SMART
SENSOR
BUSINESS

Leuze electronic

the sensor people

PRODUCTS
2018 / 2019

Switching sensors | Measuring sensors | Products for safety at work
Identification | Data transmission / Control components
Industrial image processing | Accessories

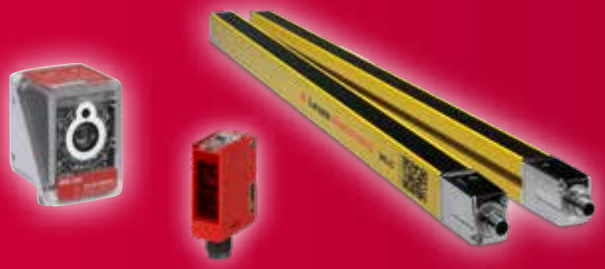

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TABLE OF CONTENTS

Smart Sensor Business – our promise	P. 8
Intelligent sensors as the basis for Industry 4.0 / IIoT	P. 18
We are the sensor people – our company	P. 20

CHAPTER		/ SEGMENT	
Switching sensors	**P. 22**	Optical Sensors	P. 24
		Inductive switches	P. 118
		Capacitive sensors	P. 142
		Ultrasonic sensors	P. 150
		Fiber optic sensors	P. 162
		Forked sensors	P. 172
		Light curtains	P. 183
		Special sensors	P. 194
Measuring sensors	**P. 210**	Optical distance sensors	P. 212
		Ultrasonic distance sensors	P. 224
		Sensors for positioning	P. 232
		3D sensors	P. 247
		Light curtains	P. 254
		Measuring forked sensors	P. 267

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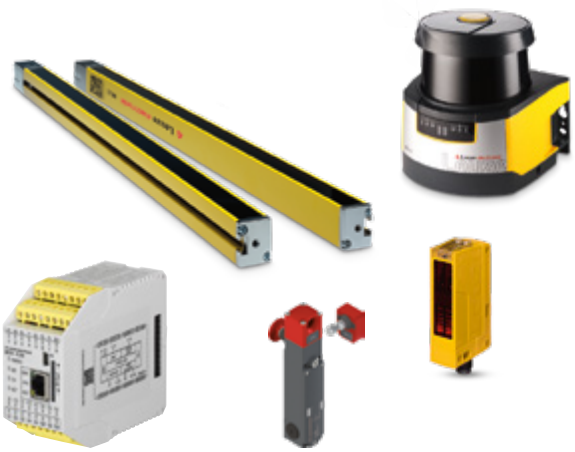
// CATEGORY		/// SERIES
Selection table Photoelectric sensors/diffuse sensors, cubic	P. 25 P. 25	2 series, 3 series, 5 series, 8 series, 10 series, 15 series, 18 series, 25 series, 28 series, 46 series, 49C series, 53 series, 55 series, 95 series, 96 series
Selection table Photoelectric sensors/diffuse sensors, cylindrical	P. 95 P. 95	318 plastic series, 318 metal series, 328 series, 412 series, 618 Series
Sensors for potentially explosive areas	P. 111	92 series, 55 series, 46 series, 96 series
Selection table Standard sensors, cubic	P. 120 P. 120	IS 288, IS 240, IS 244
Standard sensors, cylindrical	P. 124	IS 208, IS 212, IS 218, IS 230, Reduction factor 1 sensors, AC/DC sensors, All stainless steel sensors
All stainless steel sensors	P. 134	IS 208, IS 212, IS 218, IS 230
Miniature sensors	P. 139	IS 255, IS 204, IS 205, IS 206
		Capacitive sensors, standard sensors, cylindrical, Capacitive sensors, standard sensors, cubic, Capacitive sensors, PTFE sensors, Capacitive sensors, IO-Link sensors
Ultrasonic sensors, cubic	P. 151	18 series, 420 series
Ultrasonic sensors, cylindrical	P. 154	318 series, 330 series, 412 series, 418 series, 430 series
Amplifiers	P. 163	LV461, LV462, LV463
Fiber optics	P. 168	Plastic fiber optics, Glass fiber optics
Forked sensors for object detection	P. 173	GS 04
Forked sensors for label detection	P. 175	GS 61, GS 63B, GK 14, GSU 06, GSU 14D, IGSU 14D
		CSL 505, CSL 710, CSR 780
Contrast sensors	P. 195	KRT 3B, KRT 18B, KRT 55, KRT 20, KRT 21
Luminescence sensors	P. 205	LRT 8
Color sensors	P. 207	CRT 20B, CRT 448
		ODSL 8, ODSL 9, ODS 10, ODS 96B, ODSL 30
		318 series, 330 series, 418 series, 430 series
Optical laser measurement systems	P. 233	AMS 300i
Bar code positioning systems	P. 238	BPS 300i, BPS 8
Camera-based positioning sensors	P. 243	IPS 200i
Optical guidance	P. 245	OGS 600
Light section sensors	P. 248	LPS 36, LES 36, LRS 36
Laser scanners	P. 252	ROD 4, ROD 4plus
		CML700i
		GS 754B

CHAPTER		/ SEGMENT	
Products for safety at work	**P. 270**	Optoelectronic safety sensors	P. 272
		Safe locking devices, switches and proximity sensors	P. 331
		Safe control components	P. 358
		Machine Safety Services	P. 385
Identification	**P. 390**	Bar code identification	P. 392
		2D-code identification	P. 429
		RF identification	P. 443
Data Transmission / Control Components	**448**	Modular connection units	P. 450
		Data transmission	P. 460
		Power supply	P. 470



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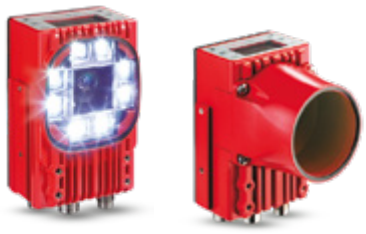
// CATEGORY		/// SERIES
Safety light curtains	P. 273	MLC 500, MLC 300
Multiple light beam safety devices	P. 291	MLD 500 transmitter/receiver, MLD 500 transceiver, MLD 300 transmitter/receiver, MLD 300 transceiver
Single light beam safety devices	P. 313	SLS 46C, MLD 510, MLD 520, MLD 530, SLS 518, SLS 46C, SLSR 25B, SLS 318
Safety laser scanners	P. 325	RSL 400
Protective sensor sets	P. 329	MLDSET, MLD-UDC
Safety switches	P. 332	S20, S200, S300, S400, S410, S420
Safety locking devices	P. 342	L10, L100, L200, L300
Safety command devices	P. 350	ERS200, ESB200
Magnetically coded sensors	P. 353	MC3
Safety transponders	P. 356	RD800
Safety relays	P. 359	MSI-SR-ES20, MSI-SR-ES31, MSI-SR-2H21, MSI-SR-2H1, MSI-MC3x, MSI-SR-LC21, MSI-SR-LC21M, MSI-SR-LC31, MSI-SR4, MSI-SR5, MSI-TRM, MSI-T, MSI-MD-FB (for local mounting), MSI-SR-LC21DT03/30, MSI-DT30, MSI-RM2, MSI-SR-CM32, MSI-SR-CM42, MSI-SR-CM43, MSI-CM52, MSI-SR-SM42OS
Programmable safety controls	P. 376	Base modules, Gateways, I/O extension modules, Base modules, Gateway, I/O extension modules
AS-Interface Safety at Work	P. 382	ASM1, ASM2
Safety inspections	P. 386	
Stopping time measurement	P. 386	
Safety consulting	P. 387	
Seminars and workshops	P. 387	
Stationary bar code readers	P. 393	BCL 8, BCL 21/22, BCL 300i, BCL 500i, BCL 600i, BCL 900i, CR50 / CR55, CR100, MSPi systems
Mobile bar code readers	P. 426	General applications, Industrial applications
Stationary 2D-code readers	P. 430	DCR 200i, LSIS 220, LSIS 422, DCR 40, DCR 50, DCR 80 / DCR 85
Mobile 2D-code readers	P. 439	General applications, Industrial applications, Directly marked codes (DPM)
Stationary RFID read/write systems	P. 444	RFI 32, RFM 12 / 32 / 62
Transponders	P. 446	TFI, TFM
		MA 200i, MD 700i / MD 200i, MA 100, MA 2, MA 21, MA 31, MA 4, MA 4.7, MA 8, MA 900
		DDLS 500, DDLS 200
		PSU, PLM / PBM

CHAPTER		/ SEGMENT	
Industrial image processing	**P. 472**	Smart camera	P. 474
		Industrial IP camera	P. 479
Accessories	**P. 482**	Connection technology	P. 484
		Mounting systems	P. 494
		Device columns	P. 499
		Deflecting mirrors / Deflecting mirror columns	P. 501
		Protective screens	P. 504
		Signaling devices	P. 505
		Reflectors and reflective tapes	P. 509
		Alignment aids	P. 513
		Bar code tapes	P. 514
		Muting mounting systems	P. 515
Part index by part number			P. 518
Part index by type designation			P. 532
Glossary			P. 565
Sales regions, Germany			Fold-out on P. 3



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// CATEGORY		/// SERIES
		LSIS 412i / LSIS 462i / LSIS 472i
		LCAM
Connection cables	P. 484	
Interconnection cables	P. 489	
User-configurable connectors	P. 492	
Distribution box	P. 493	
Mounting bracket	P. 494	
Rod mounts	P. 495	
Other mounting systems	P. 497	
Deflecting mirror columns / continuous	P. 501	
Deflecting mirror columns / individual mirrors	P. 502	
Deflecting mirrors / continuous	P. 503	
Mounting systems	P. 505	
Calottes	P. 506	
Ready-made signaling columns	P. 507	
Multitone + beacon	P. 507	
Panel-mount modules	P. 507	
Muting indicators	P. 508	
Standard reflectors	P. 509	
Micro-triad-type reflectors	P. 510	
Reflectors with higher resistance	P. 511	
Reflectors with heating	P. 511	
Reflective tapes for standard applications	P. 512	
Reflective tapes for laser and clear-glass applications	P. 512	

SMART
SENSOR
BUSINESS

SMART IS TO THINK **EASY**, TO SHARE **EXPERIENCE**, TO BE **CLOSE**, TO CREATE THE **FUTURE**

"More than 50 years of experience made Leuze electronic a real expert in innovative and efficient sensor solutions for industrial automation. With our wide sales- and service-network, our knowledgeable consulting and our reliable customer service we are always close to you – worldwide."

Ulrich Balbach,
Managing Director

www.smart-sensor-business.com

EASY

Technology must serve people. Complex and technically sophisticated products should be as **easy** and intuitive to use as possible by our customers. This is both an aspiration and a development maxim – to the benefit of our customers.

EXPERI-ENCE

More than 50 years of **experience** and a close relationship with our customers have made us true experts in specific industries. This is how we develop individual sensor solutions for and with our customers.

PROXIM-ITY

Think global, act local – this characterizes the sensor people. **Customer proximity** means not only being there for our customers 24/7, providing them with sound advice, and supporting them with an extensive range of services, but also responding to their individual desires and needs worldwide.

FUTURE

Sensors are the basis for all automation and for Industry 4.0 or IIoT. Together with our customers and strategic partners we are working on **future-oriented technologies** in order to make data and information available worldwide.

EASY

SMART IS TO THINK **EASY**

"Our development motto is quite simple – all products must be easy and intuitive to operate for our customers – easier than the previous models and similar devices on the market."

Dr. Marie-Theres Heine,
Product Manager –
Binary Switching Sensors

www.smart-sensor-business.com

COMPLEX TECHNOLOGY – **EASY TO** OPERATE!

We do not budge on this issue – if it is not “easy to operate,” we will not develop it!

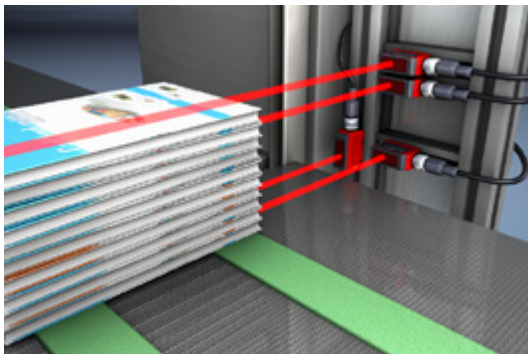
Even in the development of new products, Leuze electronic is steadfast on keeping with its customers’ desire for simple operation. This is the company’s development maxim. It means that we only develop products that are easy to operate, preferably even easier than the previous models or comparable products on the market.

These sensors offer unlimited freedom

Our new devices of the C-generation offer complete liberty when it comes to selecting the sensor alignment. The switching thresholds can be configured by button, line, IO-Link, or the traditional potentiometer – anything is possible.

A code reader that is up and running in three minutes

Our camera-based code reader DCR 200i is setting a new standard in terms of performance and implementation. It takes no more than three minutes to parameterize the code reader via its two control buttons and start using it – it doesn’t get any easier!



EXPERI-ENCE

SMART IS TO SHARE **EXPERIENCE**

"Many years of industrial experience has made us a top expert in various industries. Together with our customers, we develop efficient sensor solutions that are made specifically for their requirements."

Jörg Beintner,
Industry Manager – Machine Tools

www.smart-sensor-business.com

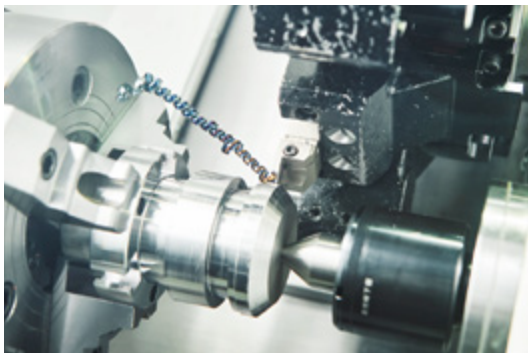
INDUSTRY ORIENTATION IS KEY TO SUSTAINABLE SUCCESS

Our experience in the industry is a true treasure trove that we don't mind sharing with our customers

To be real specialists and have expert knowledge requires focus. We are experts in intralogistics, the packaging industry, machine tools, the automotive industry, and medical technology. In these industries, we offer our customers solid know-how based on many years of experience as well as the support of our industry experts who are familiar with all the unique requirements and peculiarities of these industries. This enables us to offer tailor-made solutions for a large variety of complex customer requirements, no matter how challenging they are.

Precision and reliability matter for machine tools

Today more than ever, characteristics such as accuracy and reliability are demanded of machine tools and of the sensors used on those tools.
As a result of increasing digitization, the networking of systems is becoming more and more important as well. Many of our solutions are providing the corresponding functionalities already today.



When efficient intralogistics are a matter of competition

System manufacturer Bürkert Fluid Control Systems from Ingelfingen (Germany) has significantly increased its level of automation at the “Campus Criesbach” location in order to serve its customers even faster and more efficiently. Intelligent sensor solutions from Leuze electronic make it possible.

PROXIM-ITY

SMART IS TO BE **CLOSE**

"To us, being close to our customers means treating them as guests. We make every effort to ensure that they feel at home with us and are happy to come back."

Junghee Lee,
Customer Service Manager –
Leuze electronic South Korea

www.smart-sensor-business.com

TOP **CUSTOMER SERVICE** IS A **NATURAL PART OF OUR ACTIVITIES**

Our customers are guests who love to come back

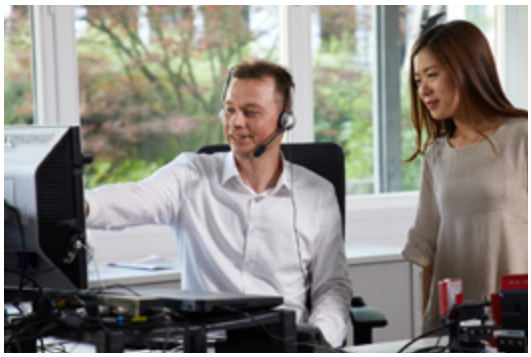
If our customers feel at home with us, they are also sure to return. Junghee Lee's job is to make every effort to ensure that her customers feel right at home with Leuze electronic. This is precisely the aim of our continuously expanding and customized services. The 24/7 service hotline and the customer proximity with our 22 branches and 42 sales partners around the globe are just some of the very real examples of our commitment to service and customer orientation.

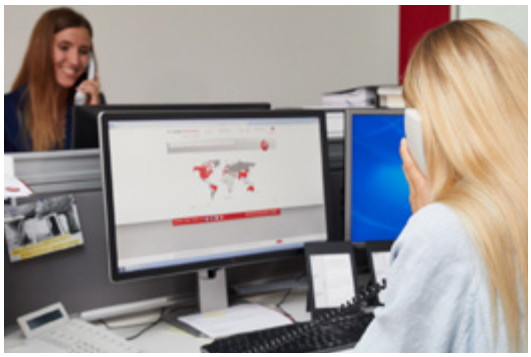
The right service, every time

We accompany our customers during the entire life cycle of their machines or systems by providing competent advice and offering our comprehensive support and services. Our 24/7 service hotline for technical questions offers worldwide support for customer inquiries.

Always here for you, no matter when or where – worldwide

In our service center we are in touch with our customers around the clock, worldwide, ready to address their questions and wishes. We make sure that our customers' machines and systems run reliably. With our presence in five continents, we are also physically close to our customers.





FUTURE

SMART IS TO CREATE THE **FUTURE**

“We are developing the technological standards of the future. Together with our customers and international technology partners, we are working on viable concepts for tomorrow’s industrial automation.”

Moritz Mullis,
Development Engineer –
Competence Center Electronics

www.smart-sensor-business.com

INTELLIGENT SENSORS PROVIDE THE FOUNDATION FOR INDUSTRY 4.0 AND IIOT

We have a very clear idea of what the future will look like, and we develop suitable sensor concepts for it

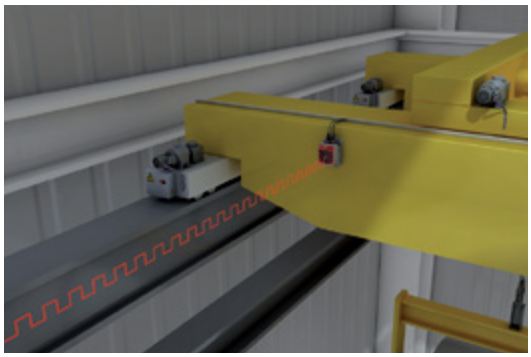
Together with international technology partners such as Microsoft and the OPC Foundation, among others, we are designing the technological standards of tomorrow and are already optimally preparing our products for this today. For example, already today some of our sensors, such as bar code readers or optical data transceivers, are sending their data directly to the cloud where they can be used for further analysis or services. Interfaces such as IO-Link or EtherNet also aim to facilitate the communication and networking of sensors and make the information available worldwide.

Remote diagnostics with DDLS 500

Our DDLS 500 data transmission photoelectric sensor is the world's first device to provide remote access and remote diagnostics via Ethernet using its integrated web server. Here Leuze electronic is a pioneer and sets the standard for the future.

Into the future with bar code reader BCL 348*i*

In cooperation with Microsoft, we are developing a sensor solution with Industry 4.0 capability which is based on the BCL 348i bar code reader and transfers the data directly to the Azure Cloud via OPC UA and back to the sensor. The bar code reader can also be controlled directly via the app.

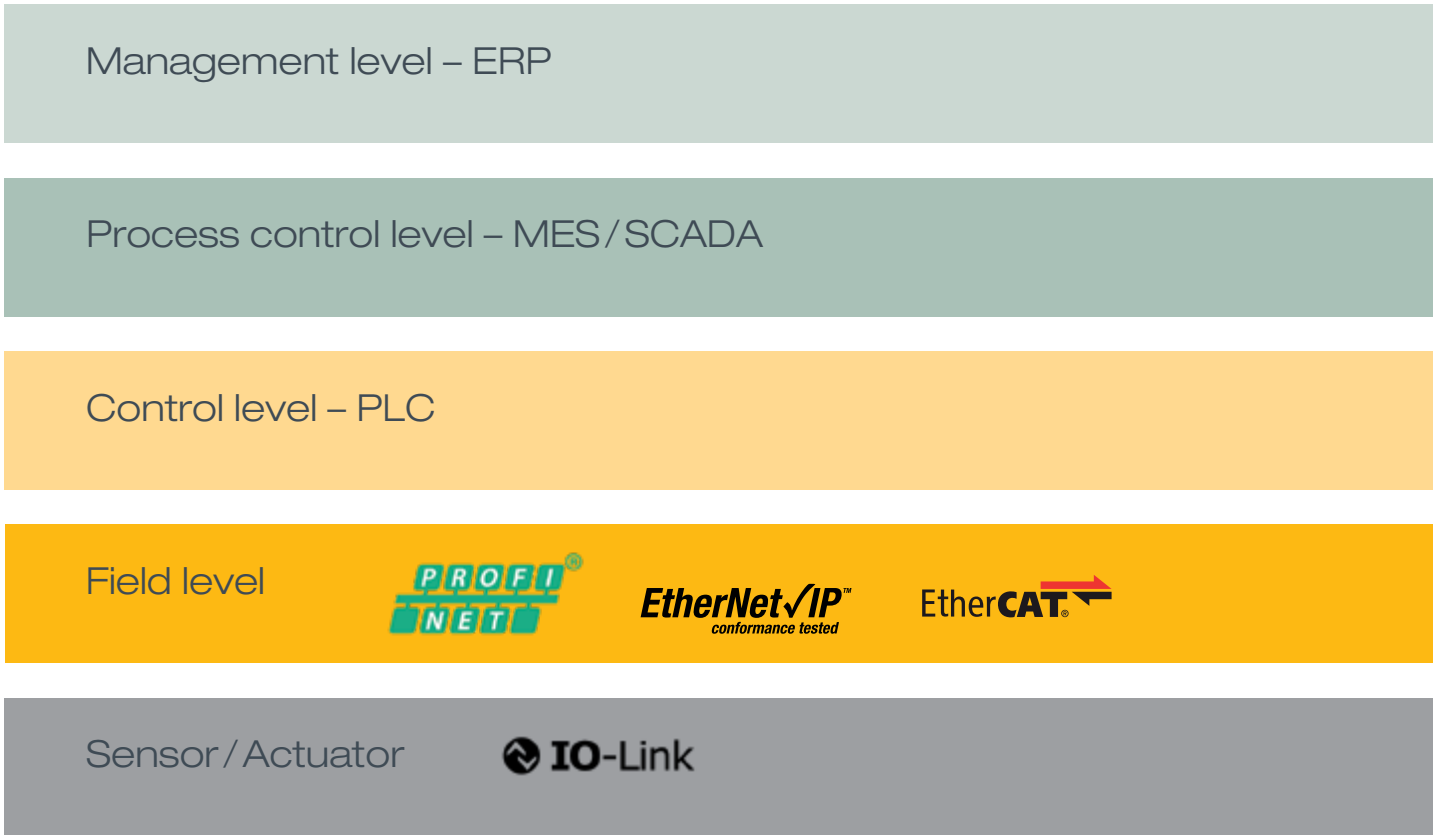


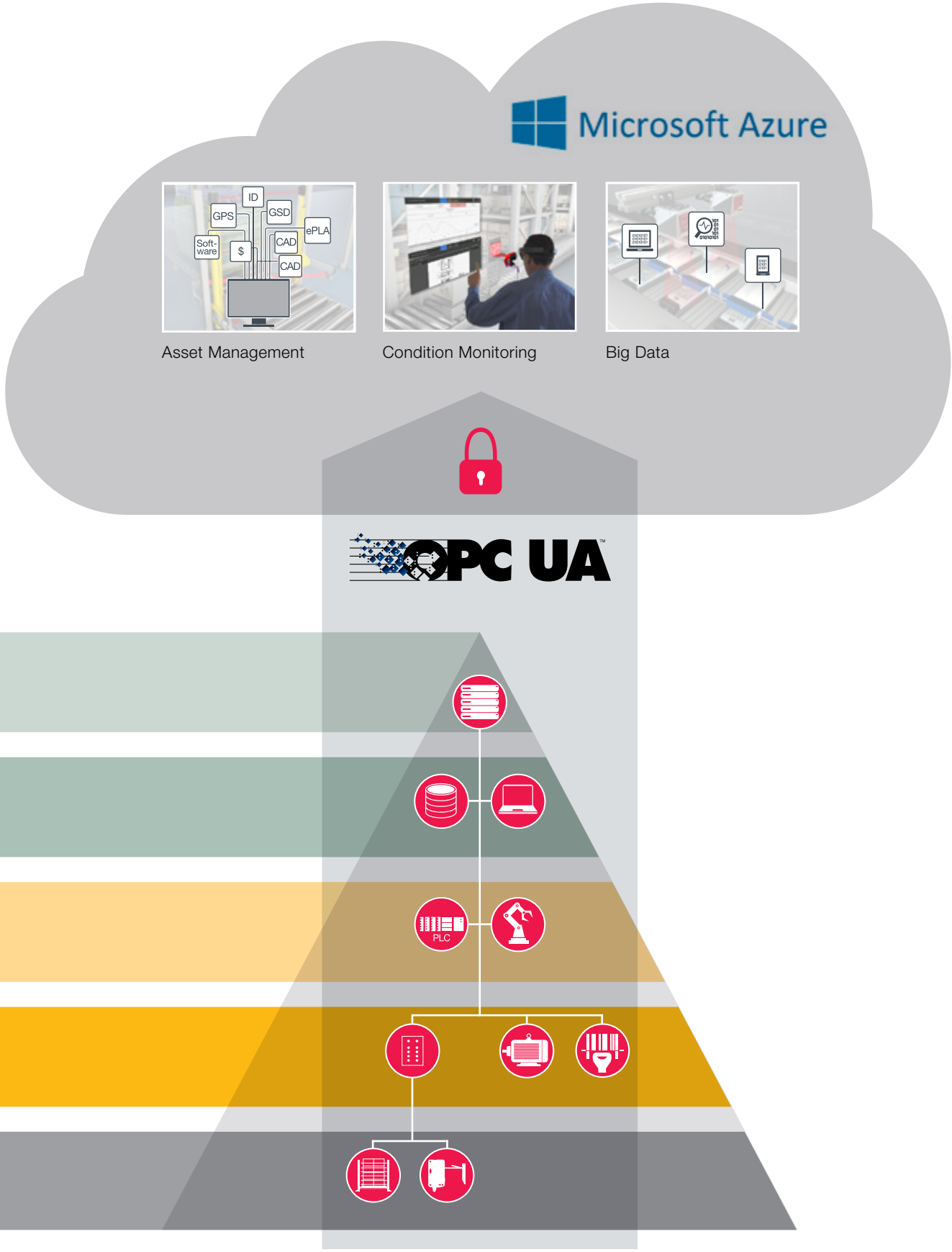
SMART IS TO CREATE THE **FUTURE**

Intelligent sensors provide the foundation for Industry 4.0 / IIoT. We have a very clear idea of what the future will look like, and we develop innovative sensor concepts for it.

Together with international technology partners such as Microsoft and the OPC Foundation, we design the technological standards of tomorrow and optimally prepare our products for the challenges of Industry 4.0 / IIoT. Our sensors already transmit their data via OPC UA to all levels of the automation pyramid or directly to the cloud, for example our BCL300i bar code readers.

There, the data can be used for further analysis and services provided by the Microsoft Azure Cloud services. Integrated interfaces such as IO-Link, PROFINET, EtherNet-IP, and EtherCAT are further driving forward the networking of sensors, and they make extensive machine data accessible and available globally through integration in the cloud.




Microsoft Azure
ID
GPS
GSD
ePLA
Soft-
ware
$
CAD
CAD
Asset Management
Condition Monitoring
Big Data
OPC UA
PLC

SMART
SENSOR
BUSINESS

WE ARE THE **SENSOR PEOPLE**

For more than 50 years, we have been developing, producing, and marketing efficient sensor solutions for industrial automation.

Leuze electronic at a glance

Foundation	1963
Company structure	GmbH & Co. KG, wholly family-owned
Executive management	Ulrich Balbach
Headquarters	Owen, Germany
Distribution companies	18
Production locations	5
Technological competence centers	3
Distributors	42
Employees	> 1,000

Product range

Switching sensors
Measuring sensors
Products for Safety at Work
Identification
Data transmission systems
Industrial image processing
Accessories

Industry expertise

Intralogistics
Packaging industry
Machine tools
Automotive industry
Medical technology

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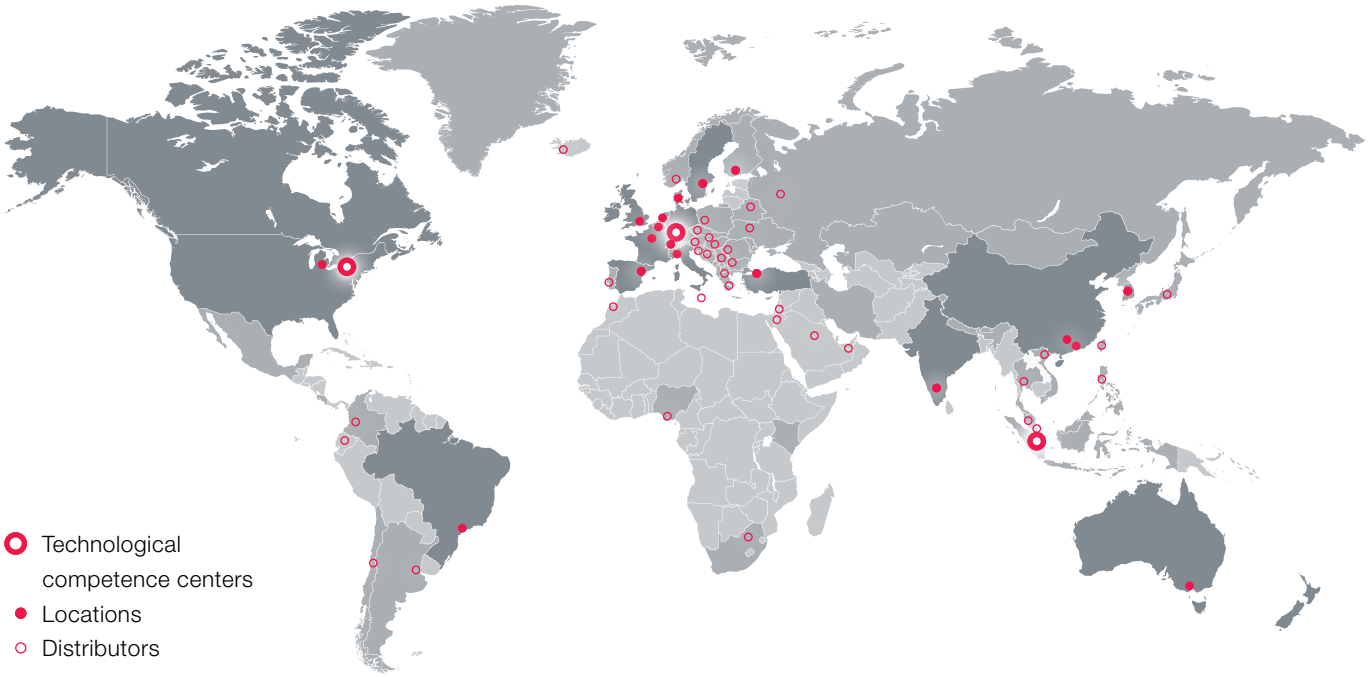
ALWAYS
CLOSE TO YOU

Short distances are important to us – both within and outside of our company. We therefore place great value on being personally, quickly, and easily accessible to you at our locations around the world. We produce our sensors on four continents, allowing us to offer you reliable product availability.



Australia / New Zealand | Belgium | Brazil | China | Denmark / Sweden | France | Germany | Great Britain | Hong Kong | India | Italy | the Netherlands | Singapore | South Korea | Spain | Switzerland | Turkey | USA / Canada

SWITCHING SENSORS

EVERYTHING IN VIEW FOR PROPER SWITCHING

In this area, you will find sensor solutions that detect an object opto-electronically, ultrasonically or inductively and output a robust switching signal. Select here from a large number of different operating principles and designs.

"Especially with switching sensors, smarter product usability can often be a decisive advantage when selecting a supplier. At Leuze electronic, we concentrate on simple mounting and alignment to allow commissioning to be performed as efficiently and as quickly as possible. But even in the event of a product exchange, these factors are becoming increasingly important when it comes to reducing downtimes. In this context, the IO-Link sensor interface is growing in importance, as this interface supplies, e.g., information via the process signal indicating whether the sensor was correctly installed."

Stefan Ambos,
Head of Product Marketing

/ Optical Sensors Page 24

/ Inductive switches Page 118

/ Capacitive sensors Page 142

/ Ultrasonic sensors Page 150

/ Fiber optic sensors Page 162

/ Forked sensors Page 172

/ Light curtains Page 183

/ Special sensors Page 194

/ OPTICAL SENSORS

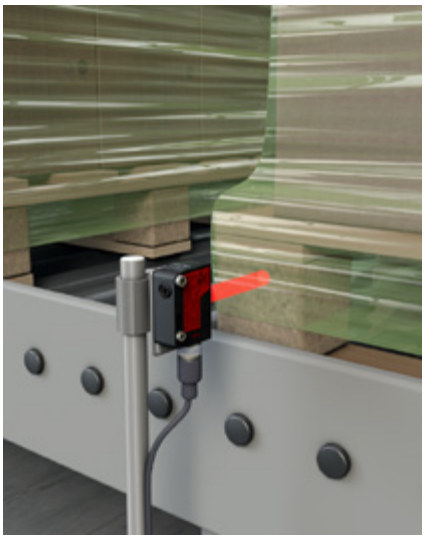
WE USE LIGHT TO PROVIDE SOLUTIONS TO MANY DIFFERENT PROBLEMS

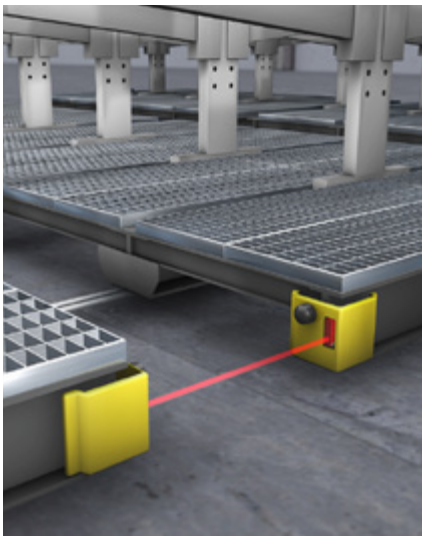
One of our core competencies are sensors that perform their detection tasks with light in a wide range of forms. For all applications that are to be solved in this way, we are able to offer you a reliable and efficient solution from our extensive product line.

Photoelectric sensors/diffuse sensors, cubic Page 25

Photoelectric sensors/diffuse sensors, cylindrical Page 95

Sensors for potentially explosive areas Page 111



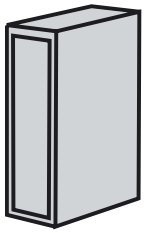


//PHOTOELECTRIC SENSORS/ DIFFUSE SENSORS, CUBIC

THE ONLY THING STANDARD HERE IS THE HOUSING SHAPE

The products in this area are characterized by their cubic design. With their various mounting options, they cover a wide range of installation situations. Here, you will find reliable sensors with different operating principles for a variety of detection tasks in a wide range of environmental conditions.

SELECTION TABLE – Cubic series

 Series	Dimensions in mm (WxHxD)	Housing material		Operating principle	Typ. operating range limit	Light source			Max. switching frequency	Response time	Special object features		
		Plastic	Metal			Infrared light	Red light	Laser			Glossy surface (metallic, shrink-wrapped object)	Transparent object (glass, PET, films)	Small part
BR2	8x23x12	●		Throughbeam photoelectric sensor	0 … 2 m		●		385 Hz	1.3 ms			●
				Retro-reflective photoelectric sensor	0.05 … 3.1 m		●		700 Hz	0.72 ms			●
				Diff. refl. sensor w. backgr. suppr.	15/30/50 mm		●		700 Hz	0.72 ms	●		●
BR3C	11x34x18	●		Throughbeam photoelectric sensor	0 … 10 m		●	●	1,000/3,000 Hz	0.16 ms			
				Retro-reflective photoelectric sensor	0 … 6 m		●	●	1500 Hz	0.16 ms	●	●	●
				Diff. refl. sensor w. backgr. suppr.	5 … 450 mm	●	●	●	1,000/3,000 Hz	0.16 ms	●		●
BR5	14x33x20	●		Throughbeam photoelectric sensor	0 … 15 m	●	●		500 Hz	1 ms			
				Retro-reflective photoelectric sensor	0.02 … 6 m		●		500 Hz	1 ms			
				Energetic diffuse sensor	0 … 1 m	●	●		500 Hz	1 ms	●		
				Diffuse sensor with fading	0 … 0.28 m	●	●		500 Hz	1 ms			
				Diff. refl. sensor w. backgr. suppr.	0 … 400 mm		●		500 Hz	1 ms			
BR10	25x65x55	●		Diff. refl. sensor w. backgr. suppr.	0.05 … 8 m			●	40 Hz	< 15 ms	●		
BR53	14x54x20		●	Throughbeam photoelectric sensor	0 … 10 m		●		1,000 Hz	0.5 ms			
				Retro-reflective photoelectric sensor	0 … 5 m		●	●	2,000 Hz	0.25 ms		●	●
				Diff. refl. sensor w. backgr. suppr.	5 … 400 mm		●		2,000 Hz	0.5 ms	●		
BR55	14x36x25		●	Throughbeam photoelectric sensor	0 … 10 m		●		1,000 Hz	0.5 ms			
				Retro-reflective photoelectric sensor	0.02 … 6 m		●	●	2,000 Hz	0.25 ms		●	●
				Diff. refl. sensor w. backgr. suppr.	5 … 400 mm		●		2,000 Hz	0.25 ms	●		●
BR25B BR25C	15x39x29	●		Throughbeam photoelectric sensor	0 … 24 m	●	●		500 Hz	1 ms			
				Retro-reflective photoelectric sensor	0.05 … 15 m		●	●	2,000 Hz	0.25 ms	●	●	●
				Energetic diffuse sensors	5 … 1,300 mm		●		500 Hz	1 ms			
				Diff. refl. sensor w. backgr. suppr.	0 … 3,000 mm	●	●		1,500 Hz	0.5 ms	●		●
BR28	15x47x32	●		Throughbeam photoelectric sensor	0 … 15 m		●		500 Hz	1 ms			
				Retro-reflective photoelectric sensor	0.02 … 6 m		●		500 Hz	1 ms			
				Energetic diffuse sensors	0 … 0.85 m		●		500 Hz	1 ms			
				Diffuse sensor with fading	0 … 0.25 m		●		500 Hz	1 ms			
BR18	15x50x33		●	Retro-reflective photoelectric sensor	0 … 7.2 m		●		5,000 Hz	0.1 ms		●	●
BR8	15x48x38		●	Throughbeam photoelectric sensor	0 … 100 m		●	●	2,800 Hz	0.18 ms			●
				Retro-reflective photoelectric sensor	0 … 21 m		●	●	2,800 Hz	0.18 ms		●	●
				Diffuse sensors	5 … 800 mm		●		1,500 Hz	0.33 ms			
				Diff. refl. sensor w. backgr. suppr.	7 … 400 mm		●	●	2,000 Hz	0.25 ms	●		●
BR95	17x66x35		●	Throughbeam photoelectric sensor	0 … 20 m	●	●		1,000 Hz	0.5 ms			
				Retro-reflective photoelectric sensor	0 … 9 m		●		1,000 Hz	0.5 ms		●	●
				Energetic diffuse sensors	10 … 400 mm		●		1,000 Hz	0.5 ms			
				Diff. refl. sensor w. backgr. suppr.	5 … 500 mm	●	●		1,000 Hz	0.5 ms	●		
BR46	20.5x76.3x44	●		Throughbeam photoelectric sensor	0 … 150 m	●	●		500 Hz	1 ms			
				Retro-reflective photoelectric sensor	0.1 … 30 m		●		500 Hz	1 ms	●	●	●
				Diff. refl. sensor w. backgr. suppr.	5 … 3,000 mm	●	●	●	500 Hz	1 ms	●		●
BR49C	31x104x55.5	●		Throughbeam photoelectric sensor	0 … 150 m	●	●		500 Hz	1 ms			
				Retro-reflective photoelectric sensor	0.1 … 30 m	●	●		500 Hz	1 ms		●	
				Diff. refl. sensor w. backgr. suppr.	5 … 3,000 mm	●	●		250 Hz	2 ms	●		
BR96	30x90x70	●	●	Throughbeam photoelectric sensor	0 … 150 m	●	●		500 Hz	1 ms			
				Retro-reflective photoelectric sensor	0 … 28 m	●	●		1,000 Hz	0.5 ms	●	●	
				Energetic diffuse sensors	20 … 1,200 mm	●			1,000 Hz	0.5 ms			
				Diff. refl. sensor w. backgr. suppr.	10…6,500/30,000 mm	●	●	●	300 Hz	1.67 ms	●		

/// 2 series

With the various miniature sensors of the 2 series – from sensor to throughbeam photoelectric sensors – you are fully prepared for a range of different industrial applications. The miniature sensors show their strengths above all in situations with limited installation space, e.g., in the areas of handling technology and robotics.

Direct access to the online product selector at **www.leuze.com/en/br2**

Throughbeam photoelectric sensors

With their very small light spot, these classic throughbeam photoelectric sensors are predestined for the reliable detection of small parts. Their miniature format also allows them to be mounted in constrained spaces.

LSR 2

With the LSR 2 throughbeam photoelectric sensor, large ranges or high function reserves are possible depending on the application. They feature a PinPoint LED for producing a small, homogeneous and highly visible light spot.

Benefits:

- Large operating ranges
- High function reserves possible
- PinPoint LED for producing a small, homogeneous and highly visible light spot
- Ideally suited for the detection of small parts

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50112129	► LSSR 2,150-S12	0 ... 1.6 m 0 ... 2 m	LED, red	Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts, DC, PinPoint diode
50112132	◄ LSER 2/42,150-S12	0 ... 1.6 m 0 ... 2 m		Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts; Switching frequency: 385 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC
50112135	◄ LSER 2/42D,150-S12	0 ... 1.6 m 0 ... 2 m		Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts; Switching frequency: 385 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC
50112128	► LSSR 2,150-S8	0 ... 1.6 m 0 ... 2 m	LED, red	Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts, DC, PinPoint diode
50112131	◄ LSER 2/42,150-S8	0 ... 1.6 m 0 ... 2 m		Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts; Switching frequency: 385 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC
50112134	◄ LSER 2/42D,150-S8	0 ... 1.6 m 0 ... 2 m		Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts; Switching frequency: 385 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC
50116172	► LSSR 2.8,150-S8.3	0 ... 1.6 m 0 ... 2 m	LED, red	Cable with connector, 150 mm, M8, 3-pin, plastic	Application: detection of small parts, DC
50116173	◄ LSER 2/4,150-S8.3	0 ... 1.6 m 0 ... 2 m		Cable with connector, 150 mm, M8, 3-pin, plastic	Application: detection of small parts; Switching frequency: 385 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50112127	► LSSR 2	0 ... 1.6 m 0 ... 2 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of small parts, DC, PinPoint diode
50112130	◄ LSER 2/42	0 ... 1.6 m 0 ... 2 m		Cable, 2,000 mm, 4-wire	Application: detection of small parts; Switching frequency: 385 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC
50112133	◄ LSER 2/42D	0 ... 1.6 m 0 ... 2 m		Cable, 2,000 mm, 4-wire	Application: detection of small parts; Switching frequency: 385 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

Through the use of polarized light, these photoelectric sensors can even reliably detect objects with glossy surfaces.

PRK 2

With the PRK 2 retro-reflective photoelectric sensor, large ranges or high function reserves are possible depending on the application. They feature glass optics and polarized light for reliable switching behavior with glossy surfaces.

Benefits:

- Large operating ranges
- High function reserves possible
- PinPoint LED for producing a small, homogeneous and highly visible light spot
- Ideally suited for the detection of small parts
- Glass optics and polarized light for reliable switching behavior with glossy surfaces

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Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50112138	PRK 2/42,150-S12	0.07 … 3.5 m 0.07 … 4 m	LED, red	Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, PinPoint diode
50112141	PRK 2/42D,150-S12	0.07 … 3.5 m 0.07 … 4 m	LED, red	Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, PinPoint diode
50112137	PRK 2/42,150-S8	0.07 … 3.5 m 0.07 … 4 m	LED, red	Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, PinPoint diode
50112140	PRK 2/42D,150-S8	0.07 … 3.5 m 0.07 … 4 m	LED, red	Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, PinPoint diode
50112136	PRK 2/42	0.07 … 3.5 m 0.07 … 4 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, PinPoint diode
50112139	PRK 2/42D	0.07 … 3.5 m 0.07 … 4 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, PinPoint diode

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Diffuse sensors with background suppression

These sensors score big thanks, in particular, to their small light spot and good background suppression. They thereby detect even the smallest components without being influenced by objects in the background.

HRTR 2

The HRTR 2 miniature diffuse reflection sensor convinces with a very small, homogeneous and laser-like light spot.
The background suppression, which is permanently set to various ranges, allows even dark objects to be reliably detected against a light background.

Benefits:

- Miniature diffuse reflection sensors with visible red light
- Homogeneous light beam with very small laser-like light spot
- Very good background suppression

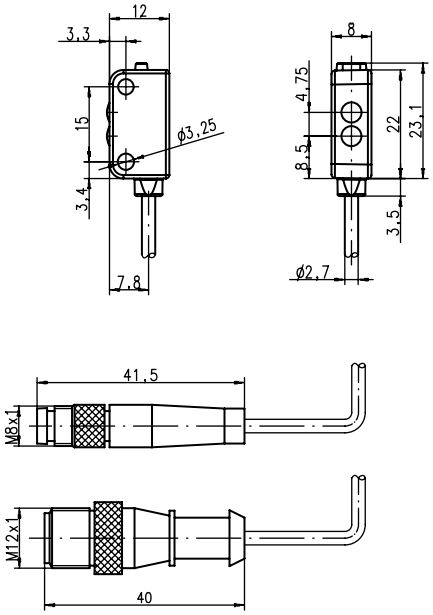
Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50112123	HRTR 2/42-50F,150-S12	0.004 … 0.046 m 0.001 … 0.06 m	LED, red	Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, permanently set range, laser-like light spot
50112126	HRTR 2/42D-50F,150-S12	0.004 … 0.046 m 0.001 … 0.06 m	LED, red	Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, permanently set range, laser-like light spot
50112122	HRTR 2/42-50F,150-S8	0.004 … 0.046 m 0.001 … 0.06 m	LED, red	Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, permanently set range, laser-like light spot
50112125	HRTR 2/42D-50F,150-S8	0.004 … 0.046 m 0.001 … 0.06 m	LED, red	Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, permanently set range, laser-like light spot
50120855	HRTR 2/2-50F,150-S8.3	0.004 … 0.046 m 0.001 … 0.06 m	LED, red	Cable with connector, 150 mm, M8, 3-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, NPN, light switching, DC, laser-like light spot
50112121	HRTR 2/42-50F	0.004 … 0.046 m 0.001 … 0.06 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, permanently set range, laser-like light spot
50112124	HRTR 2/42D-50F	0.004 … 0.046 m 0.001 … 0.06 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, permanently set range, laser-like light spot
50112117	HRTR 2/42-30F,150-S12	0.005 … 0.028 m 0.001 … 0.035 m	LED, red	Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, permanently set range, laser-like light spot
50112120	HRTR 2/42D-30F,150-S12	0.005 … 0.028 m 0.001 … 0.035 m	LED, red	Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, permanently set range, laser-like light spot
50112116	HRTR 2/42-30F,150-S8	0.005 … 0.028 m 0.001 … 0.035 m	LED, red	Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, permanently set range, laser-like light spot
50112119	HRTR 2/42D-30F,150-S8	0.005 … 0.028 m 0.001 … 0.035 m	LED, red	Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, permanently set range, laser-like light spot
50112115	HRTR 2/42-30F	0.005 … 0.028 m 0.001 … 0.035 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, permanently set range, laser-like light spot
50112118	HRTR 2/42D-30F	0.005 … 0.028 m 0.001 … 0.035 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, permanently set range, laser-like light spot
50112111	HRTR 2/42-15F,150-S12	0.004 … 0.014 m 0.001 … 0.018 m	LED, red	Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, permanently set range, laser-like light spot
50112114	HRTR 2/42D-15F,150-S12	0.004 … 0.014 m 0.001 … 0.018 m	LED, red	Cable with connector, 150 mm, M12, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, permanently set range, laser-like light spot
50112110	HRTR 2/42-15F,150-S8	0.004 … 0.014 m 0.001 … 0.018 m	LED, red	Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, permanently set range, laser-like light spot
50112113	HRTR 2/42D-15F,150-S8	0.004 … 0.014 m 0.001 … 0.018 m	LED, red	Cable with connector, 150 mm, M8, 4-pin, plastic	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, permanently set range, laser-like light spot

Measured against a white object with 90 % diffuse reflection

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50112109	HRTR 2/42-15F	0.004 … 0.014 m 0.001 … 0.018 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, permanently set range, laser-like light spot
50112112	HRTR 2/42D-15F	0.004 … 0.014 m 0.001 … 0.018 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of small parts; Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, dark switching, DC, permanently set range, laser-like light spot

Measured against a white object with 90 % diffuse reflection

Dimensioned drawings: 2 series



2 series

ACCESSORIES: 2 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

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Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50112206	BT 002M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// 3 series

The versatile range of models in the 3 series enables use in a variety of applications, such as in packaging and handling technology. In their performance class, these sensors offer the greatest range of features of all competitors and impress with large ranges and improved function reserves. Refined technologies for spurious and extraneous light suppression and for fast alignment and commissioning round out the advantages.

Direct access to the online product selector at **www.leuze.com/en/br3**

You can find other connection variants at www.leuze.com

Throughbeam photoelectric sensors

Reliable, standard photoelectric sensors with large function reserves and simple commissioning.

L3C – Reliable object detection thanks to high function reserve

The L3C throughbeam photoelectric sensor offers reliable object detection independent of the environmental conditions. The transmitter is optionally available with activation input of the receiver with warning output for increased system availability.

Benefits:

- High function reserve
- Design with homogeneous, small light spot from laser
- Transmitter optionally with activation input
- Warning output (optional for the receiver) for increased availability

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50137194	► LS3CL1/XX-M8	0 … 5 m 0 … 10 m	Laser, 1, red	Connector, M8, 4-pin, metal	DC
50137205	◄ LE3CL1.1/4W-M8	0 … 5 m 0 … 10 m		Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching; Switching frequency: 3,000 Hz; Warning output; 270 ° potentiometer
50137201	◄ LE3CL1.1/6G-M8	0 … 5 m 0 … 10 m		Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull; dark switching (PNP)/light switching (NPN); switching frequency: 3,000 Hz; 270 ° potentiometer
50137207	◄ LE3CL1.1/LP-M8	0 … 5 m 0 … 10 m		Connector, M8, 4-pin, metal	IO-Link;DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,000 Hz; 270 ° potentiometer

► transmitter / ◄ receiver

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50137198	► LS3CL1/8X-M8	0 … 5 m 0 … 10 m	Laser, 1, red	Connector, M8, 4-pin, metal	DC, activation input
50137205	◄ LE3CL1.1/4W-M8	0 … 5 m 0 … 10 m		Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, UB switching; Switching frequency: 3,000 Hz; Warning output; 270 ° potentiometer
50137201	◄ LE3CL1.1/6G-M8	0 … 5 m 0 … 10 m		Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull; dark switching (PNP)/light switching (NPN); switching frequency: 3,000 Hz; 270 ° potentiometer
50137207	◄ LE3CL1.1/LP-M8	0 … 5 m 0 … 10 m		Connector, M8, 4-pin, metal	IO-Link;DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,000 Hz; 270 ° potentiometer
50137171	► LS3C/XX-M8	0.05 … 8.5 m 0.05 … 10 m	LED, red	Connector, M8, 4-pin, metal	DC
50137189	◄ LE3C/4W-M8	0.05 … 8.5 m 0.05 … 10 m		Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching; Switching frequency: 1,000 Hz; Warning output
50137180	◄ LE3C/6G-M8	0.05 … 8.5 m 0.05 … 10 m		Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN); Switching frequency: 1,000 Hz
50137192	◄ LE3C/LP-M8	0.05 … 8.5 m 0.05 … 10 m		Connector, M8, 4-pin, metal	IO-Link;DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,000 Hz
50137173	► LS3C/8X-M8	0.05 … 8.5 m 0.05 … 10 m	LED, red	Connector, M8, 4-pin, metal	DC, activation input
50137189	◄ LE3C/4W-M8	0.05 … 8.5 m 0.05 … 10 m		Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching; Switching frequency: 1,000 Hz; Warning output
50137180	◄ LE3C/6G-M8	0.05 … 8.5 m 0.05 … 10 m		Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull; dark switching (PNP)/light switching (NPN); switching frequency: 1,000 Hz
50137192	◄ LE3C/LP-M8	0.05 … 8.5 m 0.05 … 10 m		Connector, M8, 4-pin, metal	IO-Link;DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,000 Hz

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

In this area you will find a wide range of sensors that function according to the reflection principle including special sensors for the detection of transparent media, sensors for extremely small components or for combination with a polished, metallic surface as reflector.

PRK 3C – Standard models (LED and laser)

Powerful retro-reflective photoelectric sensor with high function reserve in compact housing, also as autocollimation type and laser version for small objects.

Benefits:

- Reliable object detection with small, mis-adjusted reflectors
- Reliable object detection with large range
- Reliable object detection with heavy soiling
- Positioning with high accuracy
- Short range with foil reflectors
- Autocollimation principle for use at zero distance

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50136264	PRK3CL1.A3/2-M8.3	0 … 2 m 0 … 3 m	Laser, 1, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, NPN, light switching; Switching frequency: 3,000 Hz; Autocollimation; Teach button
50133738	PRK3CL1.A3/4-M8.3	0 … 2 m 0 … 3 m	Laser, 1, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 3,000 Hz; Autocollimation; Teach button
50133739	PRK3CL1.A3/4P-M8	0 … 2 m 0 … 3 m	Laser, 1, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 3,000 Hz; Autocollimation; Teach button
50129411	PRK3CL1.A3/4T-M8	0 … 2 m 0 … 3 m	Laser, 1, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 3,000 Hz; Autocollimation; Teach input; Teach button
50133743	PRK3CL1.A3/LP-M8	0 … 2 m 0 … 3 m	Laser, 1, red	Connector, M8, 4-pin, metal	IO-Link; DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 3,000 Hz; Autocollimation; Teach button
50137060	PRK3CL1.A3/P-M8.3	0 … 2 m 0 … 3 m	Laser, 1, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 3,000 Hz; Autocollimation; Teach button
50137055	PRK3CL1.A3/PT-M8	0 … 2 m 0 … 3 m	Laser, 1, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 3,000 Hz; Autocollimation; Teach input; Teach button
50136261	PRK3C.A3/2N-M8	0 … 4 m 0 … 5 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz; Autocollimation; Teach button
50137056	PRK3C.A3/4-M8.3	0 … 4 m 0 … 5 m	LED, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 1,500 Hz; Autocollimation; Teach button
50133628	PRK3C.A3/4P-M8	0 … 4 m 0 … 5 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz; Autocollimation; Teach button
50129403	PRK3C.A3/4T-M8	0 … 4 m 0 … 5 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 1,500 Hz; Autocollimation; Teach input; Teach button
50133624	PRK3C.A3/LP-M8	0 … 4 m 0 … 5 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz; Autocollimation; Teach button
50137162	PRK3C/6-M8.3	0.1 … 5 m 0.1 … 6 m	LED, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Switching frequency: 1,500 Hz
50137154	PRK3C/6G-M8	0.1 … 5 m 0.1 … 6 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN); Switching frequency: 1,500 Hz
50137166	PRK3C/LP-M8	0.1 … 5 m 0.1 … 6 m	LED, red	Connector, M8, 4-pin, metal	IO-Link; DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

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PRK 3C.T/TT – Optimized for transparent objects

Compact retro-reflective photoelectric sensor optimized for transparent objects (film, PET, glass) with special functions for applications in this area. Also as a laser design.

Benefits:

- Particularly suited for highly transparent PET and glass bottles as well as films
- Easy adjustment via lockable teach button or teach input
- Automatic contamination compensation with tracking

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50136258	PRK3C.T3/2N-M8	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Teach button
50136009	PRK3C.T3/2T-M8	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, NPN, light switching; Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Teach input; Teach button
50133652	PRK3C.T3/4P-M8	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Teach button
50133644	PRK3C.T3/4T-M8	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Teach input; Teach button
50137061	PRK3C.T3/6T-M8	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Teach input; Teach button
50133648	PRK3C.T3/LP-M8	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 4-pin, metal	IO-Link; DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Teach button
50137057	PRK3C.T3/P-M8.3	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Teach button
50136265	PRK3C.T3/PT-M8	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Teach input; Teach button
50133672	PRK3C.TT3/4P-M8	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Tracking function; Teach button
50129407	PRK3C.TT3/4T-M8	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Tracking function; Teach input; Teach button
50133668	PRK3C.TT3/LP-M8	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M8, 4-pin, metal	IO-Link; DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz; Detection of highly transparent bottles; Autocollimation; Tracking function; Teach button
50136253	PRK3CL1.T3/2N-M8	0 ... 0.4 m 0 ... 0.5 m	Laser, 1, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 3,000 Hz; Detection of highly transparent bottles; Autocollimation; Teach button
50133698	PRK3CL1.T3/4-M8.3	0 ... 0.4 m 0 ... 0.5 m	Laser, 1, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 3,000 Hz; Detection of highly transparent bottles; Autocollimation; Teach button
50133697	PRK3CL1.T3/4P-M8	0 ... 0.4 m 0 ... 0.5 m	Laser, 1, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 3,000 Hz; Detection of highly transparent bottles; Autocollimation; Teach button
50133688	PRK3CL1.T3/4T-M8	0 ... 0.4 m 0 ... 0.5 m	Laser, 1, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 3,000 Hz; Detection of highly transparent bottles; Autocollimation; Teach input; Teach button
50133693	PRK3CL1.T3/LP-M8	0 ... 0.4 m 0 ... 0.5 m	Laser, 1, red	Connector, M8, 4-pin, metal	IO-Link; DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 3,000 Hz; Detection of highly transparent bottles; Autocollimation; Teach button
50133722	PRK3CL1.TT3/4P-M8	0 ... 0.4 m 0 ... 0.5 m	Laser, 1, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 3,000 Hz; Detection of highly transparent bottles; Autocollimation; Tracking function; Teach button
50133714	PRK3CL1.TT3/4T-M8	0 ... 0.4 m 0 ... 0.5 m	Laser, 1, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 3,000 Hz; Detection of highly transparent bottles; Autocollimation; Tracking function; Teach input; Teach button
50133718	PRK3CL1.TT3/LP-M8	0 ... 0.4 m 0 ... 0.5 m	Laser, 1, red	Connector, M8, 4-pin, metal	IO-Link; DC; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 3,000 Hz; Detection of highly transparent bottles; Autocollimation; Tracking function; Teach button

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Diffuse sensors with background suppression

These sensors are suited for the reliable detection of objects against a background. Available in a variety of special designs, the 3B series offers robust and efficient solutions, even for tricky applications such as the detection of objects with colored structure, objects with openings or highly polished surfaces.

HT3C – Standard models (LED and Laser)

Diffuse sensor with powerful background suppression for reliable object detection on nearly any background with visible and infrared light. Laser version available for high-precision positioning applications.

Benefits:

- Exact range adjustment through 8-turn potentiometer
- Also available with infrared light
- Especially designed for the detection of fast events and small parts
- For applications with high demands on positioning and reproducibility
- Extended detection range with very good b/w ratio as laser model

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50136241	HT3C/2-M8.3	0.005 … 0.45 m 0.005 … 0.45 m	LED, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, NPN, light switching; Switching frequency: 1,000 Hz; Multiturn potentiometer
50133592	HT3C/2N-M8	0.005 … 0.45 m 0.005 … 0.45 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,000 Hz; Multiturn potentiometer
50133590	HT3C/4-M8.3	0.005 … 0.45 m 0.005 … 0.45 m	LED, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 1,000 Hz; Multiturn potentiometer
50129375	HT3C/4P-M8	0.005 … 0.45 m 0.005 … 0.45 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,000 Hz; Multiturn potentiometer
50137044	HT3C/4X-M8	0.005 … 0.45 m 0.005 … 0.45 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 1,000 Hz; Multiturn potentiometer
50137052	HT3C/6G-M8	0.005 … 0.45 m 0.005 … 0.45 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull; dark switching (PNP)/light switching (NPN); switching frequency: 1,000 Hz; Multiturn potentiometer
50137047	HT3C/PX-M8	0.005 … 0.45 m 0.005 … 0.45 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 1,000 Hz; Multiturn potentiometer
50135361	HT3CI/4P-M8	0.005 … 0.45 m 0.005 … 0.45 m	LED, infrared	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,000 Hz; Multiturn potentiometer

Typ. operating range with a black/white error < 10 %

HT3C – Extra large and small light spots

Sensors for demanding detection, e. g. for perforated objects or for detecting through bore holes with special light-spot geometry – optimized for the highest reliability in corresponding applications.

Benefits:

- XL light spot especially designed for the detection of objects with openings, holes and grooves
- Also for detecting transparent films and bottles
- Small, homogeneous light spot (S) by means of pin-point LED
- Exact range adjustment through 8-turn potentiometer

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50136248	HT3C.XL/2N-M8	0.005 … 0.05 m 0.005 … 0.1 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,000 Hz; Detection of objects with cutouts and openings; Detection of highly transparent bottles; Detection of transparent films; Extra long light spot (XL); Multiturn potentiometer
50129383	HT3C.XL/4P-M8	0.005 … 0.05 m 0.005 … 0.1 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,000 Hz; Detection of objects with cutouts and openings; Detection of highly transparent bottles; Detection of transparent films; Extra long light spot (XL); Multiturn potentiometer
50136251	HT3C.S/2N-M8	0.005 … 0.2 m 0.005 … 0.2 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,000 Hz; Detection of small parts; Small light spot (S); Multiturn potentiometer
50133598	HT3C.S/4-M8.3	0.005 … 0.2 m 0.005 … 0.2 m	LED, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 1,000 Hz; Detection of small parts; Small light spot (S); Multiturn potentiometer
50129379	HT3C.S/4P-M8	0.005 … 0.2 m 0.005 … 0.2 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,000 Hz; Detection of small parts; Small light spot (S); Multiturn potentiometer
50137598	HT3C.S/6-M8.3	0.005 … 0.2 m 0.005 … 0.2 m	LED, red	Connector, M8, 3-pin, metal	DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Switching frequency: 1,000 Hz; Detection of small parts; Small light spot (S); Multiturn potentiometer
50137050	HT3C.S/6G-M8	0.005 … 0.2 m 0.005 … 0.2 m	LED, red	Connector, M8, 4-pin, metal	DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN); Switching frequency: 1,000 Hz; Detection of small parts; Small light spot (S); Multiturn potentiometer

Typ. operating range with a black/white error < 10 %

HT3C.V – Optimized for high-gloss and polished objects

Special sensor with V-optics for the reliable detection of planar, reflecting, highly polished or transparent objects.

Benefits:

- For the reliable detection of flat, reflective or highly glossy surfaces
- Also suited for transparent objects

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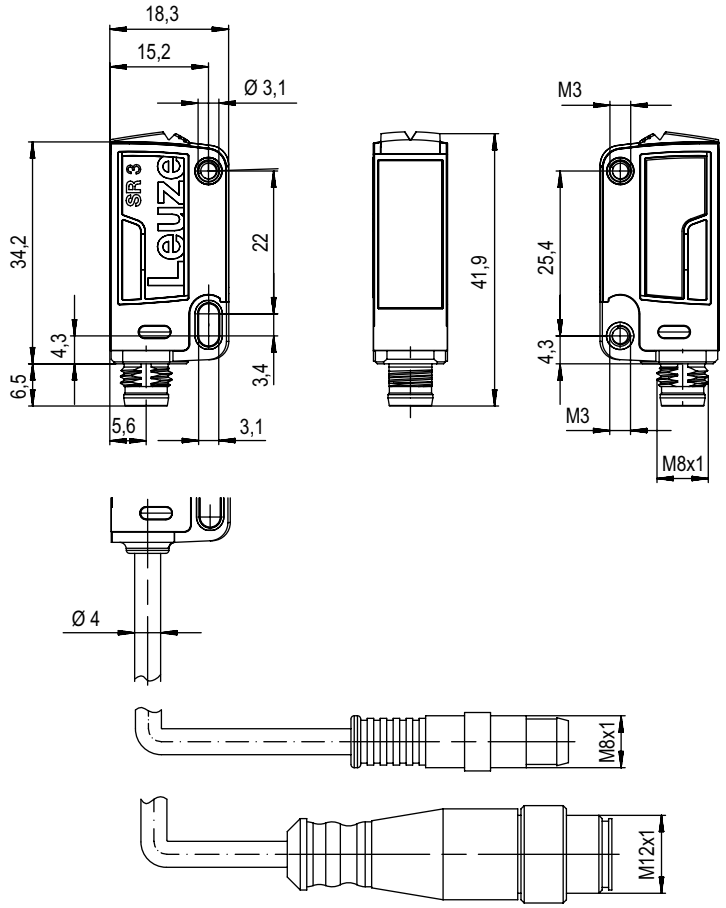
Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50136246	HT3C.V/2N-M8	0.015 … 0.15 m 0.015 … 0.15 m	LED, red	Connector, M8, 4-pin, metal	V-optics; DC; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,000 Hz; Multiturn potentiometer
50129387	HT3C.V/4P-M8	0.015 … 0.15 m 0.015 … 0.15 m	LED, red	Connector, M8, 4-pin, metal	V-optics; DC; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,000 Hz; Multiturn potentiometer
50137049	HT3C.V/4X-M8	0.015 … 0.15 m 0.015 … 0.15 m	LED, red	Connector, M8, 4-pin, metal	V-optics; DC; Digital switching output 1: transistor, PNP, light switching; Switching frequency: 1,000 Hz; Multiturn potentiometer
50137938	HT3C.VXL/6G-M8	0.01 … 0.08 m 0.01 … 0.09 m	LED, red	Connector, M8, 4-pin, metal	V-optics; Extra long light spot (XL); DC; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN); Switching frequency: 1,000 Hz; multiturn potentiometer

Typ. operating range with a black/white error < 10 %

Dimensioned drawings: 3 series



3C series

ACCESSORIES: 3 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC

Further connection cables can be found on our website

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50105546	BT 3B	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117256	BTU 200M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50024127	TK 82.2	Round	79 mm	Through-hole mounting, adhesive	Plastic
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50040894	MTKS 20x30	Rectangular	19 mm x 29 mm	Through-hole mounting, adhesive	Plastic
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

Reflective tapes for laser and clear-glass applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50123899	REF 6-A-9x9	Rectangular	9 mm x 9 mm	Self-adhesive	Plastic
50110191	REF 6-A-25x25	Rectangular	25 mm x 25 mm	Self-adhesive	Plastic
50110192	REF 6-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

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/// 5 series

The 5 series photoelectric sensors, with their compact cubic design, are always the right choice when powerful and robust standard detection is needed, e. g., in conveyor or packaging technology. The integrated M3 metal threaded sleeves and the cable outlet, which is available either pointing downward or to the rear, open many options, particularly in situations with limited installation space. From a technological perspective as well, the 5 series – with a large range, large brightVision® light spot and active A²LS extraneous light suppression – offers everything one expects in a modern photoelectric sensor.

Direct access to the online product selector at **www.leuze.com/en/br5**

Throughbeam photoelectric sensors

Compact, cubic throughbeam photoelectric sensor for constrained spaces with proven technical features.

L5

The one-way principle makes possible the reliable detection of even flat objects with a high function reserve and reduces the risk of a system standstill. Deactivation inputs enable testing of the sensor. In addition, optimized beam geometry and the highly visible brightVision® light spot simplify alignment.

Benefits:

- High function reserve
- Simple alignment by means of optimized beam geometry
- Simple detection of flat objects
- Transmitter deactivation for testing and networking

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50117695	► LS5/9D-M8	0 … 10 m 0 … 15 m	LED, red	Connector, M8, 4-pin, plastic	DC, deactivation input
50117689	◄ LE5/2N-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50134593	◄ LE5/2X-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50117692	◄ LE5/4P-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50134592	◄ LE5/4X-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50134596	◄ LE5/2-M8.3	0 … 10 m 0 … 15 m		Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50134595	◄ LE5/4-M8.3	0 … 10 m 0 … 15 m		Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50134585	► LS5/XX-M8	0 … 10 m 0 … 15 m	LED, red	Connector, M8, 4-pin, plastic	DC
50117689	◄ LE5/2N-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50134593	◄ LE5/2X-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50117692	◄ LE5/4P-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50134592	◄ LE5/4X-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50134596	◄ LE5/2-M8.3	0 … 10 m 0 … 15 m		Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50134595	◄ LE5/4-M8.3	0 … 10 m 0 … 15 m		Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50134594	► LS5/X-M8.3	0 … 10 m 0 … 15 m	LED, red	Connector, M8, 3-pin, plastic	DC
50117689	◄ LE5/2N-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50134593	◄ LE5/2X-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50117692	◄ LE5/4P-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50134592	◄ LE5/4X-M8	0 … 10 m 0 … 15 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50134596	◄ LE5/2-M8.3	0 … 10 m 0 … 15 m		Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50134595	◄ LE5/4-M8.3	0 … 10 m 0 … 15 m		Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC

► transmitter / ◄ receiver

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50117693	► LS5/9D-200-M12	0 ... 10 m 0 ... 15 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	DC, deactivation input
50117683	◄ LE5/2N-200-M12	0 ... 10 m 0 ... 15 m		Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50134471	◄ LE5/2X-200-M12	0 ... 10 m 0 ... 15 m		Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50117690	◄ LE5/4P-200-M12	0 ... 10 m 0 ... 15 m		Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50134470	◄ LE5/4X-200-M12	0 ... 10 m 0 ... 15 m		Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50117694	► LS5/9D	0 ... 10 m 0 ... 15 m	LED, red	Cable, 2,000 mm, 4-wire	DC, deactivation input
50117688	◄ LE5/2N	0 ... 10 m 0 ... 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50117691	◄ LE5/4P	0 ... 10 m 0 ... 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50135925	◄ LE5/N	0 ... 8 m 0 ... 12 m		Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, dark switching, DC
50135926	◄ LE5/P	0 ... 8 m 0 ... 12 m		Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, dark switching, DC
50132418	► LS5	0 ... 10 m 0 ... 15 m	LED, red	Cable, 2,000 mm, 3-wire	DC
50117688	◄ LE5/2N	0 ... 10 m 0 ... 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50117691	◄ LE5/4P	0 ... 10 m 0 ... 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50132420	◄ LE5/2	0 ... 10 m 0 ... 15 m		Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50132417	◄ LE5/4	0 ... 10 m 0 ... 15 m		Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50135925	◄ LE5/N	0 ... 8 m 0 ... 12 m		Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, dark switching, DC
50135926	◄ LE5/P	0 ... 8 m 0 ... 12 m		Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, dark switching, DC
50130543	► LS5I/9D-P1	0 ... 2.4 m 0 ... 3 m	LED, infrared	Cable, 2,000 mm, 4-wire	DC, deactivation input, small light spot (S)
50117688	◄ LE5/2N	0 ... 2.4 m 0 ... 3 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50117691	◄ LE5/4P	0 ... 2.4 m 0 ... 3 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50132420	◄ LE5/2	0 ... 2.4 m 0 ... 3 m		Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50132417	◄ LE5/4	0 ... 2.4 m 0 ... 3 m		Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50135925	◄ LE5/N	0 ... 2.4 m 0 ... 15 m		Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, dark switching, DC
50135926	◄ LE5/P	0 ... 2.4 m 0 ... 15 m		Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, dark switching, DC

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

Compact retro-reflective photoelectric sensors for constrained spaces, on transport systems for example.

PRK5

A polarization filter ensures the reliable suppression of direct reflections and, together with the high function reserve of the sensor, enables reliable detection. In addition, optimized beam geometry and the highly visible brightVision® light spot simplify alignment. Also available in versions with teach button for detecting packages with semi-transparent packaging.

Benefits:

- Homogeneous light spot for safe switching behavior and easy alignment
- Safe suppression of direct reflection due to polarization filter
- For detecting packages with semi-transparent packaging with teach button
- Wiring in series (daisy chain) possible

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Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50128202	PRK5.M3/2N-M8	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M8, 4-pin, plastic	Application: detection of bottle container, detection of semi-transparent media; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50128200	PRK5.M3/4P-M8	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M8, 4-pin, plastic	Application: detection of bottle container, detection of semi-transparent media; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50128203	PRK5.M3/2N	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of bottle container, detection of semi-transparent media; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50128201	PRK5.M3/4P	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of bottle container, detection of semi-transparent media; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50117703	PRK5/2N-M8	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50134578	PRK5/2X-M8	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50117706	PRK5/4P-M8	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50132598	PRK5/4X-M8	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50134580	PRK5/2-M8.3	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50134579	PRK5/4-M8.3	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50123266	PRK5/4P-800-M12	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable with connector, 800 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50123267	PRK5/4P-350-M12	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable with connector, 350 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50122066	PRK5/4X-200-M8.1	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable with connector, 200 mm, snap-in, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50117702	PRK5/2N-200-M12	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50117704	PRK5/4P-200-M12	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50134746	PRK5/4X-200-M12	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50122446	PRK5/4P-200-M8	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable with connector, 200 mm, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50122106	PRK5/4-200-M8.3	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable with connector, 200 mm, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50117707	PRK5/2N	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50117705	PRK5/4P	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50132419	PRK5/2	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50132421	PRK5/4	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50135436	PRK5/N	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, dark switching, DC
50135306	PRK5/P	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, dark switching, DC

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic diffuse sensor

Compact cubic diffuse sensor for standard detection tasks. This sensor performs detection directly on an object and requires no reflector.

ET5 / FT5

These red-light sensors in the compact plastic housing facilitate robust object detection for homogeneous or similar objects. Through the simple sensitivity adjustment with two-level teach (object/background), they are particularly flexible in use. These sensors feature the A²LS active ambient light suppression and easy alignment through brightly visible brightVision® light spot. Available for high object color independence even with infrared.

Benefits:

- Energetic diffuse reflection sensor with light/dark switching
- Range adjustment via teach-in
- Simple mounting with integrated M3 metal threaded sleeves
- Compact installation possible due to cable outlet at the rear or bottom
- Full control through green and yellow indicator LEDs and complementary outputs
- Robust plastic housing acc. to IP 67 for industrial application
- Infrared version for high color independence
- FT.X special sensor for the detection of high-gloss and/or dark objects

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122575	FT5.3/2N-M8	0.001 … 0.215 m 0 … 0.28 m	LED, red	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122572	FT5.3/4P-M8	0.001 … 0.215 m 0 … 0.28 m	LED, red	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50133933	FT5.3/2-M8.3	0.001 … 0.215 m 0 … 0.28 m	LED, red	Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, teach button, fading
50133932	FT5.3/4-M8.3	0.001 … 0.215 m 0 … 0.28 m	LED, red	Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, teach button, fading
50122577	FT5.3/2N-200-M12	0.001 … 0.215 m 0 … 0.28 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122574	FT5.3/4P-200-M12	0.001 … 0.215 m 0 … 0.28 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50122576	FT5.3/2N	0.001 … 0.215 m 0 … 0.28 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122573	FT5.3/4P	0.001 … 0.215 m 0 … 0.28 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50122581	ET5.3/2N-M8	0.001 … 0.7 m 0 … 1 m	LED, red	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122578	ET5.3/4P-M8	0.001 … 0.7 m 0 … 1 m	LED, red	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50133935	ET5.3/2-M8.3	0.001 … 0.7 m 0 … 1 m	LED, red	Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, teach button
50133934	ET5.3/4-M8.3	0.001 … 0.7 m 0 … 1 m	LED, red	Connector, M8, 3-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, teach button
50122583	ET5.3/2N-200-M12	0.001 … 0.7 m 0 … 1 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122580	ET5.3/4P-200-M12	0.001 … 0.7 m 0 … 1 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122582	ET5.3/2N	0.001 … 0.7 m 0 … 1 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122579	ET5.3/4P	0.001 … 0.7 m 0 … 1 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50131580	FT5I.3/2N-M8	0.001 … 0.215 m 0.001 … 0.28 m	LED, infrared	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50131572	FT5I.3/4P-M8	0.001 … 0.215 m 0.001 … 0.28 m	LED, infrared	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50127903	FT5I.3/2N	0.001 … 0.215 m 0.001 … 0.28 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50127904	FT5I.3/4P	0.001 … 0.215 m 0.001 … 0.28 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50130280	FT5I.3/4P-200-M12P1	0.08 … 0.12 m 0.08 … 0.15 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of labels on bottles; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50134636	FT5I.3/4P-200-M8P1	0.08 … 0.12 m 0.08 … 0.15 m	LED, infrared	Cable with connector, 200 mm, M8, 4-pin, plastic	Application: detection of labels on bottles; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50136400	ET5I.3/4P-M8	0.11 … 0.7 m 0.001 … 1 m	LED, infrared	Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50127901	ET5I.3/2N	0.001 … 0.7 m 0.001 … 1 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50127902	ET5I.3/4P	0.11 … 0.7 m 0.001 … 1 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50133930	FT5I.X3/2N-M8	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Connector, M8, 4-pin, plastic	Application: detection of high-gloss and/or dark objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, V-optics
50133931	FT5I.X3/4P-M8	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Connector, M8, 4-pin, plastic	Application: detection of high-gloss and/or dark objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, V-optics
50133928	FT5I.X3/2N	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Cable, 2,000 mm, 4-wire	Application: detection of high-gloss and/or dark objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, V-optics
50133929	FT5I.X3/4P	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Cable, 2,000 mm, 4-wire	Application: detection of high-gloss and/or dark objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, V-optics

Diffuse sensors with background suppression

Cubic diffuse sensor with background suppression for standard detection tasks. The range is adjusted using a potentiometer.

HT 5.1

These red-light sensors in the compact plastic housing facilitate robust object detection with good background suppression. They are used universally because of the intuitive sensitivity adjustment via potentiometer.

Benefits:

- Diffuse reflection sensors with background suppression and light/dark switching
- Range adjustment via potentiometer
- Simple mounting with integrated M3 metal threaded sleeves at the rear
- Full control through green and yellow indicator LEDs and complementary outputs
- Robust plastic housing acc. to IP 67 for industrial application

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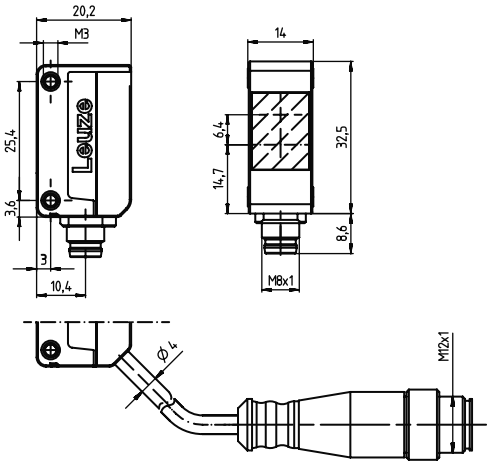
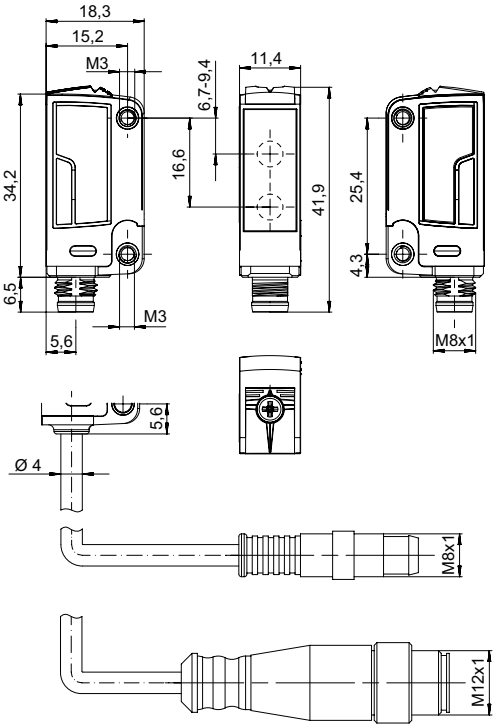
Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50135262	HT5.1/2X-M8	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Connector, M8, 4-pin, plastic	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer
50129401	HT5.1/4X-M8	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Connector, M8, 4-pin, plastic	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer
50137565	HT5.1/4X-200-M12	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer
50129400	HT5.1/4	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer
50129402	HT5.1/P	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, multiturn potentiometer
50129399	HT5.1/2	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Cable, 2,000 mm, 3-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, NPN, light switching, DC, multiturn potentiometer

Typ. operating range with a black/white error < 15 %

Dimensioned drawings: 5 series



5 series



HT 5.1 diffuse sensors with background suppression

ACCESSORIES: 5 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC

Further connection cables can be found on our website

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Fastening at system	Fastening at device	Design	Material
50118542	BT 200M.5	Through-hole mounting	Screw type	Angle, L-shape	Stainless steel
50124651	BT 205M	Through-hole mounting	Screw type	Angle, L-shape	Metal
50118543	BT 300M.5	Through-hole mounting	Screw type	Angle, L-shape	Stainless steel, V2A

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Material	Fastening at device	Fastening at system	Design
50117256	BTU 200M-D10	Metal	Screw type	For 10 mm rod, sheet-metal mounting	Mounting system, clampable, adjustable, turnable, 360 °
50117255	BTU 200M-D12	Metal	Screw type	For 12 mm rod, sheet-metal mounting	Mounting system, clampable, adjustable, turnable, 360 °
50117254	BTU 200M-D14	Metal	Screw type	For 14 mm rod, sheet-metal mounting	Mounting system, clampable, adjustable, turnable, 360 °

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Material	Reflective surface	Fastening	Design
50024127	TK 82.2	Plastic	79 mm	Through-hole mounting, adhesive	Round
50081283	TKS 20X40	Plastic	16 mm x 38 mm	Through-hole mounting, adhesive	Rectangular
50023525	TKS 30X50	Plastic	27 mm x 44 mm	Through-hole mounting, adhesive	Rectangular
50040820	TKS 40X60	Plastic	37 mm x 56 mm	Through-hole mounting, adhesive	Rectangular
50022816	TKS 100X100	Plastic	96 mm x 96 mm	Through-hole mounting, adhesive	Rectangular

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

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/// 8 series

This extensive series offers a wide variety of operating principles and functions in a sturdy metal housing with very compact dimensions. With degrees of protection of IP 67 and IP 69K, the sensors are well suited for a range of industrial applications with glass panes, e. g., in packaging technology or special-purpose machinery manufacture, particularly in rough conditions. The turnable device plug simplifies integration in constrained spaces.

Direct access to the online product selector at **www.leuze.com/en/br8**

Throughbeam photoelectric sensors

Reliable throughbeam photoelectric sensors with visible red light for a wide variety of industrial applications.

LS 8

Powerful throughbeam photoelectric sensors with visible red light suitable for applications in packaging systems.

Benefits:

- Push-pull or NPN/PNP outputs immune to interference
- M12 turning connector or cable connection
- With adjustable focal point
- Sensitivity adjustment with potentiometer

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50036358	► LSSRL 8.9-S12	0 ... 60 m 0 ... 100 m	Laser, 2, red	Connector, M12, 5-pin, metal	DC, multiturn potentiometer
50036359	◄ LSERL 8/24.01-S12	0 ... 60 m 0 ... 100 m		Connector, M12, 5-pin, metal	Switching frequency: 2,800 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, multiturn potentiometer
50126801	◄ LSERL 8/44.01-S12	0 ... 60 m 0 ... 100 m		Connector, M12, 5-pin, metal	Switching frequency: 2,800 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50126800	► LSSRL 8.98-S12	0 ... 60 m 0 ... 100 m	Laser, 2, red	Connector, M12, 5-pin, metal	DC, multiturn potentiometer, activation input
50036359	◄ LSERL 8/24.01-S12	0 ... 60 m 0 ... 100 m		Connector, M12, 5-pin, metal	Switching frequency: 2,800 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, multiturn potentiometer
50126801	◄ LSERL 8/44.01-S12	0 ... 60 m 0 ... 100 m		Connector, M12, 5-pin, metal	Switching frequency: 2,800 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50036354	► LSSR 8-S12	0 ... 12 m 0 ... 20 m	LED, red	Connector, M12, 5-pin, metal	DC
50036356	◄ LSER 8/44-S12	0 ... 12 m 0 ... 20 m		Connector, M12, 5-pin, metal	Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

Compact retro-reflective photoelectric sensors with sensitivity adjustment via potentiometer for integration in constrained spaces.

PRK(L) 8

Retro-reflective photoelectric sensors with visible red light or laser and degree of protection IP 67 and IP 69K.

Benefits:

- Push-pull or NPN/PNP outputs immune to interference
- M12 turning connector or cable connection
- Sensitivity adjustment with potentiometer or teach-in

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50036364	PRKL 8/24.91-S12	0 ... 19 m 0 ... 21 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 2,800 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, multiturn potentiometer, autocollimation
50127932	PRKL 8/44.91-S12	0 ... 19 m 0 ... 21 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 2,800 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, autocollimation
50036365	PRKL 8/24.91	0 ... 19 m 0 ... 21 m	Laser, 2, red	Cable, 2,000 mm, 5-wire	Switching frequency: 2,800 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, multiturn potentiometer, autocollimation
50115689	PRKL 8/24.99-S12	0 ... 12 m 0 ... 14 m	Laser, 1, red	Connector, M12, 5-pin, metal	Switching frequency: 2,800 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, multiturn potentiometer, autocollimation

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50036360	PRK 8/44-S12	0.1 … 6.4 m 0.1 … 8 m	LED, red	Connector, M12, 5-pin, metal	Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50036362	PRK 8/66-S12	0.1 … 6.4 m 0.1 … 8 m	LED, red	Connector, M12, 5-pin, metal	Switching frequency: 1,500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC
50038789	IPRK 8/A-S12	0.1 … 6.4 m 0.1 … 8 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 1,500 Hz, AS-Interface IO
50036363	PRK 8/66	0.1 … 6.4 m 0.1 … 8 m	LED, red	Cable, 2,000 mm, 5-wire	Switching frequency: 1,500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC
50037133	PRK 8/66.11-S12	0 … 5 m 0 … 7 m	LED, infrared	Connector, M12, 5-pin, metal	Switching frequency: 1,500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, autocollimation

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 8.4x

Retro-reflective photoelectric sensor specially designed for single-lane bottle transport and transparent media.

Benefits:

- Autocollimation principle for transparent media
- Tracking function in the event of contamination
- Sensitivity adjustment with potentiometer or teach-in
- Push-pull switching outputs immune to interference
- M12 turning connector or cable connection

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50037134	PRK 8/66.41-S12	0 … 2 m 0 … 2.4 m	LED, red	Connector, M12, 5-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/ dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, autocollimation
50037135	PRK 8/66.42-S12	0 … 2 m 0 … 2.4 m	LED, red	Connector, M12, 5-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/ light switching (NPN), DC, multiturn potentiometer, autocollimation, teach input, tracking function

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Diffuse sensors

Powerful diffuse reflection sensor with visible red light.

(I)RTR 8 / VRTR 8

These diffuse sensors feature a visible red light and are perfectly suited for rough environmental conditions. In addition, models with foreground suppression (VRTR 8) are available.

Benefits:

- Push-pull, PNP outputs or AS-Interface IO
- Operating range adjustment with potentiometer
- M12 turning connector or cable connection
- Visible red light

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50036374	VRTR 8/66-250-S12	0 … 0,25 m 0 … 0,25 m	LED, red	Connector, M12, 5-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer

Diffuse sensors with background suppression

Diffuse reflection sensor with background suppression and visible red light or infrared light.

(I)HRT 8 / HRTL 8 / HRTR 8

Powerful diffuse reflection sensors with multiturn potentiometer, specially designed for detecting glossy objects.

Benefits:

- Detection of shining objects
- Adjustable background suppression via multiturn potentiometer
- Push-pull or NPN/PNP outputs immune to interference
- M12 turning connector or cable connection
- High switching frequency

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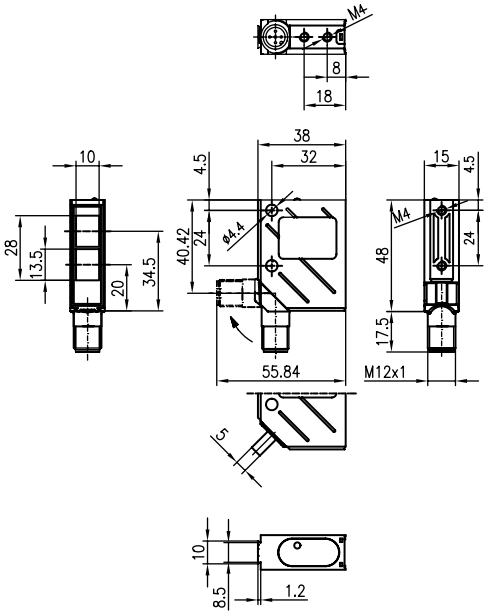
Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50036370	HRTL 8/24-350-S12	0.007 … 0.35 m 0.007 … 0.4 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, multiturn potentiometer
50102705	HRTL 8/66-350-S12	0.007 … 0.35 m 0.007 … 0.4 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer
50103709	HRTL 8/66-350,5000	0.007 … 0.35 m 0.007 … 0.4 m	Laser, 2, red	Cable, 5,000 mm, 5-wire	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer
50038482	HRTL 8/24-150-S12	0.01 … 0.15 m 0.01 … 0.2 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, NPN, light switching, DC, multiturn potentiometer
50102704	HRTL 8/66-150-S12	0.01 … 0.15 m 0.01 … 0.2 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer
50115688	HRTL 8/66.09-150-S12	0.025 … 0.15 m 0.025 … 0.2 m	Laser, 1, red	Connector, M12, 5-pin, metal	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC
50036350	HRTR 8/44-350-S12	0.007 … 0.35 m 0.007 … 0.4 m	LED, red	Connector, M12, 5-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50036352	HRTR 8/66-350-S12	0.007 … 0.35 m 0.007 … 0.4 m	LED, red	Connector, M12, 5-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer
50108224	HRTR 8/66-350,5000	0.007 … 0.35 m 0.007 … 0.4 m	LED, red	Cable, 5,000 mm, 5-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer
50103360	IHRT 8/4-100-S12	0.03 … 0.1 m 0.03 … 0.1 m	LED, red	Connector, M12, 5-pin, metal	Switching frequency: 200 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, multiturn potentiometer, warning output
50039650	HRT 8/66.6-350-S12	0.007 … 0.35 m 0.007 … 0.4 m	LED, infrared	Connector, M12, 5-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer
50103361	IHRT 8/4-200-S12	0.04 … 0.2 m 0.04 … 0.2 m	LED, infrared	Connector, M12, 5-pin, metal	Switching frequency: 200 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, multiturn potentiometer, warning output

Dimensioned drawings: 8 series



8 series

ACCESSORIES: 8 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC

Further connection cables can be found on our website

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50036195	BT 8	Angle, L-shape	Screw type	Through-hole mounting	Metal
50118543	BT 300M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel, V2A

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117253	BTU 300M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117252	BTU 300M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117251	BTU 300M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic
50114185	REF 6-S-20x40	Rectangular	16 mm x 38 mm	Screw type	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50106119	REF 4-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

Reflective tapes for laser and clear-glass applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50123899	REF 6-A-9x9	Rectangular	9 mm x 9 mm	Self-adhesive	Plastic
50123861	REF 6-A-14x45	Rectangular	15 mm x 45 mm	Self-adhesive	Plastic
50110192	REF 6-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

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/// 10 series

The diffuse sensors of series 10 have been specially developed to detect different materials under changeable conditions safely and precisely. Operating the sensor intuitively is possible and very easy using the large buttons. The maximum range of up to 8,000 mm makes the sensor an ideal solution for many different applications. The series has a wide range of functions and variants.

IO-Link

Direct access to the online product selector at **www.leuze.com/en/br10**

Diffuse sensors with background suppression

High-performance diffuse sensor with background suppression for different materials and large range.

HT10

The HT10 is a diffuse sensor with background suppression, based on propagation time measurement, with a max. operating range of 8,000 mm. The switching point is virtually material-independent up to 3,500 mm. The sensor allows reliable detection of both glossy and less-reflective objects at extreme angles. The HT10 is optimized for positioning tasks, compartment occupation check, shelf-positioning and feed-through monitoring. Thanks to the high tolerance limit, the sensor also offers high availability in changing environmental conditions or with varying reflective materials.

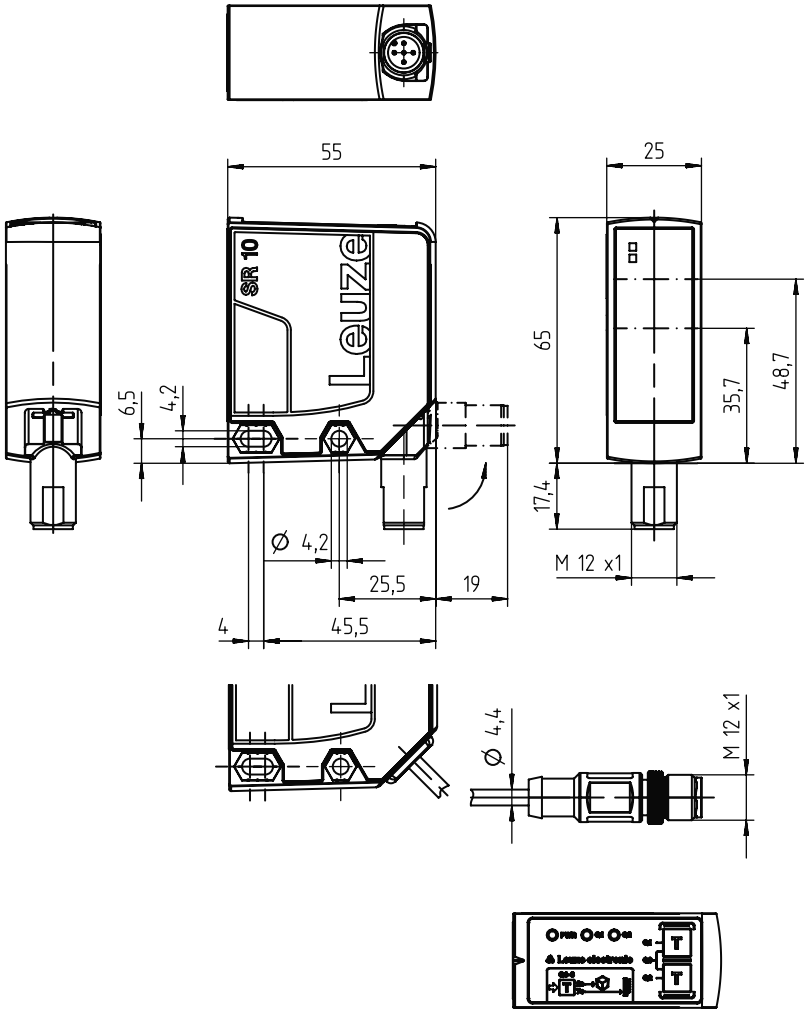
Benefits:

- Laser class 1 with visible red light
- Optionally up to 3 switching outputs
- Reliable detection of dark, glossy and colored objects
- Recess for M4 bolts or nuts on both sides
- Space-saving, rotatable M12 connection, cable outlet or pigtail
- Large control buttons
- Status LED visible from above and from front
- Additional configuration options via I/O-Link and Sensor Studio
- Compact housing
- Device model with 25 m operating range
- Device model with window function
- Device model with external teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50129541	HT10L1-25M.3/L69-M12	0.1 … 25 m 0.1 … 25 m	Laser, 1, red	Connector, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), optimized for use with reflective tape, DC, IO-Link, membrane keyboard, deactivation input
50129552	HT10L1-25M.3/L69,200-M12	0.1 … 25 m 0.1 … 25 m	Laser, 1, red	Cable with connector, 200 mm, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), optimized for use with reflective tape, DC, IO-Link, membrane keyboard, deactivation input
50129547	HT10L1-25M.3/L69	0.1 … 25 m 0.1 … 25 m	Laser, 1, red	Cable, 2,000 mm, 5-wire	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), optimized for use with reflective tape, DC, IO-Link, membrane keyboard, deactivation input
50129538	HT10L1.3/L6T-M12	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Connector, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard, teach input
50129539	HT10L1.3/L6T.P1-M12	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Connector, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard, teach input, window teach
50128388	HT10L1.3/L6X-M12	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Connector, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard
50129540	HT10L1.3/L66-M12	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Connector, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 3: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard
50129537	HT10L1.3/L69-M12	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Connector, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard, deactivation input
50129550	HT10L1.3/L6T,200-M12	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Cable with connector, 200 mm, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard, teach input
50129548	HT10L1.3/L6X,200-M12	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Cable with connector, 200 mm, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard
50129551	HT10L1.3/L66,200-M12	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Cable with connector, 200 mm, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 3: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50129549	**HT10L1.3/L69,200-M12**	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Cable with connector, 200 mm, M12, 5-pin, plastic	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard, deactivation input
50129545	**HT10L1.3/L6T**	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Cable, 2,000 mm, 5-wire	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard, teach input
50129543	**HT10L1.3/L6X**	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Cable, 2,000 mm, 5-wire	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard
50129546	**HT10L1.3/L66**	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Cable, 2,000 mm, 5-wire	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 3: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard
50129542	**HT10L1.3/L69**	0.05 … 3.5 m 0.05 … 8 m	Laser, 1, red	Cable, 2,000 mm, 5-wire	Switching frequency: 40 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, IO-Link, membrane keyboard, deactivation input

Dimensioned drawings: 10 series



10 series

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ACCESSORIES: 10 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50128379	BTU 460M-D10	Mounting system	Screw type	For 10 mm rod	Metal
50128380	BTU 460M-D12	Mounting system	Screw type	For 12 mm rod	Metal

Further rod mounts can be found on our website

Reflective tapes

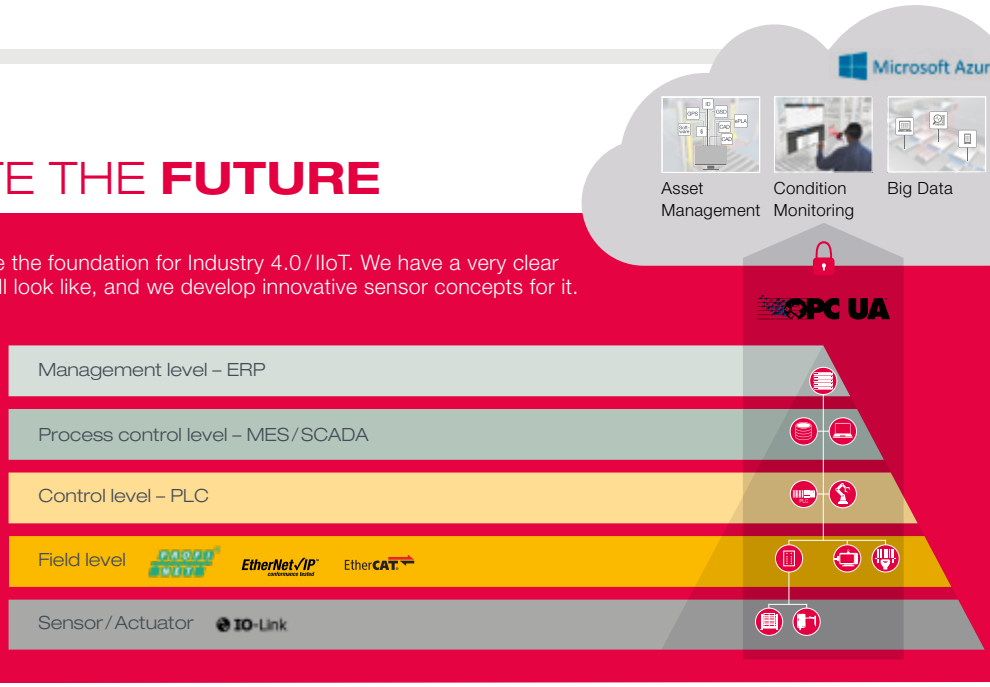
Reflective tapes

Part no.	Part description	Design	Reflective surface	Fastening	Material
50111527	REF 7-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

SMART IS
TO CREATE THE **FUTURE**

Intelligent sensors provide the foundation for Industry 4.0 / IIoT. We have a very clear idea of what the future will look like, and we develop innovative sensor concepts for it.



We are creating the future: **www.smart-sensor-business.com**

/// 15 series

The 15 series is optimized for universal use in industrial environments. Here, large operating ranges and a robust housing are combined in a compact design. The attractively priced sensor line offers all standard function principles, complemented by special solutions for intralogistics. The devices are intuitively operated via a potentiometer; indicator LEDs with all-round visibility and a switching output in either a PNP or NPN version complete the picture.

Direct access to the online product selector at **www.leuze.com/en/br15**

Retro-reflective photoelectric sensors

Compact retro-reflective photoelectric sensor with operating ranges suitable for use in transport systems in warehouses, production or secondary packaging on standard reflectors. Also available as a model for foil-wrapped or reflective objects.

PRK 15 – standard models

Powerful retro-reflective photoelectric sensor with high function reserve in compact housing.

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134366	PRK15/2X-M12	0 ... 8 m 0 ... 10 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50134362	PRK15/4X-M12	0 ... 8 m 0 ... 10 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50137460	PRK15/NX-M12	0 ... 8 m 0 ... 10 m	LED, red	Connector, M12, 4-pin, plastic	Digital switching output 1: transistor, NPN, dark switching; Switching frequency: 500 Hz, DC
50137458	PRK15/PX-M12	0 ... 8 m 0 ... 10 m	LED, red	Connector, M12, 4-pin, plastic	Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 500 Hz, DC
50134369	PRK15/2X-200-M12	0 ... 8 m 0 ... 10 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50134365	PRK15/4X-200-M12	0 ... 8 m 0 ... 10 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50134367	PRK15/2	0 ... 8 m 0 ... 10 m	LED, red	Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50134363	PRK15/4	0 ... 8 m 0 ... 10 m	LED, red	Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50137461	PRK15/N	0 ... 8 m 0 ... 10 m	LED, red	Cable, 2,000 mm, 3-wire	Digital switching output 1: transistor, NPN, dark switching; Switching frequency: 500 Hz, DC
50137459	PRK15/P	0 ... 8 m 0 ... 10 m	LED, red	Cable, 2,000 mm, 3-wire	Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 500 Hz, DC

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 15.D – optimized for reflective objects

Powerful retro-reflective photoelectric sensor specially designed for the reliable detection of shrink-wrapped or high-gloss objects, e. g. for pallet handling applications. This model is available with and without potentiometer.

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134374	PRK15.D/2X-M12	0 ... 6 m 0 ... 8 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50134370	PRK15.D/4X-M12	0 ... 6 m 0 ... 8 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50137464	PRK15.D/NX-M12	0 ... 6 m 0 ... 8 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, dark switching; Switching frequency: 500 Hz, DC
50137462	PRK15.D/PX-M12	0 ... 6 m 0 ... 8 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 500 Hz, DC
50137133	PRK15.D/XP-M12	0 ... 6 m 0 ... 8 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 500 Hz, DC
50134382	PRK15.D1/2X-M12	0 ... 6 m 0 ... 8 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, 270 ° potentiometer
50134378	PRK15.D1/4X-M12	0 ... 6 m 0 ... 8 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, 270 ° potentiometer
50137468	PRK15.D1/NX-M12	0 ... 6 m 0 ... 8 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, dark switching; Switching frequency: 500 Hz, DC, 270 ° potentiometer
50137466	PRK15.D1/PX-M12	0 ... 6 m 0 ... 8 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 500 Hz, DC, 270 ° potentiometer
50134377	PRK15.D/2X-200-M12	0 ... 6 m 0 ... 8 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

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Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134373	PRK15.D/4X-200-M12	0 … 6 m 0 … 8 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50134388	PRK15.D1/2X-200-M12	0 … 6 m 0 … 8 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, 270 ° potentiometer
50134381	PRK15.D1/4X-200-M12	0 … 6 m 0 … 8 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, 270 ° potentiometer
50137284	PRK15.D1/PX-200-M12	0 … 6 m 0 … 8 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 500 Hz, DC, 270 ° potentiometer
50134375	PRK15.D/2	0 … 6 m 0 … 8 m	LED, red	Cable, 2,000 mm, 3-wire	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC
50134371	PRK15.D/4	0 … 6 m 0 … 8 m	LED, red	Cable, 2,000 mm, 3-wire	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50137465	PRK15.D/N	0 … 6 m 0 … 8 m	LED, red	Cable, 2,000 mm, 3-wire	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, dark switching; Switching frequency: 500 Hz, DC
50137463	PRK15.D/P	0 … 6 m 0 … 8 m	LED, red	Cable, 2,000 mm, 3-wire	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 500 Hz, DC
50134465	PRK15.D1/2	0 … 6 m 0 … 8 m	LED, red	Cable, 2,000 mm, 3-wire	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, 270 ° potentiometer
50134379	PRK15.D1/4	0 … 6 m 0 … 8 m	LED, red	Cable, 2,000 mm, 3-wire	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, 270 ° potentiometer
50137469	PRK15.D1/N	0 … 6 m 0 … 8 m	LED, red	Cable, 2,000 mm, 3-wire	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, dark switching; Switching frequency: 500 Hz, DC, 270 ° potentiometer
50137467	PRK15.D1/P	0 … 6 m 0 … 8 m	LED, red	Cable, 2,000 mm, 3-wire	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 500 Hz, DC, 270 ° potentiometer

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Diffuse sensors with background suppression

Sensor with background suppression for medium operating ranges and very good black/white ratio and intuitive adjustment by means of potentiometer for reliable detection.

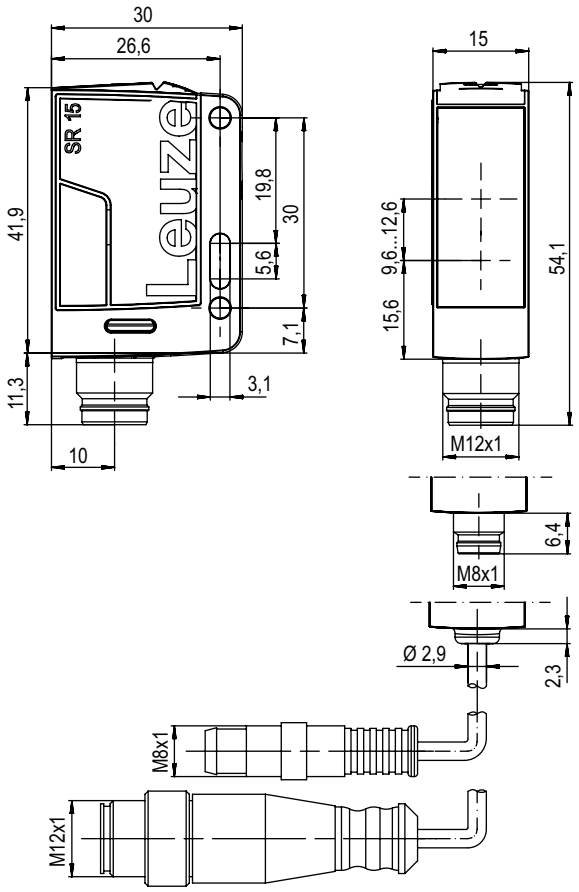
HT15

Diffuse sensor with powerful background suppression for reliable object detection on nearly any background. Intuitively adjustable by means of potentiometer.

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134350	HT15/2X-M12	0.012 … 1 m 0.012 … 1 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, multiturn potentiometer
50134346	HT15/4X-M12	0.012 … 1 m 0.012 … 1 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer
50134353	HT15/2X-200-M12	0.012 … 1 m 0.012 … 1 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, multiturn potentiometer
50134349	HT15/4X-200-M12	0.012 … 1 m 0.012 … 1 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer
50134351	HT15/2	0.012 … 1 m 0.012 … 1 m	LED, red	Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, multiturn potentiometer
50134347	HT15/4	0.012 … 1 m 0.012 … 1 m	LED, red	Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer
50134358	HT15I/2X-M12	0.012 … 1 m 0.012 … 1 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, multiturn potentiometer
50134354	HT15I/4X-M12	0.012 … 1 m 0.012 … 1 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer
50134361	HT15I/2X-200-M12	0.012 … 1 m 0.012 … 1 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, multiturn potentiometer
50134357	HT15I/4X-200-M12	0.012 … 1 m 0.012 … 1 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer
50134359	HT15I/2	0.012 … 1 m 0.012 … 1 m	LED, infrared	Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching, DC, multiturn potentiometer
50134355	HT15I/4	0.012 … 1 m 0.012 … 1 m	LED, infrared	Cable, 2,000 mm, 3-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer

Typ. operating range with a black/white error < 15 %

Dimensioned drawings: 15 series



15 series

ACCESSORIES: 15 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

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Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50040269	BT 25	Angle, L-shape	Screw type	Through-hole mounting	Metal
50124651	BT 205M	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117256	BTU 200M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50024127	TK 82.2	Round	79 mm	Through-hole mounting, adhesive	Plastic
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// 18 series

These retro-reflective photoelectric sensors in coated metal housing with glass optics were designed specially for detecting transparent PET and glass bottles, plastic foils as well as flat glass. The patented tracking process extends the cleaning interval many times over; short response times and minimal jitter ensure reliable control of fast processes. The versatile fastening options with integrated thread facilitate mounting and the models with aligned abeam optics make alignment unnecessary. Parameterization via IO-Link enables flexible and simple adjustment of the device.

IO-Link

Direct access to the online product selector at **www.leuze.com/en/br18**

Retro-reflective photoelectric sensors

Polarized and unpolarized retro-reflective photoelectric sensors with autocollimation optics for the detection of films and transparent media are available. In line with application requirements, 3 different types of adjustment options (270 ° potentiometer, teach button, 11-turn potentiometer) and IO-Link versions can be ordered.

(P)RK18B / (I)PRK 18

Polarized and unpolarized retro-reflective photoelectric sensors for the reliable detection of highly transparent bottles, films and glass panes.

Benefits:

- Reliable detection of containers for single bottles
- Configuration via IO-Link
- Precisely adjustable switching point via 270 ° potentiometer, teach button, 11-turn potentiometer
- Chemically nickel-plated
- Models with high optical accuracy available thanks to calibrated optical system
- Large temperature compensation
- Tracking for contamination compensation
- Front and side mounting systems with M4 thread

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50117357	PRK18B.1/2N-M12	0 ... 6 m 0 ... 7.2 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of bottle container; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 270 ° potentiometer, autocollimation
50117359	PRK18B.1/4P-M12	0 ... 6 m 0 ... 7.2 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of bottle container; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, autocollimation
50117373	RK18B.1/2N-M12	0 ... 6 m 0 ... 7.2 m	LED, red	Connector, M12, 4-pin, metal	Application: operation with glass triple reflectors and any reflective tapes; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 270 ° potentiometer, autocollimation
50117375	RK18B.1/4P-M12	0 ... 6 m 0 ... 7.2 m	LED, red	Connector, M12, 4-pin, metal	Application: operation with glass triple reflectors and any reflective tapes; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, autocollimation
50117356	PRK18B.1/2N-6000	0 ... 6 m 0 ... 7.2 m	LED, red	Cable, 6,000 mm, 4-wire	Application: detection of bottle container; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 270 ° potentiometer, autocollimation
50117358	PRK18B.1/4P-6000	0 ... 6 m 0 ... 7.2 m	LED, red	Cable, 6,000 mm, 4-wire	Application: detection of bottle container; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, autocollimation
50117372	RK18B.1/2N-6000	0 ... 6 m 0 ... 7.2 m	LED, red	Cable, 6,000 mm, 4-wire	Application: operation with glass triple reflectors and any reflective tapes; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 270 ° potentiometer, autocollimation
50117374	RK18B.1/4P-6000	0 ... 6 m 0 ... 7.2 m	LED, red	Cable, 6,000 mm, 4-wire	Application: operation with glass triple reflectors and any reflective tapes; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, autocollimation
50117363	PRK18B.T2/4P-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, autocollimation
50117365	PRK18B.T2/4X-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer, autocollimation
50117364	PRK18B.T2/NX-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, NPN, dark switching, DC, multiturn potentiometer, autocollimation
50117361	PRK18B.T2/PX-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, multiturn potentiometer, autocollimation

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

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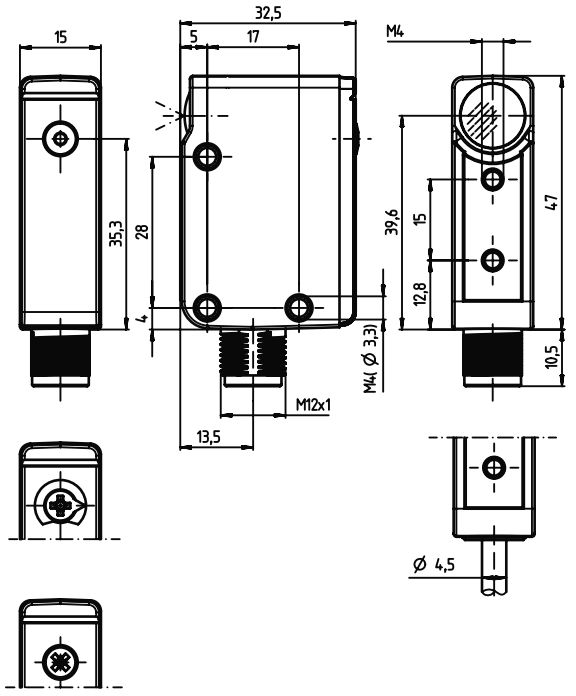
Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50117366	PRK18B.T3/2N-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, autocollimation
50117367	PRK18B.T3/4P-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, autocollimation
50124945	PRK18B.XT2/4P-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, autocollimation
50124944	PRK18B.XT3/4P-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, autocollimation
50136159	PRK18B.XT3/P4-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, autocollimation
50117377	RK18B.T2/2N-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent films and glass panes, operation with glass triple reflectors and any reflective tapes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, multiturn potentiometer, autocollimation
50117379	RK18B.T2/4P-M12	0 ... 4 m 0 ... 4.8 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent films and glass panes, operation with glass triple reflectors and any reflective tapes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, autocollimation
50117360	PRK18B.T2/2N-6000	0 ... 4 m 0 ... 4.8 m	LED, red	Cable, 6,000 mm, 4-wire	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, multiturn potentiometer, autocollimation
50117362	PRK18B.T2/4P-6000	0 ... 4 m 0 ... 4.8 m	LED, red	Cable, 6,000 mm, 4-wire	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, autocollimation
50033552	IPRK 18/4 DL.41	0 ... 3 m 0 ... 4 m	LED, red	Connector, M12, 5-pin, stainless steel	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, PNP, U_B switching, DC, step switch, autocollimation, tracking function, warning output
50033554	PRK 18/24 DL.42	0 ... 3 m 0 ... 4 m	LED, red	Connector, M12, 5-pin, stainless steel	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, light switching, DC, step switch, autocollimation, teach input, tracking function
50032798	PRK 18/24 DL.46	0 ... 3 m 0 ... 4 m	LED, red	Connector, M12, 5-pin, stainless steel	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, NPN, light switching, DC, step switch, autocollimation, tracking function
50117369	PRK18B.FXT3/2N-M12	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 5,000 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, autocollimation
50117371	PRK18B.FXT3/4P-M12	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 5,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, autocollimation
50121228	PRK18B.TT3/2N-M12	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, autocollimation, tracking function
50121229	PRK18B.TT3/4P-M12	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, autocollimation, tracking function
50132521	PRK18B.TT3/6G-M12	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, teach teach button, autocollimation, tracking function
50121230	PRK18B.TT3/LP-M12	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching, DC, IO-Link, teach button, autocollimation, tracking function
50126940	PRK18B.TT3/P4-M12	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, dark switching; Digital switching output 2: transistor, PNP, light switching, DC, teach button, tracking function, autocollimation
50124943	PRK18B.XTT3/4P-M12	0 ... 3 m 0 ... 3.6 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, autocollimation, tracking function
50115193	PRK 18/44 L.43	0 ... 3 m 0 ... 4 m	LED, red	Connector, M12, 4-pin, stainless steel	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, step switch, autocollimation, teach input, tracking function
50117368	PRK18B.FXT3/2N-6000	0 ... 3 m 0 ... 3.6 m	LED, red	Cable, 6,000 mm, 4-wire	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 5,000 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, autocollimation
50121231	PRK18B.FXT3/2T-6000	0 ... 3 m 0 ... 3.6 m	LED, red	Cable, 6,000 mm, 4-wire	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 5,000 Hz; Digital switching output 1: transistor, NPN, light switching, DC, teach button, autocollimation
50121232	PRK18B.FXT3/4P-6000	0 ... 3 m 0 ... 3.6 m	LED, red	Cable, 6,000 mm, 4-wire	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 5,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, autocollimation

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

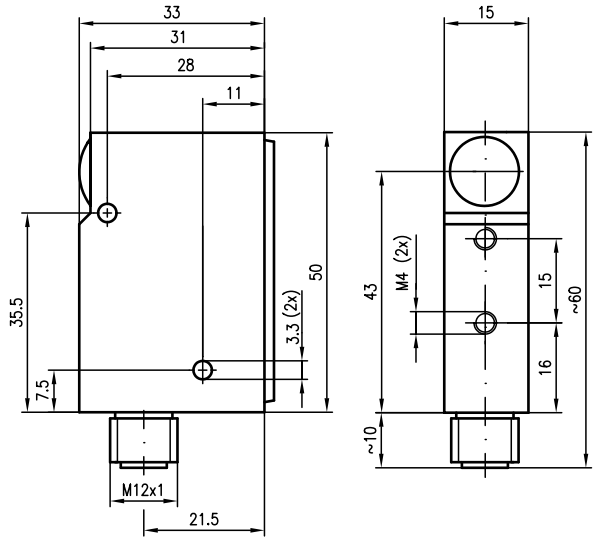
Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50121227	PRK18B.TT3/2N-6000	0 ... 3 m 0 ... 3.6 m	LED, red	Cable, 6,000 mm, 4-wire	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, autocollimation, tracking function
50117370	PRK18B.TT3/4P-6000	0 ... 3 m 0 ... 3.6 m	LED, red	Cable, 6,000 mm, 4-wire	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, autocollimation, tracking function
50040278	IPRK 18/A L.46	0 ... 2.4 m 0 ... 3 m	LED, red	Connector, M12, 5-pin, stainless steel	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,000 Hz, step switch, autocollimation, tracking function, warning output, AS-Interface IO
50034119	IPRK 18/A.1 L.4	0 ... 2.4 m 0 ... 3 m	LED, red	Connector, M12, 4-pin, stainless steel	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 500 Hz, multiturn potentiometer, autocollimation, warning output, AS-Interface IO
50030077	IPRK 18/A L.4	0 ... 2.4 m 0 ... 3 m	LED, red	Connector, M12, 4-pin, stainless steel	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 500 Hz, multiturn potentiometer, autocollimation, warning output, AS-Interface IO
50106974	IPRK 18/V L.03	0 ... 1 m 0 ... 1.2 m	LED, red	Connector, M12, 5-pin, stainless steel	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching, DC, autocollimation, teach input, warning output

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Dimensioned drawings: 18 series



18B series



18 series

ACCESSORIES: 18 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

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Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50020833	BT 95	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117256	BTU 200M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50009374	TG 29	Round	25 mm	M3 threaded pin	Glass
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50106119	REF 4-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

Reflective tapes for laser and clear-glass applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50110192	REF 6-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// 25 series

The universal 25 series is the sensor solution for a wide range of applications in packaging systems, intralogistics and automation technology. It offers the largest operating ranges for its size and convinces with generous function reserve. Special devices such as the sensors with elongated or small light spot, clear glass photoelectric sensors or the high-power throughbeam photoelectric sensors are outstanding problem solvers for tricky applications. Protection class IP 67 and IP 69K, active ambient light suppression and ECOLAB certification add to the attractiveness. The metal-reinforced M4 threaded sleeves ensure an extremely stable housing.

Direct access to the online product selector at **www.leuze.com/en/br25**

Throughbeam photoelectric sensors

The photoelectric sensors of this series offer a high function reserve and are suited for use in rough, industrial environments. Available as especially powerful model, e. g. for radiation through foils.

LSR 25B – Reliable object detection thanks to high function reserve

The standard LSR 25B throughbeam photoelectric sensor convinces with its large range and its versatile options for increasing process reliability (warning, testing). Available as especially powerful model, e. g. for radiation through foils.

Benefits:

- Photoelectric sensor with very high function reserve
- Suitable for use in rough, industrial environment
- Various options for increasing the process reliability (warning, test activation)

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50108477	► LSSR 25B-S12	0 ... 20 m 0 ... 24 m	LED, red	Connector, M12, 4-pin, plastic	DC
50108487	◄ ILSER 25B/4-S12	0 ... 20 m 0 ... 24 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, U_B switching, DC, warning output
50133397	◄ LSER 25B/6-S12	0 ... 20 m 0 ... 24 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC
50108483	◄ LSER 25B/66-S12	0 ... 20 m 0 ... 24 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC
50108484	◄ LSER 25B/66.1-S12	0 ... 20 m 0 ... 24 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, 270 ° potentiometer
50108478	► LSSR 25B.8-S12	0 ... 20 m 0 ... 24 m	LED, red	Connector, M12, 4-pin, plastic	DC, activation input
50108487	◄ ILSER 25B/4-S12	0 ... 20 m 0 ... 24 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, PNP, U_B switching, DC, warning output
50133397	◄ LSER 25B/6-S12	0 ... 20 m 0 ... 24 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC
50108483	◄ LSER 25B/66-S12	0 ... 20 m 0 ... 24 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC
50108479	► LSSR 25B.8-S8	0 ... 20 m 0 ... 24 m	LED, red	Connector, M8, 4-pin, plastic	DC, activation input
50108485	◄ LSER 25B/66-S8	0 ... 20 m 0 ... 24 m		Connector, M8, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC
50110872	► LSSR 25B,200-S8.1	0 ... 20 m 0 ... 24 m	LED, red	Cable with connector, 200 mm, snap-in, M8, 4-pin, metal	DC
50110873	◄ LSER 25B/4,200-S8.1	0 ... 20 m 0 ... 24 m		Cable with connector, 200 mm, snap-in, M8, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50110922	► LSSR 25B,200-S12	0 ... 20 m 0 ... 24 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, metal	DC
50110923	◄ LSER 25B/4,200-S12	0 ... 20 m 0 ... 24 m		Cable with connector, 200 mm, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50108480	► LSSR 25B.8	0 ... 20 m 0 ... 24 m	LED, red	Cable, 2,000 mm, 4-wire	DC, activation input
50108486	◄ LSER 25B/66	0 ... 20 m 0 ... 24 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC
50134522	► LSS 25B.2-S12	0 ... 200 m 0 ... 240 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: detection of products in bag packaging, DC, 270 ° potentiometer
50134494	◄ LSE 25B/22.2-S12	0 ... 200 m 0 ... 240 m		Connector, M12, 4-pin, plastic	Application: detection of products in bag packaging; Switching frequency: 100 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 270 ° potentiometer
50134493	◄ LSE 25B/44.2-S12	0 ... 200 m 0 ... 240 m		Connector, M12, 4-pin, plastic	Application: detection of products in bag packaging; Switching frequency: 100 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer

► transmitter / ◄ receiver

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Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134523	► LSS 25B.2-S8	0 … 200 m 0 … 240 m	LED, infrared	Connector, M8, 4-pin, plastic	Application: detection of products in bag packaging, DC, 270 ° potentiometer
50134496	◄ LSE 25B/22.2-S8	0 … 200 m 0 … 240 m		Connector, M8, 4-pin, plastic	Application: detection of products in bag packaging; Switching frequency: 100 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 270 ° potentiometer
50134495	◄ LSE 25B/44.2-S8	0 … 200 m 0 … 240 m		Connector, M8, 4-pin, plastic	Application: detection of products in bag packaging; Switching frequency: 100 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50134524	► LSS 25B.2	0 … 200 m 0 … 240 m	LED, infrared	Cable, 2,000 mm, 4-wire	Application: detection of products in bag packaging, DC, 270 ° potentiometer
50134498	◄ LSE 25B/22.2	0 … 200 m 0 … 240 m		Cable, 2,000 mm, 4-wire	Application: detection of products in bag packaging; Switching frequency: 100 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 270 ° potentiometer
50134497	◄ LSE 25B/44.2	0 … 200 m 0 … 240 m		Cable, 2,000 mm, 4-wire	Application: detection of products in bag packaging; Switching frequency: 100 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

In addition to normal polarized retro-reflective photoelectric sensors, the 25 series with variants is ideally suited for the reliable detection of stretch-wrapped pallets and transparent objects or for very precise positioning.

PRK(L)25B / PRK 25C – Standard models (LED and laser)

The standard PRK(L)25 retro-reflective photoelectric sensor ensures high system availability, even under extreme environmental conditions. Additional functions, such as warning and activation, further increase process reliability.

Benefits:

- High system availability under extreme environmental conditions
- Additional functions, such as warning, activation, for increasing the process reliability
- Optimum light beam propagation as laser for positioning and counting applications

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50104232	PRKL 25B/4D.1-S12	0.3 … 12 m 0.05 … 15 m	Laser, 2, red	Connector, M12, 4-pin, plastic	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, 270 ° potentiometer, AS-Interface, connection via coupling module
50104233	PRKL 25B/6.81-S12	0.3 … 12 m 0.05 … 15 m	Laser, 2, red	Connector, M12, 4-pin, plastic	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, 270 ° potentiometer, activation input
50104231	PRKL 25B/66.1-S12	0.3 … 12 m 0.05 … 15 m	Laser, 2, red	Connector, M12, 4-pin, plastic	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, 270 ° potentiometer
50104234	PRKL 25B/66.1-S8	0.3 … 12 m 0.05 … 15 m	Laser, 2, red	Connector, M8, 4-pin, plastic	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, 270 ° potentiometer
50110921	PRKL 25B/4.1,200-S12	0.3 … 12 m 0.05 … 15 m	Laser, 2, red	Cable with connector, 200 mm, M12, 4-pin, metal	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, PNP, light switching, DC, 270 ° potentiometer, AS-Interface, connection via coupling module
50104235	PRKL 25B/66.1	0.3 … 12 m 0.05 … 15 m	Laser, 2, red	Cable, 2,000 mm, 4-wire	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, 270 ° potentiometer
50126556	PRKL 25B/66.P-S12	0.3 … 21 m 0.3 … 26 m	Laser, 1, red	Connector, M12, 4-pin, plastic	Switching frequency: 300 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, 270 ° potentiometer
50134283	PRK25C/2N-M12	0 … 10 m 0 … 12 m	LED, red	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134279	PRK25C/4P-M12	0 … 10 m 0 … 12 m	LED, red	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50137522	PRK25C/4W-M12	0 … 10 m 0 … 12 m	LED, red	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching; Switching frequency: 1,500 Hz, DC, Warning output
50134285	PRK25C/2N-M8	0 … 10 m 0 … 12 m	LED, red	Connector, M8, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134281	PRK25C/4P-M8	0 … 10 m 0 … 12 m	LED, red	Connector, M8, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134286	PRK25C/2N-200-M12	0 … 10 m 0 … 12 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134282	PRK25C/4P-200-M12	0 … 10 m 0 … 12 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134284	PRK25C/2N	0 … 10 m 0 … 12 m	LED, red	Cable, 2,000 mm, 4-wire	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134280	PRK25C/4P	0 … 10 m 0 … 12 m	LED, red	Cable, 2,000 mm, 4-wire	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 25C.A – Optimized for transparent objects

The compact PRK 25 retro-reflective photoelectric sensor as single lens is optimized for transparent objects (films, PET, glass) with special functions for applications in this area.

Benefits:

- Particularly suited for highly transparent PET and glass bottles as well as films
- Easy adjustment via multiturn potentiometer
- Switching threshold display by means of blinking patterns on the indicator LEDs

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134277	PRK25C.A/2N-M8	0 ... 5 m 0 ... 6 m	LED, red	Connector, M8, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, autocollimation
50134273	PRK25C.A/4P-M8	0 ... 5 m 0 ... 6 m	LED, red	Connector, M8, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, autocollimation
50134275	PRK25C.A/2N-M12	0 ... 5 m 0 ... 6 m	LED, red	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, autocollimation
50134271	PRK25C.A/4P-M12	0 ... 5 m 0 ... 6 m	LED, red	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, autocollimation
50134278	PRK25C.A/2N-200-M12	0 ... 5 m 0 ... 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, autocollimation
50134274	PRK25C.A/4P-200-M12	0 ... 5 m 0 ... 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, autocollimation
50134276	PRK25C.A/2N	0 ... 5 m 0 ... 6 m	LED, red	Cable, 2,000 mm, 4-wire	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, autocollimation
50134272	PRK25C.A/4P	0 ... 5 m 0 ... 6 m	LED, red	Cable, 2,000 mm, 4-wire	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, autocollimation
50134259	PRK25C.A2/2N-M12	0 ... 5 m 0 ... 6 m	LED, red	Connector, M12, 4-pin, PUR	Application: detection of highly transparent bottles; digital switching output 1: transistor, NPN, light switching; digital switching output 2: transistor, NPN, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50134255	PRK25C.A2/4P-M12	0 ... 5 m 0 ... 6 m	LED, red	Connector, M12, 4-pin, PUR	Application: detection of highly transparent bottles; digital switching output 1: transistor, PNP, light switching; digital switching output 2: transistor, PNP, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50134261	PRK25C.A2/2N-M8	0 ... 5 m 0 ... 6 m	LED, red	Connector, M8, 4-pin, PUR	Application: detection of highly transparent bottles; digital switching output 1: transistor, NPN, light switching; digital switching output 2: transistor, NPN, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50134257	PRK25C.A2/4P-M8	0 ... 5 m 0 ... 6 m	LED, red	Connector, M8, 4-pin, PUR	Application: detection of highly transparent bottles; digital switching output 1: transistor, PNP, light switching; digital switching output 2: transistor, PNP, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50134262	PRK25C.A2/2N-200-M12	0 ... 5 m 0 ... 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Application: detection of highly transparent bottles; digital switching output 1: transistor, NPN, light switching; digital switching output 2: transistor, NPN, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50134258	PRK25C.A2/4P-200-M12	0 ... 5 m 0 ... 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Application: detection of highly transparent bottles; digital switching output 1: transistor, PNP, light switching; digital switching output 2: transistor, PNP, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50134260	PRK25C.A2/2N	0 ... 5 m 0 ... 6 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of highly transparent bottles; digital switching output 1: transistor, NPN, light switching; digital switching output 2: transistor, NPN, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50134256	PRK25C.A2/4P	0 ... 5 m 0 ... 6 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of highly transparent bottles; digital switching output 1: transistor, PNP, light switching; digital switching output 2: transistor, PNP, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50137344	PRK25C.XA2/2N-M12	0 ... 5 m 0 ... 6 m	LED, red	Connector, M12, 4-pin, PUR	Application: detection of highly transparent bottles; digital switching output 1: transistor, PNP, light switching; digital switching output 2: transistor, PNP, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50137343	PRK25C.XA2/4P-M12	0 ... 5 m 0 ... 6 m	LED, red	Connector, M12, 4-pin, PUR	Application: detection of highly transparent bottles; digital switching output 1: transistor, PNP, light switching; digital switching output 2: transistor, PNP, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50137346	PRK25C.XA2/2N	0 ... 5 m 0 ... 6 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of highly transparent bottles; digital switching output 1: transistor, NPN, light switching; digital switching output 2: transistor, NPN, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code
50137345	PRK25C.XA2/4P	0 ... 5 m 0 ... 6 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of highly transparent bottles; digital switching output 1: transistor, NPN, light switching; digital switching output 2: transistor, NPN, dark switching; switching frequency: 1,500 Hz, DC, multiturn potentiometer, autocollimation; display of the switching threshold via flash code

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 25C.D – Optimized for reflective objects

The (I)PRK 25C.D retro-reflective photoelectric sensor is optimized for use in the areas of material flow, intralogistics and packaging technology. It is particularly well suited for the reliable detection of stretch-wrapped pallets, foil-wrapped objects or laminated surfaces as well as for the detection in reflective environments.

Benefits:

- Optimized for use in the areas of material flow/intralogistics and packaging technology
- Reliable function even with stretch-wrapped pallets
- Reliable detection on reflective surfaces and environments

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Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134291	PRK25C.D/2N-M12	0 ... 8 m 0 ... 10 m	LED, red	Connector, M12, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134287	PRK25C.D/4P-M12	0 ... 8 m 0 ... 10 m	LED, red	Connector, M12, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134299	PRK25C.D1/2N-M12	0 ... 8 m 0 ... 10 m	LED, red	Connector, M12, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, 270 ° potentiometer
50134295	PRK25C.D1/4P-M12	0 ... 8 m 0 ... 10 m	LED, red	Connector, M12, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, 270 ° potentiometer
50134293	PRK25C.D/2N-M8	0 ... 8 m 0 ... 10 m	LED, red	Connector, M8, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134289	PRK25C.D/4P-M8	0 ... 8 m 0 ... 10 m	LED, red	Connector, M8, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134301	PRK25C.D1/2N-M8	0 ... 8 m 0 ... 10 m	LED, red	Connector, M8, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, 270 ° potentiometer
50134297	PRK25C.D1/4P-M8	0 ... 8 m 0 ... 10 m	LED, red	Connector, M8, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, 270 ° potentiometer
50134294	PRK25C.D/2N-200-M12	0 ... 8 m 0 ... 10 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134290	PRK25C.D/4P-200-M12	0 ... 8 m 0 ... 10 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134302	PRK25C.D1/2N-200-M12	0 ... 8 m 0 ... 10 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, 270 ° potentiometer
50134298	PRK25C.D1/4P-200-M12	0 ... 8 m 0 ... 10 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, 270 ° potentiometer
50134292	PRK25C.D/2N	0 ... 8 m 0 ... 10 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134288	PRK25C.D/4P	0 ... 8 m 0 ... 10 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134300	PRK25C.D1/2N	0 ... 8 m 0 ... 10 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, 270 ° potentiometer
50134296	PRK25C.D1/4P	0 ... 8 m 0 ... 10 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of stretch-wrapped objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, 270 ° potentiometer

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Diffuse sensors with background suppression

These sensors are suited for the reliable detection of objects against a background. Available in a variety of special designs, the series offers robust and efficient solutions, even for tricky applications such as the detection of extremely dark objects or objects with colored structure as well as objects with openings.

HRT 25B / HT 25C – Standard models

The diffuse sensor with background suppression in red light or infrared reliably detects very dark or structured surfaces. It combines large ranges with an above-average function reserve and short response time. The HRT 25 is also available as an especially powerful long-range model, e.g., for intralogistics applications with operating ranges greater than 2 m.

Benefits:

- Universal application
- Reliable with materials/surfaces having low reflectance
- Mechanical adjustment of range
- Background suppression with very small black/white error
- Additional status LEDs on the front side of the sensor

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134219	HT25C/2N-M12	0 ... 1.2 m 0 ... 1.2 m	LED, red	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134215	HT25C/4P-M12	0 ... 1.2 m 0 ... 1.2 m	LED, red	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134221	HT25C/2N-M8	0 ... 1.2 m 0 ... 1.2 m	LED, red	Connector, M8, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134217	HT25C/4P-M8	0 ... 1.2 m 0 ... 1.2 m	LED, red	Connector, M8, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134222	HT25C/2N-200-M12	0 ... 1.2 m 0 ... 1.2 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134218	HT25C/4P-200-M12	0 ... 1.2 m 0 ... 1.2 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134220	HT25C/2N	0 ... 1.2 m 0 ... 1.2 m	LED, red	Cable, 2,000 mm, 4-wire	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134216	HT25C/4P	0 ... 1.2 m 0 ... 1.2 m	LED, red	Cable, 2,000 mm, 4-wire	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134582	HRT 25B/L6T.31-2500-S12	0.05 ... 2.5 m 0.05 ... 3 m	LED, infrared	Connector, M12, 5-pin, plastic	Switching frequency: 30 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), against object, DC, IO-Link, alignment and status display (Q1, Q2) on the front, teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50132275	HRT 25B/L6X.31-2500-S12	0.05 ... 2.5 m 0.05 ... 3 m	LED, infrared	Connector, M12, 5-pin, plastic	Switching frequency: 30 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), against object, DC, IO-Link, alignment and status display (Q1, Q2) on the front
50134581	HRT 25B/L69.31-2500-S12	0.05 ... 2.5 m 0.05 ... 3 m	LED, infrared	Connector, M12, 5-pin, plastic	Switching frequency: 30 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), against object, DC, IO-Link, alignment and status display (Q1, Q2) on the front, deactivation input
50134584	HRT 25B/L6T.31-2500	0.05 ... 2.5 m 0.05 ... 3 m	LED, infrared	Cable, 2,000 mm, 5-wire	Switching frequency: 30 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), against object, DC, IO-Link, alignment and status display (Q1, Q2) on the front, teach input
50132278	HRT 25B/L6X.31-2500	0.05 ... 2.5 m 0.05 ... 3 m	LED, infrared	Cable, 2,000 mm, 5-wire	Switching frequency: 30 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), against object, DC, IO-Link, alignment and status display (Q1, Q2) on the front
50134583	HRT 25B/L69.31-2500	0.05 ... 2.5 m 0.05 ... 3 m	LED, infrared	Cable, 2,000 mm, 5-wire	Switching frequency: 30 Hz; Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, light switching (PNP)/dark switching (NPN), against object, DC, IO-Link, alignment and status display (Q1, Q2) on the front, deactivation input
50134235	HT25CI/2N-M12	0 ... 1.3 m 0 ... 1.3 m	LED, infrared	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134231	HT25CI/4P-M12	0 ... 1.3 m 0 ... 1.3 m	LED, infrared	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134237	HT25CI/2N-M8	0 ... 1.3 m 0 ... 1.3 m	LED, infrared	Connector, M8, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134233	HT25CI/4P-M8	0 ... 1.3 m 0 ... 1.3 m	LED, infrared	Connector, M8, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134238	HT25CI/2N-200-M12	0 ... 1.3 m 0 ... 1.3 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134234	HT25CI/4P-200-M12	0 ... 1.3 m 0 ... 1.3 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC
50134236	HT25CI/2N	0 ... 1.3 m 0 ... 1.3 m	LED, infrared	Cable, 2,000 mm, 4-wire	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC
50134232	HT25CI/4P	0 ... 1.3 m 0 ... 1.3 m	LED, infrared	Cable, 2,000 mm, 4-wire	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC

HRTR 25B / HT 25C – Extra large and small light spots

The diffuse reflection sensor with background suppression and large light spot (model XL) is well suited for the reliable detection of containers with openings, such as meshed containers. The S model with focused light spot is particularly well suited for the reliable detection of objects with glossy surfaces and surfaces with colored structure. This makes it the sensor of choice for complex applications, such as in packaging technology.

Benefits:

- Optimized light spot for reliable detection of meshed containers (model XL)
- Reliable positioning on glossy, metallic surfaces with openings (e. g. slide bolts)
- Focused light spot for the reliable detection of objects with glossy and inconsistently structured surfaces (model S)
- High switching frequency and short response time for detection of fast events

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50114876	HRTR 25B/66-XL-S12	0 ... 0.6 m 0 ... 0.6 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, extra long light spot (XL)
50115158	HRTR 25B/66-XL,200-S12	0 ... 0.6 m 0 ... 0.6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, metal	Switching frequency: 250 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, extra long light spot (XL)
50115157	HRTR 25B/66-XL,200-S8	0 ... 0.6 m 0 ... 0.6 m	LED, red	Cable with connector, 200 mm, M8, 4-pin, metal	Switching frequency: 250 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, extra long light spot (XL)
50116532	HRTR 25B/66-XL	0 ... 0.6 m 0 ... 0.6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 250 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, extra long light spot (XL)
50134243	HT25C.S/2N-M12	0 ... 0.5 m 0 ... 0.5 m	LED, red	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, small light spot (S)
50134239	HT25C.S/4P-M12	0 ... 0.5 m 0 ... 0.5 m	LED, red	Connector, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, small light spot (S)
50134245	HT25C.S/2N-M8	0 ... 0.5 m 0 ... 0.5 m	LED, red	Connector, M8, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, small light spot (S)
50134241	HT25C.S/4P-M8	0 ... 0.5 m 0 ... 0.5 m	LED, red	Connector, M8, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, small light spot (S)
50134246	HT25C.S/2N-200-M12	0 ... 0.5 m 0 ... 0.5 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, small light spot (S)
50134242	HT25C.S/4P-200-M12	0 ... 0.5 m 0 ... 0.5 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, PUR	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, small light spot (S)
50134244	HT25C.S/2N	0 ... 0.5 m 0 ... 0.5 m	LED, red	Cable, 2,000 mm, 4-wire	Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 1,500 Hz, DC, small light spot (S)
50134240	HT25C.S/4P	0 ... 0.5 m 0 ... 0.5 m	LED, red	Cable, 2,000 mm, 4-wire	Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 1,500 Hz, DC, small light spot (S)

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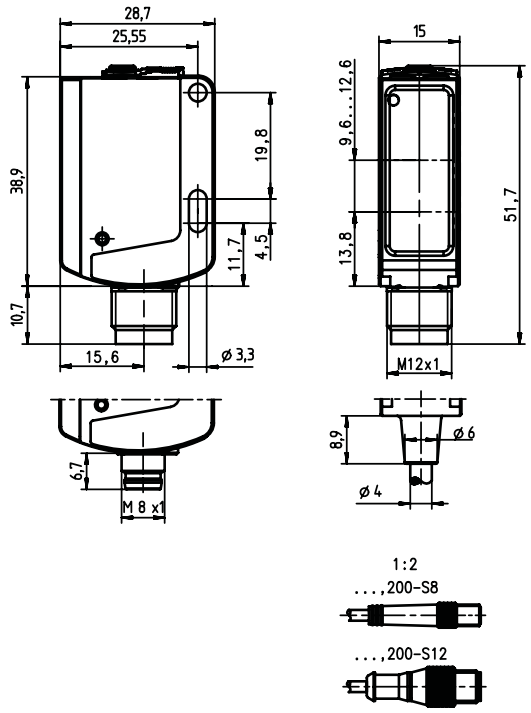
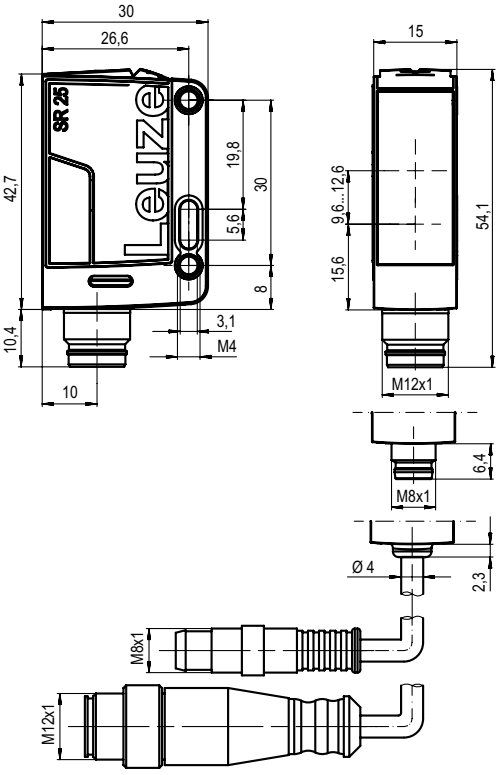
Dimensioned drawings: 25 series



25B series



25C series

ACCESSORIES: 25 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50040269	**BT 25**	Angle, L-shape	Screw type	Through-hole mounting	Metal
50124651	**BT 205M**	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117256	**BTU 200M-D10**	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	**BTU 200M-D12**	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	**BTU 200M-D14**	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50024127	**TK 82.2**	Round	79 mm	Through-hole mounting, adhesive	Plastic
50081283	**TKS 20X40**	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	**TKS 30X50**	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50040820	**TKS 40X60**	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	**TKS 100X100**	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50040895	**MTKS 20x20**	Rectangular	20 mm x 20 mm	Through-hole mounting, adhesive	Plastic
50117583	**MTKS 50x50.1**	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	**REF 4-A-50x50**	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic
50106119	**REF 4-A-100x100**	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

Reflective tapes for laser and clear-glass applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50123899	**REF 6-A-9x9**	Rectangular	9 mm x 9 mm	Self-adhesive	Plastic
50123861	**REF 6-A-14x45**	Rectangular	15 mm x 45 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

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/// 28 series

The 28 series sensors are reliable, powerful photoelectric sensors that are predestined for many standard detection tasks in materials handling, packaging technology and machines for special applications. They offer large ranges and numerous technical highlights, such as the highly visible brightVision® light spot for simple alignment or the front- and plug-side M18 mounting option, at an absolutely convincing, economical price. Moreover, the fiber-reinforced, cubic plastic housing with rating and the IP 67 A²LS active suppression of extraneous light facilitate especially robust detection, even in rough industrial environments.

Direct access to the online product selector at **www.leuze.com/en/br28**

Throughbeam photoelectric sensors

Solid, cubic throughbeam photoelectric sensor for standard detection tasks with transmitter and receiver.

L28

The one-way principle makes possible the reliable detection of even flat objects with a high function reserve and reduces the risk of a system standstill. Deactivation inputs enable testing of the sensor. In addition, optimized beam geometry and the highly visible brightVision® light spot simplify alignment.

Benefits:

- High function reserve
- Simple alignment by means of optimized beam geometry
- Simple detection of flat objects
- Transmitter deactivation for testing and networking

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50117928	► LS28/9D-M12	0 ... 10 m 0 ... 15 m	LED, red	Connector, M12, 4-pin, plastic	DC, deactivation input
50117932	◄ LE28/2N-M12	0 ... 10 m 0 ... 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50117930	◄ LE28/4P-M12	0 ... 10 m 0 ... 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50117929	► LS28/9D	0 ... 10 m 0 ... 15 m	LED, red	Cable, 2,000 mm, 4-wire	DC, deactivation input
50117933	◄ LE28/2N	0 ... 10 m 0 ... 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50117931	◄ LE28/4P	0 ... 10 m 0 ... 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

Solid, cubic, polarized retro-reflective photoelectric sensor for installation situations in which a retro-reflector can be used.

PRK28

A polarization filter ensures the reliable suppression of direct reflections and, together with the high function reserve of the sensor, enables reliable detection. In addition, optimized beam geometry and the highly visible brightVision® light spot simplify alignment.

Benefits:

- Homogeneous light spot for safe switching behavior and easy alignment
- Safe suppression of direct reflection due to polarization filter
- Wiring in series (daisy chain) possible

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122587	PRK28.3/2N-M12	0.02 ... 4.5 m 0.02 ... 6 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122585	PRK28.3/4P-M12	0.02 ... 4.5 m 0.02 ... 6 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50117926	PRK28/2N-M12	0.02 ... 4.5 m 0.02 ... 6 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50117924	PRK28/4P-M12	0.02 ... 4.5 m 0.02 ... 6 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50130049	PRK28.3/2N-200-M12	0.02 ... 4.5 m 0.02 ... 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50130047	PRK28.3/4P-200-M12	0.02 ... 4.5 m 0.02 ... 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122589	PRK28/2N-200-M12	0.02 ... 4.5 m 0.02 ... 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50122584	PRK28/4P-200-M12	0.02 ... 4.5 m 0.02 ... 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122588	PRK28.3/2N	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122586	PRK28.3/4P	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50117927	PRK28/2N	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50117925	PRK28/4P	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic diffuse sensor

Sturdy cubic diffuse sensor for standard detection tasks. This sensor performs detection directly on an object and requires no reflector.

ET28 / FT28

These red-light sensors in the solid plastic housing facilitate robust object detection for homogeneous or similar objects. Through the simple sensitivity adjustment with 2-level teach (object/background), they are particularly flexible in use. These sensors feature the A²LS active ambient light suppression and quick and easy alignment through brightly visible brightVision® light spot.

Benefits:

- Energetic diffuse reflection sensor with light/dark switching
- Range adjustment via teach-in
- Universal option for M18 hole mounting at the front and connector side
- Easy through-hole assembly with anti-rotation protection for mounting nuts on the housing
- Full control through green and yellow indicator LEDs and complementary outputs
- Robust plastic housing acc. to IP 67 for industrial application

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122599	ET28.3/2N-M12	0.001 … 0.65 m 0.001 … 0.85 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122596	ET28.3/4P-M12	0.001 … 0.65 m 0.001 … 0.85 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122600	ET28.3/2N-200-M12	0.001 … 0.65 m 0.001 … 0.85 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122597	ET28.3/4P-200-M12	0.001 … 0.65 m 0.001 … 0.85 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122601	ET28.3/2N	0.001 … 0.65 m 0.001 … 0.85 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122598	ET28.3/4P	0.001 … 0.65 m 0.001 … 0.85 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122593	FT28.3/2N-M12	0.001 … 0.21 m 0 … 0.25 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122590	FT28.3/4P-M12	0.001 … 0.21 m 0 … 0.25 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50122594	FT28.3/2N-200-M12	0.001 … 0.21 m 0 … 0.25 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122591	FT28.3/4P-200-M12	0.001 … 0.21 m 0 … 0.25 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50122595	FT28.3/2N	0.001 … 0.21 m 0 … 0.25 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122592	FT28.3/4P	0.001 … 0.21 m 0 … 0.25 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading

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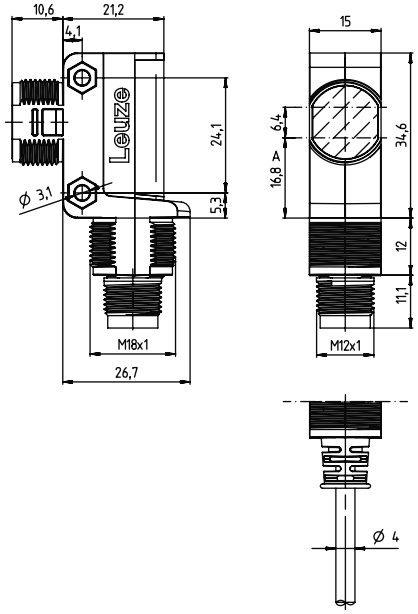
Dimensioned drawings: 28 series



28 series

ACCESSORIES: 28 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50118542	BT 200M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50124651	BT 205M	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117256	BTU 200M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50024127	TK 82.2	Round	79 mm	Through-hole mounting, adhesive	Plastic
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// 46 series

With high performance reserves and large ranges, these sensors with plastic housing are ideal for use in conveyor and storage systems, in the wood-processing industry and in special-purpose machinery manufacture. The extended series of sensors, with large lenses, degrees of protection IP 67 and IP 69K, and the patented autocontrol function reserve warning, opens many application fields.

Direct access to the online product selector at **www.leuze.com/en/br46**

Throughbeam photoelectric sensors

Reliable photoelectric sensor with large range, optimized beam geometry for simple alignment, robust switching behavior and maximum functional reliability. Available in red light or with infrared light.

L46

The throughbeam photoelectric sensor with visible red light or infrared light features a very high function reserve and a switching state display that is visible over the entire range.

Benefits:

- Switching state indicator visible from all sides
- Additional display behind the cover pane that is highly visible even at large distances
- High switching frequency for exact switching behavior
- Red light and infrared model
- Model for parallel operation of light axes
- Simple alignment and check through ARH 46 + SAT 5 alignment aids

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50127042	► LS46C-M12	0.5 ... 120 m 0 ... 150 m	LED, red	Connector, M12, 4-pin, plastic	DC
50127037	◄ LE46C.1/4P-M12	0.5 ... 120 m 0 ... 150 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50127036	◄ LE46C/2N-M12	0.5 ... 120 m 0 ... 150 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50127033	◄ LE46C/4P-M12	0.5 ... 120 m 0 ... 150 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50127038	◄ LE46C/4W-M12	0.5 ... 120 m 0 ... 150 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, warning output (active high)
50131556	◄ LE46C.P/2N-M12	0.5 ... 80 m 0 ... 120 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, operation of parallel light axes
50131555	◄ LE46C.P/4P-M12	0.5 ... 80 m 0 ... 120 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, operation of parallel light axes

► transmitter / ◄ receiver

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Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50127045	► LS46C.8-M12	0.5 ... 120 m 0 ... 150 m	LED, red	Connector, M12, 4-pin, plastic	DC, activation input
50127037	◄ LE46C.1/4P-M12	0.5 ... 120 m 0 ... 150 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50127036	◄ LE46C/2N-M12	0.5 ... 120 m 0 ... 150 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50127033	◄ LE46C/4P-M12	0.5 ... 120 m 0 ... 150 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50127038	◄ LE46C/4W-M12	0.5 ... 120 m 0 ... 150 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, warning output (active high)
50127044	► LS46C-200-M12	0.5 ... 120 m 0 ... 150 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	DC
50136148	◄ LE46C.1/4P-200-M12	0.5 ... 120 m 0 ... 150 m		Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50127035	◄ LE46C/4P-200-M12	0.5 ... 120 m 0 ... 150 m		Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50127039	◄ LE46C/PX-200-M12	0.5 ... 120 m 0 ... 150 m		Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, AS-Interface, connection via coupling module
50127043	► LS46C	0.5 ... 120 m 0 ... 150 m	LED, red	Cable, 2,000 mm, 4-wire	DC
50127034	◄ LE46C/4P	0.5 ... 120 m 0 ... 150 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50127046	► LS46CI-M12	0.5 ... 120 m 0 ... 150 m	LED, infrared	Connector, M12, 4-pin, plastic	DC
50127040	◄ LE46CI.1/4P-M12	0.5 ... 120 m 0 ... 150 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

Due to their extremely wide function reserves in several operating ranges, reliable retro-reflective photoelectric sensors with red light ensure high system availability.

RK46C VarOS – Sensor with light-band

Retro-reflective photoelectric sensor with broad, powerful light-band for the reliable detection of objects with variable shape and openings.

Benefits:

- Wide, homogeneous detection band
- 2 teachable sensitivity levels
- Standard sensor dimensions
- Models for detection of small objects
- Easy tune for optimization of sensitivity adjustment (adaptation to object size)
- Light/dark switching via teach
- Use as muting sensor (reliable detection of packages or objects wrapped in film)

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50126764	RK46C.DXL3/2N-M12	0.4 ... 4 m 0.4 ... 5.2 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of small parts, detection of stretch-wrapped objects, muting applications, detection of transparent objects; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching; Switching frequency: 250 Hz, DC, teach button, extra long light spot (XL)
50125752	RK46C.DXL3/4P-M12	0.4 ... 4 m 0.4 ... 5.2 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of small parts, detection of stretch-wrapped objects, muting applications, detection of transparent objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 250 Hz, DC, teach button, extra long light spot (XL)
50133413	RK46C.DXL3/LP-M12	0.4 ... 4 m 0.4 ... 5.2 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of small parts, detection of stretch-wrapped objects, muting applications, detection of transparent objects; Digital switching output 1: transistor, PNP, IO-Link / light/dark reversible; Digital switching output 2: transistor, PNP, light/dark reversible; Switching frequency: 250 Hz, DC, IO-Link, teach button, extra long light spot (XL)
50125991	RK46C.DXL3/PX-M12	0.4 ... 4 m 0.4 ... 5.2 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of small parts, detection of stretch-wrapped objects, muting applications, detection of transparent objects; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 250 Hz, DC, teach button, extra long light spot (XL), AS-Interface, connection via coupling module
50134568	RK46C.DXL3P2/4P-M12	0.4 ... 4 m 0.4 ... 5.2 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of objects with cutouts and openings, detection of small parts, detection of stretch-wrapped objects, detection of transparent objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 250 Hz, DC, teach button, extra long light spot (XL), high resolution sensor
50125755	RK46C.DXL3/4P-200-M12	0.4 ... 4 m 0.4 ... 5.2 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of small parts, detection of stretch-wrapped objects, muting applications, detection of transparent objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 250 Hz, DC, teach button, extra long light spot (XL)
50134572	RK46C.DXL3/PX-200-M12	0.4 ... 4 m 0.4 ... 5.2 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of small parts, detection of stretch-wrapped objects, muting applications, detection of transparent objects; Digital switching output 1: transistor, PNP, dark switching; Switching frequency: 250 Hz, DC, teach button, extra long light spot (XL), AS-Interface, connection via coupling module

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50136304	RK46C.DXL3P2/4P-200-M12	0.4 … 4 m 0.4 … 5.2 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of small parts, detection of objects with cutouts and openings, detection of stretch-wrapped objects, detection of transparent objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 250 Hz, DC, teach button, extra long light spot (XL), high resolution sensor
50125754	RK46C.DXL3/4P	0.4 … 4 m 0.4 … 5.2 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of small parts, detection of stretch-wrapped objects, muting applications, detection of transparent objects; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Switching frequency: 250 Hz, DC, teach button, extra long light spot (XL)

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 46B / PRK 46C – Standard models

This retro-reflective photoelectric sensor for large ranges offers a high function reserve for reliable object detection even with small, soiled or misaligned reflectors.

Benefits:

- Maximum function reserve within the operating range
- Reliable object detection with heavily soiled or misaligned reflectors
- Adjustment option via potentiometer
- Large selection of connection variants

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50127015	PRK46C.1/4P-M12	0.1 … 24 m 0.1 … 30 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50127018	PRK46C/2N-M12	0.1 … 24 m 0.1 … 30 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50127012	PRK46C/4P-M12	0.1 … 24 m 0.1 … 30 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50127021	PRK46C/4W-M12	0.1 … 24 m 0.1 … 30 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, warning output
50127016	PRK46C/48-M12	0.1 … 24 m 0.1 … 30 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, activation input
50136904	PRK46C/LP-M12	0.1 … 24 m 0.1 … 30 m	LED, red	Connector, M12, 4-pin, plastic	Digital switching output 1: transistor, push-pull, IO-Link / light switching (PNP)/ dark switching (NPN); Digital switching output 2: transistor, PNP, dark switching; switching frequency: 500 Hz, DC, IO-Link
50127014	PRK46C/4P-200-M12	0.1 … 24 m 0.1 … 30 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50127017	PRK46C/PX-200-M12	0.1 … 24 m 0.1 … 30 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, AS-Interface, connection via coupling module
50127019	PRK46C/2N	0.1 … 24 m 0.1 … 30 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50127013	PRK46C/4P	0.1 … 24 m 0.1 … 30 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50133045	PRK46C.D/4X-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC
50103080	PRK 46B/7D-S12	0.05 … 15 m 0.05 … 18 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 20 Hz; Digital switching output 1: relay, NO, dark switching, DC
50119714	PRK 46B/7D,5000	0.05 … 15 m 0.5 … 18 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 20 Hz; Digital switching output 1: relay, NO, dark switching, DC

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

(I)PRK 46B.2 / PRK 46C.D – Optimized for reflective objects

A special type of the retro-reflective photoelectric sensor of this series is optimized for use on roller conveyors with high functional reliability especially with stretch-wrapped pallets or depolarizing films.

Benefits:

- Optimized for use on roller conveyors and palletizers
- Reliable function even with stretch-wrapped pallets
- Available with warning output

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50127032	PRK46C.D/2N-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50127024	PRK46C.D/4P-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50127030	PRK46C.D/4W-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, warning output (active high)
50133045	PRK46C.D/4X-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, AS-I, connection via coupling module
50127029	PRK46C.D/48-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, activation input
50127027	PRK46C.D/PX-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, AS-Interface, connection via coupling module
50129753	PRK46C.D1/4P-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

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Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50127028	PRK46C.D1/PX-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Connector, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, 270 ° potentiometer, AS-Interface, connection via coupling module
50127026	PRK46C.D/4P-200-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50127031	PRK46C.D/PX-200-M12	0.1 … 16 m 0.1 … 20 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, AS-Interface, connection via coupling module
50127025	PRK46C.D/4P	0.1 … 16 m 0.1 … 20 m	LED, red	Cable, 2,000 mm, 4-wire	Application: detection of stretch-wrapped objects; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Diffuse sensors with background suppression

Extensive selection of diffuse reflection sensors which utilize background suppression to deliver reliable results even with changing backgrounds. In addition to red light and infrared types, as well as laser photoelectric sensors, solutions are also offered with IO-Link for format changeover, as well as special types.

HRT 46B / HT 46C – Standard models (LED and laser)

Universal sensor with red light/infrared light with teach function or mechanical adjustment for the reliable detection and exact positioning of even dark and glossy objects. Available as laser model in laser class 1 and 2 especially for small parts or precise light spot.

Benefits:

- Very fine adjustment with mechanical diaphragm
- Clearly visible light spot (red light) for simple alignment
- Laser devices for very fine light spots, e.g., for the detection of bore holes and small parts
- Models with teach input for inaccessible installation situations
- Large operating ranges with small black/white error

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134610	HT46CL2/2N-M12	0.05 … 1 m 0.05 … 1.2 m	Laser, 2, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, multiturn potentiometer
50134608	HT46CL2/4P-M12	0.05 … 1 m 0.05 … 1.2 m	Laser, 2, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50127060	HT46CL2/48-M12	0.05 … 1 m 0.05 … 1.2 m	Laser, 2, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer, activation input
50134609	HT46CL2/4P-200-M12	0.05 … 1 m 0.05 … 1.2 m	Laser, 2, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50134607	HT46CL1/2N-M12	0.05 … 0.8 m 0.05 … 1 m	Laser, 1, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, multiturn potentiometer
50127056	HT46CL1/4P-M12	0.05 … 0.8 m 0.05 … 1 m	Laser, 1, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50127058	HT46CL1/48-M12	0.05 … 0.8 m 0.05 … 1 m	Laser, 1, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer, activation input
50127059	HT46CL1/P9-M12	0.05 … 0.8 m 0.05 … 1 m	Laser, 1, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, multiturn potentiometer, deactivation input
50127057	HT46CL1/4P-200-M12	0.05 … 0.8 m 0.05 … 1 m	Laser, 1, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50129670	HT46C/2N-M12	0.005 … 3 m 0.005 … 3 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, multiturn potentiometer
50127048	HT46C/4P-M12	0.005 … 3 m 0.005 … 3 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50127055	HT46C/4W-M12	0.005 … 3 m 0.005 … 3 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, multiturn potentiometer, warning output (active high)
50127050	HT46C/4X-M12	0.005 … 3 m 0.005 … 3 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer, AS-Interface, connection via coupling module
50127054	HT46C/48-M12	0.005 … 3 m 0.005 … 3 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer, activation input
50127051	HT46C/PX-M12	0.005 … 3 m 0.005 … 3 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, multiturn potentiometer, AS-Interface, connection via coupling module
50129752	HT46C/4P-200-M12	0.005 … 3 m 0.005 … 3 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50130201	HT46C/4X-200-M12	0.005 … 3 m 0.005 … 3 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer, AS-Interface, connection via coupling module
50127052	HT46C/PX-200-M12	0.005 … 3 m 0.005 … 3 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, multiturn potentiometer, AS-Interface, connection via coupling module
50132578	HT46C/2N	0.005 … 3 m 0.005 … 3 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 250 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, multiturn potentiometer
50127049	HT46C/4P	0.005 … 3 m 0.005 … 3 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50131550	HT46C.E/4P-M12	0.005 … 2 m 0.005 … 2 m	LED, red	Connector, M12, 4-pin, plastic	Application: reliable switching in dusty environments; Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, dust suppression
50114032	HRTR 46B/6.22-S12	0.02 … 1.8 m 0.02 … 1.8 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 200 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, teach input

Typ. operating range with a black/white error < 10 %

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50114034	HRTR 46B/6.22,200-S12	0.02 … 1.8 m 0.02 … 1.8 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, metal	Switching frequency: 200 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, teach input
50131553	HT46C.SL/4P-M12	0.01 … 1.2 m 0.01 … 1.2 m	LED, red	Connector, M12, 4-pin, plastic	Application: object detection between the rollers of a roller conveyor; Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, small light spot (S)
50131552	HT46C.SL/4X-200-M12	0.01 … 1.2 m 0.01 … 1.2 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: object detection between the rollers of a roller conveyor; Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; dark switching, DC, multiturn potentiometer
50129671	HT46CI/2N-M12	0.005 … 3 m 0.005 … 3 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, multiturn potentiometer
50127061	HT46CI/4P-M12	0.005 … 3 m 0.005 … 3 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50127067	HT46CI/4W-M12	0.005 … 3 m 0.005 … 3 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, multiturn potentiometer, warning output (active high)
50127063	HT46CI/4X-M12	0.005 … 3 m 0.005 … 3 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer, AS-Interface, connection via coupling module
50127066	HT46CI/48-M12	0.005 … 3 m 0.005 … 3 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer, activation input
50127064	HT46CI/PX-M12	0.005 … 3 m 0.005 … 3 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, multiturn potentiometer, AS-Interface, connection via coupling module
50129751	HT46CI/4P-200-M12	0.005 … 3 m 0.005 … 3 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50134612	HT46CI/4W-200-M12	0.005 … 3 m 0.005 … 3 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, multiturn potentiometer, warning output (active high)
50127065	HT46CI/PX-200-M12	0.005 … 3 m 0.005 … 3 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, plastic	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, dark switching, DC, multiturn potentiometer, AS-Interface, connection via coupling module
50136417	HT46CI/2N	0.005 … 3 m 0.005 … 3 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50127062	HT46CI/4P	0.005 … 3 m 0.005 … 3 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50106562	HRT 46B/7-S12	0 … 2.5 m 0 … 2.5 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 20 Hz; Digital switching output 1: relay, NO, light switching, DC, multiturn potentiometer
50131549	HT46CI.E/4P-M12	0.005 … 2 m 0.005 … 2 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: reliable switching in dusty environments; Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, dust suppression
50132617	HT46CI.01/4X-200-M12	0.005 … 1.2 m 0.005 … 1.5 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: reliable switching when reflective tape present in background; Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer, AS-Interface, connection via coupling module

Typ. operating range with a black/white error < 10 %

HRT(R) 46B / HT 46C(I) – Special light spots

Sensor with special light spots necessary for certain applications. An especially narrow beam, e.g., for detection between the rollers of a roller conveyor or for structured backgrounds.

Benefits:

- Greater functional reliability through special light spot
- Infrared for use between metal rollers
- Reliable detection of objects with colored structure in packaging and the wood working industry

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50131553	HT46C.SL/4P-M12	0.01 … 1.2 m 0.01 … 1.2 m	LED, red	Connector, M12, 4-pin, plastic	Application: object detection between the rollers of a roller conveyor; Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, small light spot (S)
50131552	HT46C.SL/4X-200-M12	0.01 … 1.2 m 0.01 … 1.2 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: object detection between the rollers of a roller conveyor; Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; DC, multiturn potentiometer
50106559	HRTR 46B/66-S-S12	0.01 … 0.7 m 0.01 … 0.7 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 200 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, small light spot (S)
50131551	HT46CI.SL/4P-M12	0.01 … 1.2 m 0.01 … 1.2 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: object detection between the rollers of a roller conveyor; Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, small light spot (S)
50131554	HT46CI.SL/4X-200-M12	0.01 … 1.2 m 0.01 … 1.2 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, plastic	Application: object detection between the rollers of a roller conveyor; Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching, DC, multiturn potentiometer, AS-Interface, connection via coupling module

Typ. operating range with a black/white error < 10 %

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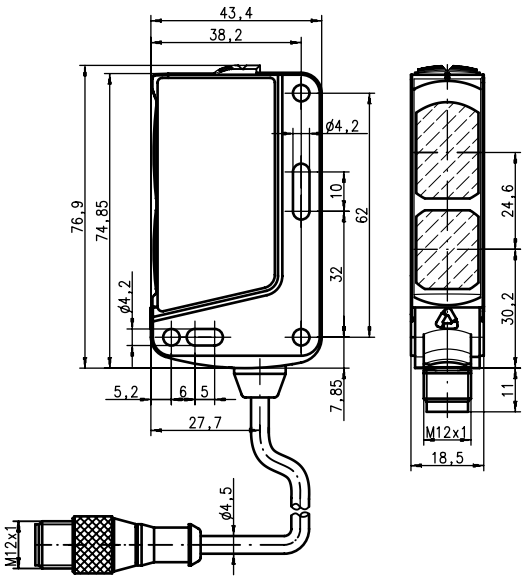
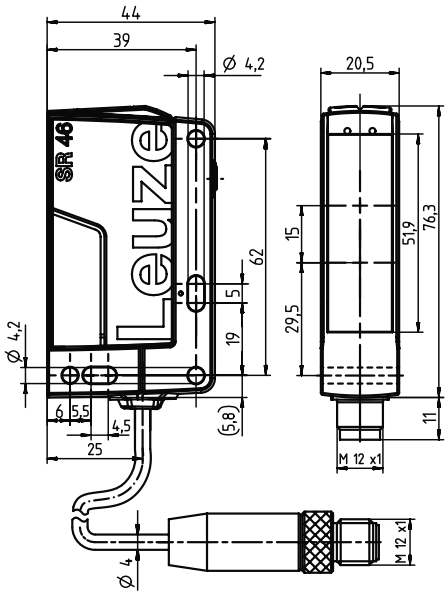
Dimensioned drawings: 46 series



46B series



46C series

ACCESSORIES: 46 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50105315	BT 46	Angle, L-shape	Screw type	Through-hole mounting	Metal
50118543	BT 300M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel, V2A

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117253	BTU 300M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117252	BTU 300M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117251	BTU 300M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50024127	TK 82.2	Round	79 mm	Through-hole mounting, adhesive	Plastic
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Part no.	Part description	Design	Reflective surface	Fastening	Material
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022814	TKS 50X50	Rectangular	47 mm x 48 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic
50106119	REF 4-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// 49C series

This series in the plastic housing impresses in all operating principles with its particularly robust design. The terminal compartment with spring terminals is accessible from the front. Key features include models with switching contacts (relay/MOSFET with high switching power) and the large voltage range of 20 … 250 V AC/DC or the 24 V DC types with NPN/PNP outputs, as well as degrees of protection IP 67 and 69K.

Direct access to the online product selector at **www.leuze.com/en/br49c**

Throughbeam photoelectric sensors

Throughbeam photoelectric sensors with particularly high function reserve and operating ranges of up to 120 m using visible red light or infrared light with numerous additional functions.

L49C

The L49C was developed for very reliable object detection at large operating ranges and in harsh environments.

Benefits:

- Status LED clearly visible
- Optimized beam geometry for large operating ranges
- Terminal compartment with spring terminals provides time-saving connection
- Simple alignment with SAT 5 alignment aid
- Optics heating for outdoor use and prevention of fogging

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50127438	► LS49C.UC	0 … 120 m 0 … 150 m	LED, red	Cable, 2,000 mm, 2-wire	AC/DC
50127442	◄ LE49C.UC/TS	0 … 120 m 0.5 … 150 m		Cable, 2,000 mm, 5-wire	Switching frequency: 25 Hz; Switching output 1: relay, NC, light switching; Switching output 2: relay, NO, light switching, AC/DC
50127444	◄ LE49C.UC1/M4	0 … 120 m 0.5 … 150 m		Cable, 2,000 mm, 5-wire	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, teach button, 270 ° potentiometer
50134450	► LS49C-TB	0.5 … 120 m 0 … 150 m	LED, red	Terminal, 5-pin	DC
50134456	◄ LE49C.1/4P-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 225 ° potentiometer, teach button
50134455	◄ LE49C/2N-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50134454	◄ LE49C/4P-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50134457	◄ LE49C/4W-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, warning output (active high)

► transmitter / ◄ receiver

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Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134451	► LS49C.8-TB	0.5 … 120 m 0 … 150 m	LED, red	Terminal, 5-pin	DC, activation input
50134456	◄ LE49C.1/4P-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 225 ° potentiometer, teach button
50134455	◄ LE49C/2N-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50134454	◄ LE49C/4P-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50134457	◄ LE49C/4W-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, warning output (active high)
50127437	► LS49C.UC-TB	0 … 120 m 0 … 150 m	LED, red	Terminal, 2-pin	AC/DC
50127441	◄ LE49C.UC/TS-TB	0 … 120 m 0.5 … 150 m		Terminal, 5-pin	Switching frequency: 25 Hz; Switching output 1: relay, NO, light switching; Switching output 2: relay, NC, light switching, AC/DC
50127443	◄ LE49C.UC1/M4-TB	0 … 120 m 0.5 … 150 m		Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, teach button, 270 ° potentiometer
50130462	► LS49C.UCH/TB	0 … 120 m 0 … 150 m	LED, red	Terminal, 2-pin	AC/DC, heating
50130467	◄ LE49C.UCH/TS-TB	0 … 120 m 0.5 … 150 m		Terminal, 5-pin	Switching frequency: 25 Hz; Switching output 1: relay, NO, light switching; Switching output 2: relay, NC, light switching, AC/DC, heating
50130465	◄ LE49C.UCH1/M4-TB	0 … 120 m 0.5 … 150 m		Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, teach button, 270 ° potentiometer, heating
50127440	► LS49CI.UC	0 … 120 m 0 … 150 m	LED, infrared	Cable, 2,000 mm, 2-wire	AC/DC
50127446	◄ LE49CI.UC/TS	0 … 120 m 0.5 … 150 m		Cable, 2,000 mm, 5-wire	Switching frequency: 25 Hz; Switching output 1: relay, NO, light switching; Switching output 2: relay, NC, light switching, AC/DC
50127448	◄ LE49CI.UC1/M4	0 … 120 m 0.5 … 150 m		Cable, 2,000 mm, 5-wire	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, teach button, 270 ° potentiometer
50134452	► LS49CI-TB	0.5 … 120 m 0 … 150 m	LED, infrared	Terminal, 5-pin	DC
50134459	◄ LE49CI.1/2N-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 225 ° potentiometer, teach button
50134458	◄ LE49CI.1/4P-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 225 ° potentiometer, teach button
50134460	◄ LE49CI/4W-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, warning output (active high)
50134453	► LS49CI.8-TB	0.5 … 120 m 0 … 150 m	LED, infrared	Terminal, 5-pin	DC, activation input
50134459	◄ LE49CI.1/2N-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 225 ° potentiometer, teach button
50134458	◄ LE49CI.1/4P-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 225 ° potentiometer, teach button
50134460	◄ LE49CI/4W-TB	0.5 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, warning output (active high)
50127439	► LS49CI.UC-TB	0 … 120 m 0 … 150 m	LED, infrared	Terminal, 2-pin	AC/DC
50127445	◄ LE49CI.UC/TS-TB	0 … 120 m 0.5 … 150 m		Terminal, 5-pin	Switching frequency: 25 Hz; Switching output 1: relay, NO, light switching; Switching output 2: relay, NC, light switching, AC/DC
50127447	◄ LE49CI.UC1/M4-TB	0 … 120 m 0.5 … 150 m		Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, teach button, 270 ° potentiometer
50130463	► LS49CI.UCH/TB	0 … 120 m 0 … 150 m	LED, infrared	Terminal, 2-pin	AC/DC, heating
50130464	◄ LE49CI.UCH/TS-TB	0 … 120 m 0.5 … 150 m		Terminal, 5-pin	Switching frequency: 25 Hz; Switching output 1: relay, NO, light switching; Switching output 2: relay, NC, light switching, AC/DC, heating
50130466	◄ LE49CI.UCH1/M4-TB	0 … 120 m 0.5 … 150 m		Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, 270 ° potentiometer, teach button, heating

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

Polarized retro-reflective photoelectric sensors with visible red light for large operating ranges of 24 m and function reserve with additional functions.

(P)RK49C

Reliable detection of glossy or shrink-wrapped objects with/ without polarization filter with visible red light or infrared model over a large distance.

Benefits:

- Particularly large function reserve
- Use of standard reflectors
- Potential-free relay outputs for connecting long cables
- MOSFET output for high switching frequencies or NPN/PNP output

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50127424	PRK49C.UC1/M4	0.3 … 24 m 0.1 … 30 m	LED, red	Cable, 2,000 mm, 5-wire	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, teach button, 270 ° potentiometer
50127421	PRK49C.UC1/TS	0.1 … 24 m 0.1 … 30 m	LED, red	Cable, 2,000 mm, 5-wire	Switching frequency: 25 Hz; Switching output 1: relay, NC, light/dark reversible; Switching output 2: relay, NO, light/dark reversible, AC/DC, teach button, 270 ° potentiometer
50134448	PRK49C.1/2N-TB	0.1 … 24 m 0.1 … 30 m	LED, red	Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 225 ° potentiometer, teach button
50134447	PRK49C.1/4P-TB	0.1 … 24 m 0.1 … 30 m	LED, red	Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 225 ° potentiometer, teach button
50127425	PRK49C.UC/M4-TB	0.3 … 24 m 0.1 … 30 m	LED, red	Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light switching, AC/DC
50127422	PRK49C.UC/TS-TB	0.1 … 24 m 0.1 … 30 m	LED, red	Terminal, 5-pin	Switching frequency: 25 Hz; Switching output 1: relay, NC, light switching; Switching output 2: relay, NO, light switching, AC/DC
50127423	PRK49C.UC1/M4-TB	0.3 … 24 m 0.1 … 30 m	LED, red	Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, teach button, 270 ° potentiometer
50127420	PRK49C.UC1/TS-TB	0.1 … 24 m 0.1 … 30 m	LED, red	Terminal, 5-pin	Switching frequency: 25 Hz; Switching output 1: relay, NC, light/dark reversible; Switching output 2: relay, NO, light/dark reversible, AC/DC, teach button, 270 ° potentiometer
50130469	PRK49C.UCH/M4-TB	0.3 … 24 m 0.1 … 30 m	LED, red	Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light switching, AC/DC, heating
50130468	PRK49C.UCH/TS-TB	0.1 … 24 m 0.1 … 30 m	LED, red	Terminal, 5-pin	Switching frequency: 25 Hz; Switching output 1: relay, NC, light switching; Switching output 2: relay, NO, light switching, AC/DC, heating
50134446	PRK49C/4P-TB	0.1 … 24 m 0.1 … 30 m	LED, red	Terminal, 5-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50127427	PRK49C.UCD1/TS	0.1 … 16 m 0.1 … 20 m	LED, red	Cable, 2,000 mm, 5-wire	Application: detection of stretch-wrapped objects; Switching frequency: 25 Hz; Switching output 1: relay, NC, light/dark reversible; Switching output 2: relay, NO, light/dark reversible, AC/DC, teach button, 270 ° potentiometer
50127426	PRK49C.UCD1/TS-TB	0.1 … 16 m 0.1 … 20 m	LED, red	Terminal, 5-pin	Application: detection of stretch-wrapped objects; Switching frequency: 25 Hz; Switching output 1: relay, NC, light/dark reversible; Switching output 2: relay, NO, light/dark reversible, AC/DC, teach button, 270 ° potentiometer

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Diffuse sensors with background suppression

Extremely powerful diffuse sensor with background suppression with extensive sensor range.

HT49C

Diffuse sensor with background suppression, red light and infrared design, clamp connection.

Benefits:

- Large range
- High function reserve
- Exact object detection, independent of surface structure (minimal black-white error)

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50127432	HT49C.UC/M4	0.005 … 3 m 0.005 … 3 m	LED, red	Cable, 2,000 mm, 5-wire	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, multiturn potentiometer, teach button
50127430	HT49C.UC/TS	0.005 … 3 m 0.005 … 3 m	LED, red	Cable, 2,000 mm, 5-wire	Switching frequency: 150 Hz; Switching output 1: relay, NC, light/dark reversible; Switching output 2: relay, NO, light/dark reversible, AC/DC, multiturn potentiometer, teach button
50127431	HT49C.UC/M4-TB	0.005 … 3 m 0.005 … 3 m	LED, red	Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, multiturn potentiometer, teach button
50127193	HT49C.UC/TS-TB	0.005 … 3 m 0.005 … 3 m	LED, red	Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: relay, NC, light/dark reversible; Switching output 2: relay, NO, light/dark reversible, AC/DC, multiturn potentiometer, teach button
50130470	HT49C.UCH/TS-TB	0.005 … 3 m 0.005 … 3 m	LED, red	Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: relay, NC, light/dark reversible; Switching output 2: relay, NO, light/dark reversible, AC/DC, teach button, multiturn potentiometer, heating
50134462	HT49C/2N-TB	0.005 … 3 m 0.005 … 3 m	LED, red	Terminal, 5-pin	Switching frequency: 250 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 225 ° potentiometer, teach button
50134461	HT49C/4P-TB	0.005 … 3 m 0.005 … 3 m	LED, red	Terminal, 5-pin	Switching frequency: 250 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 225 ° potentiometer, teach button

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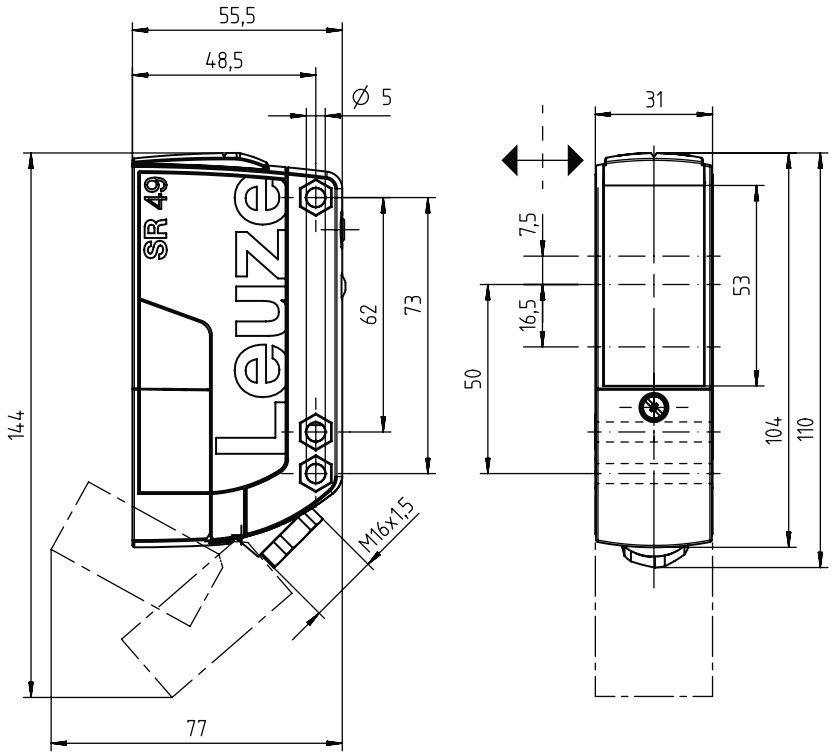
Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50127436	HT49CI.UC/M4	0.005 … 3 m 0.005 … 3 m	LED, infrared	Cable, 2,000 mm, 5-wire	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, multiturn potentiometer, teach button
50127434	HT49CI.UC/TS	0.005 … 3 m 0.005 … 3 m	LED, infrared	Cable, 2,000 mm, 5-wire	Switching frequency: 150 Hz; Switching output 1: relay, NC, light/dark reversible; Switching output 2: relay, NO, light/dark reversible, AC/DC, multiturn potentiometer, teach button
50127435	HT49CI.UC/M4-TB	0.005 … 3 m 0.005 … 3 m	LED, infrared	Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: MOSFET semiconductor, NO contact, light/dark reversible, AC/DC, multiturn potentiometer, teach button
50127433	HT49CI.UC/TS-TB	0.005 … 3 m 0.005 … 3 m	LED, infrared	Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: relay, NC, light/dark reversible; Switching output 2: relay, NO, light/dark reversible, AC/DC, multiturn potentiometer, teach button
50130471	HT49CI.UCH/TS-TB	0.005 … 3 m 0.005 … 3 m	LED, infrared	Terminal, 5-pin	Switching frequency: 150 Hz; Switching output 1: relay, NC, light/dark reversible; Switching output 2: relay, NO, light/dark reversible, AC/DC, multiturn potentiometer, teach button, heating
50134464	HT49CI/4P-TB	0.005 … 3 m 0.005 … 3 m	LED, infrared	Terminal, 5-pin	Switching frequency: 250 Hz; Switching output 1: transistor, PNP, light switching; Switching output 2: transistor, PNP, dark switching, DC, 225 ° potentiometer, teach button

Dimensioned drawings: 49C series



49 series

ACCESSORIES: 49C SERIES

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50025570	BT 96	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50082084	BT 450.1-96	Mounting system	Screw type	For 10 mm rod	Metal
50128379	BTU 460M-D10	Mounting system	Screw type	For 10 mm rod	Metal
50128380	BTU 460M-D12	Mounting system	Screw type	For 12 mm rod	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50024127	TK 82.2	Round	79 mm	Through-hole mounting, adhesive	Plastic
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic
50106119	REF 4-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// 53 series

Theses sensors were specially designed for sensitive hygiene applications, e. g., in the pharmaceutical, cosmetic and food industries. Their housing is consistently designed for preventing bacterial carry-overs with its scratch resistant and non-diffusive plastic screen. The unique fastening concept, which consists of a mounting trunnion with 12 mm diameter and G6 fit, ensures a gas-tight connection between sensor and machine.

Direct access to the online product selector at **www.leuze.com/en/br53**

Throughbeam photoelectric sensors

These stainless steel throughbeam photoelectric sensors in HYGIENE design are specially suited for use in challenging environments.

LSR 53

These photoelectric sensors have a large operating range and feature a visible red light spot for easy alignment.

Benefits:

- 316L stainless steel housing in HYGIENE design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- A²LS – Active Ambient Light Suppression
- High switching frequency for detection of fast events

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50108736	► LSSR 53.8-S8	0 … 8.5 m 0 … 10 m	LED, red	Connector, M8, 4-pin, stainless steel	DC, HYGIENE design
50108742	◄ LSER 53/66-S8	0 … 8.5 m 0 … 10 m		Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, HYGIENE design

► transmitter / ◄ receiver

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Retro-reflective photoelectric sensors

Polarized and unpolarized retro-reflective photoelectric sensors for transport systems, for exact positioning as well as models for detection of PET and glass bottles and plastic foils are available. In addition, there is a laser device specially designed for the detection of small parts.

PRK(L) 53.22

Polarized retro-reflective photoelectric sensors with visible red light in stainless steel housing in the HYGIENE design.

Benefits:

- 316L stainless steel housing in HYGIENE design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- High switching frequency for detection of fast events
- Easy adjustment via lockable teach button or teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50107605	PRKL 53/6.22-S8	0 ... 2 m 0 ... 3 m	Laser, 1, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, teach input, autocollimation, HYGIENE design
50137332	PRKL 53/6.22,5000	0 ... 2 m 0 ... 3 m	Laser, 1, red	Cable, 5,000 mm, 4-wire	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, HYGIENE design, teach input, autocollimation
50107603	PRK 53/6.22-S8	0 ... 4 m 0 ... 5 m	LED, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, teach input, autocollimation, HYGIENE design
50121898	PRK 53/6.22,5000	0 ... 4 m 0 ... 5 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, multiturn potentiometer, autocollimation, teach input, HYGIENE design

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 53.42 / RKR 53.42

Stainless steel sensors with autocollimation optics and red light with ranges of up to 3 m for transparent objects, both in a polarized design for glass panes (PRK devices) and a non-polarized design for films (RKR devices).

Benefits:

- 316L stainless steel housing in HYGIENE design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- High switching frequency for detection of fast events
- Easy adjustment via lockable teach button or teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50133403	PRKL 53/6.42-S8	0 ... 0.5 m 0 ... 0.4 m	Laser, 1, red	Connector, M8, 4-pin, stainless steel	Application: detection of highly transparent bottles; Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, teach input, HYGIENE design, autocollimation
50112475	PRK 53/6.42-S8	0 ... 3 m 0 ... 3.5 m	LED, red	Connector, M8, 4-pin, stainless steel	Application: detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, teach input, autocollimation, HYGIENE design

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Diffuse sensors with background suppression

These diffuse sensors with precise adjustment via multiturn potentiometer are designed for particularly reliable switching. With models that work on nearly any background, optimized versions for highly glossy objects and objects with colored structures as well for the detection of gaps and openings are available.

HRTL 53 / HRTR 53

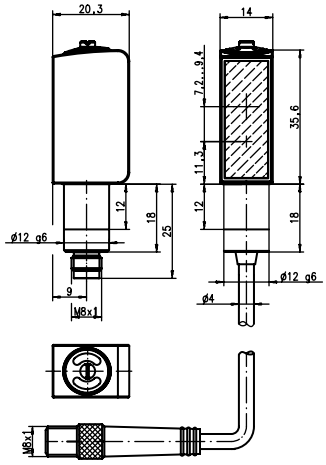
Depending on the design, these sensors offer a large range or small light spots for the reliable detection of glossy, structured objects. A model with elongated light spot specially produced for transparent objects or objects with openings is also available for delivery.

Benefits:

- 316L stainless steel housing in HYGIENE design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Exact range adjustment via 8-turn potentiometer
- Collimated light beam propagation with small beam diameter permits identical switching behavior within the specified range

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50134589	HRTL 53/66.C2-XL-S8	0.02 … 0.45 m 0.02 … 0.45 m	Laser, 2, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, HYGIENE design, extra long light spot (XL)
50115203	HRTL 53/66-S8	0.015 … 0.4 m 0.015 … 0.4 m	Laser, 1, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, HYGIENE design
50115202	HRTL 53/66,5000	0.015 … 0.4 m 0.015 … 0.4 m	Laser, 1, red	Cable, 5,000 mm, 4-wire	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, HYGIENE design
50107499	HRTR 53/66-S8	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, HYGIENE design
50121900	HRTR 53/66,5000	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, HYGIENE design
50107503	HRTR 53/66-S-S8	0.005 … 0.2 m 0.005 … 0.2 m	LED, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, small light spot (S), HYGIENE design
50121899	HRTR 53/66-S,5000	0.005 … 0.2 m 0.005 … 0.2 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, small light spot (S), HYGIENE design
50120622	HRTR 53/66-V-S8	0.015 … 0.1 m 0.015 … 0.1 m	LED, red	Connector, M8, 4-pin, stainless steel	Application: detection of high-gloss or polished surfaces; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, V-optics, HYGIENE design
50107507	HRTR 53/66-XL-S8	0.005 … 0.1 m 0.005 … 0.1 m	LED, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, extra long light spot (XL), HYGIENE design
50122261	HRTR 53/66-VXL-S8	0.01 … 0.09 m 0.01 … 0.09 m	LED, red	Connector, M8, 4-pin, stainless steel	Application: detection of top layers; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, V-optics, extra long light spot (XL), HYGIENE design

Dimensioned drawings: 53 series



53 series

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ACCESSORIES: 53 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50106154	K-D M8W-4P-2m-FAB	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50110273	K-D M8W-4P-10m-FAB	Connector, M8, angled, female	4-pin	10,000 mm	PVC
50106152	K-D M8A-4P-2m-FAB	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50106153	K-D M8A-4P-5m-FAB	Connector, M8, axial, female	4-pin	5,000 mm	PVC
50110274	K-D M8A-4P-10m-FAB	Connector, M8, axial, female	4-pin	10,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50116817	BTU 053M.5F-D12-A090	Mounting system	Screw type	For 12 mm rod	Stainless steel

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50104130	MTKS 20x40.1	Rectangular	17 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

Reflective tapes for laser and clear-glass applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50123899	REF 6-A-9x9	Rectangular	9 mm x 9 mm	Self-adhesive	Plastic
50123861	REF 6-A-14x45	Rectangular	15 mm x 45 mm	Self-adhesive	Plastic
50110192	REF 6-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

Reflectors for the pharmaceutical industry

Part no.	Part description	Design	Reflective surface	Fastening	Material	Compatibility of materials
50106961	MTKS 14x23.P	Rectangular	11 mm x 21 mm	Through-hole mounting, adhesive	Plastic	ECOLAB
50106960	TKS 20x40.P	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic	Alcohol, H2O2, ECOLAB
50136383	TKS 40x60.Chem	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic	Alcohol, H2O2, ECOLAB
50106957	TKS 40x60.P	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic	ECOLAB

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further reflectors can be found on our website

/// 55 series

This stainless steel sensor series show their strength particularly in the wet areas of your production line. With the innovative WASH-DOWN design, it is possible to thoroughly clean the entire system with all common cleaning agents and processes. The non-diffusive and chemically-stable materials prevent bacterial carry-overs and ensure the functional capability of the systems for years to come. The fact that their fastening systems are compatible to those of the standard series makes integration easier.

Direct access to the online product selector at **www.leuze.com/en/br55**

Throughbeam photoelectric sensors

Stainless steel throughbeam photoelectric sensors in the WASH-DOWN design with standard hole pattern for use in wet areas. Also available as version for the detection of highly transparent media.

LSR 55

Models with 3 different connections specially designed for detection of fast events are available for delivery. The enclosed optics design reliably prevents bacterial carry-overs.

Benefits:

- 316L stainless steel housing in WASH-DOWN design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Scratch resistant and non-diffusive plastic front cover
- High switching frequency for detection of fast events
- Version available for the detection of highly transparent media

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50108715	► LSSR 55.8-S8	0 … 8.5 m 0 … 10 m	LED, red	Connector, M8, 4-pin, stainless steel	DC, activation input, WASH-DOWN design
50108721	◄ LSER 55/66-S8	0 … 8.5 m 0 … 10 m		Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, WASH-DOWN design
50135419	► LSSR 55,300-S12 Ex	0 … 8.5 m 0 … 10 m	LED, red	Cable with connector, 300 mm, M12, 4-pin, stainless steel	DC, WASH-DOWN design, activation input
50135420	◄ LSER 55/66,300-S12 Ex	0 … 8.5 m 0 … 10 m		Cable with connector, 300 mm, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, WASH-DOWN design, Ex-protected
50108717	► LSSR 55.8,200-S12	0 … 8.5 m 0 … 10 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, stainless steel	DC, activation input, WASH-DOWN design
50108723	◄ LSER 55/66,200-S12	0 … 8.5 m 0 … 10 m		Cable with connector, 200 mm, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, WASH-DOWN design
50111969	► LSSR 55.8,5000	0 … 8.5 m 0 … 10 m	LED, red	Cable, 5,000 mm, 4-wire	DC, activation input, WASH-DOWN design
50111970	◄ LSER 55/66,5000	0 … 8.5 m 0 … 10 m		Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, WASH-DOWN design
50127771	► LSS 55.H20,200-S12	0 … 64 m 0 … 80 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, stainless steel	Application: detection of aqueous liquids (water sensor), DC, WASH-DOWN design
50127772	◄ LSE 55/44.H20,200-S12	0 … 64 m 0 … 80 m		Cable with connector, 200 mm, M12, 4-pin, stainless steel	Application: detection of aqueous liquids (water sensor); Switching frequency: 350 Hzz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, WASH-DOWN design
50130550	◄ LSE 55/441.H20,200-S12	0 … 64 m 0 … 80 m		Cable with connector, 200 mm, M12, 4-pin, stainless steel	Application: fill-level monitoring; Switching frequency: 350 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, WASH-DOWN design

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

Polarized and unpolarized retro-reflective photoelectric sensors for transport systems, for object positioning as well as autocollimation models for bottle and foil detection are available for delivery. In addition, there are laser devices with higher switching frequency specially designed for the detection of small parts.

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PRK(L) 55

Polarized retro-reflective photoelectric sensors available with red light in V4A/316L and as laser models. The autocollimation function ensures precise detection of even highly-glossy objects.

Benefits:

- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Scratch resistant and non-diffusive plastic front cover
- A²LS – Active Ambient Light Suppression
- High switching frequency for detection of fast events
- Easy adjustment via lockable teach button or teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50105796	PRKL 55/6.22-S8	0 … 2 m 0 … 3 m	Laser, 1, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50105797	PRKL 55/6.22,200-S12	0 … 2 m 0 … 3 m	Laser, 1, red	Cable with connector, 200 mm, M12, 4-pin, stainless steel	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50114072	PRKL 55/6.22,5000	0 … 2 m 0 … 3 m	Laser, 1, red	Cable, 5,000 mm, 4-wire	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50105804	PRK 55/66-S8	0.2 … 5 m 0 … 6 m	LED, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, autocollimation, WASH-DOWN design
50105805	PRK 55/66,200-S12	0.2 … 5 m 0 … 6 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, autocollimation, WASH-DOWN design
50111966	PRK 55/66,5000	0.2 … 5 m 0 … 6 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, WASH-DOWN design
50105792	PRK 55/6.22-S8	0 … 4 m 0 … 5 m	LED, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50105793	PRK 55/6.22,200-S12	0 … 4 m 0 … 5 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50111967	PRK 55/6.22,5000	0 … 4 m 0 … 5 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 55.42 / RKR 55.42

Polarized and unpolarized retro-reflective photoelectric sensors especially for the detection of highly transparent bottles, films (RKR devices) and glass panes (PRK devices) are available.

Benefits:

- Particularly suited for thin, highly transparent films with thickness < 20 µm
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Scratch resistant and non-diffusive plastic front cover
- High switching frequency for detection of fast events
- May also be used with glass reflectors (TG)
- Easy adjustment via lockable teach button or teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50112991	PRK 55/6.42-S8	0 … 3 m 0 … 3.5 m	LED, red	Connector, M8, 4-pin, stainless steel	Application: detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50112992	PRK 55/6D.42-S8	0 … 3 m 0 … 3.5 m	LED, red	Connector, M8, 4-pin, stainless steel	Application: detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50112477	PRK 55/6.42,200-S12	0 … 3 m 0 … 3.5 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, stainless steel	Application: detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50112478	PRK 55/6D.42,200-S12	0 … 3 m 0 … 3.5 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, stainless steel	Application: detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50114071	PRK 55/6.42,5000	0 … 3 m 0 … 3.5 m	LED, red	Cable, 5,000 mm, 4-wire	Application: detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50105794	RKR 55/6.42-S8	0 … 1.5 m 0 … 1.8 m	LED, red	Connector, M8, 4-pin, stainless steel	Application: detection of highly transparent films and glass panes; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design
50105795	RKR 55/6.42,200-S12	0 … 1.5 m 0 … 1.8 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, stainless steel	Application: detection of highly transparent films and glass panes; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, autocollimation, teach input, WASH-DOWN design

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Diffuse sensors with background suppression

These diffuse sensors with precise adjustment via multiturn potentiometer are designed for particularly reliable switching and can be used on nearly any background. Other models are optimized for highly-glossy and structured objects as well as the detection of grids and gaps.

HRTL 55 / HRTR 55

Depending on the design, these sensors offer a large range or small light spots for the reliable detection of even glossy, structured objects. Models with elongated light spot for transparent objects or objects with openings are also available for delivery. A model with V-optics for polished object surfaces is also available.

Benefits:

- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Scratch resistant and non-diffusive plastic front cover
- Exact range adjustment via 8-turn potentiometer
- Very good black/white behavior and reliable switching, even on glossy objects and objects with colored structure
- Small, homogeneous light spot for detecting small parts
- A^2LS – Active Ambient Light Suppression
- High switching frequency for detection of fast events

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50107496	HRTR 55/66-XL-S8	0.005 … 0.1 m 0.005 … 0.1 m	Laser, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, extra long light spot (XL), WASH-DOWN design
50115204	HRTL 55/66,200-S12	0.015 … 0.4 m 0.015 … 0.4 m	Laser, 1, red	Connector, M12, 4-pin, stainless steel	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, WASH-DOWN design
50115206	HRTL 55/66-S8	0.015 … 0.4 m 0.015 … 0.4 m	Laser, 1, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, WASH-DOWN design
50115205	HRTL 55/66,5000	0.015 … 0.4 m 0.015 … 0.4 m	Laser, 1, red	Cable, 5,000 mm, 4-wire	Switching frequency: 2,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, WASH-DOWN design
50107484	HRTR 55/66-S8	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, WASH-DOWN design
50107492	HRTR 55/66,200-S12	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, WASH-DOWN design
50111968	HRTR 55/66,5000	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, WASH-DOWN design
50107493	HRTR 55/66-S-S8	0.005 … 0.2 m 0.005 … 0.2 m	LED, red	Connector, M8, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, small light spot (S), WASH-DOWN design
50107495	HRTR 55/66-S,200-S12	0.005 … 0.2 m 0.005 … 0.2 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, small light spot (S), WASH-DOWN design
50114069	HRTR 55/66-S,5000	0.005 … 0.2 m 0.005 … 0.2 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, WASH-DOWN design
50120623	HRTR 55/66-V,200-S12	0.015 … 0.1 m 0.015 … 0.1 m	LED, red	Connector, 200 mm, M12, 4-pin, stainless steel	Application: detection of high-gloss or polished surfaces; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, V-optics, WASH-DOWN design
50107498	HRTR 55/66-XL,200-S12	0.005 … 0.1 m 0.005 … 0.1 m	LED, red	Connector, 200 mm, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, extra long light spot (XL), WASH-DOWN design
50117199	HRTR 55/22-XL,5000	0.005 … 0.1 m 0.005 … 0.1 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, multiturn potentiometer, extra long light spot (XL), WASH-DOWN design
50116828	HRTR 55/44-XL,5000	0.005 … 0.1 m 0.005 … 0.1 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, extra long light spot (XL), WASH-DOWN design
50114070	HRTR 55/66-XL,5000	0.005 … 0.1 m 0.005 … 0.1 m	LED, red	Cable, 5,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, extra long light spot (XL), WASH-DOWN design
50128811	HRT 55/44,200-S12	0.005 … 0.6 m 0.005 … 0.6 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, WASH-DOWN design

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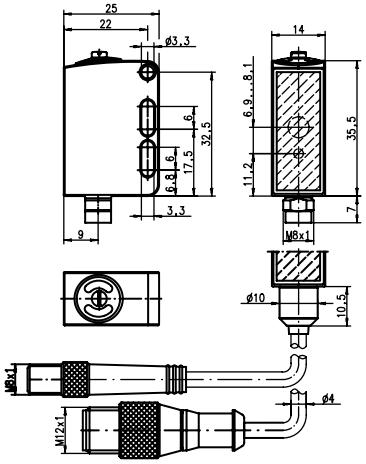
Dimensioned drawings: 55 series



55 series

ACCESSORIES: 55 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50106154	K-D M8W-4P-2m-FAB	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50106155	K-D M8W-4P-5m-FAB	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50106152	K-D M8A-4P-2m-FAB	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50106153	K-D M8A-4P-5m-FAB	Connector, M8, axial, female	4-pin	5,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50040269	BT 25	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117256	BTU 200M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50104130	MTKS 20x40.1	Rectangular	17 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

Reflective tapes for laser and clear-glass applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50123899	REF 6-A-9x9	Rectangular	9 mm x 9 mm	Self-adhesive	Plastic
50123861	REF 6-A-14x45	Rectangular	15 mm x 45 mm	Self-adhesive	Plastic
50110192	REF 6-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

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/// 95 series

Series 95 is available as throughbeam photoelectric sensors, retro-reflective photoelectric sensors and diffuse sensors in versions used for PET, film and glass detection. Moreover, the sturdy housing with degree of protection IP 67 / IP 69K and the A²LS active ambient light suppression facilitate especially reliable detection, even in rough industrial environments.

Direct access to the online product selector at **www.leuze.com/en/br95**

Throughbeam photoelectric sensors

Throughbeam photoelectric sensors with glass optics and high function reserve using visible red light or infrared light.

LS 95

Sturdy throughbeam photoelectric sensors with high function reserve using visible red light or infrared light. The series has complementary switching outputs for light/dark switching as a control function.

Benefits:

- Activation input and warning output
- Sensitivity adjustment via multiturn potentiometer
- Complementary switching outputs for light/dark switching or as a control function

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50034509	► LSR 95/2.8 SE-L.1	0 … 12 m 0 … 18 m	LED, red	Connector, M12, 4-pin, stainless steel	DC, activation input
50034510	◄ ILSR 95/44 E-L.1	0 … 12 m 0 … 18 m		Connector, M12, 5-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Digital switching output 3: transistor, PNP, U_B switching, DC, warning output
50026835	► LS 95/2.8 SE-L.1	0 … 12 m 0 … 20 m	LED, infrared	Connector, M12, 4-pin, stainless steel	DC, activation input
50026836	◄ ILS 95/44 E-L.1	0 … 12 m 0 … 20 m		Connector, M12, 5-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Digital switching output 3: transistor, PNP, U_B switching, DC, warning output

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

These retro-reflective photoelectric sensors with glass optics are available with visible red light or infrared light.

(I)PRK 95

Reliable retro-reflective photoelectric sensors with function reserves for high system availability. The sensitivity adjustment is performed via multiturn potentiometer.

Benefits:

- With autocollimation principle
- Sensitivity adjustment via multiturn potentiometer
- Activation input and warning output
- Version with focus at 100 mm

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50034512	IPRK 95/44 L.5	0.15 … 6 m 0.15 … 9 m	LED, red	Connector, M12, 5-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Digital switching output 3: transistor, PNP, U_B switching, DC, multiturn potentiometer, warning output
50034511	PRK 95/44 L	0 … 6 m 0 … 6 m	LED, red	Connector, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, autocollimation
50022680	IPRK 95/44 L.2	0 … 4.2 m 0 … 6 m	LED, red	Connector, M12, 5-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Digital switching output 3: transistor, PNP, U_B switching, DC, autocollimation, warning output
50102613	IPRK 95/44 L.21	0 … 4.2 m 0 … 6 m	LED, red	Connector, M12, 5-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Digital switching output 3: transistor, PNP, U_B switching, DC, multiturn potentiometer, autocollimation, warning output
50027993	PRK 95/4 L.2	0 … 3.4 m 0 … 5 m	LED, red	Connector, M12, 4-pin, stainless steel	Switching frequency: 200 Hz; Digital switching output 1: transistor, PNP, light switching, DC, autocollimation
50022681	IPRK 95/44 L.3	0 … 0.3 m 0 … 0.3 m	LED, red	Connector, M12, 5-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Digital switching output 3: transistor, PNP, U_B switching, DC, autocollimation, warning output, small light spot (S)

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 95.4

Retro-reflective photoelectric sensors for reliable detection of transparent media (e. g. clear glass, PET, film)

Benefits:

- User controlled sensitivity adjustment for transparent objects
- Autocollimation principle for transparent media
- Activation input and warning output

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50025609	PRK 95/44 L.4	0 … 1.8 m 0 … 3 m	LED, red	Connector, M12, 4-pin, stainless steel	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, autocollimation
50027095	PRK 95/A L.4	0 … 1.8 m 0 … 3 m	LED, red	Connector, M12, 4-pin, stainless steel	Application: detection of highly transparent bottles, detection of highly transparent films and glass panes, multiturn potentiometer, autocollimation, AS-Interface IO

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic diffuse sensor

Diffuse sensors are transmitter and receiver in one and react to the light reflected by the object to be detected, and therefore do not need a separate reflector. The switching distance possible is therefore dependent on the reflection properties of the object.

IRK(R) 95 / RKR 95

Diffuse sensors using red light or infrared light with operating range adjustable via potentiometer. The exact adjustment is performed via multiturn potentiometer.

Benefits:

- Very good black/white behavior
- Exact adjustment via multiturn potentiometer
- Warning output
- PNP outputs for light/dark switching

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50025612	IRKR 95/44-250 L	0.01 … 0.25 m 0.01 … 0.4 m	LED, red	Connector, M12, 5-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching; Digital switching output 3: transistor, PNP, U_B switching, DC, multiturn potentiometer, warning output

Diffuse sensors with background suppression

These sturdy diffuse sensors with adjustable background suppression are available with visible red light or infrared light. They are suited for many applications.

FRK(R) 95

These diffuse sensors feature a very good black/white behavior and are particularly well-suited for glossy surfaces.

Benefits:

- Sensor with adjustable background suppression using visible red light or infrared light
- Very good black/white behavior
- Optimized for glossy/inclined surfaces
- Models with focused light beam
- NPN/PNP outputs for light/dark switching

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50034514	FRKR 95/44-350 L	0.005 … 0.35 m 0.005 … 0.5 m	LED, red	Connector, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50025610	FRKR 95/44-150 L	0.012 … 0.15 m 0.012 … 0.19 m	LED, red	Connector, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50034515	FRK 95/44-350 L	0.005 … 0.35 m 0.005 … 0.5 m	LED, infrared	Connector, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50019925	FRK 95/44-150 L	0.012 … 0.15 m 0.012 … 0.23 m	LED, infrared	Connector, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer

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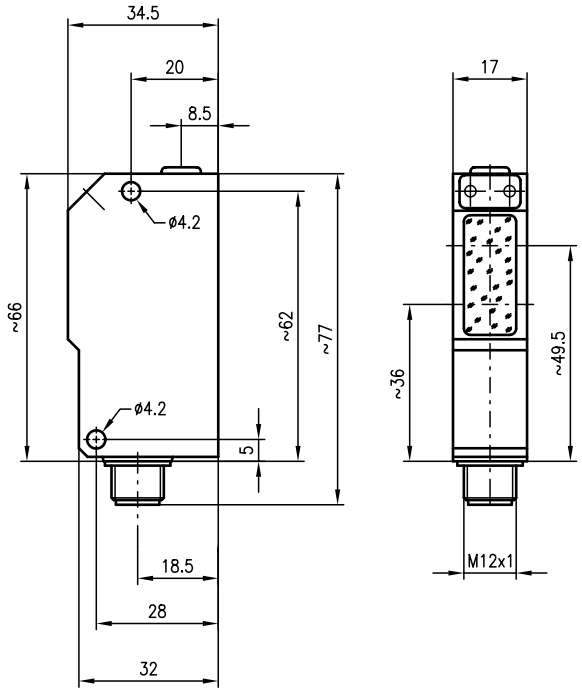
Dimensioned drawings: 95 series



95 series

ACCESSORIES: 95 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50020833	BT 95	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50022814	TKS 50X50	Rectangular	47 mm x 48 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50106119	REF 4-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// 96 series

Regardless of operating principle, regardless of whether metal or plastic housing, regardless of whether DC or AC supply – the sensors of this series are all-rounders. With their large optical surface, IP 67 or IP 69K protection class and optional optics heating, they will win you over with their reliable detection with high function reserves, large operating ranges and a multitude of options under rough environmental conditions.

Direct access to the online product selector at **www.leuze.com/en/br96**

Throughbeam photoelectric sensors

Throughbeam photoelectric sensors with particularly high function reserve using visible red light or infrared light and numerous options.

LS 96

Sturdy throughbeam photoelectric sensors with high function reserve using visible red light or infrared light for standard applications. Models with optics heatings are also available for delivery.

Benefits:

- Complementary outputs for standard applications and a wide range of input and output variants for optimal adaptation to the application
- Versatile options with warning output, activation input and switching delay
- Models with optics heating for use at low temperatures

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50031574	► LSS 96M-120W-43	0 … 30 m 0 … 39 m	LED, red	Connector, M12, 4-pin, metal	DC, wide angle version
50031575	◄ LSE 96M/P-181W-41	0 … 30 m 0 … 39 m		Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, wide angle version
50082040	► LSS 96M-180W-44	0 … 30 m 0 … 39 m	LED, red	Connector, M12, 4-pin, metal	AS-Interface IO, wide angle version
50082039	◄ LSE 96M/A-182W-44	0 … 30 m 0 … 39 m		Connector, M12, 4-pin, metal	Switching frequency: 500 Hz, AS-Interface IO, wide angle version
50032129	► LSS 96M-1206-43	0 … 30 m 0 … 39 m	LED, red	Connector, M12, 4-pin, metal	DC, heating
50025197	◄ LSE 96M/P-1170-42	0 … 30 m 0 … 39 m		Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, light switching, DC, 270 ° potentiometer, warning output, time function
50032128	◄ LSE 96M/P-1816-41	0 … 30 m 0 … 39 m		Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, heating
50080657	► LSS 96K-1213-24	0 … 30 m 0 … 39 m	LED, red	Terminal, 3-pin	DC, activation input
50030269	◄ LSE 96K/P-1140-21	0 … 30 m 0 … 39 m		Terminal, 4-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50032004	► LSS 96M-175W-26	0 … 30 m 0 … 39 m	LED, red	Terminal, 2-pin	AC/DC, wide angle version
50032003	◄ LSE 96M/R-176W-25	0 … 30 m 0 … 39 m		Terminal, 5-pin	Switching frequency: 20 Hz; Digital switching output 1: relay, NC/NO, light switching, AC/DC, 270 ° potentiometer, wide angle version

► transmitter / ◄ receiver

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Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50025217	► LSS 96M-1200-23	0 … 30 m 0 … 39 m	LED, red	Terminal, 2-pin	DC
50025195	◄ LSE 96M/P-1170-22	0 … 30 m 0 … 39 m		Terminal, 4-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, light switching, DC, 270 ° potentiometer, warning output, time function
50103290	► LSS 96M-1090-43	0 … 120 m 0 … 150 m	LED, infrared	Connector, M12, 4-pin, metal	DC, activation input, heating
50103291	◄ LSE 96M/P-3012-41	0 … 120 m 0 … 150 m		Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, heating
50106871	► LSS 96M-1093-24	0 … 120 m 0 … 150 m	LED, infrared	Terminal, 3-pin	DC, heating, activation input
50033328	◄ LSE 96M/P-3012-21	0 … 120 m 0 … 150 m		Terminal, 4-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, heating
50025228	► LSS 96M-1070-43		LED, infrared	Connector, M12, 4-pin, metal	DC
50034128	◄ LSE 96M/P-3010-41	0 … 120 m 0 … 150 m		Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50025205	◄ LSE 96M/P-1040-42	0 … 50 m 0 … 65 m		Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, light switching, DC, 270 ° potentiometer, warning output, time function
50025223	► LSS 96M-1090-24		LED, infrared	Terminal, 3-pin	DC, activation input, heating
50033328	◄ LSE 96M/P-3012-21	0 … 120 m 0 … 150 m		Terminal, 4-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, heating
50025201	◄ LSE 96M/P-1130-22	0 … 50 m 0 … 65 m		Terminal, 4-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, light switching, DC, 270 ° potentiometer, activation input, warning output, heating, time function
50025225	► LSS 96M-1070-23		LED, infrared	Terminal, 2-pin	DC
50082296	◄ LSE 96M/P-3010-21	0 … 120 m 0 … 150 m		Terminal, 4-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50031295	◄ LSE 96M/N-1010-27	0 … 50 m 0 … 65 m		Terminal, 4-pin	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 270 ° potentiometer
50080081	► LSS 96M-1350-26		LED, infrared	Terminal, 2-pin	AC/DC
50031651	◄ LSE 96M/R-3310-25	0 … 120 m 0 … 150 m		Terminal, 5-pin	Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching; Switching output 2: relay, dark switching, AC/DC, 270 ° potentiometer
50080080	◄ LSE 96M/R-1310-25	0 … 50 m 0 … 65 m		Terminal, 5-pin	Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching, AC/DC, 270 ° potentiometer

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

Polarized and unpolarized retro-reflective photoelectric sensors with particularly high function reserve using visible red light and other options.

(P)RK 96

Polarized and unpolarized retro-reflective photoelectric sensors with large operating range using visible red light. Extensive input/output models for optimal adaptation to the application. The product range also contains sensors for detection of transparent objects (e. g. clear glass, PET, film).

Benefits:

- Complementary outputs for standard applications and a wide range of input and output variants for optimal adaptation to the application
- Connection via comfortable terminal compartment up to 1.5 mm² or metal M12 connector
- Multiple options with warning output, activation input, switching delays and optics heating for use at low temperatures

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50041042	PRK 96K/P-3368-41	0.3 … 26 m 0.1 … 28 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50035351	PRK 96K/R-3428-25	0.3 … 20 m 0.1 … 24 m	LED, red	Terminal, 5-pin	Switching frequency: 20 Hz; Digital switching output 1: relay, NC/NO, light switching, AC/DC, 270 ° potentiometer
50107216	PRK 96K/R-3428.1-25	0.3 … 20 m 0.1 … 24 m	LED, red	Terminal, 5-pin	Switching frequency: 20 Hz; Digital switching output 1: relay, NC/NO, light/dark reversible, AC/DC, 270 ° potentiometer
50082067	PRK 96M/A-3410-44	0.3 … 15 m 0.1 … 18 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 1,000 Hz; 270 ° potentiometer, AS-Interface IO
50061452	PRK 96M/P-3380-41	0.3 … 15 m 0.1 … 18 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, time function
50082066	PRK 96M/R-3420-25	0.3 … 15 m 0.1 … 18 m	LED, red	Terminal, 5-pin	Switching frequency: 20 Hz; Digital switching output 1: relay, NC/NO, light switching, AC/DC, 270 ° potentiometer
50061111	PRK 96M/R-3430-25	0.3 … 15 m 0.1 … 18 m	LED, red	Terminal, 5-pin	Switching frequency: 20 Hz; Digital switching output 1: relay, NC/NO, light switching, AC/DC, 270 ° potentiometer
50102379	PRK 96M/N-3366-27	0.3 … 15 m 0.1 … 18 m	LED, red	Terminal, 4-pin	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 270 ° potentiometer, heating
50082065	PRK 96M/P-3360-21	0.3 … 15 m 0.1 … 18 m	LED, red	Terminal, 4-pin	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50081325	PRK 96K/N-1380-46	0 … 8 m 0.1 … 10 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 270 ° potentiometer, time function

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50082092	PRK 96M/P-1361-47	0.3 … 8 m 0.1 … 10 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50104279	PRK 96M/P-1361.1-47	0.3 … 8 m 0.1 … 10 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer
50080477	PRK 96M/P-1362-47	0.3 … 8 m 0.1 … 10 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, activation input, heating
50025186	PRK 96M/P-1370-42	0.3 … 8 m 0.1 … 10 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, light switching, DC, 270 ° potentiometer
50031549	PRK 96M/P-1400-42	0.3 … 8 m 0.1 … 10 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, 270 ° potentiometer, warning output, heating, time function
50025165	PRK 96K/P-1360-41	0.3 … 8 m 0.1 … 10 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50103216	PRK 96K/P-1360.1-41	0.3 … 8 m 0.1 … 10 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer
50025166	PRK 96K/P-1380-41	0.3 … 8 m 0.1 … 10 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, time function
50025167	PRK 96K/R-1420-25	0.3 … 8 m 0.1 … 10 m	LED, red	Terminal, 5-pin	Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching, AC/DC, 270 ° potentiometer
50105587	PRK 96K/R-1420.1-25	0.3 … 8 m 0.1 … 10 m	LED, red	Terminal, 5-pin	Switching frequency: 20 Hz Switching output 1: relay, NC/NO, light/dark reversible, AC/DC, 270 ° potentiometer
50025168	PRK 96K/R-1430-25	0.3 … 8 m 0.1 … 10 m	LED, red	Terminal, 5-pin	Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching, AC/DC, 270 ° potentiometer
50025163	PRK 96K/P-1360-21	0.3 … 8 m 0.1 … 10 m	LED, red	Terminal, 4-pin	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50080476	PRK 96K/P-1361-29	0.3 … 8 m 0.1 … 10 m	LED, red	Terminal, 4-pin	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, activation input
50025182	PRK 96M/P-1370-22	0.3 … 8 m 0.1 … 10 m	LED, red	Terminal, 4-pin	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, light switching, DC, multiturn potentiometer, 270 ° potentiometer
50109208	PRK 96M/P-1375-22	0.3 … 8 m 0.1 … 10 m	LED, red	Terminal, 4-pin	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50025178	PRK 96M/P-1400-22	0.3 … 8 m 0.1 … 10 m	LED, red	Terminal, 4-pin	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, 270 ° potentiometer, warning output, heating, time function
50105622	PRK 96M/P-1832-41	0 … 7 m 0 … 8.5 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50082060	PRK 96M/P-2838-28	0 … 7 m 0 … 8.5 m	LED, red	Terminal, 4-pin	Application: detection of stretch-wrapped objects, positioning, zero distance; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50030648	RK 96M/P-1440-21	0.3 … 15 m 0.1 … 18 m	LED, infrared	Terminal, 4-pin	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 96-183x / PRK 96-185x

Polarized retro-reflective photoelectric sensors with large operating range and red light especially for the detection of highly transparent films.

Benefits:

- Autocollimation principle allows use at zero distance and provides a constant function reserve across the entire operating range
- Visible red light
- Complementary outputs, sensitivity adjustment and delay before start-up for optimal adaptation to the application
- Connection via comfortable terminal compartment up to 1.5 mm² or metal M12 connector
- Preset sensitivities for differentiation between brown/green glass as well as clear glass

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50080760	PRK 96M/P-1838-41	0 … 7 m 0 … 8.5 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of stretch-wrapped objects, detection of highly transparent films and glass panes, detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50029881	PRK 96M/R-1858-25	0 … 7 m 0 … 8.5 m	LED, red	Terminal, 5-pin	Application: detection of stretch-wrapped objects, detection of highly transparent films and glass panes, detection of highly transparent bottles; Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching, AC/DC, multiturn potentiometer, time function
50029880	PRK 96M/P-1838-21	0 … 7 m 0 … 8.5 m	LED, red	Terminal, 3-pin	Application: detection of stretch-wrapped objects, detection of highly transparent films and glass panes, detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50080469	PRK 96M/P-1830-41	0 … 1.5 m 0 … 1.85 m	LED, red	Connector, M12, 4-pin, metal	Application: detection of stretch-wrapped objects, detection of highly transparent films and glass panes, detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50080470	PRK 96M/R-1850-25	0 … 1.5 m 0 … 1.85 m	LED, red	Terminal, 5-pin	Application: detection of stretch-wrapped objects, detection of highly transparent films and glass panes, detection of highly transparent bottles; Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching, AC/DC, multiturn potentiometer, time function
50028975	PRK 96M/P-1830-21	0 … 1.5 m 0 … 1.85 m	LED, red	Terminal, 3-pin	Application: detection of stretch-wrapped objects, detection of highly transparent films and glass panes, detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

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Energetic diffuse sensor

Energetic diffuse sensors with large range.

RT 96

Reliable diffuse sensors with potentiometer for range adjustment for the minimal short range.

Benefits:

- Operating range adjustment via potentiometer
- Complementary switching outputs and delay before start-up for optimal adaptation to the application
- Minimal short range
- Connection via M12 connector or terminal compartment

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50041597	RT 96M/P-1474-800-42	0.02 … 0.8 m 0.02 … 1.2 m	LED, infrared	Connector, M12, 5-pin, metal	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer, warning output, time function
50041598	RT 96M/R-1574-800-25	0.02 … 0.8 m 0.02 … 1.2 m	LED, infrared	Terminal, 5-pin	Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching; Switching output 2: relay, dark switching, AC/DC, 270 ° potentiometer, time function

Diffuse sensors with background suppression

Powerful diffuse sensors with background suppression for particularly large operating range.

HRT 96

Diffuse sensors with adjustable background suppression using visible red light and infrared light with versatile options such as switching delays, activation input and optics heating.

Benefits:

- Complementary switching outputs, exact mechanical range adjustment and delay before start-up for optimal adaptation to the application
- Connection via comfortable terminal compartment up to 1.5 mm² or metal M12 connector
- Multiple options with switching delays, activation input and optics heating for use at low temperatures
- Up to 3 teachable programmable switching points
- Arbitrary ranges teachable

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50038471	HRT 96K/P-1631-800-47	0.1 … 0.8 m 0.1 … 1.2 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, activation input
50080048	HRT 96M/A-1670-800-44	0.1 … 0.8 m 0.1 … 1.2 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 300 Hz, multiturn potentiometer, AS-Interface IO
50080047	HRT 96M/P-1630-800-41	0.1 … 0.8 m 0.1 … 1.2 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50032127	HRT 96M/P-1636-800-41	0.1 … 0.8 m 0.1 … 1.2 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, heating
50025126	HRT 96M/P-1640-800-41	0.1 … 0.8 m 0.1 … 1.2 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, time function
50080242	HRT 96K/P-1630-800-41	0.1 … 0.8 m 0.1 … 1.2 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50081464	HRT 96K/P-1640-800-41	0.1 … 0.8 m 0.1 … 1.2 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, time function
50080327	HRT 96K/P-1630-800-21	0.1 … 0.8 m 0.1 … 1.2 m	LED, red	Terminal, 4-pin	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50025124	HRT 96M/P-1640-800-21	0.1 … 0.8 m 0.1 … 1.2 m	LED, red	Terminal, 4-pin	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, time function
50060857	HRT 96M/P-1600-2000-42	0.1 … 2 m 0.1 … 2.5 m	LED, infrared	Connector, M12, 4-pin, metal	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, light switching, DC, multiturn potentiometer, time function
50060858	HRT 96M/P-3604-2000-42	0.1 … 2 m 0.1 … 2.5 m	LED, infrared	Connector, M12, 4-pin, metal	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, light switching, DC, multiturn potentiometer, time function, 2 independent switching points
50113909	HRT 96M/P-1620-1800-41	0.1 … 1.8 m 0.1 … 2 m	LED, infrared	Connector, M12, 4-pin, metal	Switching frequency: 100 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, light switching (PNP)/dark switching (NPN), DC, multiturn potentiometer, heating
50105667	HRT 96K/P-1600-1800-41	0.1 … 1.8 m 0.1 … 2 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50025112	HRT 96M/A-1660-1200-44	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Connector, M12, 4-pin, metal	Switching frequency: 300 Hz, multiturn potentiometer, AS-Interface IO
50025118	HRT 96M/P-1610-1200-41	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Connector, M12, 4-pin, metal	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, time function
50061102	HRT 96M/P-1620-1200-41	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Connector, M12, 4-pin, metal	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, heating, time function
50025133	HRT 96K/P-1600-1200-41	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50103217	HRT 96K/P-1600.1-1200-41	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, multiturn potentiometer
50103090	HRT 96K/P-1607-1200-49	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50025132	HRT 96K/R-1680-1200-25	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Terminal, 5-pin	Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching, AC/DC, multiturn potentiometer
50025131	HRT 96K/R-1690-1200-25	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Terminal, 5-pin	Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching, AC/DC, multiturn potentiometer, time function
50080076	HRT 96M/R-1680-1200-25	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Terminal, 5-pin	Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching, AC/DC, multiturn potentiometer
50080075	HRT 96M/R-1690-1200-25	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Terminal, 5-pin	Switching frequency: 20 Hz; Switching output 1: relay, NC/NO, light switching, AC/DC, multiturn potentiometer
50025135	HRT 96K/P-1600-1200-21	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Terminal, 4-pin	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer
50040358	HRT 96M/N-1606-1200-27	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Terminal, 4-pin	Switching frequency: 300 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, multiturn potentiometer, heating
50025116	HRT 96M/P-1610-1200-21	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Terminal, 4-pin	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, time function
50025114	HRT 96M/P-1620-1200-21	0.1 … 1.2 m 0.1 … 1.8 m	LED, infrared	Terminal, 4-pin	Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, multiturn potentiometer, heating, time function

HRT(I)L 96B

Laser diffuse sensors with large detection range for universal application (visible red light or infrared light). The time lock prevents inadvertent changes to switching points.

Benefits:

- Light propagation time measurement makes use possible under difficult environmental conditions (brightness, light, interfering contours)
- Extremely simple operation, teachable switching points and teach input
- Time lock prevents unintentional changing of the switching points
- Optimized for positioning applications and reliable object detection (e. g. compartment occupation check, shelf positioning, collision protection)
- Diagnostics function
- Sensors in laser class 1 and 2 available

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50115690	HRTL 96B M/66.04S-S12	0.15 … 25 m 0.1 … 30 m	Laser, 2, red	Connector, M12, 5-pin, metal	Application: only detects reflective tape; Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, dark switching; Digital switching output 2: transistor, push-pull, dark switching, optimized for use with reflective tape, DC, teach button, 2 independent switching points, small light spot (S)
50112862	HRTL 96B M/66.9.03S-S12	0.15 … 25 m 0.1 … 30 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching; Digital switching output 2: transistor, push-pull, light switching, DC, teach button, 2 independent switching points, deactivation input, small light spot (S), optimized for large operating ranges
50129077	HRTL 96B M/6.09.06S-S12	0.1 … 12 m 0.05 … 12.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, teach button, small light spot (S), deactivation input
50111815	HRTL 96B M/6.4.02S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching, DC, teach button, small light spot (S)
50110990	HRTL 96B M/6.9S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, deactivation input, small light spot (S)
50112803	HRTL 96B M/6.49.02S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching, DC, teach button, deactivation input, small light spot (S), window teach
50127550	HRTL 96B M/66.01-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, teach button, extra long light spot (XL), 2 independent switching points
50108889	HRTL 96B M/66.01S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 100 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, teach button, 2 independent switching points, small light spot (S)
50113800	HRTL 96B M/66.02S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, dark switching; Digital switching output 2: transistor, push-pull, dark switching, DC, teach button, 2 independent switching points, small light spot (S)
50112804	HRTL 96B M/666.01S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching; Digital switching output 2: transistor, push-pull, light switching; Digital switching output 3: transistor, push-pull, light switching, DC, teach button, 3 independent switching points, small light spot (S)
50111208	HRTL 96B M/C66.01S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 50 Hz; Digital switching output 1: transistor, push-pull, light switching; Digital switching output 2: transistor, push-pull, light switching, DC, teach button, 2 independent switching points, small light spot (S)

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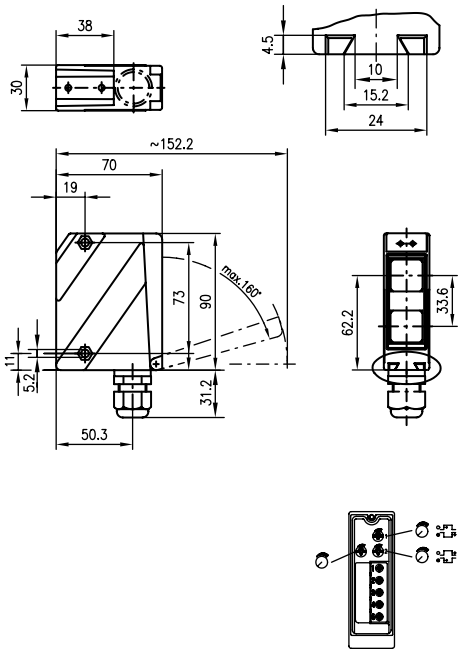
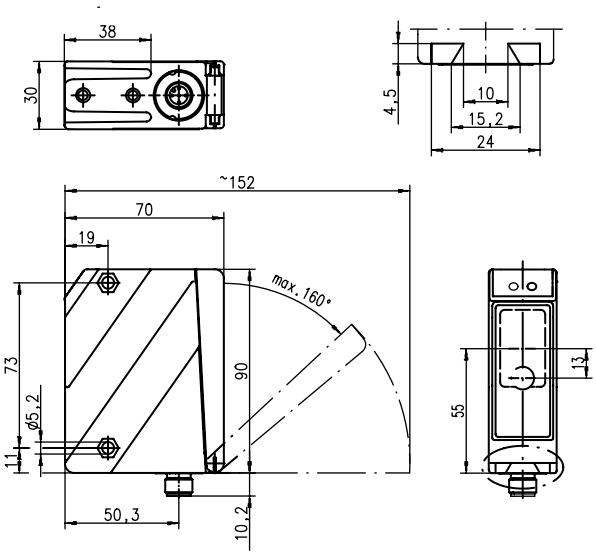
Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50114306	HRTL 96B M/C66.03S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 50 Hz; Digital switching output 1: transistor, push-pull, dark switching; Digital switching output 2: transistor, push-pull, dark switching, DC, teach button, 2 independent switching points, small light spot (S)
50110952	HRTL 96B M/V66.01S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 2, red	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching; Digital switching output 2: transistor, push-pull, light switching, DC, teach button, 2 independent switching points, small light spot (S)
50116678	HRTL 96B M/C66.01.C1S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 1, red	Connector, M12, 5-pin, metal	Switching frequency: 50 Hz; Digital switching output 1: transistor, push-pull, light switching; Digital switching output 2: transistor, push-pull, light switching, DC, teach button, 2 independent switching points, small light spot (S)
50125111	HRTIL 96BM/66.04S-S12	0.15 … 25 m 0.1 … 30 m	Laser, 1, infrared	Connector, M12, 5-pin, metal	Application: only detects reflective tape; Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, dark switching; Digital switching output 2: transistor, push-pull, dark switching, optimized for use with reflective tape, DC, teach button, 2 independent switching points, small light spot (S)
50135685	HRTIL 96BM/6.49.02S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 1, infrared	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching, DC, teach button, deactivation input, small light spot (S), window teach
50115016	HRTIL 96B M/66.01S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 1, infrared	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching; Digital switching output 2: transistor, push-pull, light switching, DC, teach button, 2 independent switching points, small light spot (S)
50117920	HRTIL 96B M/66.03S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 1, infrared	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, dark switching; Digital switching output 2: transistor, push-pull, dark switching, DC, teach button, 2 independent switching points, small light spot (S)
50115015	HRTIL 96B M/C66.01S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 1, infrared	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching; Digital switching output 2: transistor, push-pull, light switching, DC, teach button, 2 independent switching points, small light spot (S)
50126559	HRTIL 96BM/C66.02S-S12	0.1 … 6 m 0.05 … 6.5 m	Laser, 1, infrared	Connector, M12, 5-pin, metal	Switching frequency: 10 Hz; Digital switching output 1: transistor, push-pull, light switching; Digital switching output 2: transistor, push-pull, dark switching, DC, teach button, small light spot (S), 2 independent switching points

Dimensioned drawings: 96 series



96 and 96B series, cable gland



96 and 96B series, M12 connector

ACCESSORIES: 96 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50025570	BT 96	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50082084	BT 450.1-96	Mounting system	Screw type	For 10 mm rod	Metal
50026204	UMS 96	Mounting system	Clampable	For 10 mm rod, for 12 mm rod, 14 mm rod, 16 mm rod	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50022814	TKS 50X50	Rectangular	47 mm x 48 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50106119	REF 4-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

Reflective tapes for distance sensors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50111527	REF 7-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

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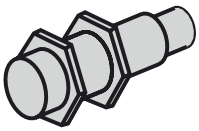
//PHOTOELECTRIC SENSORS/ DIFFUSE SENSORS, CYLINDRICAL

TO KEEP YOUR PROCESS RUNNING SMOOTHLY

The common characteristic of sensors from this area is their cylindrical design. This facilitates extremely simple and fast mounting in the system.

SELECTION TABLE – Cylindrical series

 Series		Dimensions in mm (WxHxD)	Housing material			Operating principle	Typ. operating range limit	Light source			Max. switching frequency	Response time	Special object features		
			Plastic	Metal	Stainless steel			Infrared light	Red light	Laser			Glossy surface (metallic, shrink-wrapped object)	Transparent object (glass, PET, films)	Small part
	BR318	M18x50	●	●		Throughbeam photoelectric sensor	0 … 120 m	●	●	●	5000 Hz	0.1 ms			●
						Retro-reflective photoelectric sensor	0.02 … 15 m		●	●	5000 Hz	0.1 ms			●
						Energetic diffuse sensors	0 … 1000 mm	●	●	●	5000 Hz	0.1 ms			●
						Diff. refl. sensor with backgr. suppr.	1 … 140 mm		●		1000 Hz	0.5 ms			
						Diffuse sensor with fading	0 … 280 mm	●	●		500 Hz	1 ms			
	BR328	M18x46			●	Throughbeam photoelectric sensor	0 … 15 m	●	●		500 Hz	1 ms			
						Retro-reflective photoelectric sensor	0.02 … 6 m		●		500 Hz	1 ms			
						Energetic diffuse sensors	1 … 1000 mm	●	●		500 Hz	1 ms			
						Diffuse sensor with fading	1 … 280 mm	●	●		500 Hz	1 ms			
	BR412	M12x55		●		Throughbeam photoelectric sensor	0 … 8 m		●		500 Hz	1 ms			
						Retro-reflective photoelectric sensor	0.05 … 1.6 m		●		700 Hz	0.7 ms			
						Energetic diffuse sensors	0 … 400 mm		●		700 Hz	0.7 ms			
	BR618	M18x60		●		Throughbeam photoelectric sensor	0 … 12 m	●			500 Hz	1 ms			
						Retro-reflective photoelectric sensor	0 … 7 m		●		500 Hz	1 ms			
						Energetic diffuse sensors	0 … 300 mm	●			500 Hz	1 ms			

/// 318 plastic series

Our 318B series of photoelectric sensors is proof that affordable and functional do not have to be a contradiction in terms. A robust plastic sleeve, reliable detection behavior and the intelligent omni-mount mounting process for M18 hole mounting make these sensors the first choice for standard detection tasks in many areas of application.

Direct access to the online product selector at **www.leuze.com/en/br318-k**

Throughbeam photoelectric sensors

The photoelectric sensors of this series offer a high function reserve and are suited for use in rough, industrial environments.

L318B

The L318B throughbeam photoelectric sensor offers simple alignment with its optimized beam geometry. It is also suitable for the simple detection of flat objects. Deactivation inputs enable testing of the sensor. The simple fine adjustment with omni-mount, the embedded mounting option and variants with axial and angled optics round out the portfolio.

Benefits:

- High function reserve
- Simple alignment by means of optimized beam geometry
- Simple detection of flat objects

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50116853	► LS318B/9D-M12	0 … 10 m 0 … 15 m	LED, red	Connector, M12, 4-pin, plastic	DC, deactivation input
50116845	◄ LE318B/2N-M12	0 … 10 m 0 … 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50116847	◄ LE318B/4P-M12	0 … 10 m 0 … 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50116852	► LS318B/9D	0 … 10 m 0 … 15 m	LED, red	Cable, 2,000 mm, 4-wire	DC, deactivation input
50116844	◄ LE318B/2N	0 … 10 m 0 … 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50116846	◄ LE318B/4P	0 … 10 m 0 … 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50126605	► LS318B.Y1	0 … 9.4 m 0 … 14.2 m	LED, red	Connector, M12, 4-pin, plastic	DC, deactivation input, small light spot (S)
50116845	◄ LE318B/2N-M12	0 … 10 m 0 … 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50116847	◄ LE318B/4P-M12	0 … 10 m 0 … 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50116855	► LS318B.W/9D-M12	0 … 5.5 m 0 … 8 m	LED, red	Connector, M12, 4-pin, plastic	DC, deactivation input, 90 ° angular optics
50116849	◄ LE318B.W/2N-M12	0 … 5.5 m 0 … 8 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 90 ° angular optics
50116851	◄ LE318B.W/4P-M12	0 … 5.5 m 0 … 8 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 90 ° angular optics
50116854	► LS318B.W/9D	0 … 5.5 m 0 … 8 m	LED, red	Cable, 2,000 mm, 4-wire	DC, deactivation input, 90 ° angular optics
50116848	◄ LE318B.W/2N	0 … 5.5 m 0 … 8 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 90 ° angular optics
50116850	◄ LE318B.W/4P	0 … 5.5 m 0 … 8 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 90 ° angular optics
50129507	► LS318BI/9D-M12	0 … 16 m 0 … 23 m	LED, infrared	Connector, M12, 4-pin, plastic	DC, deactivation input
50116845	◄ LE318B/2N-M12	0 … 10 m 0 … 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50116847	◄ LE318B/4P-M12	0 … 10 m 0 … 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50116844	◄ LE318B/2N	0 … 10 m 0 … 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50116846	◄ LE318B/4P	0 … 10 m 0 … 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50132822	► LS318BI/9D	0 … 16 m 0 … 23 m	LED, infrared	Cable, 2,000 mm, 4-wire	DC, deactivation input
50116845	◄ LE318B/2N-M12	0 … 10 m 0 … 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50116847	◄ LE318B/4P-M12	0 … 10 m 0 … 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50116844	◄ LE318B/2N	0 … 10 m 0 … 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50116846	◄ LE318B/4P	0 … 10 m 0 … 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

Through the use of polarized light, these photoelectric sensors can even reliably detect objects with glossy surfaces.

PRK318B

Reliable suppression of direct reflections through polarization filter and optimized beam path for fast commissioning. The simple fine adjustment with omni-mount, the embedded mounting option and variants with axial and angled optics round out the portfolio.

Benefits:

- High function reserve
- Safe suppression of direct reflection due to polarization filter
- Series connection possible (Daisy Chain)

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50116857	PRK318B/2N-M12	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50116859	PRK318B/4P-M12	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50132731	PRK318B/PX-M12	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, dark switching, DC
50116856	PRK318B/2N	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50116858	PRK318B/4P	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50116861	PRK318B.W/2N-M12	0.02 … 4 m 0.02 … 5 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 90 ° angular optics
50116863	PRK318B.W/4P-M12	0.02 … 4 m 0.02 … 5 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 90 ° angular optics
50116860	PRK318B.W/2N	0.02 … 4 m 0.02 … 5 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 90 ° angular optics
50116862	PRK318B.W/4P	0.02 … 4 m 0.02 … 5 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 90 ° angular optics

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

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Energetic diffuse sensor

These sensors perform detection directly on an object and require no reflector. Versions are available that have been optimized for various distances.

ET318B / FT318B

These sensors facilitate robust object detection for homogeneous or similar objects. Through the simple sensitivity adjustment with 2-level teach (object/background), they are particularly flexible in use. The sensors with visible red light feature the A²LS active ambient light suppression and easy alignment through brightly visible brightVision® light spot. Available for high object color independence even with infrared.

Benefits:

- Energetic diffuse reflection sensor with light/dark switching
- Range adjustment via teach-in
- Axial and 90 ° light beam gate for flexible integration
- Simple fine adjustment with omni-mount
- Embedded mounting option
- Full control through green and yellow indicator LEDs and complementary outputs
- Robust plastic housing acc. to IP 67 for industrial application

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122556	FT318B.3/2N-M12	0.001 … 0.215 m 0 … 0.28 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122554	FT318B.3/4P-M12	0.001 … 0.215 m 0 … 0.28 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50122557	FT318B.3/2N	0.001 … 0.215 m 0 … 0.28 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122555	FT318B.3/4P	0.001 … 0.215 m 0 … 0.28 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50122560	ET318B.W3/2N-M12	0.005 … 0.35 m 0.001 … 0.45 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, 90 ° angular optics
50122558	ET318B.W3/4P-M12	0.005 … 0.35 m 0.001 … 0.45 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, 90 ° angular optics
50122561	ET318B.W3/2N	0.005 … 0.35 m 0.001 … 0.45 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, 90 ° angular optics
50122559	ET318B.W3/4P	0.005 … 0.35 m 0.001 … 0.45 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, 90 ° angular optics
50122564	ET318B.3/2N-M12	0.001 … 0.7 m 0 … 1 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122562	ET318B.3/4P-M12	0.001 … 0.7 m 0 … 1 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122565	ET318B.3/2N	0.001 … 0.7 m 0 … 1 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122563	ET318B.3/4P	0.001 … 0.7 m 0 … 1 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122552	FT318B.W3/2N-M12	0.002 … 0.1 m 0 … 0.12 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, 90 ° angular optics
50122550	FT318B.W3/4P-M12	0.002 … 0.1 m 0 … 0.12 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, 90 ° angular optics
50122553	FT318B.W3/2N	0.002 … 0.1 m 0 … 0.12 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, 90 ° angular optics
50122551	FT318B.W3/4P	0.002 … 0.1 m 0 … 0.12 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, 90 ° angular optics
50127997	FT318BI.3/2N-M12	0.001 … 0.215 m 0 … 0.28 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50127996	FT318BI.3/4P-M12	0.001 … 0.215 m 0.001 … 0.28 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50126608	FT318BI.3/2N	0.001 … 0.215 m 0.001 … 0.28 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50126609	FT318BI.3/4P	0.001 … 0.215 m 0.001 … 0.28 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50127999	ET318BI.3/2N-M12	0.001 … 0.7 m 0.001 … 1 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50127998	ET318BI.3/4P-M12	0.001 … 0.7 m 0.001 … 1 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50126606	ET318BI.3/2N	0.001 … 0.7 m 0.001 … 1 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50126607	ET318BI.3/4P	0.001 … 0.7 m 0.001 … 1 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50127929	ET318BI-400F.3/2N	0.001 … 0.4 m 0.001 … 0.4 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, permanently set range
50135286	FT318BI-100F.X/4P-M12	0.001 … 0.1 m 0.001 … 0.1 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, fading, V-optics, permanently set range
50133944	FT318BI.X3/2N-M12	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, V-optics
50133945	FT318BI.X3/4P-M12	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, V-optics

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50133941	FT328I.X3/2N-M12	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, V-optics
50133942	FT328I.X3/4P-M12	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, V-optics
50133270	FT318BI.X3/2N	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Cable, 2,000 mm, 4-wire	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, V-optics
50133943	FT318BI.X3/4P	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Cable, 2,000 mm, 4-wire	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, V-optics
50133271	FT328I.X3/2N	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Cable, 2,000 mm, 4-wire	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, V-optics
50133940	FT328I.X3/4P	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Cable, 2,000 mm, 4-wire	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, V-optics

Diffuse sensors with background suppression

These diffuse reflection sensors with background suppression and highly visible red light spot are well-suited for detection of fast events thanks to their high switching frequency.

HRTR 318

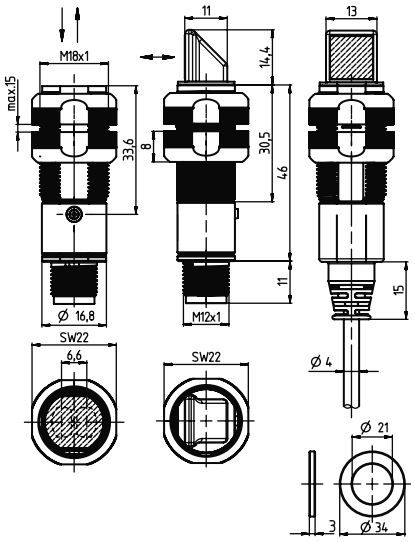
Diffuse sensors with very short, robust housing with straight optics and active ambient light suppression.

Benefits:

- Exact background suppression, electronically adjustable
- Nearly color-independent object detection
- Clearly visible red light spot
- High switching frequency for detection of fast events
- A²LS – Active Ambient Light Suppression
- Very short, robust cylindrical stainless steel or plastic housing with straight optics

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50106085	HRTR 318K/66-120-S12	0.001 … 0.12 m 0.001 … 0.14 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, 270 ° potentiometer
50106089	HRTR 318K/66-120	0.001 … 0.12 m 0.001 … 0.14 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, 270 ° potentiometer

Dimensioned drawings: 318 plastic series



318B series, plastic housing

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ACCESSORIES: 318 PLASTIC SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113548	BT D18M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50117257	BT D21M	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117490	BTU D18M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	Through-hole mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50024127	TK 82.2	Round	79 mm	Through-hole mounting, adhesive	Plastic
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

SMART IS TO THINK **EASY**

Only with the proper accessories is your solution complete.

We place great value on flexible mounting solutions, simple integration through variable connection technology, alignment aids and innovative mounting systems. Pre-configured and pre-mounted systems also facilitate fast and simple commissioning of, e.g., muting systems for applications in safety at work.

Discover our extensive line of accessories on the web at: **www.leuze.com/en/accessories**

/// 318 metal series

The stainless steel metal housing and the range of models make these sensors from the 318 series interesting for all customers who are looking a sensor program with sturdy mounting and metal nuts for challenging applications.

Direct access to the online product selector at **www.leuze.com/en/br318-m**

Throughbeam photoelectric sensors

Throughbeam photoelectric sensors with long operating range in red laser light and straight optics.

LS(L) 318

Throughbeam photoelectric laser sensors in stainless steel housing in cylindrical M18 design.

Benefits:

- Sensitivity adjustment via potentiometer
- Fixed beam geometry, convergent
- Activation input for testing and interlinking of the sensor
- Complementary switching outputs for light/dark switching or as a control function

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50083172	► LSSL 318M-S12		Laser, 1, red	Connector, M12, 4-pin, plastic	DC, 270 ° potentiometer, deactivation input
50083176	◄ LSEL 318M/P-S12	0 … 100 m 0 … 120 m		Connector, M12, 4-pin, plastic	Switching frequency: 5,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50083180	◄ LSEL 318M/P-B5-S12	0 … 15 m 0 … 18 m		Connector, M12, 4-pin, plastic	Switching frequency: 5,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50083171	► LSSL 318M		Laser, 1, red	Cable, 2,000 mm, 4-wire	DC, 270 ° potentiometer, deactivation input
50083175	◄ LSEL 318M/P	0 … 100 m 0 … 120 m		Cable, 2,000 mm, 4-wire	Switching frequency: 5,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50083179	◄ LSEL 318M/P-B5	0 … 15 m 0 … 18 m		Cable, 2,000 mm, 4-wire	Switching frequency: 5,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC

► transmitter / ◄ receiver

Retro-reflective photoelectric sensors

Polarized retro-reflective photoelectric sensors with straight optics and very short construction for application in limited spaces.

PRKL 318

Polarized and unpolarized laser retro-reflective photoelectric sensors in sturdy stainless steel housing in cylindrical M18 design. LED and laser devices are available.

Benefits:

- Sturdy cylindrical stainless steel housing M18x1, degree of protection IP 67 for industrial application
- Sensitivity adjustment via potentiometer
- Fixed beam geometry, convergent
- Complementary switching outputs for light/dark switching or as a control function

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50083184	PRKL 318M/P-S12	0.15 … 11 m 0.12 … 15 m	Laser, 1, red	Connector, M12, 4-pin, plastic	Switching frequency: 5,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer
50083183	PRKL 318M/P	0.15 … 11 m 0.12 … 15 m	Laser, 1, red	Cable, 2,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

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Energetic diffuse sensor

Energetic diffuse reflection sensor with straight optics for application in limited spaces.

RTL 318

Energetic diffuse sensor in cylindrical M18 design.

Benefits:

- Sensitivity adjustment via potentiometer
- Fixed beam geometry, convergent
- Complementary switching outputs for light/dark switching or as a control function

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50083188	RTL 318M/P-300-S12	0 … 0.3 m 0 … 0.35 m	Laser, 2, red	Connector, M12, 4-pin, plastic	Switching frequency: 5,000 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 270 ° potentiometer

Diffuse sensors with background suppression

Diffuse reflection sensors with background suppression and straight optics.

HRTR 318

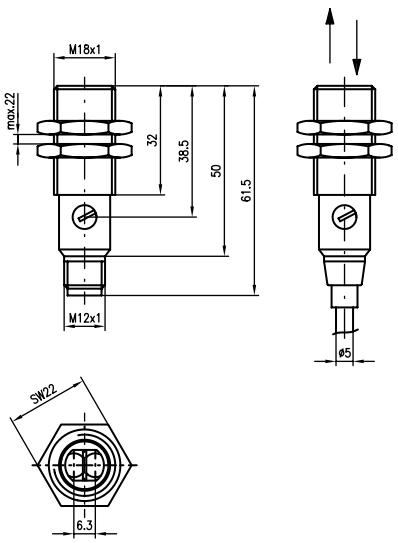
Diffuse sensors with background suppression and highly visible red light spot in cylindrical M18 design for nearly color-independent object detection.

Benefits:

- Exact background suppression, electronically adjustable
- Nearly color-independent object detection
- Clearly visible red light spot
- A^2LS – Active Ambient Light Suppression

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50106086	HRTR 318M/66-120-S12	0.001 … 0.12 m 0.001 … 0.14 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, 270 ° potentiometer
50106090	HRTR 318M/66-120	0.001 … 0.12 m 0.001 … 0.14 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, 270 ° potentiometer

Dimensioned drawings: 318 metal series



318 series, metal housing

ACCESSORIES: 318 METAL SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113548	BT D18M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117490	BTU D18M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	Through-hole mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50106119	REF 4-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

Reflective tapes for laser and clear-glass applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50123899	REF 6-A-9x9	Rectangular	9 mm x 9 mm	Self-adhesive	Plastic
50123861	REF 6-A-14x45	Rectangular	15 mm x 45 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

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/// 328 series

The 328 series photoelectric sensor family unifies the sturdiness of a stable stainless steel metal thread in the plastic housing with high functionality, all at a low price. With their reliable detection behavior, the versatile mounting options thanks to extensive accessories and models with axial and angled optics, these sensors are the perfect choice for standard detection tasks in many challenging areas of application.

Direct access to the online product selector at **www.leuze.com/en/br328**

Throughbeam photoelectric sensors

The photoelectric sensors of this series offer a high function reserve and are suited for use in industrial environments with their metal thread in the plastic housing.

L328

The L328 throughbeam photoelectric sensor in the sturdy plastic housing with metal thread simplifies alignment thanks to optimized beam geometry. It is also suitable for the simple detection of flat objects. The simple fine adjustment and deactivation inputs for testing the sensor round out the portfolio of these sensors.

Benefits:

- High function reserve
- Simple alignment by means of optimized beam geometry
- Simple detection of flat objects

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122702	► LS328/9D-M12	0 … 10 m 0 … 15 m	LED, red	Connector, M12, 4-pin, plastic	DC, deactivation input
50122711	◄ LE328/2N-M12	0 … 10 m 0 … 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50122709	◄ LE328/4P-M12	0 … 10 m 0 … 15 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50122699	LS328/XX-M12	0 … 10 m 0 … 15 m	LED, red	Connector, M12, 4-pin, plastic	DC
50122703	► LS328/9D	0 … 10 m 0 … 15 m	LED, red	Cable, 2,000 mm, 4-wire	DC, deactivation input
50122712	◄ LE328/2N	0 … 10 m 0 … 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC
50122710	◄ LE328/4P	0 … 10 m 0 … 15 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC
50122700	► LS328.W/9D-M12	0 … 5.5 m 0 … 8 m	LED, red	Connector, M12, 4-pin, plastic	DC, 90 ° angular optics, deactivation input
50122706	◄ LE328.W/2N-M12	0 … 5.5 m 0 … 8 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 90 ° angular optics
50122704	◄ LE328.W/4P-M12	0 … 5.5 m 0 … 8 m		Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 90 ° angular optics
50122701	► LS328.W/9D	0 … 5.5 m 0 … 8 m	LED, red	Cable, 2,000 mm, 4-wire	DC, 90 ° angular optics, deactivation input
50122707	◄ LE328.W/2N	0 … 5.5 m 0 … 8 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, 90 ° angular optics
50122705	◄ LE328.W/4P	0 … 5.5 m 0 … 8 m		Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, 90 ° angular optics

► transmitter / ◄ receiver

Retro-reflective photoelectric sensor

These retro-reflective photoelectric sensors with metal thread can reliably detect objects even with glossy surfaces through the use of polarized light.

PRK328

Reliable blanking of direct reflections by the polarization filter, an optimized beam path for quick commissioning and simple fine adjustment (teach) characterize these sensors in the sturdy plastic housings with metal thread.

Benefits:

- High function reserve
- Safe suppression of direct reflection due to polarization filter
- Sensitivity adjustment by means of teach button
- Series connection possible (Daisy Chain)

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122697	PRK328.3/2N-M12	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122695	PRK328.3/4P-M12	0.02 … 4.5 m 0.02 … 6 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122698	PRK328.3/2N	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122696	PRK328.3/4P	0.02 … 4.5 m 0.02 … 6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122691	PRK328.W3/2N-M12	0.02 … 4 m 0.02 … 5 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, 90 ° angular optics
50122689	PRK328.W3/4P-M12	0.02 … 4 m 0.02 … 5 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, 90 ° angular optics
50122694	PRK328.W3/2N	0.02 … 4 m 0.02 … 5 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, 90 ° angular optics
50122690	PRK328.W3/4P	0.02 … 4 m 0.02 … 5 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, 90 ° angular optics

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic diffuse sensor

These sturdy sensors with metal thread in the plastic housing perform detection directly on an object and do not require a reflector. Versions are available for various distances as well as specifically for the paper industry. For even easier use, available with preset ranges.

ET328 / FT328

These red light sensors in the sturdy plastic housing with metal thread facilitate robust object detection. The simple adjustment to the object through the teach button with 2 levels makes installation a piece of cake. These sensors feature the A²LS active ambient light suppression and easy alignment through brightly visible brightVision® light spot. Also available with preset range and infrared light for higher color independence.

Benefits:

- Energetic diffuse reflection sensor with light/dark switching
- Range adjustment via teach-in
- Preset ranges (FT 100 mm/ET 400 mm) for easier use
- Axial and 90 ° light beam gate for flexible integration
- Sturdy plastic housing with stainless steel threaded sleeve with cylindrical M18 design
- Full control through green and yellow indicator LEDs and complementary outputs
- High color independence
- Special model available for paper label detection

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122719	FT328.3/2N-M12	0.001 … 0.215 m 0.001 … 0.28 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122717	FT328.3/4P-M12	0.001 … 0.215 m 0.001 … 0.28 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, permanently set range
50122720	FT328.3/2N	0.001 … 0.215 m 0.001 … 0.28 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122718	FT328.3/4P	0.001 … 0.215 m 0.001 … 0.28 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50122724	ET328.W3/2N-M12	0.005 … 0.35 m 0.001 … 0.45 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, 90 ° angular optics
50122721	ET328.W3/4P-M12	0.005 … 0.35 m 0.001 … 0.45 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, 90 ° angular optics
50122725	ET328.W3/2N	0.005 … 0.35 m 0.001 … 0.45 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, 90 ° angular optics
50122722	ET328.W3/4P	0.005 … 0.35 m 0.001 … 0.45 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, 90 ° angular optics
50122728	ET328.3/2N-M12	0.001 … 0.7 m 0.001 … 1 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button

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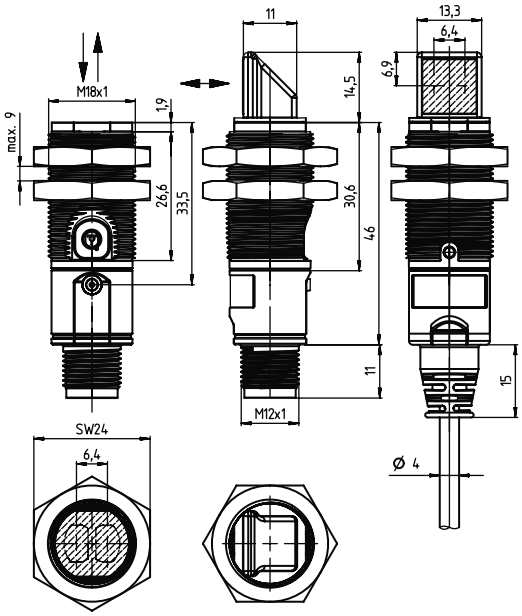
Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122726	ET328.3/4P-M12	0.001 … 0.7 m 0.001 … 1 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122729	ET328.3/2N	0.001 … 0.7 m 0.001 … 1 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122727	ET328.3/4P	0.001 … 0.7 m 0.001 … 1 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122715	FT328.W3/2N-M12	0.002 … 0.1 m 0.002 … 0.12 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, 90 ° angular optics
50122713	FT328.W3/4P-M12	0.002 … 0.1 m 0.002 … 0.12 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, 90 ° angular optics
50122716	FT328.W3/2N	0.002 … 0.1 m 0.002 … 0.12 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, 90 ° angular optics
50122714	FT328.W3/4P	0.002 … 0.1 m 0.002 … 0.12 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, 90 ° angular optics
50128196	ET328I-400F.3/4P	0.001 … 0.7 m 0.001 … 1 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50129139	ET328I-400F.3/2N-M12	0.001 … 0.4 m 0.001 … 0.4 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50129140	ET328I-400F.3/4P-M12	0.001 … 0.4 m 0.001 … 0.4 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50128197	ET328I-400F.3/2N	0.001 … 0.4 m 0.001 … 0.4 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50127773	FT328I.3/4P-M12P1	0.08 … 0.1 m 0.08 … 0.12 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: detection of labels on bottles; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50133941	FT328I.X3/2N-M12	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, V-optics
50133942	FT328I.X3/4P-M12	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, V-optics
50133271	FT328I.X3/2N	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Cable, 2,000 mm, 4-wire	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, V-optics
50133940	FT328I.X3/4P	0.001 … 0.1 m 0.001 … 0.13 m	LED, infrared	Cable, 2,000 mm, 4-wire	Application: detection of dark objects at short range; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, V-optics

Dimensioned drawings: 328 series



328 series

ACCESSORIES: 328 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113548	BT D18M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50117257	BT D21M	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117490	BTU D18M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	Through-hole mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50024127	TK 82.2	Round	79 mm	Through-hole mounting, adhesive	Plastic
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

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/// 412 series

The extremely compact M12 design of the 412 series opens many interesting applications, e. g., in assembly and handling technology or packaging technology.

Direct access to the online product selector at **www.leuze.com/en/br412**

Throughbeam photoelectric sensors

Short and compact throughbeam photoelectric sensors with visible red light.

LS 412

Throughbeam photoelectric sensors with visible red light in cylindrical M12 design.

Benefits:

- Slim and short cylindrical metal housing M12
- Sensitivity adjustment for optimum adaptation to the application
- Light/dark switching via control cable

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50081431	SET LS 412M/P-S12	0 … 6 m 0 … 8 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer, article set
50081432	LS 412M/P	0 … 6 m 0 … 8 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer

Both products consist of transmitter and receiver

Retro-reflective photoelectric sensors

Short and compact retro-reflective photoelectric sensors with visible red light and polarization filter.

PRK 412

The retro-reflective photoelectric sensor in slim metal housing is well-suited for detection of fast events thanks to the high switching frequency.

Benefits:

- High switching frequency for detection of fast events
- Slim and short cylindrical metal housing M12
- Light/dark switching via control cable

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50081407	PRK 412M/P-S12	0.15 … 1.3 m 0.15 … 1.6 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer
50081408	PRK 412M/P	0.15 … 1.3 m 0.15 … 1.6 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic diffuse sensor

Short and compact energetic diffuse sensors with visible red light.

RT 412

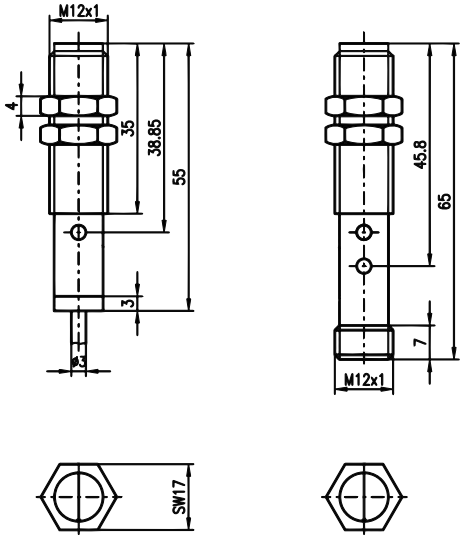
Energetic retro-reflective photoelectric sensor with visible red light in cylindrical M12 design for detection of fast events.

Benefits:

- High switching frequency for detection of fast events
- Slim and short cylindrical metal housing M12
- Light/dark switching via control cable

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50081409	RT 412M/P-200-S12	0 … 0.2 m 0 … 0.4 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer
50081410	RT 412M/P-200	0 … 0.2 m 0 … 0.4 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 700 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer

Dimensioned drawings: 412 series



412 series

ACCESSORIES: 412 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113549	BT D12M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

Reflectors

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

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/// 618 Series

With its full-metal housing, this M18 design makes no compromises in terms of maximum robustness.

Direct access to the online product selector at **www.leuze.com/en/br618**

Throughbeam photoelectric sensors

Sturdy throughbeam photoelectric sensors with infrared light.

LS 618

Throughbeam photoelectric sensors with infrared light and light/dark switching via control cable.

Benefits:
- Sturdy metal housing in cylindrical M18 design
- Sensitivity adjustment for optimum adaptation to the application
- Dual LED indicator for easy commissioning
- M12 connector for fast installation

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50038451	SET LS 618/4-S12	0 … 10 m 0 … 12 m	LED, infrared	Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer, article set

Set consists of transmitter and receiver

Retro-reflective photoelectric sensors

Retro-reflective photoelectric sensors with red light in sturdy metal housing.

PRK 618

Retro-reflective photoelectric sensor with light/dark switching via control cable.

Benefits:
- Sturdy metal housing in cylindrical M18 design
- Sensitivity adjustment for optimum adaptation to the application
- Dual LED indicator for easy commissioning
- M12 connector for fast installation

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50038450	PRK 618/4-S12	0 … 5 m 0 … 7 m	LED, red	Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic diffuse sensor

Energetic diffuse sensor with infrared light in sturdy metal housing.

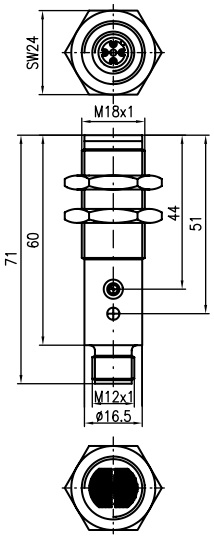
RT 618

Energetic diffuse reflection sensor with light/dark switching via control cable.

Benefits:
- Sturdy metal housing in cylindrical M18 design
- Sensitivity adjustment for optimum adaptation to the application
- Dual LED indicator for easy commissioning
- M12 connector for fast installation

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50038449	RT 618/4-200-S12	0 … 0.2 m 0 … 0.3 m	LED, infrared	Connector, M12, 4-pin, metal	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer

Dimensioned drawings: 618 series



618 series

ACCESSORIES: 618 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	**KD U-M12-4W-P1-020**	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	**KD U-M12-4W-P1-050**	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	**KD U-M12-4W-V1-020**	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	**KD U-M12-4W-V1-050**	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	**KD U-M12-4A-P1-020**	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	**KD U-M12-4A-P1-050**	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	**KD U-M12-4A-V1-020**	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	**KD U-M12-4A-V1-050**	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Reflectors

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	**TKS 20X40**	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	**TKS 30X50**	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50022816	**TKS 100X100**	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

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//SENSORS FOR POTENTIALLY EXPLOSIVE AREAS

DETECT WITHOUT RISK

The use of optoelectronic sensors in potentially explosive areas requires specially protected devices. Our extensive product line offers powerful sensors in all common technologies.

/// 92 series

The 92 Ex series sensors are available as diffuse reflection sensors, retro-reflective photoelectric sensors or throughbeam photoelectric sensors and reliably detect objects at distances of 0.3 m up to 12 m. The intrinsically safe sensors transmit switching signals to the VS 403 isolated switching amplifier by way of the NAMUR interface. The temperature class for explosive gas areas is T6; for explosive dust areas it is 80 °C.

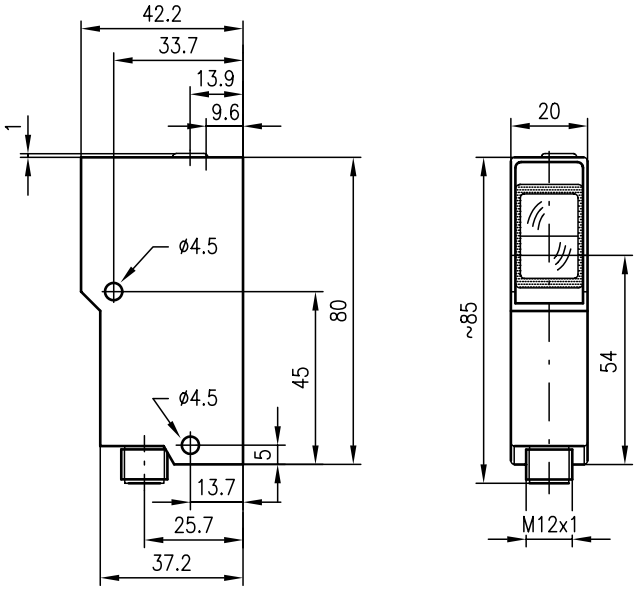
Benefits:

- Compact construction with robust diecast zinc housing and glass optics for protection against environmental influences
- Switching output acc. to IEC 60947-5-6 (NAMUR)
- EU type examination certificate DMT 03 ATEX E 029 for zone 1/21
- Large range from 0.3 to 12 m

Direct access to the online product selector at **www.leuze.com/en/br92-ex**

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description	Ex device category Ex-zone
50080723	PRK 92/3 L Ex	0.2 … 5 m 0.2 … 5 m	LED, red	Connector, M12, 4-pin, metal	Polarized retro-reflective photoelectric sensor; Switching frequency: 60 Hz, DC, Ex-protected, NAMUR	2/1/21
50080724	FRK 92/3-300 L Ex	0.03 … 0.3 m 0.03 … 0.3 m	LED, red	Connector, M12, 4-pin, metal	Diffuse sensor with background suppression; Switching frequency: 60 Hz, DC, Ex-protected, NAMUR	2/1/21

Dimensioned drawings: 92 series



92 Ex series

ACCESSORIES: 92 EX SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50037784	BK7 KB-092-5000-4 Ex	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50037783	BK7 KB-092-5000-4A Ex	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50018415	BT 92	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

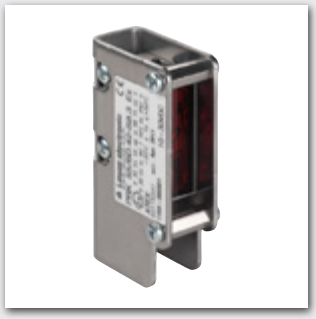
Reflectors

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50003186	TK 60	Round	55 mm	Through-hole mounting	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

/// 55 series



The sensors are developed for all category 3G and 3D applications. With their small dimensions, they fit even in constrained spaces. The sensors and the protective housing are made of stainless steel and are also suitable for demanding operating conditions. Currently available are retro-reflective photoelectric sensors and diffuse sensors with background suppression. The temperature class for explosive gas areas is T4; for explosive dust areas it is 70 °C.

Benefits:

- Diffuse reflection sensor with visible red light and adjustable background suppression
- Stainless steel device housing and protective housing
- Exact range adjustment via 8-turn potentiometer
- Very good black/white behavior and reliable switching nearly independent of the object or background properties
- Fast alignment through brightVision®
- A²LS – Active Ambient Light Suppression

Direct access to the online product selector at **www.leuze.com/en/br55-ex**

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description	Ex device category Ex-zone
50135419	► LSSR 55,300-S12 Ex	0 … 8.5 m 0 … 10 m	LED, red	Cable with connector, 300 mm, M12, 4-pin, stainless steel	DC, WASH-DOWN design, activation input	3/2/22
50135420	◄ LSER 55/66,300-S12 Ex	0 … 8.5 m 0 … 10 m		Cable with connector, 300 mm, M12, 4-pin, stainless steel	Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, WASH-DOWN design, Ex-protected	3/2/22
50119364	PRK 55/6.42-S8 Ex	0 … 3 m 0 … 3.5 m	LED, red	Connector, M8, 4-pin, stainless steel	Polarized retro-reflective photoelectric sensor; Application: detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN), DC, teach button, teach input, Ex-protected	3/2/22
50115207	PRK 55/6D.42-S8.3 Ex	0 … 3 m 0 … 3.5 m	LED, red	Connector, M8, 3-pin, stainless steel	Polarized retro-reflective photoelectric sensor; Application: detection of highly transparent bottles; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, teach button, teach input, Ex-protected	3/2/22
50115269	HRTR 55/66-S8 Ex	0.005 … 0.4 m 0.005 … 0.4 m	LED, red	Connector, M8, 4-pin, stainless steel	Sensor with background suppression; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, Ex-protected	3/2/22

► transmitter / ◄ receiver

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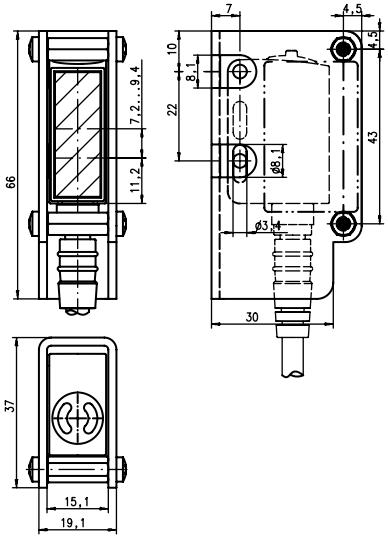
Dimensioned drawings: 55 series



55 Ex series

ACCESSORIES: 55 EX SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117256	BTU 200M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Reflectors and reflective tapes

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50104130	MTKS 20x40.1	Rectangular	17 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

Reflective tapes for laser and clear-glass applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50123899	REF 6-A-9x9	Rectangular	9 mm x 9 mm	Self-adhesive	Plastic
50123861	REF 6-A-14x45	Rectangular	15 mm x 45 mm	Self-adhesive	Plastic
50110192	REF 6-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// 46 series

Due to their high function reserve, these devices are used for reliable detection even with heavy soiling in category 3G and 3D applications. The product spectrum encompasses familiar operating principles such as throughbeam photoelectric sensor, retro-reflective photoelectric sensor or diffuse sensor with background suppression. The temperature class for explosive gas areas is T4; for explosive dust areas it is 90 °C.

Benefits:

- Diffuse sensor with adjustable background suppression through multiturn potentiometer
- Reliable detection of light and dark, as well as inclined or sloped surfaces
- Fast connection through Ultra-Lock™ fast locking
- Complementary switching outputs for optimal adaptation to the application
- Warning output for increased availability
- A²LS – Active Ambient Light Suppression

Direct access to the online product selector at **www.leuze.com/en/br46-ex**

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description	Ex device category Ex-zone
50114409	HRTL 46B/66,200-S12 S-Ex n	0.05 ... 1.2 m 0.05 ... 1.2 m	Laser, 2, red	Cable with connector, 200 mm, M12, 4-pin, metal	Sensor with background suppression; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer	3/2/22
50111519	► LSSR 46B,200-S12 S-Ex n	0 ... 50 m 0 ... 60 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, metal	Throughbeam sensor transmitter; Switching frequency: 500 Hz, DC, Ex-protected	3/2/22
50111520	◄ LSER 46B/66,200-S12 S-Ex n	0 ... 50 m 0 ... 60 m		Cable with connector, 200 mm, M12, 4-pin, metal	Throughbeam sensor receiver; Switching frequency: 500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, Ex-protected	3/2/22
50108945	IPRK 46B/4,200-S12 S-Ex n	0.05 ... 15 m 0.05 ... 18 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, metal	Polarized retro-reflective photoelectric sensor; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, warning output, Ex-protected	3/2/22

► transmitter / ◄ receiver

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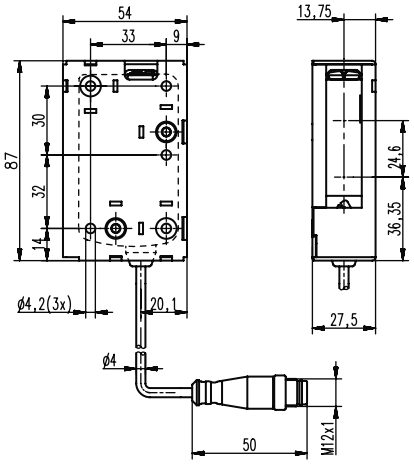
Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description	Ex device category Ex-zone
50108591	PRK 46B/66,200-S12 S-Ex n	0.05 ... 15 m 0.05 ... 18 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, metal	Polarized retro-reflective photoelectric sensor; Switching frequency: 500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, Ex-protected	3/2/22
50108593	PRK 46B/66.01,200-S12 S-Ex n	0.05 ... 15 m 0.05 ... 18 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, metal	Polarized retro-reflective photoelectric sensor; Switching frequency: 500 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, 270 ° potentiometer, Ex-protected	3/2/22
50108589	HRTR 46B/66,200-S12 S-Ex n	0 ... 1.8 m 0 ... 1.8 m	LED, red	Cable with connector, 200 mm, M12, 4-pin, metal	Sensor with background suppression; Switching frequency: 200 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, Ex-protected	3/2/22
50108587	HRT 46B/66,200-S12 S-Ex n	0 ... 2.5 m 0 ... 2.5 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, metal	Sensor with background suppression; Switching frequency: 200 Hz; Digital switching output 1: transistor, push-pull, light switching (PNP)/dark switching (NPN); Digital switching output 2: transistor, push-pull, dark switching (PNP)/light switching (NPN), DC, multiturn potentiometer, Ex-protected	3/2/22
50108943	IHRT 46B/4,200-S12 S-Ex n	0 ... 2.5 m 0 ... 2.5 m	LED, infrared	Cable with connector, 200 mm, M12, 4-pin, metal	Sensor with background suppression; Switching frequency: 200 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, U_B switching, DC, multiturn potentiometer, warning output, Ex-protected	3/2/22

► transmitter / ◄ receiver

Dimensioned drawings: 46 series



46B Ex series

ACCESSORIES: 46 EX SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50020833	BT 95	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117253	BTU 300M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117252	BTU 300M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117251	BTU 300M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Reflectors

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50024127	TK 82.2	Round	79 mm	Through-hole mounting, adhesive	Plastic
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	Through-hole mounting, adhesive	Plastic
50022814	TKS 50X50	Rectangular	47 mm x 48 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

/// 96 series

These sensors were specially designed for applications that require large ranges in categories 3G and 3D. The product line covers all operating principles. The temperature class for explosive gas areas is T4; for explosive dust areas it is 70 °C.

Benefits:

- Diffuse sensor with adjustable background suppression using visible red light
- Robust metal housing with shock-resistant optical window, degree of protection IP 67/ IP 69K for industrial application
- Complementary switching outputs
- Range adjustment and delay before start-up
- Connection via comfortable terminal compartment

Direct access to the online product selector at **www.leuze.com/en/br96-ex**

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description	Ex device category Ex-zone
50111088	PRK 96M/P-3369-21 Ex n	0.1 … 15 m 0.1 … 18 m	LED, red	Terminal, 3-pin	Polarized retro-reflective photoelectric sensor; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer, Ex-protected	3/2/22
50111015	► LSS 96M-1079-23 Ex n	0 … 120 m 0 … 150 m	LED, infrared	Terminal, 2-pin	Throughbeam sensor transmitter, DC, Ex-protected	3/2/22
50111016	◄ LSE 96M/P-3019-21 Ex n	0 … 120 m 0 … 150 m		Terminal, 3-pin	Throughbeam sensor receiver; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching, DC, 270 ° potentiometer, Ex-protected	3/2/22
50109523	PRK 96M/P-2838-28 Ex n	0.1 … 7 m 0.1 … 8.5 m	LED, infrared	Terminal, 4-pin	Polarized retro-reflective photoelectric sensor; Switching frequency: 1,000 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, 270 ° potentiometer, Ex-protected	3/2/22
50111087	HRT 96M/P-1639-800-21 Ex n	0.1 … 0.8 m 0.1 … 1.2 m	LED, infrared	Terminal, 4-pin	Sensor with background suppression; Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, multiturn potentiometer, Ex-protected	3/2/22
50111089	HRT 96M/P-1649-800-21 Ex n	0.1 … 0.8 m 0.1 … 1.2 m	LED, infrared	Terminal, 4-pin	Sensor with background suppression; Switching frequency: 300 Hz; Digital switching output 1: transistor, PNP, light/dark reversible, DC, multiturn potentiometer, time function, Ex-protected	3/2/22

► transmitter / ◄ receiver

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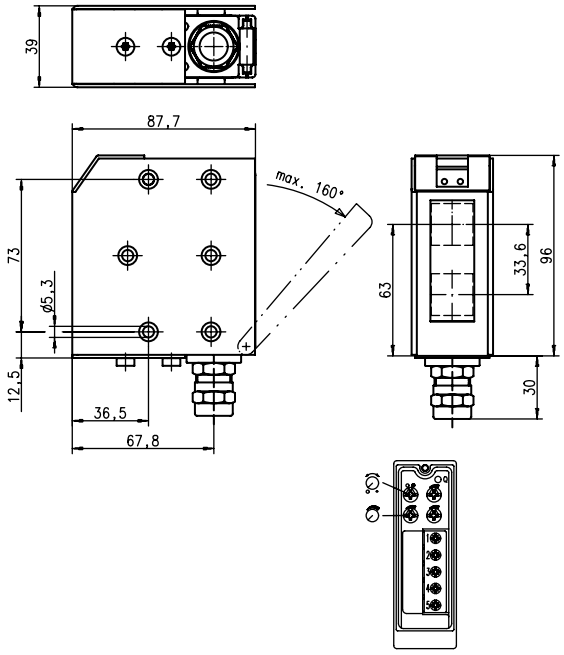
Dimensioned drawings: 96 series



96 Ex series

ACCESSORIES: 96 EX SERIES

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50025570	BT 96	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50082084	BT 450.1-96	Mounting system	Screw type	For 10 mm rod	Metal
50104897	BT 450.3-96	Mounting system	Screw type	For 12 mm rod	Metal

Further rod mounts can be found on our website

Reflectors

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

/ INDUCTIVE SWITCHES

RELIABLE DETECTION OF METALLIC PARTS

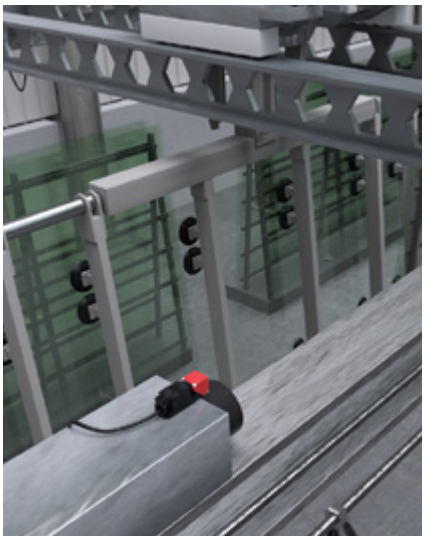
In automation technology, not just optical applications, but many other applications are predestined for inductive sensors. An array of different designs, short reaction times and large operating ranges make our inductive sensors the right solution for practically all areas of application in industrial automation. Depending on the environment or requirement in which they are used, other selection criteria such as AC/DC, reduction factor 1 or all-metal are available.

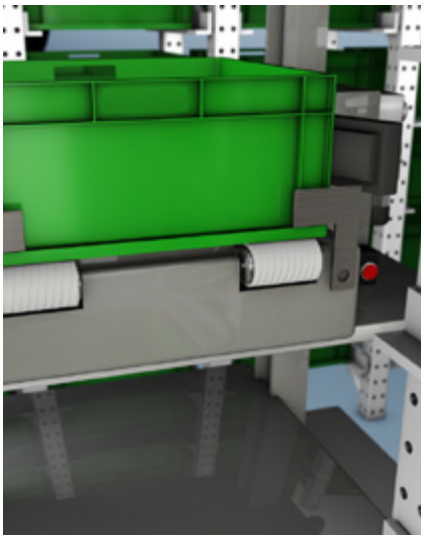
Standard sensors, cubic **Page 120**

Standard sensors, cylindrical **Page 124**

All stainless steel sensors **Page 134**

Miniature sensors **Page 139**





SELECTION TABLE – Cubic/cylindrical series

Series		Dimensions in mm (HxWxL) / (ØxL)	Typ. range limit S_n	Installation		Switching output/ Function				Max. switching frequency	Operating voltage	Connection			Housing material			Degree of protection	
				Embedded	Non-embedded	PNP	NPN	NO – normally open	NC – normally closed			M8 connector	M12 connector	Cable, 2 m, PVC	Chromed brass	Plastic (PA)	Stainless steel	IP 67	IP 69K
	IS240	40x12x26	4.0 mm	●		●	●	●	●	1400 Hz	10 … 30 VDC	●		●		●		●	
			8.0 mm		●	●	●	●	●	1400 Hz	10 … 30 VDC	●		●		●		●	
	IS244	40x40x67 40x40x120	20.0 mm	●		●	●	●	●	150 Hz	10 … 30 VDC		●	●		●		●	
			40.0 mm		●	●	●	●	●	150 Hz	10 … 30 VDC		●	●		●		●	
	IS255	5x5x25	1.5 mm	●		●	●	●	○	3000 Hz	10 … 30 VDC	○		●	●			●	
	IS288	8x8x50	1.5 mm	●		●	●	●	○	5000 Hz	10 … 30 VDC	●		●	●			●	
			2.0 mm	●		●	○	●	●	3000 Hz	10 … 30 VDC	●		●	●			●	
			3.0 mm	●		●	○	●	○	1000 Hz	10 … 30 VDC	●		●	●			●	
	IS204	Ø 4x25	1.5 mm	●		●	○	●	●	3000 Hz	10 … 30 VDC	○		●			●	●	
	IS205	M5x38	1.5 mm	●		●	○	●	○	3000 Hz	10 … 30 VDC	●		●			●	●	
	IS206	Ø 6.5x35	2.0 mm	●		●	○	●	○	5000 Hz	10 … 30 VDC	●		●			●	●	
			3.0 mm	●		●	○	●	○	1000 Hz	10 … 30 VDC			●			●	●	
	IS208	M8x45	1.5 mm	●		●	○	●		5000 Hz	10 … 30 VDC	●	●	●			●	●	
			2.0 mm	●		●	●	●	●	5000 Hz	10 … 30 VDC	●		●			●	●	
			2.5 mm		●	●	○	●		5000 Hz	10 … 30 VDC	●	●	●			●	●	
			4.0 mm		●	●	○	●	○	3500 Hz	10 … 30 VDC	●		●			●	●	
	IS212	M12x50	2.0 mm[2]	●		●	○	●		3000 Hz	10 … 30 VDC		●	●	●			●	
			4.0 mm	●		●	●	●	●	2000 Hz	10 … 30 VDC		●	●	●			●	
			4.0 mm		●	●	○	●		2000 Hz	10 … 30 VDC		●	●	●			●	
			6.0 mm[1]	●		●	○	●		800 Hz	10 … 30 VDC		●					●	
			6.0 mm	●		●	●	●	○	600 Hz	10 … 30 VDC		●	●	●		●	●	●
			8.0 mm		●	●	●	●	○	1500 Hz	10 … 30 VDC		●	●	●			●	
			10.0 mm[1]		●	●	○	●		400 Hz	10 … 30 VDC		●				●	●	●
			10.0 mm		●	●	○	●	○	400 Hz	10 … 30 VDC		●	●	●			●	
	IS218	M18x50	5.0 mm[2]	●		●	○	●		2000 Hz	10 … 30 VDC		●	●	●			●	
			8.0 mm	●		●	●	●	●	1500 Hz	10 … 30 VDC		●	●	●			●	
			8.0 mm		●	●	○	●		2000 Hz	10 … 30 VDC		●	●	●			●	
			10.0 mm[1]	●		●	○	●		200 Hz	10 … 30 VDC		●				●	●	●
			12.0 mm	●		●	●	●	○	500 Hz	10 … 30 VDC		●	●	●			●	
			20.0 mm[1]		●	●	○	●		200 Hz	10 … 30 VDC		●				●	●	●
			20.0 mm		●	●	○	●	○	200 Hz	10 … 30 VDC		●	●	●			●	
	IS230	M30x60	10.0 mm	●		●	○	●		1200 Hz	10 … 30 VDC		●	●	●			●	
			15.0 mm[2]		●	●	○	●		700 Hz	10 … 30 VDC		●	●	●			●	
			20.0 mm[1]	●		●	○	●		100 Hz	10 … 30 VDC		●				●	●	●
			22.0 mm	●		●	●	●	●	200 Hz	10 … 30 VDC		●	●	●			●	
			40.0 mm[1]		●	●	○	●		100 Hz	10 … 30 VDC		●				●	●	●
			40.0 mm		●	●	●	●	○	90 Hz	10 … 30 VDC		●	●	●			●	

[1] Food + Beverage design

[2] AC/DC design (10 … 320 V AC/DC, relay output function)

○ = on request

//STANDARD SENSORS, CUBIC

SMALL DESIGNS FOR BIG REQUIREMENTS

These standard cubic sensors can be universally applied for a wide variety of detection tasks. Cubic designs are available in both plastic and metal housings.

/// IS 288

With a laterally aligned sensor field, space and cost-saving integration is possible. Using our special supports, the sensors can even be mounted in the groove of an ITEM profile.

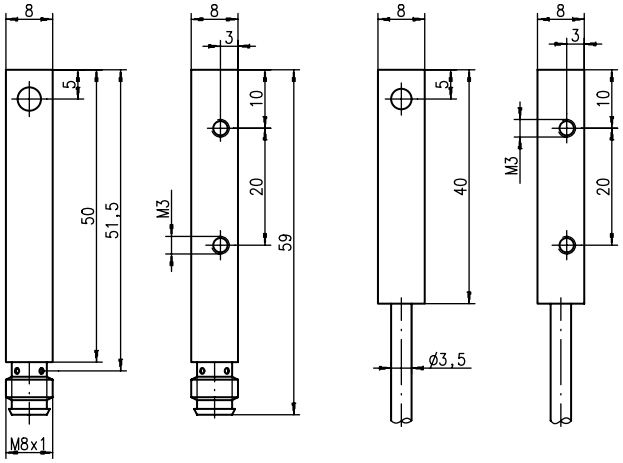
Benefits:

- Laterally aligned sensor field for space and hence cost-saving integration
- Short reaction times for reliable detection in dynamic processes to increase machine productivity

Direct access to the online product selector at **www.leuze.com/en/is288**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50112890	IS 288MP/4NO-3E0-S8.3	0 ... 2.4 mm 3 mm	1,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Metal
50112889	IS 288MP/4NO-3E0	0 ... 2.4 mm 3 mm	1,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50113783	IS 288MP/4NC-2E0	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50112888	IS 288MP/4NO-2E0-S8.3	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Metal
50112887	IS 288MP/4NO-2E0	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50112886	IS 288MP/4NO-1E5-S8.3	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Metal
50112885	IS 288MP/4NO-1E5	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50113208	IS 288MP/2NO-1E5	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal

Dimensioned drawings: IS 288



IS 288 series

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/// IS 240

With its cubic design, this sensor is ideal for lateral mounting on conveying belts.

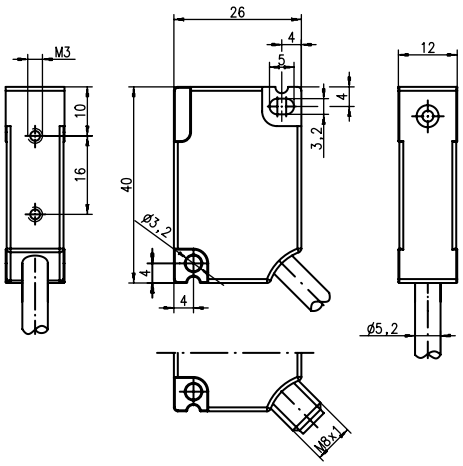
Benefits:

- Cubic construction for simple mounting on the side
- Quick and easy installation and commissioning saves mounting times and guarantees the highest availability
- Wider ranges offer high functional reliability
- Very clearly visible status display for reliable detection and commissioning even at long distances

Direct access to the online product selector at **www.leuze.com/en/is240**

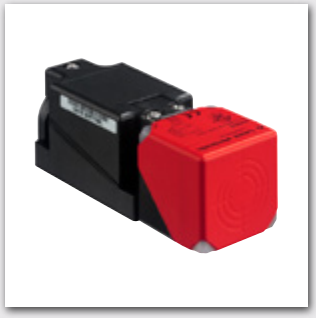
Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Switching output 2	Description	Connection	Material
50114210	IS 240PP/44-8N0-S8.4	0 … 6.4 mm 8 mm	1,400 Hz	Non-embedded	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	DC	Connector, M8, 4-pin	Plastic
50114209	IS 240PP/44-8N0	0 … 6.4 mm 8 mm	1,400 Hz	Non-embedded	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 4-wire	Plastic
50114206	IS 240PP/22-8N0-S8.4	0 … 6.4 mm 8 mm	1,400 Hz	Non-embedded	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	DC	Connector, M8, 4-pin	Plastic
50114205	IS 240PP/22-8N0	0 … 6.4 mm 8 mm	1,400 Hz	Non-embedded	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 4-wire	Plastic
50114208	IS 240PP/44-4E0-S8.4	0 … 3.2 mm 4 mm	1,400 Hz	Embedded	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	DC	Connector, M8, 4-pin	Plastic
50117797	IS 240PP/4N0-4E0-S8.3	0 … 3.2 mm 4 mm	1,400 Hz	Embedded	Transistor, PNP, NO (normally open)		DC	Connector, M8, 3-pin	Plastic
50114207	IS 240PP/44-4E0	0 … 3.2 mm 4 mm	1,400 Hz	Embedded	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 4-wire	Plastic
50114204	IS 240PP/22-4E0-S8.4	0 … 3.2 mm 4 mm	1,400 Hz	Embedded	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	DC	Connector, M8, 4-pin	Plastic
50114203	IS 240PP/22-4E0	0 … 3.2 mm 4 mm	1,400 Hz	Embedded	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 4-wire	Plastic

Dimensioned drawings: IS 240



IS 240 series

/// IS 244



With a sensor field that can be aligned in 5 directions, this compact sensor sees almost everything. Versions with M12 connector or convenient terminal compartment leave nothing to be desired.

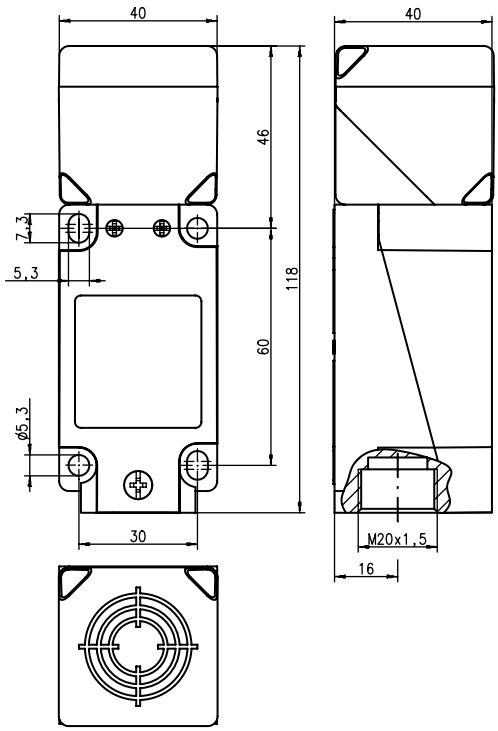
Benefits:

- Sensor field can be oriented in 5 directions for flexible mounting and simplified machine construction
- Status displays visible from all sides for reliable detection and commissioning
- Models with comfortable terminal compartment or M12 connector

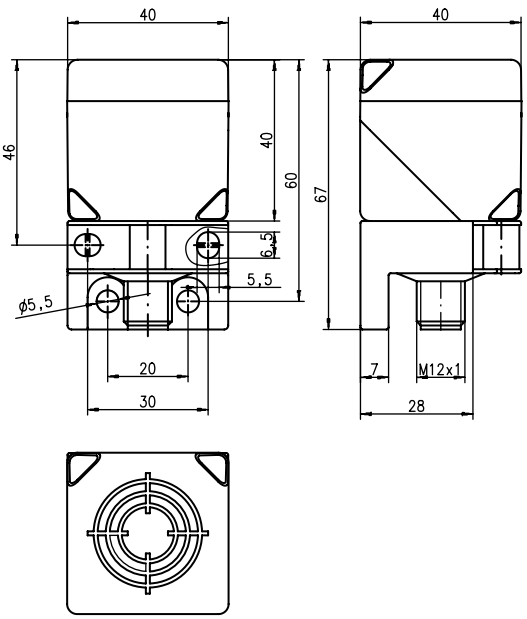
Direct access to the online product selector at **www.leuze.com/en/is244**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Switching output 2	Description	Connection	Material
50133521	ISS 244PP.1/44-40N-S12	0 … 32.4 mm 40 mm	100 Hz	Non-embedded	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Plastic
50114214	IS 244PP/44-40N-TB.4	0 … 32.4 mm 40 mm	150 Hz	Non-embedded	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	DC	Terminal, 4-pin	Plastic
50136333	ISS 244PP.1/22-40N-S12	0 … 32.4 mm 40 mm	100 Hz	Non-embedded	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	DC	Connector, M12, 4-pin	Plastic
50114212	IS 244PP/22-40N-TB.4	0 … 32.4 mm 40 mm	150 Hz	Non-embedded	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	DC	Terminal, 4-pin	Plastic
50133520	ISS 244PP.1/44-20E-S12	0 … 16.2 mm 20 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Plastic
50114213	IS 244PP/44-20E-TB.4	0 … 16.2 mm 20 mm	150 Hz	Embedded	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	DC	Terminal, 4-pin	Plastic
50136332	ISS 244PP.1/22-20E-S12	0 … 16.2 mm 20 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	DC	Connector, M12, 4-pin	Plastic
50114211	IS 244PP/22-20E-TB.4	0 … 16.2 mm 20 mm	150 Hz	Embedded	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	DC	Terminal, 4-pin	Plastic

Dimensioned drawings: IS 244



IS 244 series



ISS 244 series

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ACCESSORIES: INDUCTIVE SWITCHES, CUBIC HOUSING

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

//STANDARD SENSORS, CYLINDRICAL

ROBUST SENSORS IN CYLINDRICAL DESIGN

The reliable detection of metal objects in a robust metal housing is the versatile area of application of these sensors. In addition to the design, the range Sn is an important selection criterion. Various switching outputs and connection options are available to suit a wide range of applications.

/// IS 208

With a diameter of just 8 mm, this small standard sensor can be custom-integrated in applications.

Benefits:

- Large ranges allow you to choose a smaller construction and thus save space and costs for the mechanical machine parts
- The sensor can be mounted at a greater distance from moving parts. This helps to avoid damage and ensures the machine availability
- The high sensitivity of the sensors makes them the inexpensive solution for special applications, e.g. for close-range detection of small parts

Direct access to the online product selector at **www.leuze.com/en/is208**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50109660	IS 208MM/4NC-4N0-S8.3	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M8, 3-pin	Stainless steel
50129349	IS 208MM/4NC-4N0	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50109659	IS 208MM/4NO-4N0-S8.3	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Stainless steel
50109658	IS 208MM/4NO-4N0	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50109663	IS 208MM/2NC-4N0-S8.3	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embedded	Transistor, NPN, break-contact (NC)	DC	Connector, M8, 3-pin	Stainless steel
50109662	IS 208MM/2NO-4N0-S8.3	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Connector, M8, 3-pin	Stainless steel
50109661	IS 208MM/2NO-4N0	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50129347	IS 208MM/4NC-2N5-S8.3	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M8, 3-pin	Stainless steel
50109647	IS 208MM/4NO-2N5-S12	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Stainless steel
50109646	IS 208MM/4NO-2N5-S8.3	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Stainless steel
50114490	ISS 208MM/4NO-2N5-S8.3	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Stainless steel
50109645	IS 208MM/4NO-2N5	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50109649	IS 208MM/2NO-2N5	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50109654	IS 208MM/4NC-2E0-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M8, 3-pin	Stainless steel
50126968	ISS 208MM/4NC-2E0-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M8, 3-pin	Stainless steel
50113211	IS 208MM/4NC-2E0	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50109653	IS 208MM/4NO-2E0-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Stainless steel
50117201	ISS 208MM/4NO-2E0-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Stainless steel
50114051	IS 208MM/4NO-2E0,200-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, N O (normally open)	DC	Cable with connector, 200 mm, M8, 3-pin	Stainless steel
50118369	ISS 208MM/4NO-2E0,200-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable with connector, 200 mm, M8, 3-pin	Stainless steel
50109652	IS 208MM/4NO-2E0	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50129348	IS 208MM/2NC-2E0	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50109656	IS 208MM/2NO-2E0-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Connector, M8, 3-pin	Stainless steel
50109655	IS 208MM/2NO-2E0	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel

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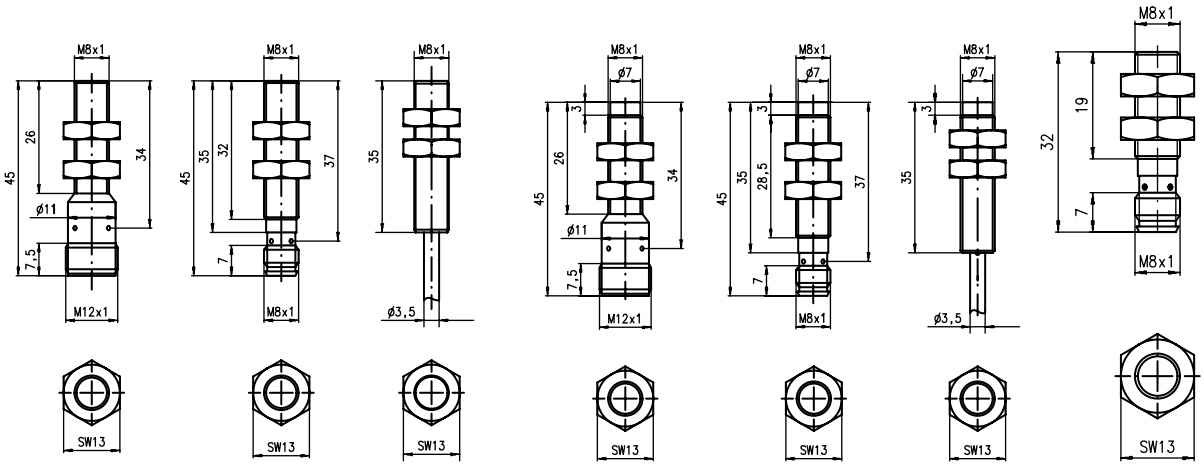
Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50129346	IS 208MM/4NC-1E5-S12	0 … 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Stainless steel
50129345	IS 208MM/4NC-1E5-S8.3	0 … 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M8, 3-pin	Stainless steel
50112444	IS 208MM/4NC-1E5	0 … 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50109641	IS 208MM/4NO-1E5-S12	0 … 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Stainless steel
50109640	IS 208MM/4NO-1E5-S8.3	0 … 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Stainless steel
50122455	IS 208MM/4NO-1E5,5000	0 … 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 5,000 mm, 3-wire	Stainless steel
50109639	IS 208MM/4NO-1E5	0 … 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50113207	IS 208MM/2NC-1E5	0 … 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50109642	IS 208MM/2NO-1E5	0 … 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel

Dimensioned drawings: IS 208



IS 208…E… series

IS208…N… series

ISS 208…E… series

SMART IS TO BE **CLOSE**

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/// IS 212

Even this standard design with M12 external thread has its special features: Increased ranges with a small design save space and money.

Benefits:

- Large ranges allow you to choose a smaller construction and thus save space and costs
- The sensor can be mounted at a greater distance from moving parts
- The high sensitivity of the sensors makes them the inexpensive solution for special applications, e.g. for close-range detection of small parts
- Sturdy all-metal housing for permanent operation

Direct access to the online product selector at **www.leuze.com/en/is212**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50114052	IS 212MM/4NC-10N-S12	0 ... 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129355	IS 212MM/4NC-10N	0 ... 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109680	ISS 212MM/4NO-10N-S12	0 ... 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109689	IS 212MM/4NO-10N	0 ... 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50111952	IS 212MM/2NO-10N	0 ... 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50129358	IS 212MM/4NC-8NO-S12	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129357	IS 212MM/4NC-8NO	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50112808	IS 212MM/4NO-8NO-S12	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50112807	IS 212MM/4NO-8NO	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50129356	IS 212MM/2NC-8NO	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50120274	IS 212MM/2NO-8NO-S12	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50112806	IS 212MM/2NO-8NO	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50112914	IS 212MM/4NC-4NO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129351	IS 212MM/4NC-4NO	0 ... 3.2 mm 4 mm	1,500 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109669	IS 212MM/4NO-4NO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50111963	ISS 212MM/4NO-4NO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109668	IS 212MM/4NO-4NO	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50121012	IS 212MM/2NC-4NO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, NPN, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129352	IS 212MM/2NC-4NO	0 ... 3.2 mm 4 mm	1,500 Hz	Non-embedded	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109671	IS 212MM/2NO-4NO-S12	0 ... 3.2 mm 4 mm	1,500 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109670	IS 212MM/2NO-4NO	0 ... 3.2 mm 4 mm	1,500 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50112209	ISS 212MM/2NO-4NO	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50133409	ISS 212MM/4NC-6E0-S12	0 ... 4.8 mm 6 mm	800 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50109679	ISS 212MM/4NO-6E0-S12	0 ... 4.8 mm 6 mm	800 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109678	IS 212MM/4NO-6E0	0 ... 4.8 mm 6 mm	800 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109688	ISS 212MM/2NO-6E0-S12	0 ... 4.8 mm 6 mm	800 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109682	IS 212MM/2NO-6E0	0 ... 4.8 mm 6 mm	800 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50127466	IS 218MM/4NC-5E0-S12	0 ... 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50109674	IS 212MM/4NC-4E0-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50109676	ISS 212MM/4NC-4E0-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129353	IS 212MM/4NC-4E0	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50129359	ISS 212MM/4NC-4E0	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal

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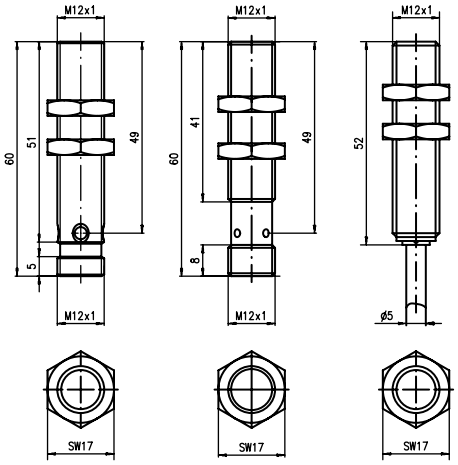
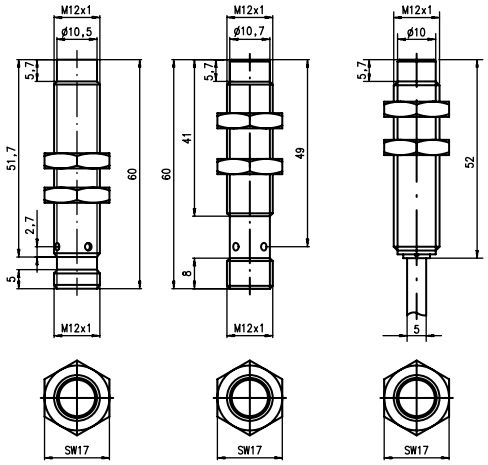
Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50109673	IS 212MM/4NO-4E0-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109685	ISS 212MM/4NO-4E0-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109672	IS 212MM/4NO-4E0	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109684	ISS 212MM/4NO-4E0	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109677	IS 212MM/2NC-4E0-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, NPN, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50111741	ISS 212MM/2NC-4E0-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, NPN, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50114380	IS 212MM/2NC-4E0	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50129354	IS 212MM/2NO-4E0-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109687	ISS 212MM/2NO-4E0-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109675	IS 212MM/2NO-4E0	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50111870	IS 212MM/4NC-2E0-S12	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129350	IS 212MM/4NC-2E0	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109665	IS 212MM/4NO-2E0-S12	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109664	IS 212MM/4NO-2E0	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50129415	IS 212MM/2NC-2E0	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109666	IS 212MM/2NO-2E0	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal

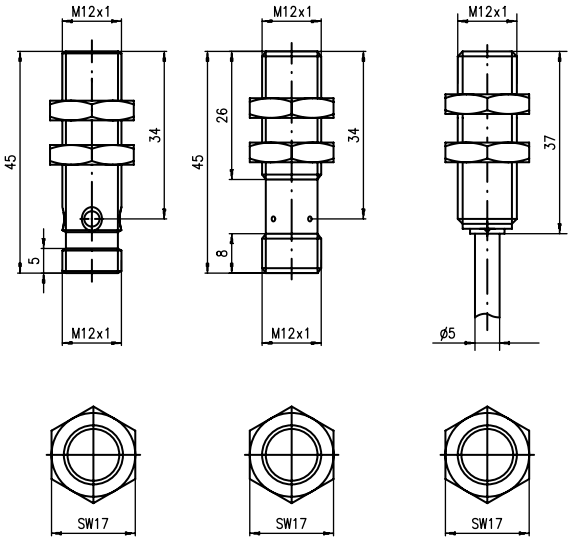
Dimensioned drawings: IS 212



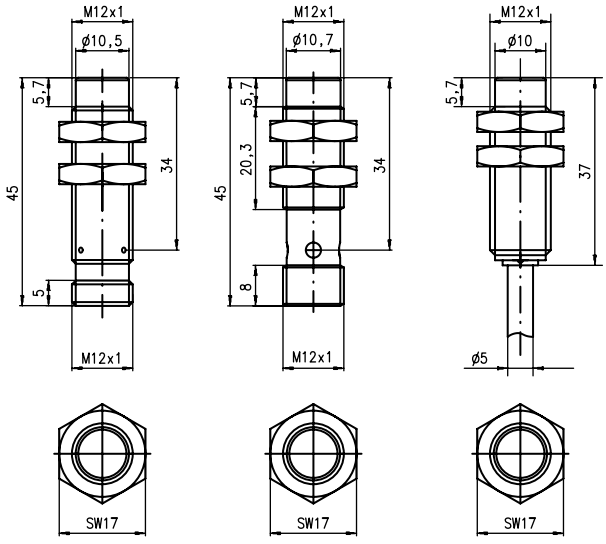
IS212...E... series



IS212...N... series

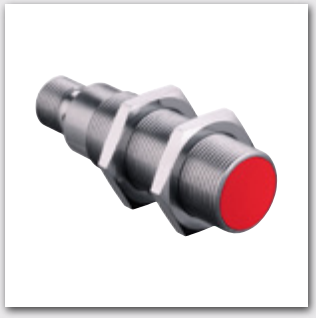


ISS 212...E... series



ISS 212...N... series

/// IS 218



In spite of the compact design in an M18 housing, these sensors don't skimp on power and can be quickly and easily integrated in the machine.

Benefits:

- Wide spectrum of available ranges enables application in limited spaces
- The sensor can be mounted at a greater distance from moving parts
- The high sensitivity of the sensors makes them the inexpensive solution for special applications, e.g. for close-range detection of small parts
- Sturdy all-metal housing for permanent operation

Direct access to the online product selector at **www.leuze.com/en/is218**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50109711	ISS 218MM/4NC-20N-S12	0 … 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129365	IS 218MM/4NC-20N	0 … 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109710	ISS 218MM/4NO-20N-S12	0 … 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109709	IS 218MM/4NO-20N	0 … 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50111953	IS 218MM/2NO-20N	0 … 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50135397	IS 218MM/4NC-12N-S12	0 … 9.7 mm 12 mm	5,000 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50134095	IS 218MM/4NO-12N-S12	0 … 9.7 mm 12 mm	500 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50129361	IS 218MM/4NC-8N0-S12	0 … 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129360	IS 218MM/4NC-8N0	0 … 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109697	IS 218MM/4NO-8N0-S12	0 … 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109696	IS 218MM/4NO-8N0	0 … 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50129363	IS 218MM/2NC-8N0-S12	0 … 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, NPN, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129362	IS 218MM/2NC-8N0	0 … 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109699	IS 218MM/2NO-8N0-S12	0 … 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109698	IS 218MM/2NO-8N0	0 … 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50129366	IS 218 mm/4NC-12E-S12	0 … 9.7 mm 12 mm	500 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50120273	ISS 218MM/4NC-12E-S12	0 … 9.7 mm 12 mm	500 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50114427	IS 218 mm/4NO-12E-S12	0 … 9.7 mm 12 mm	500 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109707	ISS 218MM/4NO-12E-S12	0 … 9.7 mm 12 mm	500 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109706	IS 218MM/4NO-12E	0 … 9.7 mm 12 mm	500 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109708	ISS 218MM/2NO-12E-S12	0 … 9.7 mm 12 mm	500 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50111954	IS 218MM/2NO-12E	0 … 9.7 mm 12 mm	500 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109702	IS 218MM/4NC-8E0-S12	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50111744	ISS 218MM/4NC-8E0-S12	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50135195	ISS 218MM/4NC-8E0-200-S12	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable with connector, 200 mm, M12, 4-pin	Metal
50129364	IS 218MM/4NC-8E0	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109701	IS 218MM/4NO-8E0-S12	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50111743	ISS 218MM/4NO-8E0-S12	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50135194	ISS 218MM/4NO-8E0-200-S12	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable with connector, 200 mm, M12, 4-pin	Metal
50109700	IS 218MM/4NO-8E0	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109705	IS 218MM/2NC-8E0-S12	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, NPN, break-contact (NC)	DC	Connector, M12, 4-pin	Metal

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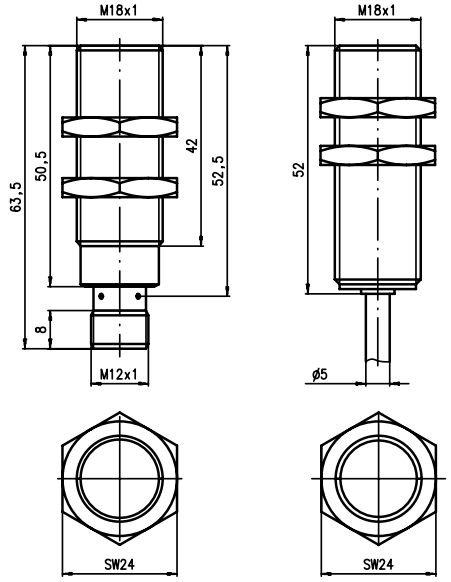
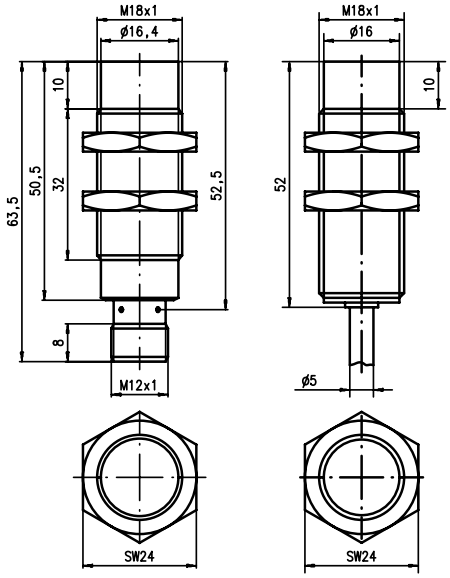
Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50111745	ISS 218MM/2NC-8E0-S12	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, NPN, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129367	IS 218MM/2NC-8E0	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109704	IS 218MM/2NO-8E0-S12	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109703	ISS 218MM/2NO-8E0-S12	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50112104	IS 218MM/2NO-8E0	0 … 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50127466	IS 218MM/4NC-5E0-S12	0 … 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129368	ISS 218MM/4NC-5E0-S12	0 … 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50118521	IS 218MM/4NC-5E0	0 … 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109693	IS 218MM/4NO-5E0-S12	0 … 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50112293	ISS 218MM/4NO-5E0-S12	0 … 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109692	IS 218MM/4NO-5E0	0 … 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50112915	ISS 218MM/4NO-5E0	0 … 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109694	IS 218MM/2NO-5E0	0 … 4 mm 5 mm	2,000 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal

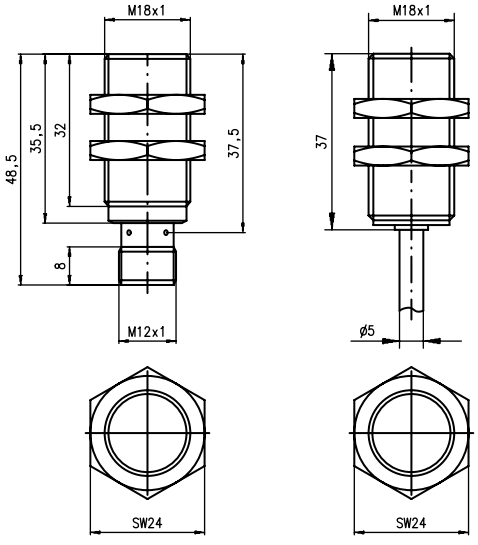
Dimensioned drawings: IS 218



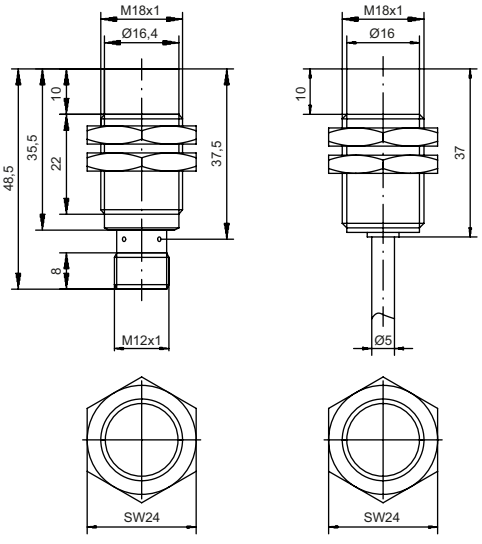
IS218…E… series



IS218…N… series



ISS 218…E… series



ISS 218…N… series

/// IS 230

With an operating range of up to 40 mm, this series in the M30 design opens the greatest possible flexibility during mounting.

Benefits:

- Wide spectrum of available ranges enables application in limited spaces
- The sensor can be mounted at a greater distance from moving parts
- The high sensitivity of the sensors makes them the inexpensive solution for special applications, e.g. for close-range detection of small parts
- Sturdy all-metal housing for permanent operation

Direct access to the online product selector at **www.leuze.com/en/is230**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50109727	IS 230MM/4NO-40N-S12	0 … 32.4 mm 40 mm	100 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109726	IS 230MM/4NO-40N	0 … 32.4 mm 40 mm	100 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109728	IS 230MM/2NO-40N	0 … 32.4 mm 40 mm	100 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50137114	IS 230MM/4NO-25N-S12	0 … 20.2 mm 25 mm	200 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50137115	IS 230MM/4NO-25N	0 … 20.2 mm 25 mm	200 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50128813	IS 230MM/4NC-15N-S12	0 … 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50129370	IS 230MM/4NC-15N	0 … 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109717	IS 230MM/4NO-15N-S12	0 … 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109716	IS 230MM/4NO-15N	0 … 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50129371	IS 230MM/2NC-15N	0 … 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, NPN, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal
50109719	IS 230MM/2NO-15N-S12	0 … 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109718	IS 230MM/2NO-15N	0 … 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109722	IS 230MM/4NC-22E-S12	0 … 17.8 mm 22 mm	200 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50109721	IS 230MM/4NO-22E-S12	0 … 17.8 mm 22 mm	200 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109720	IS 230MM/4NO-22E	0 … 17.8 mm 22 mm	200 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109723	IS 230MM/2NO-22E	0 … 17.8 mm 22 mm	200 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50111871	IS 230MM/4NC-10E-S12	0 … 8.1 mm 10 mm	1,200 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Connector, M12, 4-pin	Metal
50109713	IS 230MM/4NO-10E-S12	0 … 8.1 mm 10 mm	1,200 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M12, 4-pin	Metal
50109712	IS 230MM/4NO-10E	0 … 8.1 mm 10 mm	1,200 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50109714	IS 230MM/2NO-10E	0 … 8.1 mm 10 mm	1,200 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50129369	IS 230MM/4NC-10E	0 … 8 mm 10 mm	1,200 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Metal

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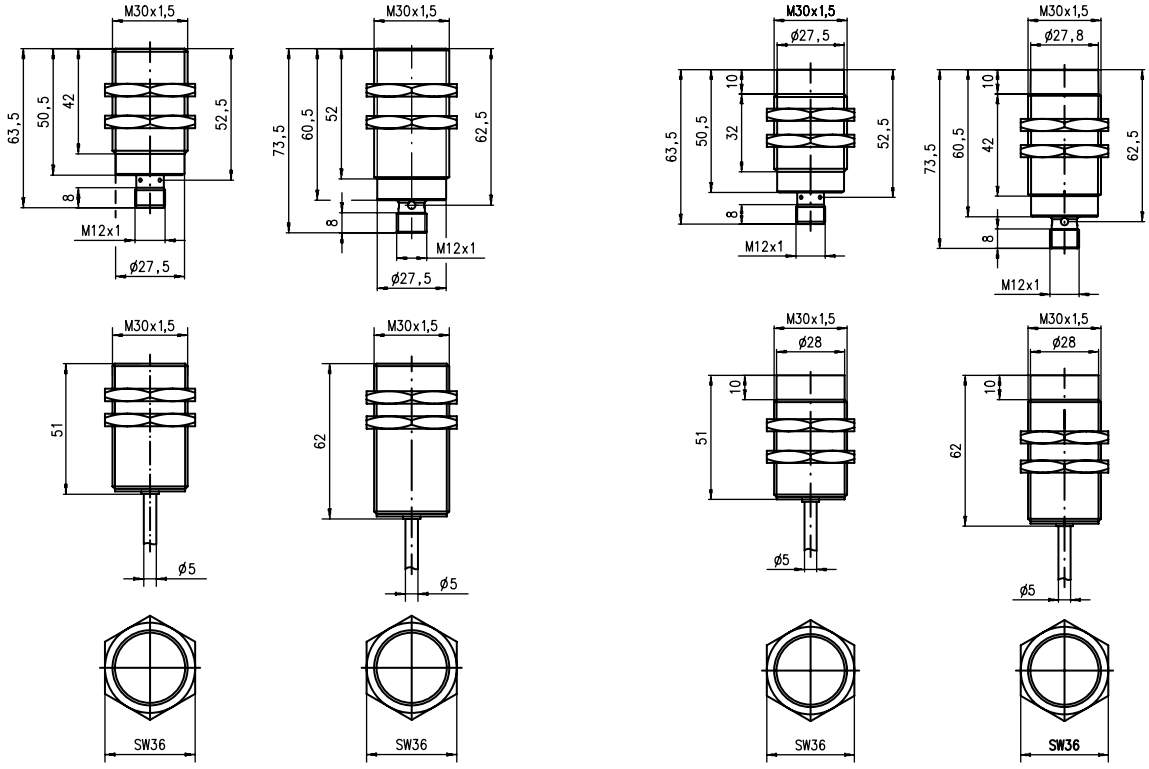
Dimensioned drawings: IS 230



IS230…E… series

IS230…N… series

ACCESSORIES: INDUCTIVE SWITCHES, CYLINDRICAL HOUSING

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113550	BT D08M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50113549	BT D12M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

/// Reduction factor 1 sensors

Sensors with this feature provide a constant operating range Sn, independent of the material – regardless of whether iron, stainless steel or copper. It can be used with objects made of different materials, or with very thin metal foils.

Benefits:

- Constant material-independent range Sn
- For various metals and thin films

Direct access to the online product selector at **www.leuze.com/en/is-rf1**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50111436	IS 230FM/4NO.5F-40N-S12	0 … 32.4 mm 40 mm	90 Hz	Non-embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50109734	IS 218FM/4NO.5F-20N-S12	0 … 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50109738	IS 212FM/4NO.5F-10N-S12	0 … 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50111435	IS 230FM/4NO.5F-20E-S12	0 … 16.2 mm 20 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50109732	IS 218FM/4NO.5F-10E-S12	0 … 8.1 mm 10 mm	300 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128163	IS 230FM/4NO.5-10E-S12	0 … 8.1 mm 10 mm	50 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128164	IS 230FM/4NO.5-10E	0 … 8.1 mm 10 mm	50 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50128165	IS 230FM/2NO.5-10E-S12	0 … 8.1 mm 10 mm	50 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128166	IS 230FM/2NO.5-10E	0 … 8.1 mm 10 mm	50 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50109736	IS 212FM/4NO.5F-6E0-S12	0 … 4.8 mm 6 mm	600 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128169	IS 218FM/4NO.5-5E0-S12	0 … 4 mm 5 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128170	IS 218FM/4NO.5-5E0	0 … 4 mm 5 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50128171	IS 218FM/2NO.5-5E0-S12	0 … 4 mm 5 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128172	IS 218FM/2NO.5-5E0	0 … 4 mm 5 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50128173	IS 212FM/4NC.5-3E0-S12	0 … 2.4 mm 3 mm	100 Hz	Embedded	Transistor, PNP, break-contact (NC)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128175	IS 212FM/4NO.5-3E0-S12	0 … 2.4 mm 3 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128176	IS 212FM/4NO.5-3E0	0 … 2.4 mm 3 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50128177	IS 212FM/2NO.5-3E0-S12	0 … 2.4 mm 3 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128178	IS 212FM/2NO.5-3E0	0 … 2.4 mm 3 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50128181	IS 208FM/4NO.5-2E0-S8.3	0 … 1.6 mm 2 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M8, 3-pin	Stainless steel
50128182	IS 208FM/4NO.5-2E0	0 … 1.6 mm 2 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50128183	IS 208FM/2NO.5-2E0-S8.3	0 … 1.6 mm 2 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Connector, M8, 3-pin	Stainless steel
50128184	IS 208FM/2NO.5-2E0	0 … 1.6 mm 2 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel

ACCESSORIES: SENSORS WITH REDUCTION FACTOR 1

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR

Further connection cables can be found on our website

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Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC

Further connection cables can be found on our website

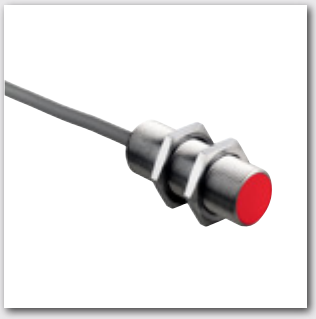
Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113550	BT D08M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50113549	BT D12M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

/// AC/DC sensors



These 2-wire sensors can be used in a versatile manner within a universal environment due to their large AC/DC voltage range.

Benefits:

- Voltage range 10 … 320 V AC/DC
- Non-polarized switching contact NC or NO

Direct access to the online product selector at **www.leuze.com/en/is-ac_dc**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50128153	IS 230MM/1NC.3-15N	0 … 12.1 mm 15 mm	500 Hz	Non-embedded	Relay, NC (normally closed)	AC/DC	Cable, 2,000 mm, 2-wire	Metal
50128154	IS 230MM/1NO.3-15N	0 … 12.1 mm 15 mm	500 Hz	Non-embedded	Relay, NO (normally open)	AC/DC	Cable, 2,000 mm, 2-wire	Metal
50128151	IS 218MM/1NC.3-5E0	0 … 4 mm 5 mm	1,500 Hz	Embedded	Relay, NC (normally closed)	AC/DC	Cable, 2,000 mm, 2-wire	Metal
50128152	IS 218MM/1NO.3-5E0	0 … 4 mm 5 mm	1,500 Hz	Embedded	Relay, NO (normally open)	AC/DC	Cable, 2,000 mm, 2-wire	Metal
50128149	IS 212MM/1NC.3-2E0	0 … 1.6 mm 2 mm	3,000 Hz	Embedded	Relay, NC (normally closed)	AC/DC	Cable, 2,000 mm, 2-wire	Metal
50128150	IS 212MM/1NO.3-2E0	0 … 1.6 mm 2 mm	3,000 Hz	Embedded	Relay, NO (normally open)	AC/DC	Cable, 2,000 mm, 2-wire	Metal

ACCESSORIES: AC/DC SENSORS

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113549	BT D12M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

//ALL STAINLESS STEEL SENSORS

SENSORS MADE OF V2A / V4A STAINLESS STEEL

Our inductive sensors made of stainless steel provide an optimal solution for use in environments with higher requirements on the housing material. Variants for the Food & Beverage area (316L) are also available.

/// IS 208

V2A sensor for extreme environmental conditions and material-independent switching distance (reduction factor 1).

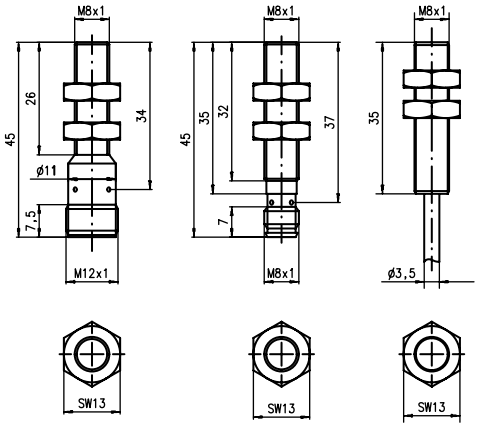
Benefits:

- Sturdy all-metal housing for high, permanent machine availability
- Housing of stainless steel V2A with degrees of protection IP 68 and IP 69K
- Switching distance independent of object property (reduction factor 1)

Direct access to the online product selector at **www.leuze.com/en/is208**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50128181	IS 208FM/4NO.5-2E0-S8.3	0 … 1.6 mm 2 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M8, 3-pin	Stainless steel
50128182	IS 208FM/4NO.5-2E0	0 … 1.6 mm 2 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50128183	IS 208FM/2NO.5-2E0-S8.3	0 … 1.6 mm 2 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Connector, M8, 3-pin	Stainless steel
50128184	IS 208FM/2NO.5-2E0	0 … 1.6 mm 2 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel

Dimensioned drawings: IS 208



IS 208…E… series

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/// IS 212

With their robust housing made of stainless steel, these sensor withstand even aggressive cleaning processes encountered in food and pharmaceutical production.

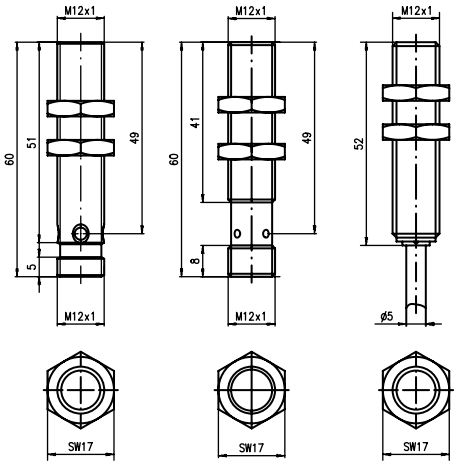
Benefits:

- Sturdy stainless steel housing for high, permanent machine availability
- Housing of stainless steel 316L with degree of protection IP 69K for food & beverage applications as well as V2A housing material with degree of protection IP 68/IP 69K
- Large ranges on stainless steel objects for reliable detection of machine parts, e.g. on packaging machinery in the foodstuffs sector
- Switching distance independent of object property (reduction factor 1)

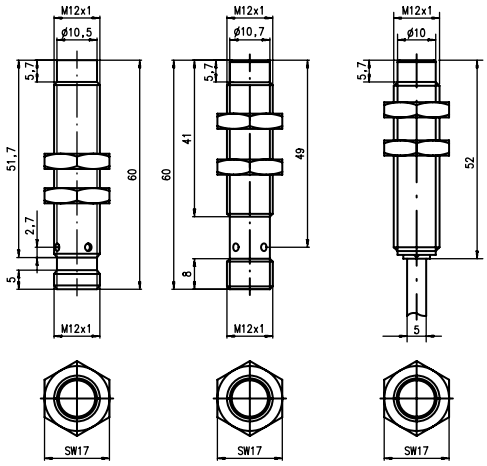
Direct access to the online product selector at **www.leuze.com/en/is212**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50109738	IS 212FM/4NO.5F-10N-S12	0 … 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50109736	IS 212FM/4NO.5F-6E0-S12	0 … 4.8 mm 6 mm	600 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128173	IS 212FM/4NC.5-3E0-S12	0 … 2.4 mm 3 mm	100 Hz	Embedded	Transistor, PNP, break-contact (NC)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128175	IS 212FM/4NO.5-3E0-S12	0 … 2.4 mm 3 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128176	IS 212FM/4NO.5-3E0	0 … 2.4 mm 3 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50128177	IS 212FM/2NO.5-3E0-S12	0 … 2.4 mm 3 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128178	IS 212FM/2NO.5-3E0	0 … 2.4 mm 3 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel

Dimensioned drawings: IS 212



IS212…E… series



IS212…N… series

/// IS 218

Like the IS 212 series, these sensors are likewise robust with V4A housing and, in addition, offer a larger switching distance.

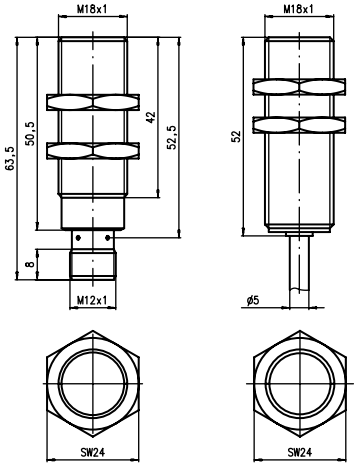
Benefits:

- Sturdy all-metal housing for high, permanent machine availability
- Housing of stainless steel 316L with degree of protection IP 69K for food & beverage applications as well as V2A housing material with degree of protection IP 68/IP 69K
- Large ranges on stainless steel objects for reliable detection of machine parts, e.g. on packaging machinery in the foodstuffs sector
- Switching distance independent of object property (reduction factor 1)

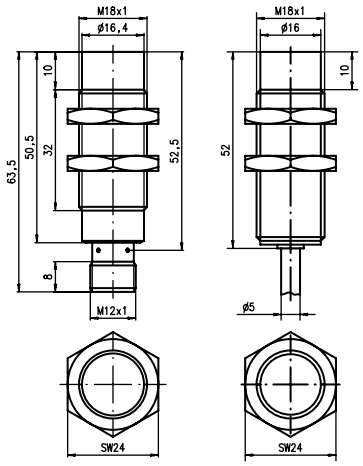
Direct access to the online product selector at **www.leuze.com/en/is218**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50109734	IS 218FM/4NO.5F-20N-S12	0 … 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50109732	IS 218FM/4NO.5F-10E-S12	0 … 8.1 mm 10 mm	300 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128169	IS 218FM/4NO.5-5E0-S12	0 … 4 mm 5 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128170	IS 218FM/4NO.5-5E0	0 … 4 mm 5 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50128171	IS 218FM/2NO.5-5E0-S12	0 … 4 mm 5 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128172	IS 218FM/2NO.5-5E0	0 … 4 mm 5 mm	100 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel

Dimensioned drawings: IS 218



IS218…E… series



IS218…N… series

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/// IS 230

With a switching distance of up to 40 mm, this series in the M30 stainless steel design offers the greatest possible flexibility during mounting.

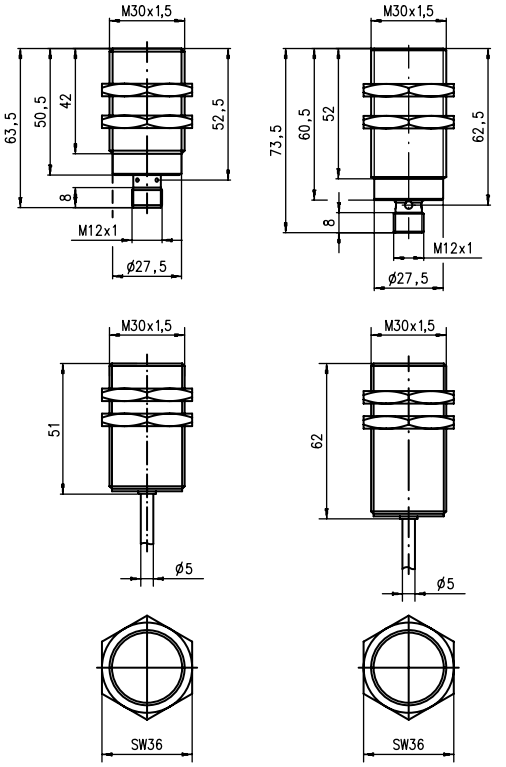
Benefits:

- Sturdy all-metal housing for high, permanent machine availability
- Housing of stainless steel 316L with degree of protection IP 69K for food & beverage applications as well as V2A housing material with degree of protection IP 68/IP 69K
- Large ranges on stainless steel objects for reliable detection of machine parts, e.g. on packaging machinery in the foodstuffs sector
- Switching distance independent of object property (reduction factor 1)

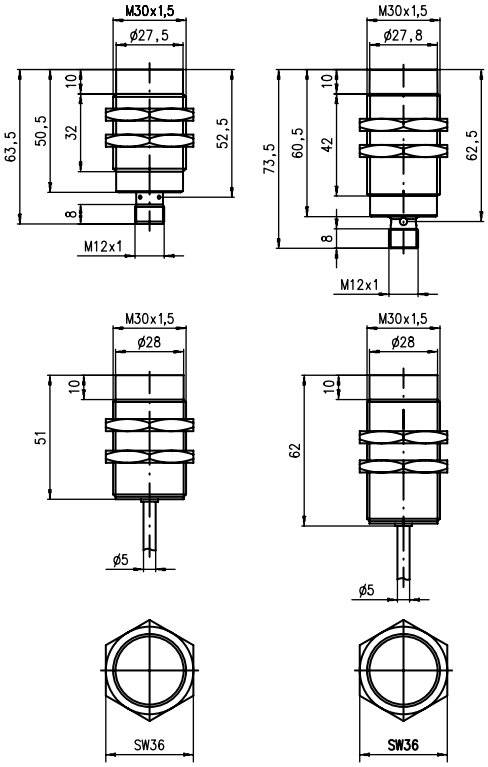
Direct access to the online product selector at **www.leuze.com/en/is230**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50111436	IS 230FM/4NO.5F-40N-S12	0 … 32.4 mm 40 mm	90 Hz	Non-embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50111435	IS 230FM/4NO.5F-20E-S12	0 … 16.2 mm 20 mm	100 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128163	IS 230FM/4NO.5-10E-S12	0 … 8.1 mm 10 mm	50 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128164	IS 230FM/4NO.5-10E	0 … 8.1 mm 10 mm	50 Hz	Embedded	Transistor, PNP, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel
50128165	IS 230FM/2NO.5-10E-S12	0 … 8.1 mm 10 mm	50 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Connector, M12, 4-pin	Stainless steel
50128166	IS 230FM/2NO.5-10E	0 … 8.1 mm 10 mm	50 Hz	Embedded	Transistor, NPN, NO (normally open)	Reduction factor 1, DC	Cable, 2,000 mm, 3-wire	Stainless steel

Dimensioned drawings: IS 230



IS 230…E… series



IS 230…N… series

ACCESSORIES: ALL STAINLESS STEEL SENSORS

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113550	BT D08M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50113549	BT D12M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

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Dr. Marie-Theres Heine,
Product Manager –
Binary Switching Sensors

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//MINIATURE SENSORS

SPACE IN THE SMALLEST SYSTEM

For constrained spaces and special applications, Leuze electronic offers miniature sensor versions in a wide range of designs.

/// IS 255

This subminiature sensor in a cubic housing measuring just 5 x 5 mm doesn't need to hide.

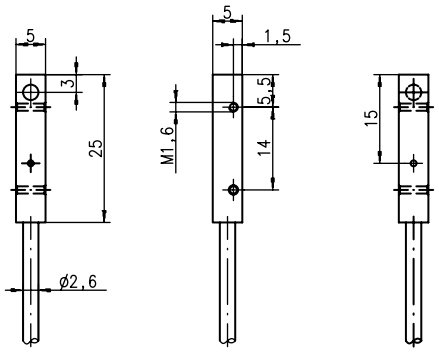
Benefits:

- Laterally aligned sensor field for space and hence cost-saving integration
- Short reaction times for reliable detection in dynamic processes

Direct access to the online product selector at **www.leuze.com/en/is255**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50117200	IS 255MP/4NO-1E5,200-S8.3	0 … 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable with connector, 200 mm, M8, 3-pin	Metal
50113209	IS 255MP/4NO-1E5	0 … 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50113210	IS 255MP/2NO-1E5	0 … 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, NPN, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal

Dimensioned drawings: IS 255



IS 255 series

/// IS 204

A cylindrical sensor with a diameter of just 4 mm fits in every system.

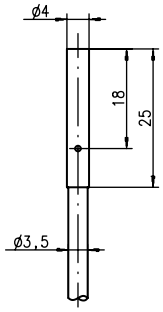
Benefits:

- Very small construction for integration in extremely confined spaces
- Large ranges offer broad application flexibility and sufficient function reserves for reliable detection even of different metals
- Short reaction times for reliable detection in dynamic processes

Direct access to the online product selector at **www.leuze.com/en/is204**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50133132	IS 204MP/4NC-1E5	0 … 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50113478	IS 204MP/4NO-1E5	0 … 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel

Dimensioned drawings: IS 204



IS 204 series

/// IS 205

With its M5 fine thread, this sensor can be very easily mounted even in constrained spaces.

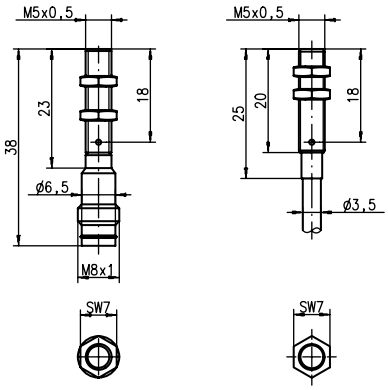
Benefits:

- Very small construction for integration in extremely confined spaces
- Clearly visible indicator for precise alignment
- Short reaction times for reliable detection in dynamic processes

Direct access to the online product selector at **www.leuze.com/en/is205**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50134895	IS 205MM/4NC-1E5	0 … 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	DC	Cable, 2,000 mm, 3-wire	Stainless steel
50113212	IS 205MM/4NO-1E5-S8.3	0 … 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Stainless steel
50113213	IS 205MM/4NO-1E5	0.9 … 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel

Dimensioned drawings: IS 205



IS 205 series

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/// IS 206

This miniature sensor convinces with ranges of up to 3.0 mm with completely flush mounting.

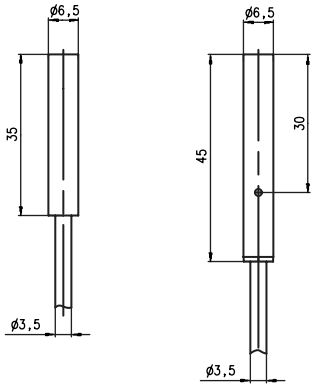
Benefits:

- Very small construction for integration in extremely confined spaces
- Large ranges offer broad application flexibility and sufficient function reserves for reliable detection even of different metals
- Short reaction times for reliable detection in dynamic processes

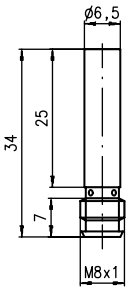
Direct access to the online product selector at **www.leuze.com/en/is206**

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Description	Connection	Material
50109686	IS 206MP/4NO-3E0	0 … 2.4 mm 3 mm	1,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Metal
50111438	ISS 206MP/4NO-2E0-S8.3	0 … 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Connector, M8, 3-pin	Stainless steel
50121902	IS 206MP/4NO-2E0,300-S8.3W	0 … 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable with connector, 300 mm, M8, 3-pin	Stainless steel
50121901	IS 206MP/4NO-2E0,150-S8.3W	0 … 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable with connector, 150 mm, M8, 3-pin	Stainless steel
50111437	IS 206MP/4NO-2E0	0 … 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, NO (normally open)	DC	Cable, 2,000 mm, 3-wire	Stainless steel

Dimensioned drawings: IS 206



IS 206 series



ISS 206 series

ACCESSORIES: MINIATURE SENSORS

Connection technology

Connection cables

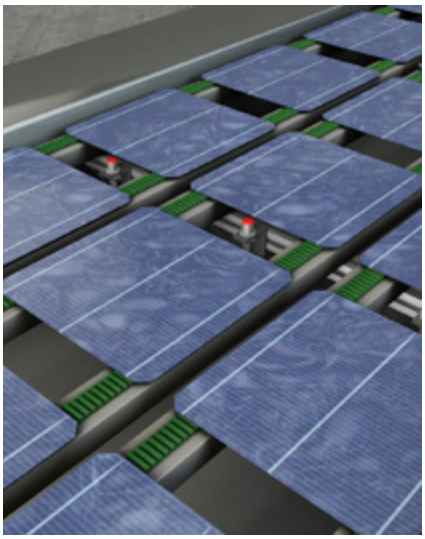
Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC

Further connection cables can be found on our website

/ CAPACITIVE SENSORS

DETECTION OF SOLID, LIQUID OR GRANULAR OBJECTS

With these sensors highly structured and non-dimensionally stable objects e.g. the fill levels of liquids or bulk materials can also be detected in direct contact with the medium or through a non-metallic container wall and are also suitable for completeness inspections. These sensors also function reliably in an extremely dusty or dirty environment. An array of different designs and large operating ranges complement our product line to practically all areas of application in industrial automation.



/// Capacitive sensors, standard sensors, cylindrical

The compact cylindrical construction can be universally used for a wide range of detection tasks. The selection covers plastic housing, stainless steel and metal housing. PTFE (Teflon) is also available to meet higher chemical requirements. The adjustability of the detection range makes these models extremely flexible in use.

CE

Direct access to the online product selector at **www.leuze.com/en/capa-cylind**

Part no.	Part description	Series	Type of installation	Switching distance Sn	Connection	Material	Output function	Dimension
50135758	LCS-1M12P-N08NNC-M12	LCS-1	Non-embedded	1 … 8 mm	Connector, M12	Plastic	NPN, NC (normally closed)	12 mm x 75 mm
50135757	LCS-1M12P-N08NNO-M12	LCS-1	Non-embedded	1 … 8 mm	Connector, M12	Plastic	NPN, NO (normally open)	12 mm x 75 mm
50135756	LCS-1M12P-N08PNC-M12	LCS-1	Non-embedded	1 … 8 mm	Connector, M12	Plastic	PNP, NC (normally closed)	12 mm x 75 mm
50135755	LCS-1M12P-N08PNO-M12	LCS-1	Non-embedded	1 … 8 mm	Connector, M12	Plastic	PNP, NO (normally open)	12 mm x 75 mm
50135778	LCS-1M18P-N15NNC-M12	LCS-1	Non-embedded	2 … 15 mm	Connector, M12	Plastic	NPN, NC (normally closed)	18 mm x 88.5 mm
50135777	LCS-1M18P-N15NNO-M12	LCS-1	Non-embedded	2 … 15 mm	Connector, M12	Plastic	NPN, NO (normally open)	18 mm x 88.5 mm
50135776	LCS-1M18P-N15PNC-M12	LCS-1	Non-embedded	2 … 15 mm	Connector, M12	Plastic	PNP, NC (normally closed)	18 mm x 88.5 mm
50135775	LCS-1M18P-N15PNO-M12	LCS-1	Non-embedded	2 … 15 mm	Connector, M12	Plastic	PNP, NO (normally open)	18 mm x 88.5 mm
50135798	LCS-1M30P-N25NNC-M12	LCS-1	Non-embedded	1 … 25 mm	Connector, M12	Plastic	NPN, NC (normally closed)	30 mm x 78.5 mm
50135797	LCS-1M30P-N25NNO-M12	LCS-1	Non-embedded	1 … 25 mm	Connector, M12	Plastic	NPN, NO (normally open)	30 mm x 78.5 mm
50135796	LCS-1M30P-N25PNC-M12	LCS-1	Non-embedded	1 … 25 mm	Connector, M12	Plastic	PNP, NC (normally closed)	30 mm x 78.5 mm
50135795	LCS-1M30P-N25PNO-M12	LCS-1	Non-embedded	1 … 25 mm	Connector, M12	Plastic	PNP, NO (normally open)	30 mm x 78.5 mm
50135750	LCS-1M12M-N08NNC-M12	LCS-1	Non-embedded	1 … 8 mm	Connector, M12	Metal, stainless steel	NPN, NC (normally closed)	12 mm x 75 mm
50135749	LCS-1M12M-N08NNO-M12	LCS-1	Non-embedded	1 … 8 mm	Connector, M12	Metal, stainless steel	NPN, NO (normally open)	12 mm x 75 mm
50135748	LCS-1M12M-N08PNC-M12	LCS-1	Non-embedded	1 … 8 mm	Connector, M12	Metal, stainless steel	PNP, NC (normally closed)	12 mm x 75 mm
50135747	LCS-1M12M-N08PNO-M12	LCS-1	Non-embedded	1 … 8 mm	Connector, M12	Metal, stainless steel	PNP, NO (normally open)	12 mm x 75 mm
50135770	LCS-1M18M-N15NNC-M12	LCS-1	Non-embedded	2 … 15 mm	Connector, M12	Metal, stainless steel	NPN, NC (normally closed)	18 mm x 88.5 mm
50135769	LCS-1M18M-N15NNO-M12	LCS-1	Non-embedded	2 … 15 mm	Connector, M12	Metal, stainless steel	NPN, NO (normally open)	18 mm x 88.5 mm
50135768	LCS-1M18M-N15PNC-M12	LCS-1	Non-embedded	2 … 15 mm	Connector, M12	Metal, stainless steel	PNP, NC (normally closed)	18 mm x 88.5 mm
50135767	LCS-1M18M-N15PNO-M12	LCS-1	Non-embedded	2 … 15 mm	Connector, M12	Metal, stainless steel	PNP, NO (normally open)	18 mm x 88.5 mm
50135790	LCS-1M30M-N25NNC-M12	LCS-1	Non-embedded	1 … 25 mm	Connector, M12	Metal, stainless steel	NPN, NC (normally closed)	30 mm x 78.5 mm
50135789	LCS-1M30M-N25NNO-M12	LCS-1	Non-embedded	1 … 25 mm	Connector, M12	Metal, stainless steel	NPN, NO (normally open)	30 mm x 78.5 mm
50135788	LCS-1M30M-N25PNC-M12	LCS-1	Non-embedded	1 … 25 mm	Connector, M12	Metal, stainless steel	PNP, NC (normally closed)	30 mm x 78.5 mm
50135787	LCS-1M30M-N25PNO-M12	LCS-1	Non-embedded	1 … 25 mm	Connector, M12	Metal, stainless steel	PNP, NO (normally open)	30 mm x 78.5 mm
50135762	LCS-1M12P-N08NNC-K020P	LCS-1	Non-embedded	1 … 8 mm	Cable	Plastic	NPN, NC (normally closed)	12 mm x 61 mm
50135761	LCS-1M12P-N08NNO-K020P	LCS-1	Non-embedded	1 … 8 mm	Cable	Plastic	NPN, NO (normally open)	12 mm x 61 mm
50135760	LCS-1M12P-N08PNC-K020P	LCS-1	Non-embedded	1 … 8 mm	Cable	Plastic	PNP, NC (normally closed)	12 mm x 61 mm
50135759	LCS-1M12P-N08PNO-K020P	LCS-1	Non-embedded	1 … 8 mm	Cable	Plastic	PNP, NO (normally open)	12 mm x 61 mm
50135766	LCS-1M12T-N08NNC-K020T	LCS-1	Non-embedded	1 … 8 mm	Cable	Plastic	NPN, NC (normally closed)	12 mm x 53 mm
50135765	LCS-1M12T-N08NNO-K020T	LCS-1	Non-embedded	1 … 8 mm	Cable	Plastic	NPN, NO (normally open)	12 mm x 53 mm
50135764	LCS-1M12T-N08PNC-K020T	LCS-1	Non-embedded	1 … 8 mm	Cable	Plastic	PNP, NC (normally closed)	12 mm x 53 mm
50135763	LCS-1M12T-N08PNO-K020T	LCS-1	Non-embedded	1 … 8 mm	Cable	Plastic	PNP, NO (normally open)	12 mm x 53 mm
50135782	LCS-1M18P-N15NNC-K020P	LCS-1	Non-embedded	2 … 15 mm	Cable	Plastic	NPN, NC (normally closed)	18 mm x 75.5 mm
50135781	LCS-1M18P-N15NNO-K020P	LCS-1	Non-embedded	2 … 15 mm	Cable	Plastic	NPN, NO (normally open)	18 mm x 75.5 mm
50135780	LCS-1M18P-N15PNC-K020P	LCS-1	Non-embedded	2 … 15 mm	Cable	Plastic	PNP, NC (normally closed)	18 mm x 75.5 mm
50135779	LCS-1M18P-N15PNO-K020P	LCS-1	Non-embedded	2 … 15 mm	Cable	Plastic	PNP, NO (normally open)	18 mm x 75.5 mm
50135786	LCS-1M18T-N15NNC-K020T	LCS-1	Non-embedded	2 … 15 mm	Cable	Plastic	NPN, NC (normally closed)	18 mm x 73 mm
50135785	LCS-1M18T-N15NNO-K020T	LCS-1	Non-embedded	2 … 15 mm	Cable	Plastic	NPN, NO (normally open)	18 mm x 73 mm
50135784	LCS-1M18T-N15PNC-K020T	LCS-1	Non-embedded	2 … 15 mm	Cable	Plastic	PNP, NC (normally closed)	18 mm x 73 mm
50135783	LCS-1M18T-N15PNO-K020T	LCS-1	Non-embedded	2 … 15 mm	Cable	Plastic	PNP, NO (normally open)	18 mm x 73 mm
50135802	LCS-1M30P-N25NNC-K020P	LCS-1	Non-embedded	1 … 25 mm	Cable	Plastic	NPN, NC (normally closed)	30 mm x 66.5 mm
50135801	LCS-1M30P-N25NNO-K020P	LCS-1	Non-embedded	1 … 25 mm	Cable	Plastic	NPN, NO (normally open)	30 mm x 66.5 mm
50135800	LCS-1M30P-N25PNC-K020P	LCS-1	Non-embedded	1 … 25 mm	Cable	Plastic	PNP, NC (normally closed)	30 mm x 66.5 mm
50135799	LCS-1M30P-N25PNO-K020P	LCS-1	Non-embedded	1 … 25 mm	Cable	Plastic	PNP, NO (normally open)	30 mm x 66.5 mm
50135806	LCS-1M30T-N30NNC-K020T	LCS-1	Non-embedded	2 … 30 mm	Cable	Plastic	NPN, NC (normally closed)	30 mm x 72 mm
50135805	LCS-1M30T-N30NNO-K020T	LCS-1	Non-embedded	2 … 30 mm	Cable	Plastic	NPN, NO (normally open)	30 mm x 72 mm
50135804	LCS-1M30T-N30PNC-K020T	LCS-1	Non-embedded	2 … 30 mm	Cable	Plastic	PNP, NC (normally closed)	30 mm x 72 mm
50135803	LCS-1M30T-N30PNO-K020T	LCS-1	Non-embedded	2 … 30 mm	Cable	Plastic	PNP, NO (normally open)	30 mm x 72 mm
50135754	LCS-1M12M-N08NNC-K020P	LCS-1	Non-embedded	1 … 8 mm	Cable	Metal, stainless steel	NPN, NC (normally closed)	12 mm x 61 mm
50135753	LCS-1M12M-N08NNO-K020P	LCS-1	Non-embedded	1 … 8 mm	Cable	Metal, stainless steel	NPN, NO (normally open)	12 mm x 61 mm
50135752	LCS-1M12M-N08PNC-K020P	LCS-1	Non-embedded	1 … 8 mm	Cable	Metal, stainless steel	PNP, NC (normally closed)	12 mm x 61 mm
50135751	LCS-1M12M-N08PNO-K020P	LCS-1	Non-embedded	1 … 8 mm	Cable	Metal, stainless steel	PNP, NO (normally open)	12 mm x 61 mm
50135774	LCS-1M18M-N15NNC-K020P	LCS-1	Non-embedded	2 … 15 mm	Cable	Metal, stainless steel	NPN, NC (normally closed)	18 mm x 75.5 mm
50135773	LCS-1M18M-N15NNO-K020P	LCS-1	Non-embedded	2 … 15 mm	Cable	Metal, stainless steel	NPN, NO (normally open)	18 mm x 75.5 mm

Part no.	Part description	Series	Type of installation	Switching distance Sn	Connection	Material	Output function	Dimension
50135772	LCS-1M18M-N15PNC-K020P	LCS-1	Non-embedded	2 … 15 mm	Cable	Metal, stainless steel	PNP, NC (normally closed)	18 mm x 75.5 mm
50135771	LCS-1M18M-N15PNO-K020P	LCS-1	Non-embedded	2 … 15 mm	Cable	Metal, stainless steel	PNP, NO (normally open)	18 mm x 75.5 mm
50135794	LCS-1M30M-N25NNC-K020P	LCS-1	Non-embedded	1 … 25 mm	Cable	Metal, stainless steel	NPN, NC (normally closed)	30 mm x 66.5 mm
50135793	LCS-1M30M-N25NNO-K020P	LCS-1	Non-embedded	1 … 25 mm	Cable	Metal, stainless steel	NPN, NO (normally open)	30 mm x 66.5 mm
50135792	LCS-1M30M-N25PNC-K020P	LCS-1	Non-embedded	1 … 25 mm	Cable	Metal, stainless steel	PNP, NC (normally closed)	30 mm x 66.5 mm
50135791	LCS-1M30M-N25PNO-K020P	LCS-1	Non-embedded	1 … 25 mm	Cable	Metal, stainless steel	PNP, NO (normally open)	30 mm x 66.5 mm
50135699	LCS-1M12P-F04NNC-M12	LCS-1	Embedded	1 … 4 mm	Connector, M12	Plastic	NPN, NC (normally closed)	12 mm x 75 mm
50135698	LCS-1M12P-F04NNO-M12	LCS-1	Embedded	1 … 4 mm	Connector, M12	Plastic	NPN, NO (normally open)	12 mm x 75 mm
50135697	LCS-1M12P-F04PNC-M12	LCS-1	Embedded	1 … 4 mm	Connector, M12	Plastic	PNP, NC (normally closed)	12 mm x 75 mm
50135696	LCS-1M12P-F04PNO-M12	LCS-1	Embedded	1 … 4 mm	Connector, M12	Plastic	PNP, NO (normally open)	12 mm x 75 mm
50135715	LCS-1M18P-F08NNC-M12	LCS-1	Embedded	1 … 8 mm	Connector, M12	Plastic	NPN, NC (normally closed)	18 mm x 88.5 mm
50135714	LCS-1M18P-F08NNO-M12	LCS-1	Embedded	1 … 8 mm	Connector, M12	Plastic	NPN, NO (normally open)	18 mm x 88.5 mm
50135713	LCS-1M18P-F08PNC-M12	LCS-1	Embedded	1 … 8 mm	Connector, M12	Plastic	PNP, NC (normally closed)	18 mm x 88.5 mm
50135712	LCS-1M18P-F08PNO-M12	LCS-1	Embedded	1 … 8 mm	Connector, M12	Plastic	PNP, NO (normally open)	18 mm x 88.5 mm
50135733	LCS-1M30P-F15NNC-M12	LCS-1	Embedded	2 … 15 mm	Connector, M12	Plastic	NPN, NC (normally closed)	30 mm x 79 mm
50135732	LCS-1M30P-F15NNO-M12	LCS-1	Embedded	2 … 15 mm	Connector, M12	Plastic	NPN, NO (normally open)	30 mm x 79 mm
50135731	LCS-1M30P-F15PNC-M12	LCS-1	Embedded	2 … 15 mm	Connector, M12	Plastic	PNP, NC (normally closed)	30 mm x 79 mm
50135730	LCS-1M30P-F15PNO-M12	LCS-1	Embedded	2 … 15 mm	Connector, M12	Plastic	PNP, NO (normally open)	30 mm x 79 mm
50135691	LCS-1M12M-F04NNC-M12	LCS-1	Embedded	1 … 4 mm	Connector, M12	Metal, stainless steel	NPN, NC (normally closed)	12 mm x 75 mm
50135690	LCS-1M12M-F04NNO-M12	LCS-1	Embedded	1 … 4 mm	Connector, M12	Metal, stainless steel	NPN, NO (normally open)	12 mm x 75 mm
50135689	LCS-1M12M-F04PNC-M12	LCS-1	Embedded	1 … 4 mm	Connector, M12	Metal, stainless steel	PNP, NC (normally closed)	12 mm x 75 mm
50135688	LCS-1M12M-F04PNO-M12	LCS-1	Embedded	1 … 4 mm	Connector, M12	Metal, stainless steel	PNP, NO (normally open)	12 mm x 75 mm
50135707	LCS-1M18M-F08NNC-M12	LCS-1	Embedded	1 … 8 mm	Connector, M12	Metal, stainless steel	NPN, NC (normally closed)	18 mm x 88.5 mm
50135706	LCS-1M18M-F08NNO-M12	LCS-1	Embedded	1 … 8 mm	Connector, M12	Metal, stainless steel	NPN, NO (normally open)	18 mm x 88.5 mm
50135705	LCS-1M18M-F08PNC-M12	LCS-1	Embedded	1 … 8 mm	Connector, M12	Metal, stainless steel	PNP, NC (normally closed)	18 mm x 88.5 mm
50135704	LCS-1M18M-F08PNO-M12	LCS-1	Embedded	1 … 8 mm	Connector, M12	Metal, stainless steel	PNP, NO (normally open)	18 mm x 88.5 mm
50135725	LCS-1M30M-F15NNC-M12	LCS-1	Embedded	2 … 15 mm	Connector, M12	Metal, stainless steel	NPN, NC (normally closed)	30 mm x 79 mm
50135724	LCS-1M30M-F15NNO-M12	LCS-1	Embedded	2 … 15 mm	Connector, M12	Metal, stainless steel	NPN, NO (normally open)	30 mm x 79 mm
50135723	LCS-1M30M-F15PNC-M12	LCS-1	Embedded	2 … 15 mm	Connector, M12	Metal, stainless steel	PNP, NC (normally closed)	30 mm x 79 mm
50135722	LCS-1M30M-F15PNO-M12	LCS-1	Embedded	2 … 15 mm	Connector, M12	Metal, stainless steel	PNP, NO (normally open)	30 mm x 79 mm
50135703	LCS-1M12P-F04NNC-K020P	LCS-1	Embedded	1 … 4 mm	Cable	Plastic	NPN, NC (normally closed)	12 mm x 61 mm
50135702	LCS-1M12P-F04NNO-K020P	LCS-1	Embedded	1 … 4 mm	Cable	Plastic	NPN, NO (normally open)	12 mm x 61 mm
50135701	LCS-1M12P-F04PNC-K020P	LCS-1	Embedded	1 … 4 mm	Cable	Plastic	PNP, NC (normally closed)	12 mm x 61 mm
50135700	LCS-1M12P-F04PNO-K020P	LCS-1	Embedded	1 … 4 mm	Cable	Plastic	PNP, NO (normally open)	12 mm x 61 mm
50135719	LCS-1M18P-F08NNC-K020P	LCS-1	Embedded	1 … 8 mm	Cable	Plastic	NPN, NC (normally closed)	18 mm x 75 mm
50135718	LCS-1M18P-F08NNO-K020P	LCS-1	Embedded	1 … 8 mm	Cable	Plastic	NPN, NO (normally open)	18 mm x 75 mm
50135717	LCS-1M18P-F08PNC-K020P	LCS-1	Embedded	1 … 8 mm	Cable	Plastic	PNP, NC (normally closed)	18 mm x 75 mm
50135716	LCS-1M18P-F08PNO-K020P	LCS-1	Embedded	1 … 8 mm	Cable	Plastic	PNP, NO (normally open)	18 mm x 75 mm
50135737	LCS-1M30P-F15NNC-K020P	LCS-1	Embedded	2 … 15 mm	Cable	Plastic	NPN, NC (normally closed)	30 mm x 66.5 mm
50135736	LCS-1M30P-F15NNO-K020P	LCS-1	Embedded	2 … 15 mm	Cable	Plastic	NPN, NO (normally open)	30 mm x 66.5 mm
50135735	LCS-1M30P-F15PNC-K020P	LCS-1	Embedded	2 … 15 mm	Cable	Plastic	PNP, NC (normally closed)	30 mm x 66.5 mm
50135734	LCS-1M30P-F15PNO-K020P	LCS-1	Embedded	2 … 15 mm	Cable	Plastic	PNP, NO (normally open)	30 mm x 66.5 mm
50135695	LCS-1M12M-F04NNC-K020P	LCS-1	Embedded	1 … 4 mm	Cable	Metal, stainless steel	NPN, NC (normally closed)	12 mm x 61 mm
50135694	LCS-1M12M-F04NNO-K020P	LCS-1	Embedded	1 … 4 mm	Cable	Metal, stainless steel	NPN, NO (normally open)	12 mm x 61 mm
50135693	LCS-1M12M-F04PNC-K020P	LCS-1	Embedded	1 … 4 mm	Cable	Metal, stainless steel	PNP, NC (normally closed)	12 mm x 61 mm
50135692	LCS-1M12M-F04PNO-K020P	LCS-1	Embedded	1 … 4 mm	Cable	Metal, stainless steel	PNP, NO (normally open)	12 mm x 61 mm
50135711	LCS-1M18M-F08NNC-K020P	LCS-1	Embedded	1 … 8 mm	Cable	Metal, stainless steel	NPN, NC (normally closed)	18 mm x 75.5 mm
50135710	LCS-1M18M-F08NNO-K020P	LCS-1	Embedded	1 … 8 mm	Cable	Metal, stainless steel	NPN, NO (normally open)	18 mm x 75.5 mm
50135709	LCS-1M18M-F08PNC-K020P	LCS-1	Embedded	1 … 8 mm	Cable	Metal, stainless steel	PNP, NC (normally closed)	18 mm x 75.5 mm
50135708	LCS-1M18M-F08PNO-K020P	LCS-1	Embedded	1 … 8 mm	Cable	Metal, stainless steel	PNP, NO (normally open)	18 mm x 75.5 mm
50135729	LCS-1M30M-F15NNC-K020P	LCS-1	Embedded	2 … 15 mm	Cable	Metal, stainless steel	NPN, NC (normally closed)	30 mm x 66.5 mm
50135728	LCS-1M30M-F15NNO-K020P	LCS-1	Embedded	2 … 15 mm	Cable	Metal, stainless steel	NPN, NO (normally open)	30 mm x 66.5 mm
50135727	LCS-1M30M-F15PNC-K020P	LCS-1	Embedded	2 … 15 mm	Cable	Metal, stainless steel	PNP, NC (normally closed)	30 mm x 66.5 mm
50135726	LCS-1M30M-F15PNO-K020P	LCS-1	Embedded	2 … 15 mm	Cable	Metal, stainless steel	PNP, NO (normally open)	30 mm x 66.5 mm
50136576	LCS-2M12B-N06NNC-M12	LCS-2	Non-embedded	1 … 6 mm	Connector, M12	Metal	NPN, NC (normally closed)	12 mm x 68 mm
50136575	LCS-2M12B-N06NNO-M12	LCS-2	Non-embedded	1 … 6 mm	Connector, M12	Metal	NPN, NO (normally open)	12 mm x 68 mm
50136574	LCS-2M12B-N06PNC-M12	LCS-2	Non-embedded	1 … 6 mm	Connector, M12	Metal	PNP, NC (normally closed)	12 mm x 68 mm
50136573	LCS-2M12B-N06PNO-M12	LCS-2	Non-embedded	1 … 6 mm	Connector, M12	Metal	PNP, NO (normally open)	12 mm x 68 mm
50136596	LCS-2M18B-N15NNC-M12	LCS-2	Non-embedded	2 … 15 mm	Connector, M12	Metal	NPN, NC (normally closed)	18 mm x 85 mm
50136595	LCS-2M18B-N15NNO-M12	LCS-2	Non-embedded	2 … 15 mm	Connector, M12	Metal	NPN, NO (normally open)	18 mm x 85 mm
50136594	LCS-2M18B-N15PNC-M12	LCS-2	Non-embedded	2 … 15 mm	Connector, M12	Metal	PNP, NC (normally closed)	18 mm x 85 mm
50136593	LCS-2M18B-N15PNO-M12	LCS-2	Non-embedded	2 … 15 mm	Connector, M12	Metal	PNP, NO (normally open)	18 mm x 85 mm
50136616	LCS-2M30B-N30NNC-M12	LCS-2	Non-embedded	2 … 30 mm	Connector, M12	Metal	NPN, NC (normally closed)	30 mm x 98 mm
50136615	LCS-2M30B-N30NNO-M12	LCS-2	Non-embedded	2 … 30 mm	Connector, M12	Metal	NPN, NO (normally open)	30 mm x 98 mm
50136614	LCS-2M30B-N30PNC-M12	LCS-2	Non-embedded	2 … 30 mm	Connector, M12	Metal	PNP, NC (normally closed)	30 mm x 98 mm
50136613	LCS-2M30B-N30PNO-M12	LCS-2	Non-embedded	2 … 30 mm	Connector, M12	Metal	PNP, NO (normally open)	30 mm x 98 mm
50136584	LCS-2M12P-N06NNC-M12	LCS-2	Non-embedded	1 … 6 mm	Connector, M12	Plastic	NPN, NC (normally closed)	12 mm x 68 mm
50136583	LCS-2M12P-N06NNO-M12	LCS-2	Non-embedded	1 … 6 mm	Connector, M12	Plastic	NPN, NO (normally open)	12 mm x 68 mm
50136582	LCS-2M12P-N06PNC-M12	LCS-2	Non-embedded	1 … 6 mm	Connector, M12	Plastic	PNP, NC (normally closed)	12 mm x 68 mm
50136581	LCS-2M12P-N06PNO-M12	LCS-2	Non-embedded	1 … 6 mm	Connector, M12	Plastic	PNP, NO (normally open)	12 mm x 68 mm
50136604	LCS-2M18P-N15NNC-M12	LCS-2	Non-embedded	2 … 15 mm	Connector, M12	Plastic	NPN, NC (normally closed)	18 mm x 85 mm

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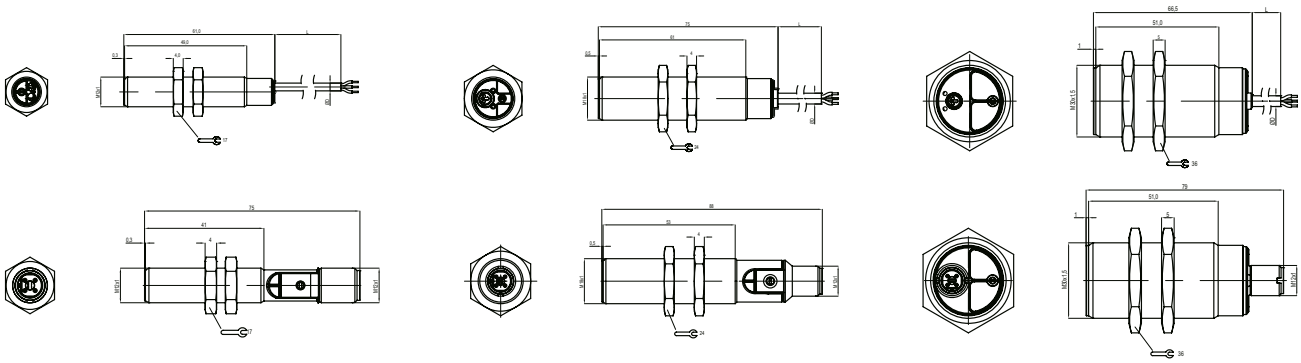
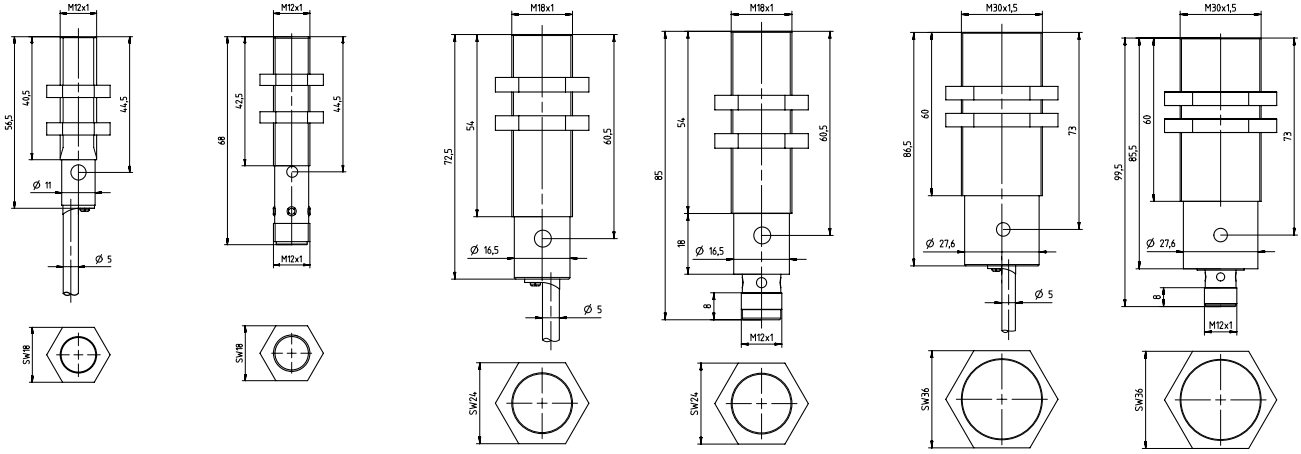
Part no.	Part description	Series	Type of installation	Switching distance Sn	Connection	Material	Output function	Dimension
50136603	LCS-2M18P-N15NNO-M12	LCS-2	Non-embedded	2 … 15 mm	Connector, M12	Plastic	NPN, NO (normally open)	18 mm x 85 mm
50136602	LCS-2M18P-N15PNC-M12	LCS-2	Non-embedded	2 … 15 mm	Connector, M12	Plastic	PNP, NC (normally closed)	18 mm x 85 mm
50136601	LCS-2M18P-N15PNO-M12	LCS-2	Non-embedded	2 … 15 mm	Connector, M12	Plastic	PNP, NO (normally open)	18 mm x 85 mm
50136624	LCS-2M30P-N30NNC-M12	LCS-2	Non-embedded	2 … 30 mm	Connector, M12	Plastic	NPN, NC (normally closed)	30 mm x 98 mm
50136623	LCS-2M30P-N30NNO-M12	LCS-2	Non-embedded	2 … 30 mm	Connector, M12	Plastic	NPN, NO (normally open)	30 mm x 98 mm
50136622	LCS-2M30P-N30PNC-M12	LCS-2	Non-embedded	2 … 30 mm	Connector, M12	Plastic	PNP, NC (normally closed)	30 mm x 98 mm
50136621	LCS-2M30P-N30PNO-M12	LCS-2	Non-embedded	2 … 30 mm	Connector, M12	Plastic	PNP, NO (normally open)	30 mm x 98 mm
50136580	LCS-2M12B-N06NNC-K020V	LCS-2	Non-embedded	1 … 6 mm	Cable	Metal	NPN, NC (normally closed)	12 mm x 55 mm
50136579	LCS-2M12B-N06NNO-K020V	LCS-2	Non-embedded	1 … 6 mm	Cable	Metal	NPN, NO (normally open)	12 mm x 55 mm
50136578	LCS-2M12B-N06PNC-K020V	LCS-2	Non-embedded	1 … 6 mm	Cable	Metal	PNP, NC (normally closed)	12 mm x 55 mm
50136577	LCS-2M12B-N06PNO-K020V	LCS-2	Non-embedded	1 … 6 mm	Cable	Metal	PNP, NO (normally open)	12 mm x 55 mm
50136600	LCS-2M18B-N15NNC-K020V	LCS-2	Non-embedded	2 … 15 mm	Cable	Metal	NPN, NC (normally closed)	18 mm x 70 mm
50136599	LCS-2M18B-N15NNO-K020V	LCS-2	Non-embedded	2 … 15 mm	Cable	Metal	NPN, NO (normally open)	18 mm x 70 mm
50136598	LCS-2M18B-N15PNC-K020V	LCS-2	Non-embedded	2 … 15 mm	Cable	Metal	PNP, NC (normally closed)	18 mm x 70 mm
50136597	LCS-2M18B-N15PNO-K020V	LCS-2	Non-embedded	2 … 15 mm	Cable	Metal	PNP, NO (normally open)	18 mm x 70 mm
50136620	LCS-2M30B-N30NNC-K020V	LCS-2	Non-embedded	2 … 30 mm	Cable	Metal	NPN, NC (normally closed)	30 mm x 85 mm
50136619	LCS-2M30B-N30NNO-K020V	LCS-2	Non-embedded	2 … 30 mm	Cable	Metal	NPN, NO (normally open)	30 mm x 85 mm
50136618	LCS-2M30B-N30PNC-K020V	LCS-2	Non-embedded	2 … 30 mm	Cable	Metal	PNP, NC (normally closed)	30 mm x 85 mm
50136617	LCS-2M30B-N30PNO-K020V	LCS-2	Non-embedded	2 … 30 mm	Cable	Metal	PNP, NO (normally open)	30 mm x 85 mm
50136588	LCS-2M12P-N06NNC-K020V	LCS-2	Non-embedded	1 … 6 mm	Cable	Plastic	NPN, NC (normally closed)	12 mm x 55 mm
50136587	LCS-2M12P-N06NNO-K020V	LCS-2	Non-embedded	1 … 6 mm	Cable	Plastic	NPN, NO (normally open)	12 mm x 55 mm
50136586	LCS-2M12P-N06PNC-K020V	LCS-2	Non-embedded	1 … 6 mm	Cable	Plastic	PNP, NC (normally closed)	12 mm x 55 mm
50136585	LCS-2M12P-N06PNO-K020V	LCS-2	Non-embedded	1 … 6 mm	Cable	Plastic	PNP, NO (normally open)	12 mm x 55 mm
50136608	LCS-2M18P-N15NNC-K020V	LCS-2	Non-embedded	2 … 15 mm	Cable	Plastic	NPN, NC (normally closed)	18 mm x 70 mm
50136607	LCS-2M18P-N15NNO-K020V	LCS-2	Non-embedded	2 … 15 mm	Cable	Plastic	NPN, NO (normally open)	18 mm x 70 mm
50136606	LCS-2M18P-N15PNC-K020V	LCS-2	Non-embedded	2 … 15 mm	Cable	Plastic	PNP, NC (normally closed)	18 mm x 70 mm
50136605	LCS-2M18P-N15PNO-K020V	LCS-2	Non-embedded	2 … 15 mm	Cable	Plastic	PNP, NO (normally open)	18 mm x 70 mm
50136628	LCS-2M30P-N30NNC-K020V	LCS-2	Non-embedded	2 … 30 mm	Cable	Plastic	NPN, NC (normally closed)	30 mm x 85 mm
50136627	LCS-2M30P-N30NNO-K020V	LCS-2	Non-embedded	2 … 30 mm	Cable	Plastic	NPN, NO (normally open)	30 mm x 85 mm
50136626	LCS-2M30P-N30PNC-K020V	LCS-2	Non-embedded	2 … 30 mm	Cable	Plastic	PNP, NC (normally closed)	30 mm x 85 mm
50136625	LCS-2M30P-N30PNO-K020V	LCS-2	Non-embedded	2 … 30 mm	Cable	Plastic	PNP, NO (normally open)	30 mm x 85 mm
50136520	LCS-2M12B-F03NNC-M12	LCS-2	Embedded	1 … 3 mm	Connector, M12	Metal	NPN, NC (normally closed)	12 mm x 68 mm
50136519	LCS-2M12B-F03NNO-M12	LCS-2	Embedded	1 … 3 mm	Connector, M12	Metal	NPN, NO (normally open)	12 mm x 68 mm
50136518	LCS-2M12B-F03PNC-M12	LCS-2	Embedded	1 … 3 mm	Connector, M12	Metal	PNP, NC (normally closed)	12 mm x 68 mm
50136517	LCS-2M12B-F03PNO-M12	LCS-2	Embedded	1 … 3 mm	Connector, M12	Metal	PNP, NO (normally open)	12 mm x 68 mm
50136536	LCS-2M18B-F08NNC-M12	LCS-2	Embedded	2 … 8 mm	Connector, M12	Metal	NPN, NC (normally closed)	18 mm x 85 mm
50136535	LCS-2M18B-F08NNO-M12	LCS-2	Embedded	2 … 8 mm	Connector, M12	Metal	NPN, NO (normally open)	18 mm x 85 mm
50136534	LCS-2M18B-F08PNC-M12	LCS-2	Embedded	2 … 8 mm	Connector, M12	Metal	PNP, NC (normally closed)	18 mm x 85 mm
50136533	LCS-2M18B-F08PNO-M12	LCS-2	Embedded	2 … 8 mm	Connector, M12	Metal	PNP, NO (normally open)	18 mm x 85 mm
50136552	LCS-2M30B-F20NNC-M12	LCS-2	Embedded	2 … 20 mm	Connector, M12	Metal	NPN, NC (normally closed)	30 mm x 98 mm
50136551	LCS-2M30B-F20NNO-M12	LCS-2	Embedded	2 … 20 mm	Connector, M12	Metal	NPN, NO (normally open)	30 mm x 98 mm
50136550	LCS-2M30B-F20PNC-M12	LCS-2	Embedded	2 … 20 mm	Connector, M12	Metal	PNP, NC (normally closed)	30 mm x 98 mm
50136549	LCS-2M30B-F20PNO-M12	LCS-2	Embedded	2 … 20 mm	Connector, M12	Metal	PNP, NO (normally open)	30 mm x 98 mm
50136528	LCS-2M12P-F03NNC-M12	LCS-2	Embedded	1 … 3 mm	Connector, M12	Plastic	NPN, NC (normally closed)	12 mm x 68 mm
50136527	LCS-2M12P-F03NNO-M12	LCS-2	Embedded	1 … 3 mm	Connector, M12	Plastic	NPN, NO (normally open)	12 mm x 68 mm
50136526	LCS-2M12P-F03PNC-M12	LCS-2	Embedded	1 … 3 mm	Connector, M12	Plastic	PNP, NC (normally closed)	12 mm x 68 mm
50136525	LCS-2M12P-F03PNO-M12	LCS-2	Embedded	1 … 3 mm	Connector, M12	Plastic	PNP, NO (normally open)	12 mm x 68 mm
50136544	LCS-2M18P-F08NNC-M12	LCS-2	Embedded	2 … 8 mm	Connector, M12	Plastic	NPN, NC (normally closed)	18 mm x 85 mm
50136543	LCS-2M18P-F08NNO-M12	LCS-2	Embedded	2 … 8 mm	Connector, M12	Plastic	NPN, NO (normally open)	18 mm x 85 mm
50136542	LCS-2M18P-F08PNC-M12	LCS-2	Embedded	2 … 8 mm	Connector, M12	Plastic	PNP, NC (normally closed)	18 mm x 85 mm
50136541	LCS-2M18P-F08PNO-M12	LCS-2	Embedded	2 … 8 mm	Connector, M12	Plastic	PNP, NO (normally open)	18 mm x 85 mm
50136560	LCS-2M30P-F20NNC-M12	LCS-2	Embedded	2 … 20 mm	Connector, M12	Plastic	NPN, NC (normally closed)	30 mm x 98 mm
50136559	LCS-2M30P-F20NNO-M12	LCS-2	Embedded	2 … 20 mm	Connector, M12	Plastic	NPN, NO (normally open)	30 mm x 98 mm
50136558	LCS-2M30P-F20PNC-M12	LCS-2	Embedded	2 … 20 mm	Connector, M12	Plastic	PNP, NC (normally closed)	30 mm x 98 mm
50136557	LCS-2M30P-F20PNO-M12	LCS-2	Embedded	2 … 20 mm	Connector, M12	Plastic	PNP, NO (normally open)	30 mm x 98 mm
50136524	LCS-2M12B-F03NNC-K020V	LCS-2	Embedded	1 … 3 mm	Cable	Metal	NPN, NC (normally closed)	12 mm x 55 mm
50136523	LCS-2M12B-F03NNO-K020V	LCS-2	Embedded	1 … 3 mm	Cable	Metal	NPN, NO (normally open)	12 mm x 55 mm
50136522	LCS-2M12B-F03PNC-K020V	LCS-2	Embedded	1 … 3 mm	Cable	Metal	PNP, NC (normally closed)	12 mm x 55 mm
50136521	LCS-2M12B-F03PNO-K020V	LCS-2	Embedded	1 … 3 mm	Cable	Metal	PNP, NO (normally open)	12 mm x 55 mm
50136540	LCS-2M18B-F08NNC-K020V	LCS-2	Embedded	2 … 8 mm	Cable	Metal	NPN, NC (normally closed)	18 mm x 70 mm
50136539	LCS-2M18B-F08NNO-K020V	LCS-2	Embedded	2 … 8 mm	Cable	Metal	NPN, NO (normally open)	18 mm x 70 mm
50136538	LCS-2M18B-F08PNC-K020V	LCS-2	Embedded	2 … 8 mm	Cable	Metal	PNP, NC (normally closed)	18 mm x 70 mm
50136537	LCS-2M18B-F08PNO-K020V	LCS-2	Embedded	2 … 8 mm	Cable	Metal	PNP, NO (normally open)	18 mm x 70 mm
50136556	LCS-2M30B-F20NNC-K020V	LCS-2	Embedded	2 … 20 mm	Cable	Metal	NPN, NC (normally closed)	30 mm x 85 mm
50136555	LCS-2M30B-F20NNO-K020V	LCS-2	Embedded	2 … 20 mm	Cable	Metal	NPN, NO (normally open)	30 mm x 85 mm
50136554	LCS-2M30B-F20PNC-K020V	LCS-2	Embedded	2 … 20 mm	Cable	Metal	PNP, NC (normally closed)	30 mm x 85 mm
50136553	LCS-2M30B-F20PNO-K020V	LCS-2	Embedded	2 … 20 mm	Cable	Metal	PNP, NO (normally open)	30 mm x 85 mm
50136532	LCS-2M12P-F03NNC-K020V	LCS-2	Embedded	1 … 3 mm	Cable	Plastic	NPN, NC (normally closed)	12 mm x 55 mm
50136531	LCS-2M12P-F03NNO-K020V	LCS-2	Embedded	1 … 3 mm	Cable	Plastic	NPN, NO (normally open)	12 mm x 55 mm
50136530	LCS-2M12P-F03PNC-K020V	LCS-2	Embedded	1 … 3 mm	Cable	Plastic	PNP, NC (normally closed)	12 mm x 55 mm
50136529	LCS-2M12P-F03PNO-K020V	LCS-2	Embedded	1 … 3 mm	Cable	Plastic	PNP, NO (normally open)	12 mm x 55 mm

Part no.	Part description	Series	Type of installation	Switching distance Sn	Connection	Material	Output function	Dimension
50136548	LCS-2M18P-F08NNC-K020V	LCS-2	Embedded	2 … 8 mm	Cable	Plastic	NPN, NC (normally closed)	18 mm x 70 mm
50136547	LCS-2M18P-F08NNO-K020V	LCS-2	Embedded	2 … 8 mm	Cable	Plastic	NPN, NO (normally open)	18 mm x 70 mm
50136546	LCS-2M18P-F08PNC-K020V	LCS-2	Embedded	2 … 8 mm	Cable	Plastic	PNP, NC (normally closed)	18 mm x 70 mm
50136545	LCS-2M18P-F08PNO-K020V	LCS-2	Embedded	2 … 8 mm	Cable	Plastic	PNP, NO (normally open)	18 mm x 70 mm
50136564	LCS-2M30P-F20NNC-K020V	LCS-2	Embedded	2 … 20 mm	Cable	Plastic	NPN, NC (normally closed)	30 mm x 85 mm
50136563	LCS-2M30P-F20NNO-K020V	LCS-2	Embedded	2 … 20 mm	Cable	Plastic	NPN, NO (normally open)	30 mm x 85 mm
50136562	LCS-2M30P-F20PNC-K020V	LCS-2	Embedded	2 … 20 mm	Cable	Plastic	PNP, NC (normally closed)	30 mm x 85 mm
50136561	LCS-2M30P-F20PNO-K020V	LCS-2	Embedded	2 … 20 mm	Cable	Plastic	PNP, NO (normally open)	30 mm x 85 mm

Dimensioned drawings: Capacitive sensors, standard sensors, cylindrical



LCS-1 series



LCS-2 s

SMART IS TO SHARE **EXPERIENCE**

Measurement
Reliable systems for 2D- and 3D-measurement of distances and objects

Positioning
Sensor technology for quick positioning accurate down to the millimeter

Identification
Innovative code readers and RFID systems

Safeguarding
Economical solutions in all areas of safety at work

Other applications – field-proven: **www.leuze.com/en/praxis**

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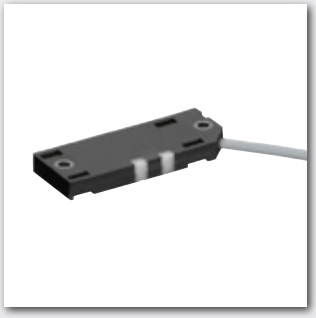
/// Capacitive sensors, standard sensors, cubic

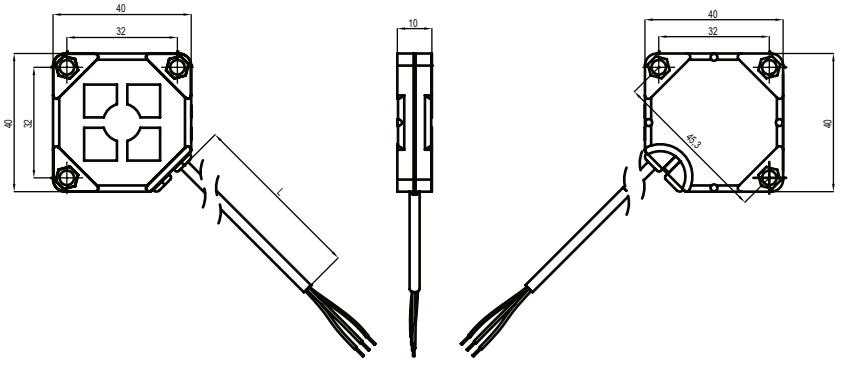


There is a selection of plastic cubic sensors in several formats with a high degree of protection e. g. for leakage or for placing on pipes. The adjustability of the sensor's operating range allows it to operate optimally despite material dependency.

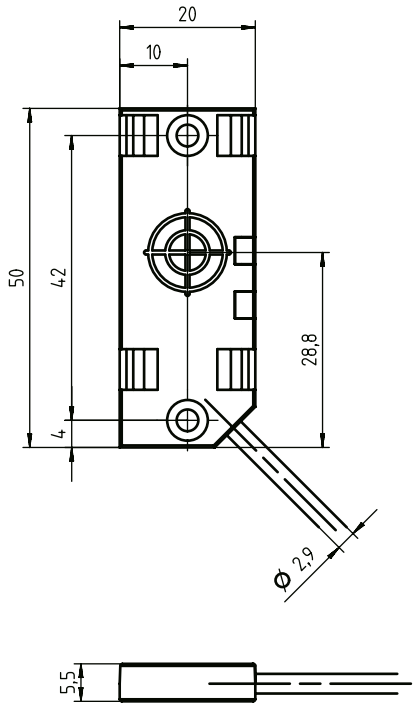
Direct access to the online product selector at **www.leuze.com/en/capa-cub**

Part no.	Part description	Series	Type of installation	Switching distance Sn	Connection	Material	Output function	Dimension
50135741	LCS-1Q40P-F20PNC-K003PM08	LCS-1	Embedded	1 ... 20 mm	Connector, M8	Plastic	PNP, NC (normally closed)	40 mm x 40 mm x 10 mm
50135740	LCS-1Q40P-F20PNO-K003PM08	LCS-1	Embedded	1 ... 20 mm	Connector, M8	Plastic	PNP, NO (normally open)	40 mm x 40 mm x 10 mm
50135742	LCS-1Q40P-F20BNP-K020P	LCS-1	Embedded	1 ... 20 mm	Cable	Plastic	Push-pull, NC (normally closed)/ NO (normally open)	40 mm x 40 mm x 10 mm
50135746	LCS-1Q54P-F10NNC-K020P	LCS-1	Embedded	1 ... 10 mm	Cable	Plastic	NPN, NC (normally closed)	54 mm x 20.3 mm x 5.5 mm
50135745	LCS-1Q54P-F10NNO-K020P	LCS-1	Embedded	1 ... 10 mm	Cable	Plastic	NPN, NO (normally open)	54 mm x 20.3 mm x 5.5 mm
50135744	LCS-1Q54P-F10PNC-K020P	LCS-1	Embedded	1 ... 10 mm	Cable	Plastic	PNP, NC (normally closed)	54 mm x 20.3 mm x 5.5 mm
50135743	LCS-1Q54P-F10PNO-K020P	LCS-1	Embedded	1 ... 10 mm	Cable	Plastic	PNP, NO (normally open)	54 mm x 20.3 mm x 5.5 mm

Dimensioned drawings: Capacitive sensors, standard sensors, cubic



LCS-1Q40



LCS-1Q54

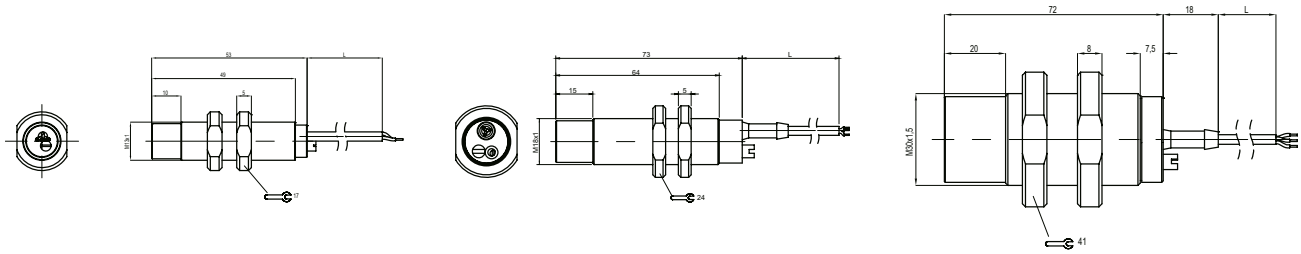
/// Capacitive sensors, PTFE sensors

These particularly robust sensors in Teflon housing (PTFE) are suitable for high chemical stress e. g. caused by cleaning agents.

Direct access to the online product selector at **www.leuze.com/en/capa-ptfe**

Part no.	Part description	Series	Type of installation	Switching distance Sn	Connection	Material	Output function	Dimension
50135766	LCS-1M12T-N08NNC-K020T	LCS-1	Non-embedded	1 ... 8 mm	Cable	Plastic	NPN, NC (normally closed)	12 mm x 53 mm
50135765	LCS-1M12T-N08NNO-K020T	LCS-1	Non-embedded	1 ... 8 mm	Cable	Plastic	NPN, NO (normally open)	12 mm x 53 mm
50135764	LCS-1M12T-N08PNC-K020T	LCS-1	Non-embedded	1 ... 8 mm	Cable	Plastic	PNP, NC (normally closed)	12 mm x 53 mm
50135763	LCS-1M12T-N08PNO-K020T	LCS-1	Non-embedded	1 ... 8 mm	Cable	Plastic	PNP, NO (normally open)	12 mm x 53 mm
50135786	LCS-1M18T-N15NNC-K020T	LCS-1	Non-embedded	2 ... 15 mm	Cable	Plastic	NPN, NC (normally closed)	18 mm x 73 mm
50135785	LCS-1M18T-N15NNO-K020T	LCS-1	Non-embedded	2 ... 15 mm	Cable	Plastic	NPN, NO (normally open)	18 mm x 73 mm
50135784	LCS-1M18T-N15PNC-K020T	LCS-1	Non-embedded	2 ... 15 mm	Cable	Plastic	PNP, NC (normally closed)	18 mm x 73 mm
50135783	LCS-1M18T-N15PNO-K020T	LCS-1	Non-embedded	2 ... 15 mm	Cable	Plastic	PNP, NO (normally open)	18 mm x 73 mm
50135806	LCS-1M30T-N30NNC-K020T	LCS-1	Non-embedded	2 ... 30 mm	Cable	Plastic	NPN, NC (normally closed)	30 mm x 72 mm
50135805	LCS-1M30T-N30NNO-K020T	LCS-1	Non-embedded	2 ... 30 mm	Cable	Plastic	NPN, NO (normally open)	30 mm x 72 mm
50135804	LCS-1M30T-N30PNC-K020T	LCS-1	Non-embedded	2 ... 30 mm	Cable	Plastic	PNP, NC (normally closed)	30 mm x 72 mm
50135803	LCS-1M30T-N30PNO-K020T	LCS-1	Non-embedded	2 ... 30 mm	Cable	Plastic	PNP, NO (normally open)	30 mm x 72 mm

Dimensioned drawings: Capacitive sensors, PTFE sensors



LCS-1, PFTE

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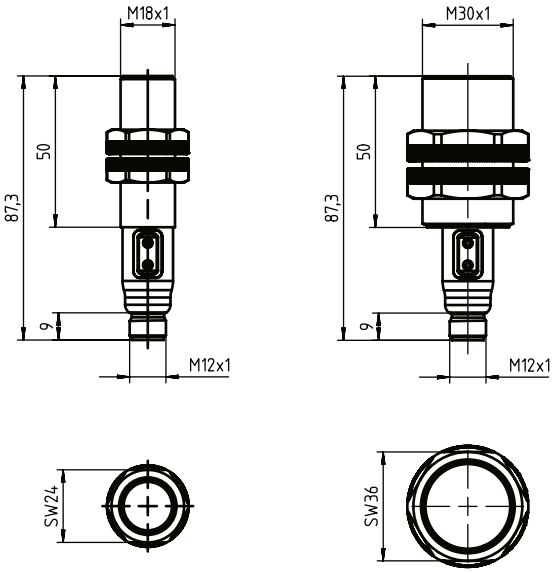
/// Capacitive sensors, IO-Link sensors

High process transparency requires more than switching state and current data from the sensor. The sensor has an IO-Link interface, which makes process optimization possible, in particular with respect to Industry 4.0.

Direct access to the online product selector at **www.leuze.com/en/capa-io**

Part no.	Part description	Series	Type of installation	Switching distance Sn embedded/non-embedded	Connection	Material	Output function	Dimension
50135721	LCS-1M18P-F05NNP-M12-LT	LCS-1	Embedded and non-embedded	1 … 5 mm 1 … 7.5 mm	Connector, M12	Plastic	NPN, NC (normally closed)/ NO (normally open) programmable	18 mm x 87.3 mm
50135720	LCS-1M18P-F05PNP-M12-LT	LCS-1	Embedded and non-embedded	1 … 5 mm 1 … 7.5 mm	Connector, M12	Plastic	PNP, NC (normally closed)/ NO (normally open) programmable	18 mm x 87.3 mm
50135739	LCS-1M30P-F10NNP-M12-LT	LCS-1	Embedded and non-embedded	1 … 10 mm 1 … 15 mm	Connector, M12	Plastic	NPN, NC (normally closed)/ NO (normally open) programmable	30 mm x 87.3 mm
50135738	LCS-1M30P-F10PNP-M12-LT	LCS-1	Embedded and non-embedded	1 … 10 mm 1 … 15 mm	Connector, M12	Plastic	PNP, NC (normally closed)/ NO (normally open) programmable	30 mm x 87.3 mm

Dimensioned drawings: Capacitive sensors, IO-Link sensors



LCS-1, IO-Link

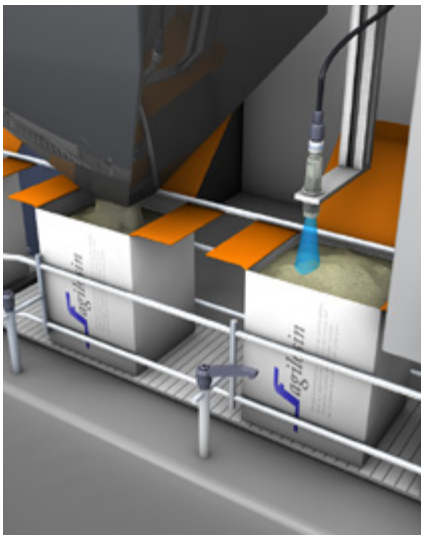
/ ULTRASONIC SENSORS

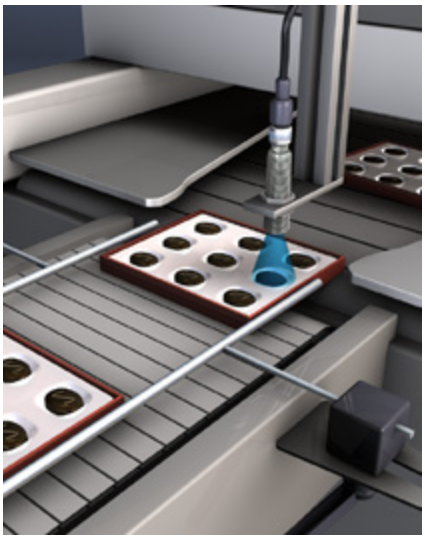
THE ALL-ROUNDERS AMONG THE SENSORS

Ultrasonic sensors are used whenever optical systems reach their limits. Hence, partially and fully transparent or extremely dark objects can be detected just as easily as objects with reflecting surfaces or objects in dusty, vaporous or humid environments.

Ultrasonic sensors, cubic **Page 151**

Ultrasonic sensors, cylindrical **Page 154**





//ULTRASONIC SENSORS, CUBIC

SPECIALISTS FOR REFLECTIVE SURFACES

Our ultrasonic sensors in the cubic design feature a very good background suppression based on the reliable runtime measurement. Due to the largely surface-independent switching behavior, they are particularly well-suited for sound-reflecting materials.

/// 18 series

This ultrasonic sensor features a high sound pressure and is thus suitable even for air transport systems.

Benefits:

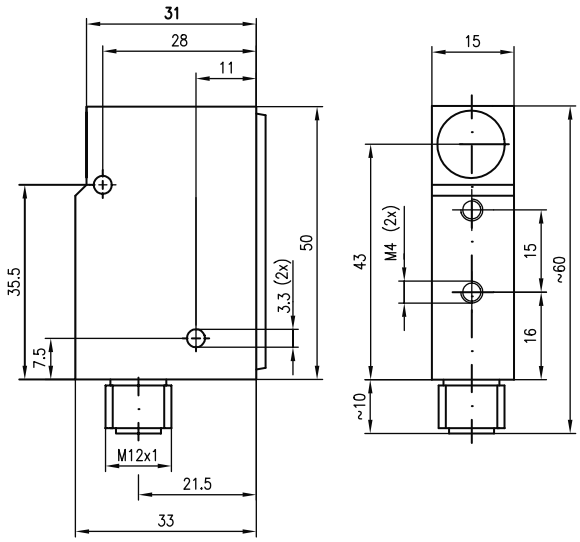
- Detection of narrow gaps
- Reliable object detection even in humid and foggy environment
- Metal housing
- Sensitivity adjustment via step switch
- Insensitive to dust

Direct access to the online product selector at **www.leuze.com/en/br18u**

Part no.	Part description	Operating principle	Operating range	Switching frequency	Switching output 1	Switching output 2	Sound cone Angle of radiation	Description
50103365	► LSSU 18-S12	Throughbeam principle	0 … 0.65 m	100 Hz			Standard Front	Operational controls: step switch, connector, M12, 5-pin
50103364	◄ LSEU 18/24-S12	Throughbeam principle	0 … 0.65 m	100 Hz	Transistor, PNP, NO (normally open)	Transistor, NPN, NO (normally open)	Standard Front	Operational controls: step switch, connector, M12, 5-pin

► transmitter / ◄ receiver
Operating range: over the whole temperature range, measured object ≥ 20×20 mm²

Dimensioned drawings: 18 series



18 series

/// 420 series

From narrow to wide, this diffuse reflection ultrasonic sensor offers 3 different opening angles and sound lobes.

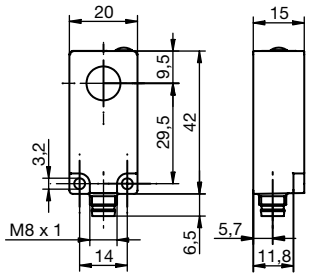
Benefits:

- Small ultrasonic sensor in plastic housing with degree of protection IP 67
- Various opening angles and sound cone geometries
- Switching behavior largely independent of surface properties
- Precise switching point adjustment through teach-in on the device and via a cable
- Protection against erroneous operation by automatically locking teach button

Direct access to the online product selector at **www.leuze.com/en/br420u**

Part no.	Part description	Operating principle	Operating range	Switching frequency	Switching output 1	Sound cone Angle of radiation	Description
50113989	HRTU 420/4NC.2-S-S8	Diffuse reflection principle with background suppression	0.01 ... 0.2 m	50 Hz	Transistor, PNP, break-contact (NC)	Narrow Front	Operational controls: teach button, connector, M8, 4-pin
50113992	HRTU 420/4NO.2-S-S8	Diffuse reflection principle with background suppression	0.01 ... 0.2 m	50 Hz	Transistor, PNP, NO (normally open)	Narrow Front	Operational controls: teach button, connector, M8, 4-pin
50113983	HRTU 420/2NC.2-S-S8	Diffuse reflection principle with background suppression	0.01 ... 0.2 m	50 Hz	Transistor, NPN, break-contact (NC)	Narrow Front	Operational controls: teach button, connector, M8, 4-pin
50113986	HRTU 420/2NO.2-S-S8	Diffuse reflection principle with background suppression	0.01 ... 0.2 m	50 Hz	Transistor, NPN, NO (normally open)	Narrow Front	Operational controls: teach button, connector, M8, 4-pin
50113988	HRTU 420/4NC.2-S8	Diffuse reflection principle with background suppression	0.04 ... 0.4 m	20 Hz	Transistor, PNP, break-contact (NC)	Standard Front	Operational controls: teach button, connector, M8, 4-pin
50113991	HRTU 420/4NO.2-S8	Diffuse reflection principle with background suppression	0.04 ... 0.4 m	20 Hz	Transistor, PNP, NO (normally open)	Standard Front	Operational controls: teach button, connector, M8, 4-pin
50113982	HRTU 420/2NC.2-S8	Diffuse reflection principle with background suppression	0.04 ... 0.4 m	20 Hz	Transistor, NPN, break-contact (NC)	Standard Front	Operational controls: teach button, connector, M8, 4-pin
50113985	HRTU 420/2NO.2-S8	Diffuse reflection principle with background suppression	0.04 ... 0.4 m	20 Hz	Transistor, NPN, NO (normally open)	Standard Front	Operational controls: teach button, connector, M8, 4-pin
50113987	HRTU 420/4NC.2-L-S8	Diffuse reflection principle with background suppression	0.1 ... 1 m	10 Hz	Transistor, PNP, break-contact (NC)	Wide Front	Operational controls: teach button, connector, M8, 4-pin
50113990	HRTU 420/4NO.2-L-S8	Diffuse reflection principle with background suppression	0.1 ... 1 m	10 Hz	Transistor, PNP, NO (normally open)	Wide Front	Operational controls: teach button, connector, M8, 4-pin
50113981	HRTU 420/2NC.2-L-S8	Diffuse reflection principle with background suppression	0.1 ... 1 m	10 Hz	Transistor, NPN, break-contact (NC)	Wide Front	Operational controls: teach button, connector, M8, 4-pin
50113984	HRTU 420/2NO.2-L-S8	Diffuse reflection principle with background suppression	0.1 ... 1 m	10 Hz	Transistor, NPN, NO (normally open)	Wide Front	Operational controls: teach button, connector, M8, 4-pin
50132082	RKU 420/2NC.2-S8	Reflection principle	0 ... 0.4 m	20 Hz	Transistor, NPN, break-contact (NC)	Standard Front	Operational controls: teach button, connector, M8, 4-pin

Dimensioned drawings: 420 series



420 series

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ACCESSORIES: ULTRASONIC SENSORS, CUBIC HOUSING

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50020833	BT 95	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

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//ULTRASONIC SENSORS, CYLINDRICAL

EXPERTS IN CYLINDRICAL DESIGN

The cylindrical ultrasonic sensors with particularly thin sound cone are specially designed for the detection of small objects or objects in very small openings and for distance, height and dimension measurements of objects in many different areas of application.

/// 318 series

Standard- and short construction and with 2 independent switching outputs available. Teachable via cable or via control button on the device. Also optionally available with angled head, which enables a sound outlet at 90 ° to the longitudinal axis of the M18 sensor. The series also comprises models with temperature compensation or multi-function input.

Benefits:

- Precise switching point adjustment, teachable via cable or via control button on the device
- Models with temperature compensation
- Small dead zone at long range
- Independent indicator diodes in devices with 2 switching outputs
- An additional diode as an indicator for the detection range simplifies installation
- Sensor configuration is unnecessary due to internal synchronization and multiplex function

Direct access to the online product selector at **www.leuze.com/en/br318**

Part no.	Part description	Operating principle	Operating range	Switching frequency	Switching output 1	Switching output 2	Sound cone Angle of radiation	Description
50136070	HTU318-300/4T-M12	Diffuse reflection principle with background suppression	0.04 ... 0.3 m	8 Hz	Transistor, PNP, NO (normally open)		Front	Teach input, connector, M12, 4-pin
50136071	HTU318-300/2T-M12	Diffuse reflection principle with background suppression	0.04 ... 0.3 m	8 Hz	Transistor, NPN, NO (normally open)		Front	Teach input, connector, M12, 4-pin
50136082	HTU318-400.3/4PK-M12	Diffuse reflection principle with background suppression	0.05 ... 0.4 m	10 Hz	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	Front	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50136098	HTU318-400.W3/4PK-M12	Diffuse reflection principle with background suppression	0.05 ... 0.4 m	10 Hz	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	90 ° deflection	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50136083	HTU318-400.3/2NK-M12	Diffuse reflection principle with background suppression	0.05 ... 0.4 m	10 Hz	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	Front	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50136099	HTU318-400.W3/2NK-M12	Diffuse reflection principle with background suppression	0.05 ... 0.4 m	10 Hz	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	90 ° deflection	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50136074	HTU318-1200/4T-M12	Diffuse reflection principle with background suppression	0.08 ... 1.2 m	5 Hz	Transistor, PNP, NO (normally open)		Front	Teach input, connector, M12, 4-pin
50136075	HTU318-1200/2T-M12	Diffuse reflection principle with background suppression	0.08 ... 1.2 m	5 Hz	Transistor, NPN, NO (normally open)		Front	Teach input, connector, M12, 4-pin
50136088	HTU318-1600.3/4PK-M12	Diffuse reflection principle with background suppression	0.15 ... 1.6 m	2 Hz	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	Front	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50136104	HTU318-1600.W3/4PK-M12	Diffuse reflection principle with background suppression	0.15 ... 1.6 m	2 Hz	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	90 ° deflection	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50136089	HTU318-1600.3/2NK-M12	Diffuse reflection principle with background suppression	0.15 ... 1.6 m	2 Hz	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	Front	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin

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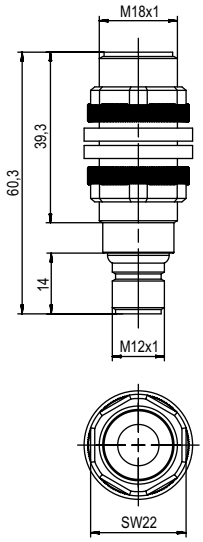
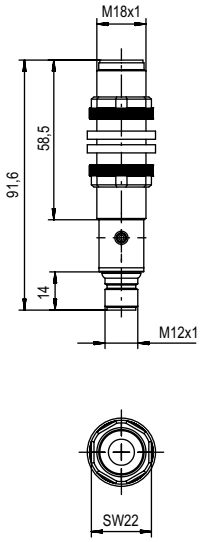
Part no.	Part description	Operating principle	Operating range	Switching frequency	Switching output 1	Switching output 2	Sound cone Angle of radiation	Description
50136105	HTU318-1600.W3/2NK-M12	Diffuse reflection principle with background suppression	0.15 … 1.6 m	2 Hz	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	90 ° deflection	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50136078	RKU318-300/4T-M12	Reflection principle	0 … 0.3 m	8 Hz	Transistor, PNP, NO (normally open)		Front	Interface: IO-Link; Operational controls: control buttons, teach input, connector, M12, 4-pin
50136079	RKU318-300/2T-M12	Reflection principle	0 … 0.3 m	8 Hz	Transistor, NPN, NO (normally open)		Front	Interface: IO-Link; Operational controls: control buttons, teach input, connector, M12, 4-pin
50136094	RKU318-400.3/4X-M12	Reflection principle	0 … 0.4 m	8 Hz	Transistor, PNP, NO (normally open)		Front	Operational controls: control buttons, connector, M12, 4-pin
50136095	RKU318-400.3/2X-M12	Reflection principle	0 … 0.4 m	8 Hz	Transistor, NPN, NO (normally open)		Front	Operational controls: control buttons, connector, M12, 4-pin
50136080	RKU318-800/4T-M12	Reflection principle	0 … 0.8 m	5 Hz	Transistor, PNP, NO (normally open)		Front	Interface: IO-Link; Operational controls: control buttons, teach input, connector, M12, 4-pin
50136081	RKU318-800/2T-M12	Reflection principle	0 … 0.8 m	5 Hz	Transistor, NPN, NO (normally open)		Front	Interface: IO-Link; Operational controls: control buttons, teach input, connector, M12, 4-pin
50136096	RKU318-1600.3/4X-M12	Reflection principle	0 … 1.6 m	1 Hz	Transistor, PNP, NO (normally open)		Front	Operational controls: control buttons, connector, M12, 4-pin
50136097	RKU318-1600.3/2X-M12	Reflection principle	0 … 1.6 m	1 Hz	Transistor, NPN, NO (normally open)		Front	Operational controls: control buttons, connector, M12, 4-pin

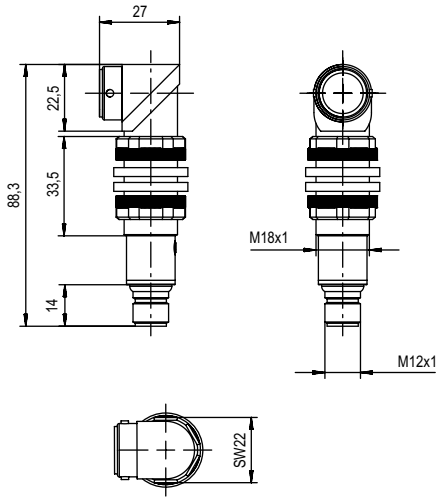
Dimensioned drawings: 318 series



318 series



318 series with control button



318…W series with control button

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/// 330 series

Whenever large ranges are needed, the robust plastic sensors from the 330 series are the right choice. 2 separate switching outputs can be set independently by means of teach button.
Any number of these sensors can be easily synchronized with a cable.

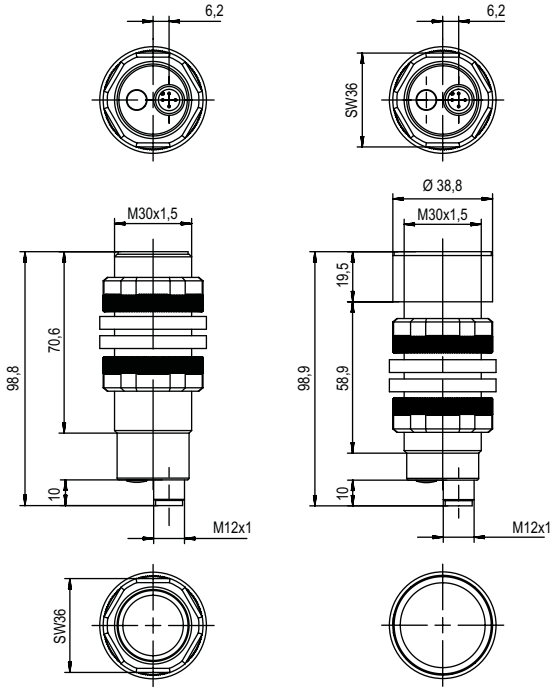
Benefits:

- Particularly compact design: M30
- Precise switching point adjustment per teach button on the device
- Independent indicator diodes
- An additional diode as an indicator for the detection range simplifies installation
- High accuracy through temperature compensation

Direct access to the online product selector at **www.leuze.com/en/br330**

Part no.	Part description	Operating principle	Operating range	Switching frequency	Switching output 1	Switching output 2	Sound cone Angle of radiation	Description
50136110	HTU330-3500.3/4PK-M12	Diffuse reflection principle with background suppression	0.25 … 3.5 m	2 Hz	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	Front	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50136111	HTU330-3500.3/2NK-M12	Diffuse reflection principle with background suppression	0.25 … 3.5 m	2 Hz	Transistor, NPN, NO (normally open)	Transistor, NPN, break-contact (NC)	Front	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50136116	HTU330-6000.3/4PK-M12	Diffuse reflection principle with background suppression	0.35 … 6 m	2 Hz	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact (NC)	Front	Inputs/outputs: 1; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin

Dimensioned drawings: 330 series



HTU 330 series

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/// 412 series

The cylindrical M12 design with 2 different opening angles ensures high flexibility during installation and use.

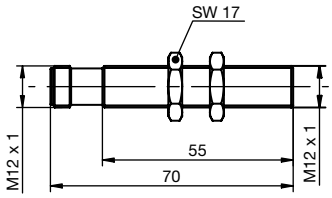
Benefits:

- Metal housing M12
- Precise switching point adjustment via line teach
- Especially narrow sound cone available

Direct access to the online product selector at **www.leuze.com/en/br412u**

Part no.	Part description	Operating principle	Operating range	Switching frequency	Switching output 1	Sound cone Angle of radiation	Description
50113995	HRTU 412/4NC.2-S-S12	Diffuse reflection principle with background suppression	0.01 … 0.2 m	50 Hz	Transistor, PNP, break-contact (NC)	Narrow Front	Teach input, connector, M12, 4-pin
50113993	HRTU 412/4NO.2-S-S12	Diffuse reflection principle with background suppression	0.01 … 0.2 m	50 Hz	Transistor, PNP, NO (normally open)	Narrow Front	Teach input, connector, M12, 4-pin
50113999	HRTU 412/2NC.2-S-S12	Diffuse reflection principle with background suppression	0.01 … 0.2 m	50 Hz	Transistor, NPN, break-contact (NC)	Narrow Front	Teach input, connector, M12, 4-pin
50113997	HRTU 412/2NO.2-S-S12	Diffuse reflection principle with background suppression	0.01 … 0.2 m	50 Hz	Transistor, NPN, NO (normally open)	Narrow Front	Teach input, connector, M12, 4-pin
50113996	HRTU 412/4NC.2-S12	Diffuse reflection principle with background suppression	0.04 … 0.4 m	20 Hz	Transistor, PNP, break-contact (NC)	Narrow Front	Teach input, connector, M12, 4-pin
50113994	HRTU 412/4NO.2-S12	Diffuse reflection principle with background suppression	0.04 … 0.4 m	20 Hz	Transistor, PNP, NO (normally open)	Narrow Front	Teach input, connector, M12, 4-pin
50114000	HRTU 412/2NC.2-S12	Diffuse reflection principle with background suppression	0.04 … 0.4 m	20 Hz	Transistor, NPN, break-contact (NC)	Narrow Front	Teach input, connector, M12, 4-pin
50113998	HRTU 412/2NO.2-S12	Diffuse reflection principle with background suppression	0.04 … 0.4 m	20 Hz	Transistor, NPN, NO (normally open)	Narrow Front	Teach input, connector, M12, 4-pin

Dimensioned drawings: 412 series



412 series

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/// 418 series

Short design, teachable and up to 2 independent switching outputs are the key features of this series. Also optionally with angled head, which enables a sound outlet at 90 ° to the longitudinal axis of the M18 sensor. Versions available with temperature compensation and IO-Link.

Benefits:

- Precise switching point adjustment through teach or via IO-Link
- One teach button per switching output
- Models with temperature compensation
- Operating mode setting and configuration via IO-Link (multiplex, parallel, throughbeam)
- Small dead zone at long range

Direct access to the online product selector at **www.leuze.com/en/br418u**

Part no.	Part description	Operating principle	Operating range	Switching frequency	Switching output 1	Switching output 2	Sound cone Angle of radiation	Description
50127764	HTU418B-400/PTX-M12	Diffuse reflection principle with background suppression	0.025 … 0.4 m	7 Hz	Transistor, PNP, break-contact (NC)		Standard Front	Teach input, connector, M12, 5-pin
50129826	HTU418B-400.W/4T4-M12	Diffuse reflection principle with background suppression	0.025 … 0.4 m	7 Hz	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact/ make-contact	Standard 90 ° deflection	Teach input, connector, M12, 5-pin, 2 independent switching points
50129824	HTU418B-400.W/4TX-M12	Diffuse reflection principle with background suppression	0.025 … 0.4 m	7 Hz	Transistor, PNP, NO (normally open)		Standard 90 ° deflection	Teach input, connector, M12, 5-pin
50124268	HTU418B-400/4T4-M12	Diffuse reflection principle with background suppression	0.025 … 0.4 m	7 Hz	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact/ make-contact	Standard Front	Teach input, connector, M12, 5-pin, 2 independent switching points
50124269	HTU418B-400/4TX-M12	Diffuse reflection principle with background suppression	0.025 … 0.4 m	7 Hz	Transistor, PNP, NO (normally open)		Standard Front	Teach input, connector, M12, 5-pin
50124267	HTU418B-400.X3/LT4-M12	Diffuse reflection principle with background suppression	0.025 … 0.4 m	7 Hz	Transistor, push-pull, IO-Link / NC/NO	Transistor, PNP, break-contact/ make-contact	Standard Front	Inputs/outputs: 1; Interface: IO-Link; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50131020	HTU418B-700/4TX-M12	Diffuse reflection principle with background suppression	0.1 … 0.7 m	8 Hz	Transistor, PNP, NO (normally open)		Standard Front	Teach input, connector, M12, 5-pin
50129825	HTU418B-1000.W/4TX-M12	Diffuse reflection principle with background suppression	0.15 … 1 m	8 Hz	Transistor, PNP, NO (normally open)		Standard 90 ° deflection	Teach input, connector, M12, 5-pin
50124270	HTU418B-1000/4TX-M12	Diffuse reflection principle with background suppression	0.15 … 1 m	8 Hz	Transistor, PNP, NO (normally open)		Standard Front	Teach input, connector, M12, 5-pin
50129827	HTU418B-1300.W/4T4-M12	Diffuse reflection principle with background suppression	0.15 … 1.3 m	8 Hz	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact/ make-contact	Standard 90 ° deflection	2 independent switching points, connector, M12, 5-pin, teach input
50124272	HTU418B-1300/4T4-M12	Diffuse reflection principle with background suppression	0.15 … 1.3 m	8 Hz	Transistor, PNP, NO (normally open)	Transistor, PNP, break-contact/ make-contact	Standard Front	Teach input, connector, M12, 5-pin, 2 independent switching points
50124271	HTU418B-1300.X3/LT4-M12	Diffuse reflection principle with background suppression	0.15 … 1.3 m	8 Hz	Transistor, push-pull, IO-Link / NC/NO	Transistor, PNP, break-contact/ make-contact	Standard Front	Inputs/outputs: 1; Interface: IO-Link; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin

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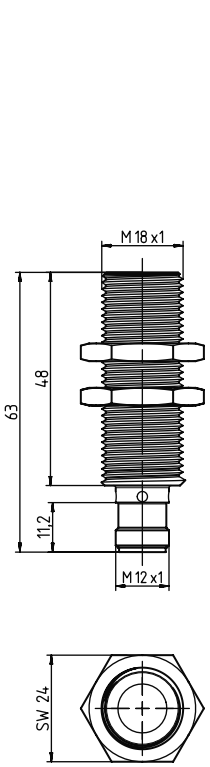
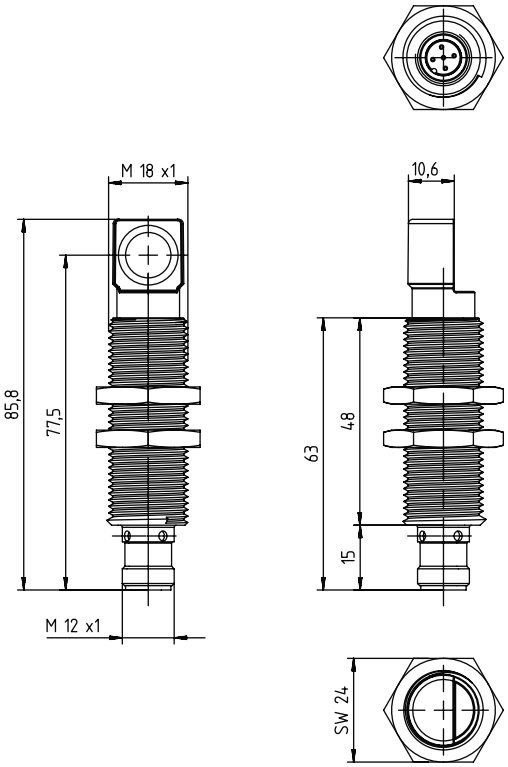
Dimensioned drawings: 418 series



418B Series



418B...W series

/// 430 series

Whenever large ranges are needed, the M30 sensors from the 430 series are the right choice. Two separate switching outputs can be set independently by means of teach button or IO-Link. A total of 10 of these sensors can be easily synchronized with a cable.

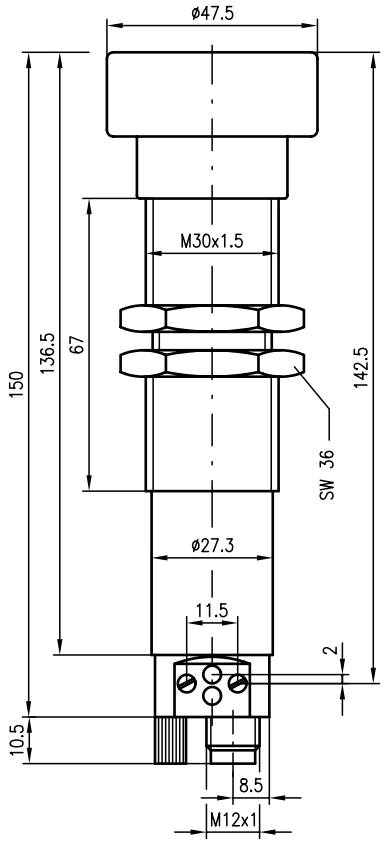
Benefits:

- Particularly compact design: M30
- Precise switching point adjustment through teach or via IO-Link
- One teach button per switching output
- Operating mode setting and configuration via IO-Link (multiplex, parallel, throughbeam)
- High accuracy through temperature compensation
- Small dead zone at long range

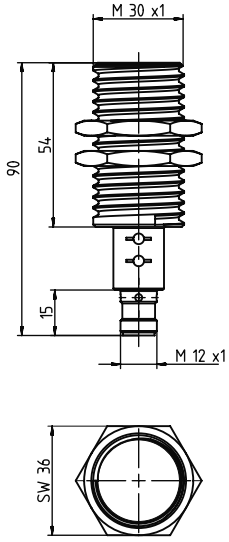
Direct access to the online product selector at **www.leuze.com/en/br430u**

Part no.	Part description	Operating principle	Operating range	Switching frequency	Switching output 1	Switching output 2	Sound cone Angle of radiation	Description
50124273	HTU430B-3000.X3/LT4-M12	Diffuse reflection principle with background suppression	0.3 ... 3 m	4 Hz	Transistor, push-pull, IO-Link / NC/NO	Transistor, PNP, break-contact/ make-contact	Standard Front	Inputs/outputs: 1; Interface: IO-Link; Operational controls: control buttons, 2 independent switching points, connector, M12, 5-pin
50036264	VRTU 430M/P-1110-6000-S12	Diffuse reflection principle with background suppression	0.6 ... 6 m	1 Hz	Transistor, PNP, break-contact/ make-contact	Transistor, PNP, break-contact/ make-contact	Standard Front	Operational controls: 270 ° potentiometer, synchronization input, connector, M12, 5-pin

Dimensioned drawings: 430 series



430 series



430B series

ACCESSORIES: ULTRASONIC SENSORS, CYLINDRICAL HOUSING

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

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Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113548	BT D18M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117490	BTU D18M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	Through-hole mounting	Metal

Further rod mounts can be found on our website

Other mounting systems

Part no.	Part description	Suitable for	Fastening at device	Fastening at system	Material
50125860	BTX-D18M-D30	Sensors with M18 design	Screw type	Mounting thread	Stainless steel

Further mounting systems can be found on our website

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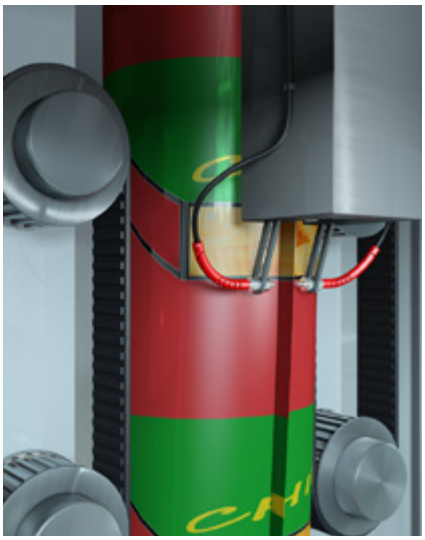
/ FIBER OPTIC SENSORS

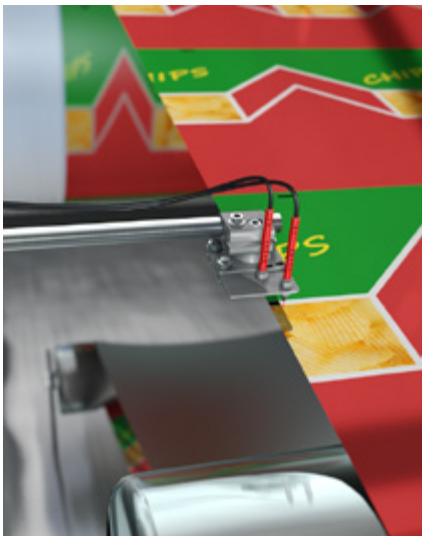
HOW TO BEND LIGHT AROUND A CORNER

With the use of fiber optics and appropriate amplifiers, the area of application of optoelectronic sensors is considerably expanded. The flexible fiber optics with various head shapes can be integrated in nearly any system design. The detection range is dependent on the fiber optics and amplifiers used.

Amplifiers **Page 163**

Fiber optics **Page 168**





//AMPLIFIERS

SIMPLE SETUP AND CONTROL

The optical fibers are plugged into the amplifier. Depending on the model, the ranges of the fibers and the available functions vary.

/// LV461

The series satisfies all basic requirements: 20-turn potentiometer for high-resolution sensitivity adjustments, 2 switches for light/dark switching and for selecting between larger range or higher switching frequency.

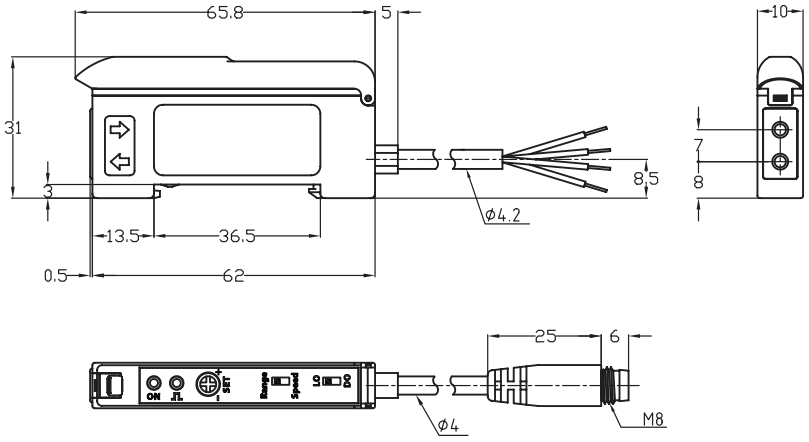
Benefits:

- Mode changeover: range / response time
- Light/dark switching
- 20-turn potentiometer for sensitivity adjustment

Direct access to the online product selector at **www.leuze.com/en/lv461**

Part no.	Part description	Light source	Switching output	Input/output	Switching frequency	Connection	Operational controls
50118399	LV461.1/P2-150-M8	LED, red	Transistor, PNP	Transistor, NPN	500 Hz	Connector, 150 mm, M8, 4-pin	Multiturn potentiometer, control buttons
50118398	LV461.1/P2	LED, red	Transistor, PNP	Transistor, NPN	500 Hz	Cable, 2,000 mm, 4-wire	Multiturn potentiometer, control buttons

Dimensioned drawings: LV461



LV 461 fiber optic amplifier

/// LV462

The series has a 4-digit display for displaying the switching threshold. The setting is made with the AutoSet function or manually with the ± button. A switch for light/dark switching and simple menu functions for setting the range and various timing functions complement the device features.

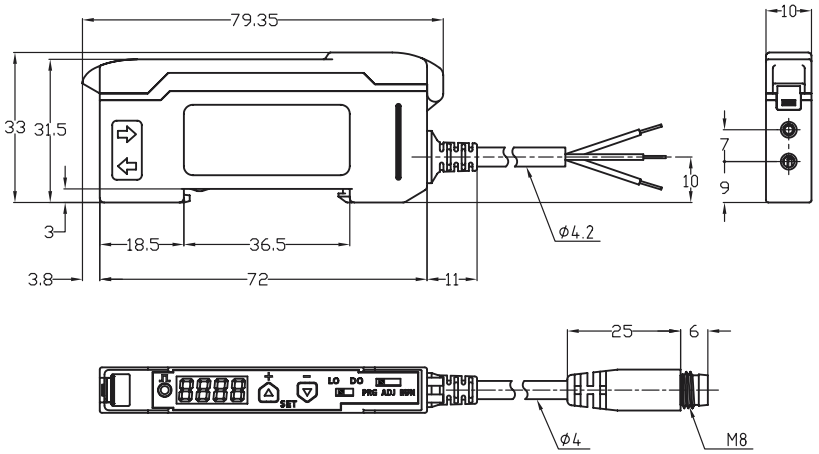
Benefits:

- 4-digit display
- High dynamics
- Time functions configurable on the device
- Sensitivity levels configurable on the device
- Light/dark switching
- Easy sensitivity adjustment via AutoSet function

Direct access to the online product selector at **www.leuze.com/en/lv462**

Part no.	Part description	Light source	Switching output	Switching frequency	Connection	Operational controls
50118401	LV462.4/4X-150-M8	LED, red	Transistor, PNP	500 Hz	Cable with connector, 150 mm, M8, 4-pin	Control buttons, slide switch
50118400	LV462.4/4	LED, red	Transistor, PNP	500 Hz	Cable, 2,000 mm, 4-wire	Control buttons, slide switch
50118403	LV462.4/2X-150-M8	LED, red	Transistor, NPN	500 Hz	Cable with connector, 1,500 mm, M8, 4-pin	Control buttons, slide switch
50118402	LV462.4/2	LED, red	Transistor, NPN	500 Hz	Cable, 2,000 mm, 4-wire	Control buttons, slide switch

Dimensioned drawings: LV462



LV 462 fiber optic amplifier

/// LV463

The high-performance LV463 fiber optic amplifier convinces with its extensive setting options for operating ranges, sensitivities and time functions. The signal value, and at the same time the switching threshold, are shown on 2 easy-to-read displays. 3 different teach modes considerably simplify configuration. Also available as IO-Link variant.

Benefits:

- Double display to show signals and switching thresholds in parallel
- 3 different teach modes for fast sensor setting
- Extensive configuration options, e. g. for operating range, sensitivity or time functions
- Internal multiplex operation of up to 6 units for preventing mutual interference
- Also available as IO-Link variant

Direct access to the online product selector at **www.leuze.com/en/lv463**

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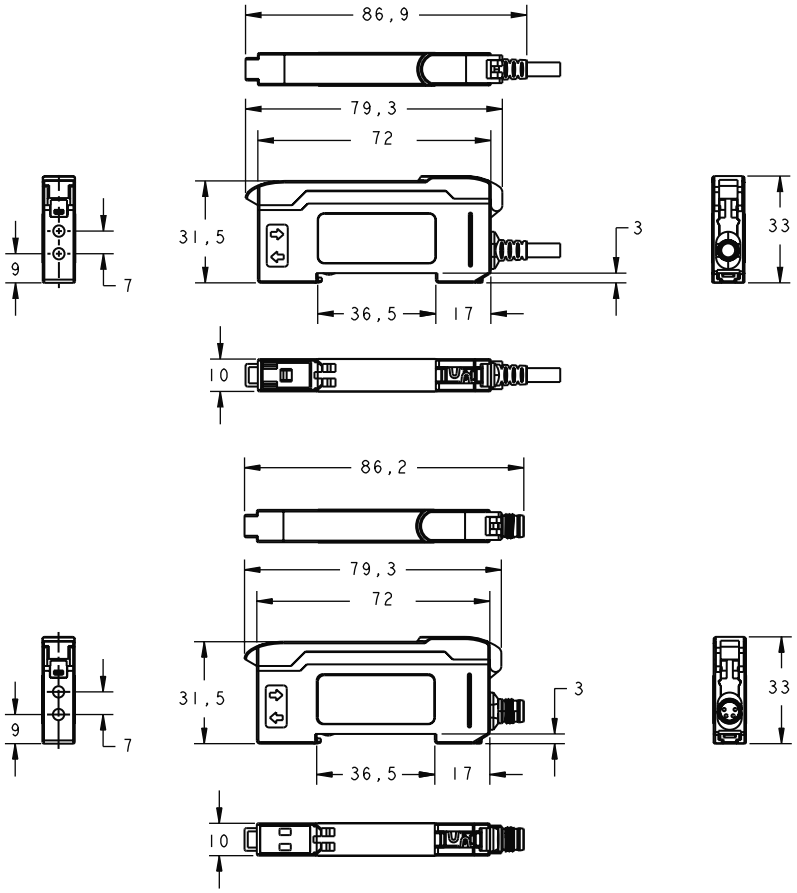
Part no.	Part description	Light source	Switching output	Analog outputs	Input/output	Switching frequency	Connection	Operational controls
50118405	LV463.7/4T-M8	LED, red	Transistor, PNP		Teach input, activation input, multiplex operation	2,500 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50133974	LV463.XR7/4T-M8	LED, red	Transistor, PNP		Activation input, teach input, multiplex operation	21 Hz	Connector, M8, 4-pin	Rocker pressure switch, slide switch
50133962	LV463.XV7/4T-M8	LED, red	Transistor, PNP		Multiplex operation, activation input, teach input	50,000 Hz	Connector, M8, 4-pin	Rocker pressure switch, slide switch
50133981	LV463.XR7/4T4-150-M12	LED, red	Transistor, PNP		Transistor, PNP, multiplex operation, activation input, teach input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Slide switch, rocker pressure switch
50133991	LV463.XR7/4TC-150-M12	LED, red	Transistor, PNP	Current	Teach input, activation input, multiplex operation	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Rocker pressure switch, slide switch
50133986	LV463.XR7/4TV-150-M12	LED, red	Transistor, PNP	Voltage	Teach input, multiplex operation, activation input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Slide switch, rocker pressure switch
50133999	LV463I.XR7/4T4-150-M12	LED, infrared	Transistor, PNP		Transistor, PNP, multiplex operation, activation input, teach input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Slide switch, rocker pressure switch
50134005	LV463I.XR7/4TC-150-M12	LED, infrared	Transistor, PNP	Current	Multiplex operation, activation input, teach input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Rocker pressure switch, slide switch
50134002	LV463I.XR7/4TV-150-M12	LED, infrared	Transistor, PNP	Voltage	Teach input, activation input, multiplex operation	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Slide switch, rocker pressure switch
50118407	LV463.7/4T-150-M12	LED, red	Transistor, PNP		Teach input, activation input, multiplex operation	2,500 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50133975	LV463.XR7/4T-150-M12	LED, red	Transistor, PNP		Activation input, teach input, multiplex operation	21 Hz	Cable with connector, 150 mm, M12, 4-pin	Rocker pressure switch, slide switch
50133964	LV463.XV7/4T-150-M12	LED, red	Transistor, PNP		Activation input, teach input, multiplex operation	50,000 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50133996	LV463I.XR7/4T-150-M12	LED, infrared	Transistor, PNP		Activation input, teach input, multiplex operation	21 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50118406	LV463.7/4T-150-M8	LED, red	Transistor, PNP		Teach input, activation input, multiplex operation	2,500 Hz	Cable with connector, 150 mm, M8, 4-pin	Slide switch, rocker pressure switch
50119070	LV463.7/4-150-M8.3	LED, red	Transistor, PNP			2,500 Hz	Cable with connector, 150 mm, M8, 3-pin	Slide switch, rocker pressure switch
50133980	LV463.XR7/4T4	LED, red	Transistor, PNP		Transistor, PNP, multiplex operation, activation input, teach input	21 Hz	Cable, 2,000 mm, 5-wire	Slide switch, rocker pressure switch
50133990	LV463.XR7/4TC	LED, red	Transistor, PNP	Current	Teach input, multiplex operation, activation input	21 Hz	Cable, 2,000 mm, 5-wire	Slide switch, rocker pressure switch
50133985	LV463.XR7/4TV	LED, red	Transistor, PNP	Voltage	Teach input, activation input, multiplex operation	21 Hz	Cable, 2,000 mm, 5-wire	Rocker pressure switch, slide switch
50133998	LV463I.XR7/4T4	LED, infrared	Transistor, PNP		Transistor, PNP, multiplex operation, activation input, teach input	21 Hz	Cable, 2,000 mm, 5-wire	Slide switch, rocker pressure switch
50134004	LV463I.XR7/4TC	LED, infrared	Transistor, PNP	Current	Activation input, teach input, multiplex operation	21 Hz	Cable, 2,000 mm, 5-wire	Rocker pressure switch, slide switch
50134001	LV463I.XR7/4TV	LED, infrared	Transistor, PNP	Voltage	Teach input, activation input, multiplex operation	21 Hz	Cable, 2,000 mm, 5-wire	Rocker pressure switch, slide switch
50118404	LV463.7/4T	LED, red	Transistor, PNP		Teach input, activation input, multiplex operation	2,500 Hz	Cable, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50133973	LV463.XR7/4T	LED, red	Transistor, PNP		Teach input, activation input, multiplex operation	21 Hz	Cable, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50133963	LV463.XV7/4T	LED, red	Transistor, PNP		Activation input, multiplex operation, teach input	50,000 Hz	Cable, 2,000 mm, 4-wire	Rocker pressure switch, slide switch
50133995	LV463I.XR7/4T	LED, infrared	Transistor, PNP		Multiplex operation, activation input, teach input	21 Hz	Cable, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50118409	LV463.7/2T-M8	LED, red	Transistor, NPN		Teach input, activation input, multiplex operation	2,500 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50133976	LV463.XR7/2T-M8	LED, red	Transistor, NPN		Activation input, teach input, multiplex operation	21 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50133965	LV463.XV7/2T-M8	LED, red	Transistor, NPN		Activation input, multiplex operation, teach input	50,000 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50133983	LV463.XR7/2T2-150-M12	LED, red	Transistor, NPN		Transistor, NPN, multiplex operation, activation input, teach input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Slide switch, rocker pressure switch
50133993	LV463.XR7/2TC-150-M12	LED, red	Transistor, NPN	Current	Teach input, multiplex operation, activation input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Rocker pressure switch, slide switch
50133988	LV463.XR7/2TV-150-M12	LED, red	Transistor, NPN	Voltage	Activation input, teach input, multiplex operation	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Rocker pressure switch, slide switch
50118411	LV463.7/2T-150-M12	LED, red	Transistor, NPN		Teach input, activation input, multiplex operation	2,500 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50133978	LV463.XR7/2T-150-M12	LED, red	Transistor, NPN		Activation input, multiplex operation, teach input	21 Hz	Cable with connector, 150 mm, M12, 4-pin	Rocker pressure switch, slide switch
50133967	LV463.XV7/2T-150-M12	LED, red	Transistor, NPN		Multiplex operation, activation input, teach input	50,000 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50118410	LV463.7/2T-150-M8	LED, red	Transistor, NPN		Teach input, activation input, multiplex operation	2,500 Hz	Cable with connector, 150 mm, M8, 4-pin	Slide switch, rocker pressure switch
50119071	LV463.7/2-150-M8.3	LED, red	Transistor, NPN			2,500 Hz	Cable with connector, 150 mm, M8, 3-pin	Slide switch, rocker pressure switch
50133982	LV463.XR7/2T2	LED, red	Transistor, NPN		Transistor, NPN, teach input, activation input, multiplex operation	21 Hz	Cable, 2,000 mm, 5-wire	Slide switch, rocker pressure switch
50133992	LV463.XR7/2TC	LED, red	Transistor, NPN	Current	Multiplex operation, activation input, teach input	21 Hz	Cable, 2,000 mm, 5-wire	Rocker pressure switch, slide switch
50133987	LV463.XR7/2TV	LED, red	Transistor, NPN	Voltage	Activation input, multiplex operation, teach input	21 Hz	Cable, 2,000 mm, 5-wire	Slide switch, rocker pressure switch
50118408	LV463.7/2T	LED, red	Transistor, NPN		Teach input, activation input, multiplex operation	2,500 Hz	Cable, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50133977	LV463.XR7/2T	LED, red	Transistor, NPN		Activation input, multiplex operation, teach input	21 Hz	Cable, 2,000 mm, 4-wire	Rocker pressure switch, slide switch

Part no.	Part description	Light source	Switching output	Analog outputs	Input/output	Switching frequency	Connection	Operational controls
50133966	LV463.XV7/2T	LED, red	Transistor, NPN		Activation input, multiplex operation, teach input	50,000 Hz	Cable, 2,000 mm, 4-wire	Rocker pressure switch, slide switch
50122456	LV463.7/L4-M8	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	2,500 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50134007	LV463.XR7/L4-M8	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	21 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50133969	LV463.XV7/L4-M8	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	50,000 Hz	Connector, M8, 4-pin	Rocker pressure switch, slide switch
50134008	LV463.XR7/L4	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	21 Hz	Connector, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50133970	LV463.XV7/L4	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	50,000 Hz	Connector, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50122457	LV463.7/L4-150-M12	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	2,500 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50134009	LV463.XR7/L4-150-M12	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	21 Hz	Cable with connector, 150 mm, M12, 4-pin	Rocker pressure switch, slide switch
50133971	LV463.XV7/L4-150-M12	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	50,000 Hz	Cable with connector, 150 mm, M12, 4-pin	Rocker pressure switch, slide switch
50122459	LV463.7/L4-150-M8	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	2,500 Hz	Cable with connector, 150 mm, M8, 4-pin	Slide switch, rocker pressure switch
50122460	LV463.7/L4	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	2,500 Hz	Cable, 2,000 mm, 4-wire	Slide switch, rocker pressure switch

Dimensioned drawings: LV463



LV 463 and LV 463B fiber optic amplifiers

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ACCESSORIES: AMPLIFIERS

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

//FIBER OPTICS

PLASTIC OR GLASS – DEPENDING ON THE AREA OF APPLICATION

For simple integration, each is available in a range of different designs and fiber optics cross sections.

/// Plastic fiber optics

Plastic fiber optic cables are available for reflective operation or for the throughbeam principle. The selection is made depending on the design of the fiber head and the functional characteristics of the fibers.
A very wide selection of different fiber optics are available, including with bend protection.

Benefits:

- Large selection of fiber optics
- Fiber optics with injection-molded bending protection
- Fiber optics with lateral optics
- Cross-section converter
- Fiber optics with V-optics
- Attachment lens for greater ranges or higher precision

Direct access to the online product selector at **www.leuze.com/en/plastic-fo**

Part no.	Part description	Operating principle	Design	Fiber length Outer diameter	Light beam exit	Minimum object diameter	Fiber sheathing material	Description
50132746	KF-L-320	Throughbeam principle	Cylindrical	2,000 mm 2.8 mm	Front	0.5 mm	PE	Single fiber core
50117739	KF-L-320-D-T14L	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Lateral	0.1 mm	PE	Single fiber core
50137383	KF-L-420	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117741	KF-LD-210-32	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Lateral	0.05 mm	PE	Single fiber core
50117738	KF-LE-220	Throughbeam principle	Cylindrical	2,000 mm 1 mm	Front	0,03 mm	PE	Single fiber core
50126967	KF-LH-320-D	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Lateral	0.1 mm	PE	Heat resistant, single fiber core
50122328	KF-LP-FU92-520-Q	Throughbeam principle	Cylindrical	2,000 mm 4 mm	Front	0.5 mm	PTFE	Single fiber core
50122327	KF-LP-FU96-520-Q	Throughbeam principle	Cylindrical	2,000 mm 4 mm	Lateral	0.5 mm	PTFE	Single fiber core
50117750	KF-LY-77TZ-20	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Lateral	0.5 mm	PE	Single fiber core
50117770	KFX-L-320	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117774	KFX-L-320-Q	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117766	KFX-L-420	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117776	KFX-LA-220	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Front	0,03 mm	PE	Single fiber core
50117777	KFX-LD-120	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117771	KFX-LD-320	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117775	KFX-LD-320-Q	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117767	KFX-LD-420	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117772	KFX-LH-320	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Heat resistant, single fiber core
50117768	KFX-LH-420	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Heat resistant, single fiber core
50117773	KFX-LY-320	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117769	KFX-LY-420	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117749	KF-LC32-12	Throughbeam principle	Cylindrical	900 mm 2.8 mm	bent 90 °	0.1 mm	PE	Multiple fiber core, mixed fiber configuration
50117740	KF-LH-305-D	Throughbeam principle	Cylindrical	500 mm 2.2 mm	Lateral	0.1 mm	PE	Heat resistant, single fiber core
50137382	KF-ET-620	Diffuse reflection principle	Cylindrical	2,000 mm 2.2 mm	Front	0.2 mm	PE	50 % / 50 % fiber configuration
50132149	KF-ETC-420	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Coaxial fiber configuration, multiple fiber core

A LV4xx series amplifier is required for operation!

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Part no.	Part description	Operating principle	Design	Fiber length Outer diameter	Light beam exit	Minimum object diameter	Fiber sheathing material	Description
50117737	KF-ETE-220	Diffuse reflection principle	Cylindrical	2,000 mm 1 mm	Front	0.05 mm	PE	Single fiber core
50132817	KF-ETW-FU31-20	Diffuse reflection principle	Cylindrical	2,000 mm 1.47 mm	Lateral	0.1 mm	PE	Multiple fiber core
50117752	KFX-ET-620	Diffuse reflection principle	Cylindrical	2,000 mm 2.2 mm	Front	0.2 mm	PE	Single fiber core
50117758	KFX-ETA-320	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117755	KFX-ETA-420	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117759	KFX-ETC-320	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Multiple fiber core, coaxial fiber configuration
50117761	KFX-ETC-320-Q	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Multiple fiber core, coaxial fiber configuration
50117756	KFX-ETC-420	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Multiple fiber core, coaxial fiber configuration
50117753	KFX-ETC-620	Diffuse reflection principle	Cylindrical	2,000 mm 2.2 mm	Front	0.1 mm	PE	Multiple fiber core, coaxial fiber configuration
50117763	KFX-ETC7-120	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Multiple fiber core, coaxial fiber configuration
50117760	KFX-ETD-320	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.1 mm	PE	Single fiber core
50117762	KFX-ETD-320-Q	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117757	KFX-ETD-420	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.1 mm	PE	Single fiber core
50117754	KFX-ETH-620	Diffuse reflection principle	Cylindrical	2,000 mm 2.2 mm	Front	0.2 mm	PE	Heat resistant, single fiber core
50117764	KFX-ETY-67TZ-20	Diffuse reflection principle	Cylindrical	2,000 mm 2.2 mm	Lateral	0.2 mm	PE	Single fiber core
50121079	KFX-ET-605	Diffuse reflection principle	Cylindrical	500 mm 2.2 mm	Front	0.2 mm	PE	Single fiber core
50117743	KF-L-10MLD-20	Throughbeam principle	Cubic	2,000 mm 2.2 mm	Lateral	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117744	KF-L-15MLD-10	Throughbeam principle	Cubic	2,000 mm 2.2 mm	Lateral	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117746	KF-L-30ML-20	Throughbeam principle	Cubic	2,000 mm 2.8 mm	Lateral	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117747	KF-L-50ML-20	Throughbeam principle	Cubic	2,000 mm 2.2 mm	Lateral	2 mm	PE	Multiple fiber core, mixed fiber configuration
50117748	KF-LW-FU53-20	Throughbeam principle	Cubic	2,000 mm 1 mm	Lateral	0.1 mm	PE	Single fiber core
50117745	KF-LW-FU57-20	Throughbeam principle	Cubic	2,000 mm 1 mm	Lateral	0.1 mm	PE	Single fiber core
50117751	KF-LY-U09-20	Throughbeam principle	Cubic	2,000 mm 2.2 mm	Lateral		PE	Single fiber core
50117778	KFX-L-20ML-20	Throughbeam principle	Cubic	2,000 mm 2.8 mm	Front	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117742	KF-L-10ML-10	Throughbeam principle	Cubic	1,000 mm 2.2 mm	Front	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117727	KF-ET-10ML-20	Diffuse reflection principle	Cubic	2,000 mm 1.25 mm	Front	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117729	KF-ET-20MLS-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Front	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117730	KF-ET-30ML-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Lateral	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117731	KF-ET-50ML-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Lateral	2 mm	PE	Multiple fiber core, mixed fiber configuration
50117735	KF-ETB-38V-20	Diffuse reflection principle	Cubic	2,000 mm 1.3 mm	Lateral		PE	Single fiber core
50117736	KF-ETH-38H-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Lateral		PE	Heat resistant, single fiber core
50117733	KF-ETW-FU47-20	Diffuse reflection principle	Cubic	2,000 mm 1 mm	Lateral	0.1 mm	PE	Single fiber core
50117734	KF-ETW-K10-20	Diffuse reflection principle	Cubic	2,000 mm 1 mm	Lateral	0.1 mm	PE	Single fiber core
50117732	KF-ETY-20MLSD-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Lateral	0.5 mm	PE	Single fiber core
50117765	KFX-ET-20ML-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Front	1 mm	PE	Multiple fiber core
50117728	KF-ET-15MLD-20	Diffuse reflection principle	Cubic	1,000 mm 1.25 mm	Lateral	1 mm	PE	Multiple fiber core, mixed fiber configuration

A LV4xx series amplifier is required for operation!

/// Glass fiber optics

For applications with high temperature resistance, glass fiber optics are often used. The selection is made depending on the design of the fiber head and the sheathing material.

Benefits:

- Wide variety of types of glass fiber optics
- Mechanically robust metal sheathing designs, partially from corrosion-proof stainless steel
- Use also possible at high temperatures
- Special solutions for vacuum-sealed light feed-throughs

Direct access to the online product selector at **www.leuze.com/en/glas-fo**

Part no.	Part description	Operating principle	Design	Fiber length Outer diameter	Light beam exit	Fiber sheathing material	Description
50126470	GF-LB-BR-450-IQ	Throughbeam principle	Cylindrical	5,000 mm 4 mm	On face	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126462	GF-LB-SI-450-IQ	Throughbeam principle	Cylindrical	5,000 mm 4 mm	On face	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50126466	GF-LB-SS-450-IQ	Throughbeam principle	Cylindrical	5,000 mm 4 mm	On face	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126469	GF-LB-BR-430-IQ	Throughbeam principle	Cylindrical	3,000 mm 4 mm	On face	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126500	GF-LB-BR-630-SD	Throughbeam principle	Cylindrical	3,000 mm 4.5 mm	Lateral without lens	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126461	GF-LB-SI-430-IQ	Throughbeam principle	Cylindrical	3,000 mm 4 mm	On face	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50126498	GF-LB-SI-630-SD	Throughbeam principle	Cylindrical	3,000 mm 4.5 mm	Lateral without lens	Silicone	Heat resistant, multiple fiber core
50126465	GF-LB-SS-430-IQ	Throughbeam principle	Cylindrical	3,000 mm 4 mm	On face	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126499	GF-LB-SS-630-SD	Throughbeam principle	Cylindrical	3,000 mm 4.5 mm	Lateral without lens	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50127341	GF-LB-SS-830-SM	Throughbeam principle	Cylindrical	3,000 mm 4.5 mm	Front	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126468	GF-LB-BR-410-IQ	Throughbeam principle	Cylindrical	1,000 mm 4 mm	On face	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126497	GF-LB-BR-610-SD	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral without lens	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126491	GF-LB-BR-610-SU	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	bent 90 °	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50127340	GF-LB-BR-810-SF	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral with lens	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126460	GF-LB-SI-410-IQ	Throughbeam principle	Cylindrical	1,000 mm 4 mm	On face	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50126495	GF-LB-SI-610-SD	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral without lens	Silicone	Heat resistant, multiple fiber core
50126489	GF-LB-SI-610-SU	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	bent 90 °	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50127338	GF-LB-SI-810-SF	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral with lens	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50126464	GF-LB-SS-410-IQ	Throughbeam principle	Cylindrical	1,000 mm 4 mm	On face	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126496	GF-LB-SS-610-SD	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral without lens	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126490	GF-LB-SS-610-SU	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	bent 90 °	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50127339	GF-LB-SS-810-SF	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral with lens	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126467	GF-LB-BR-405-IQ	Throughbeam principle	Cylindrical	500 mm 4 mm	On face	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126459	GF-LB-SI-405-IQ	Throughbeam principle	Cylindrical	500 mm 4 mm	On face	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50126463	GF-LB-SS-405-IQ	Throughbeam principle	Cylindrical	500 mm 4 mm	On face	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126488	GF-ETG-BR-650-IQ	Diffuse reflection principle	Cylindrical	5,000 mm 6 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126476	GF-ETG-SI-650-IQ	Diffuse reflection principle	Cylindrical	5,000 mm 6 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126482	GF-ETG-SS-650-IQ	Diffuse reflection principle	Cylindrical	5,000 mm 6 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126487	GF-ETG-BR-630-IQ	Diffuse reflection principle	Cylindrical	3,000 mm 6 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126475	GF-ETG-SI-630-IQ	Diffuse reflection principle	Cylindrical	3,000 mm 6 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126481	GF-ETG-SS-630-IQ	Diffuse reflection principle	Cylindrical	3,000 mm 6 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126485	GF-ETG-BR-310-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 3 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core

A LVSR 325 series amplifier is required for operation!

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Part no.	Part description	Operating principle	Design	Fiber length Outer diameter	Light beam exit	Fiber sheathing material	Description
50126486	GF-ETG-BR-610-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126494	GF-ETG-BR-710-SU	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	bent 90 °	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126473	GF-ETG-SI-310-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 3 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126474	GF-ETG-SI-610-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126492	GF-ETG-SI-710-SU	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	bent 90 °	Silicone	Heat resistant, multiple fiber core
50126479	GF-ETG-SS-310-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 3 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126480	GF-ETG-SS-610-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126493	GF-ETG-SS-710-SU	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	bent 90 °	Stainless steel	Heat resistant, multiple fiber core
50134919	GF-ETB-SS-305-SM	Diffuse reflection principle	Cylindrical	500 mm 3.8 mm	On face	Stainless steel	Heat resistant, multiple fiber core
50126483	GF-ETG-BR-305-IQ	Diffuse reflection principle	Cylindrical	500 mm 3 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126484	GF-ETG-BR-605-IQ	Diffuse reflection principle	Cylindrical	500 mm 6 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126471	GF-ETG-SI-305-IQ	Diffuse reflection principle	Cylindrical	500 mm 3 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126472	GF-ETG-SI-605-IQ	Diffuse reflection principle	Cylindrical	500 mm 6 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126477	GF-ETG-SS-305-IQ	Diffuse reflection principle	Cylindrical	500 mm 3 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126478	GF-ETG-SS-605-IQ	Diffuse reflection principle	Cylindrical	500 mm 6 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50127342	GF-ETM-BR-402-IM	Diffuse reflection principle	Cylindrical	200 mm 4 mm	Front	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration

A LVSR 325 series amplifier is required for operation!

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– Standards workshops
– Product training courses

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Markus Erdorf,
Safety Consultant and Trainer

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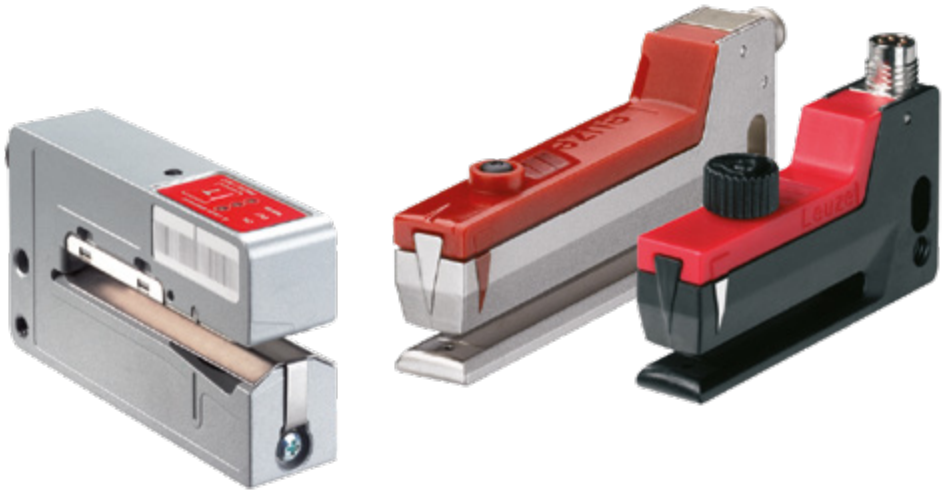
/ FORKED SENSORS

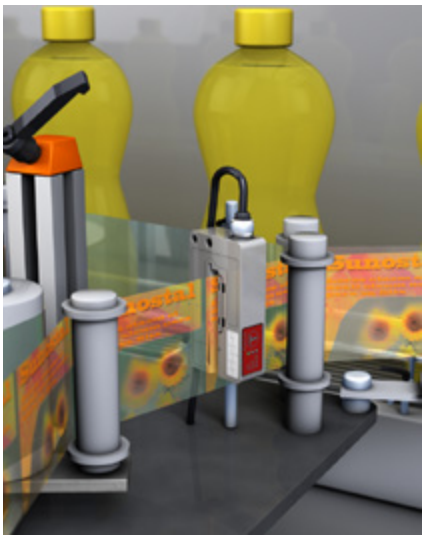
NOTHING GETS PAST THESE FORKS

Sensors of this series combine transmitter and receiver into a single device and therefore feature high operational safety. They are characterized by simple mounting without alignment work as well as high sensitivity. The sensors are used for detecting small parts or for detecting labels and print marks, even on transparent films.



Forked sensors for object detection Page 173

Forked sensors for label detection Page 175



//FORKED SENSORS FOR OBJECT DETECTION

MAXIMUM PRECISION FOR THE SMALLEST PARTS

The design of these sensors makes them the ideal choice for the detection of small parts. High sensitivities and fast reaction times facilitate simple and reliable integration of these sensors in fast automation processes.

/// GS 04

This series, with mouth widths from 20 to 220 mm, can be optimally adapted to a given application by means of their sensitivity adjustment and light/dark switching.
Laser variants can be used to reliably detect even the smallest parts.

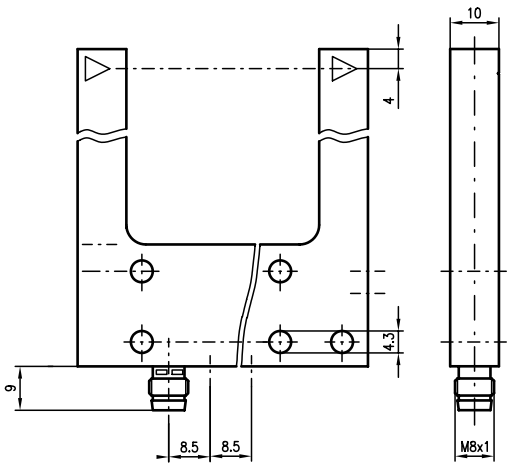
Benefits:

- Sensitivity adjustment and light/dark switching for optimum adaptation to the application
- Sensitivity adjustment on the back of the fork
- Robust metal housing and glass optics for protection against environmental influences
- Transmitter and receiver are installed in the same housing, therefore easy and fast mounting (complex mounting brackets and extensive alignment not necessary)

Direct access to the online product selector at **www.leuze.com/en/gs04**

Part no.	Part description	Mouth width	Switching frequency	Light source	Switching output	Response time	Description
50110793	GSL 04M/P-30-S8	30 mm	5,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	0.1 ms	Connector, M8, 3-pin, 270 ° potentiometer
50124703	GSL 04M/N-30-S8	30 mm	5,000 Hz	Laser, red	Transistor, NPN, light/dark reversible	0.1 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110794	GSL 04M/P-50-S8	50 mm	5,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	0.1 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110795	GSL 04M/P-80-S8	80 mm	5,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	0.1 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110792	GS 04M/P-20-S8	20 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110782	GS 04M/P-30-S8	30 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110791	GS 04M/N-30-S8	30 mm	1,500 Hz	LED, red	Transistor, NPN, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110783	GS 04M/P-50-S8	50 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110789	GS 04M/N-50-S8	50 mm	1,500 Hz	LED, red	Transistor, NPN, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110784	GS 04M/P-80-S8	80 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110790	GS 04M/N-80-S8	80 mm	1,500 Hz	LED, red	Transistor, NPN, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110785	GS 04M/P-120-S8	120 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110787	GS 04M/N-120-S8	120 mm	1,500 Hz	LED, red	Transistor, NPN, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110786	GS 04M/P-220-S8	220 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer
50110788	GS 04M/N-220-S8	220 mm	1,500 Hz	LED, red	Transistor, NPN, light/dark reversible	0.33 ms	Connector, M8, 3-pin, 270 ° potentiometer

Dimensioned drawings: GS 04



GS 04 forked sensor

ACCESSORIES: FORKED SENSORS FOR OBJECT DETECTION

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC

Further connection cables can be found on our website

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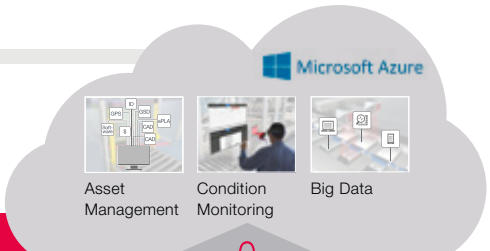
TO CREATE THE **FUTURE**



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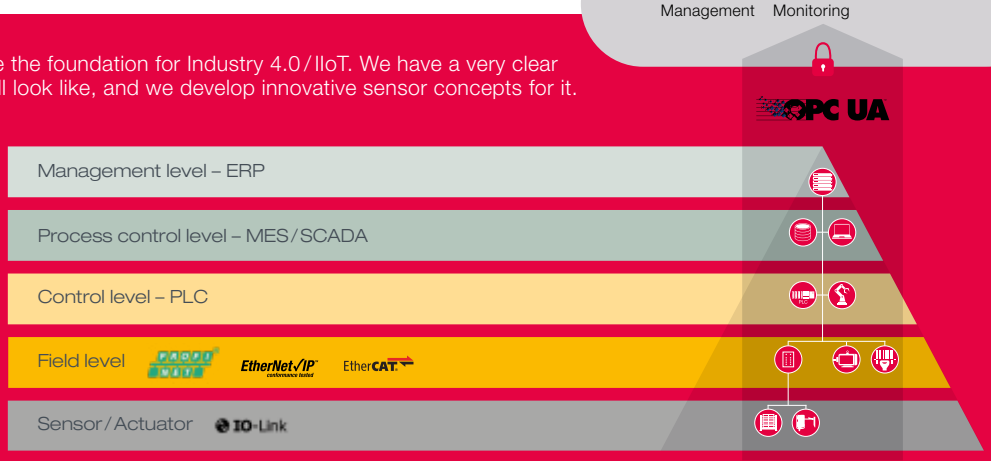

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//FORKED SENSORS FOR LABEL DETECTION

RELIABLE DETECTION IN A WIDE RANGE OF DIFFERENT APPLICATIONS

Precise and fast detection – even at high web speeds – and the reliable detection of a wide range of material combinations and surfaces. These are the criteria professional sensors must meet for labeling applications. Here we offer the right solution for every application with our wide line of different designs and operating principles, from light to ultrasonics.

/// GS 61

Optical forked photoelectric sensor in slim-line design with 3 mm mouth width for exact detection of labels on base material.

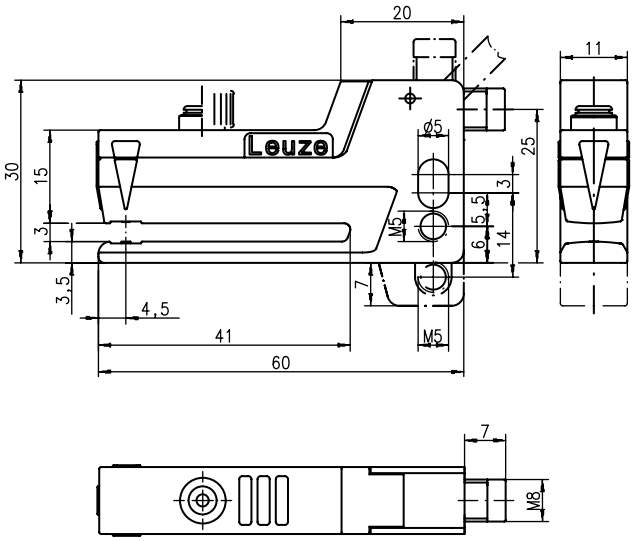
Benefits:

- Simple sensitivity adjustment via multiturn potentiometer or optionally via teach-in function
- Slimline-design (reduced fork height) for installation directly at the dispensing edge
- Removable operating head for comfortable potentiometer adjustment
- Smallest dimensions of all industrial forked photoelectric sensors with an excellent price / performance ratio

Direct access to the online product selector at **www.leuze.com/en/gs61**

Part no.	Part description	Principle of physics	Mouth width	Switching frequency	Light source	Switching output 1	Response time	Description
50110108	GS 61/6.2-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8, 4-pin, teach button
50110763	GS 61/6.2-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8, 4-pin, teach button
50110110	GS 61/6-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8, 4-pin, multiturn potentiometer
50110112	GS 61/6-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8, 4-pin, multiturn potentiometer
50110765	GS 61/6.2-S8.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8, 3-pin, teach button
50110761	GS 61/6-S8.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8, 3-pin, multiturn potentiometer
50112422	GS 61/6.2,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable with connector, M12, 200 mm, 5-pin, teach button
50112424	GS 61/6.3,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable with connector, M12, 200 mm, 5-pin, teach button
50112423	GS 61/6,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable with connector, M12, 200 mm, 5-pin, multiturn potentiometer
50112425	GS 61/6.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable, 2,000 mm, 5-wire, teach button
50110769	GS 61/6	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable, 2,000 mm, 5-wire, multiturn potentiometer
50110109	GS 61/6D.2-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8, 4-pin, teach button
50110764	GS 61/6D.2-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8, 4-pin, teach button
50110111	GS 61/6D-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8, 4-pin, multiturn potentiometer
50110113	GS 61/6D-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8, 4-pin, multiturn potentiometer
50110766	GS 61/6D.2-S8.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8, 3-pin, teach button
50110762	GS 61/6D-S8.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8, 3-pin, multiturn potentiometer
50112426	GS 61/6D.2,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable with connector, M12, 200 mm, 5-pin, teach button
50112427	GS 61/6D,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable with connector, M12, 200 mm, 5-pin, multiturn potentiometer
50110767	GS 61/6.2	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable, 2,000 mm, 5-wire, teach button
50110768	GS 61/6D.2	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable, 2,000 mm, 5-wire, teach button
50110770	GS 61/6D	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable, 2,000 mm, 5-wire, multiturn potentiometer

Dimensioned drawings: GS 61



GS 61 forked sensor

/// GS 63B

The chemically nickel-plated metal housing of this optical forked photoelectric sensor is ideal for applications in the foodstuffs sector where it is critical that no paint chipping occurs. The flat fork enables installation in a groove directly at the dispensing edge to achieve – together with the short response time – a high dispensing accuracy. With a 3 mm mouth width and 60 mm mouth depth, the sensor is also very well suited for wide labels.

Benefits:

- High switching frequency and short response time guarantee very good repeatability
- Easy adjustment via lockable teach button or teach input
- Slimline-design (reduced fork height) for installation directly at the dispensing edge
- ALC (auto level control) function: maximum function reserve via automatic online optimization of the switching threshold
- Warning output for indicating teach or function errors

Direct access to the online product selector at **www.leuze.com/en/gs63b**

Part no.	Part description	Principle of physics	Mouth width	Switching frequency	Light source	Switching output 1	Response time	Description
50128004	GS 63B/6.3-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8, 4-pin, teach button
50128005	GS 63B/6.3-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8, 4-pin, teach button
50128011	GS 63B/6-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8, 4-pin, multiturn potentiometer
50128012	GS 63B/6-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8, 4-pin, multiturn potentiometer
50128014	IGS 63B/6.3,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable with connector, M12, 200 mm, 5-pin, teach button, warning output
50128003	GS 63B/6.01,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable with connector, M12, 200 mm, 5-pin, multiturn potentiometer, article set
50128002	GS 63B/6,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable with connector, M12, 200 mm, 5-pin, multiturn potentiometer
50129248	GS 63B/6.3,200-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable with connector, M8, 200 mm, 4-pin, teach button
50128013	IGS 63B/6.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable, 2,000 mm, 5-wire, teach button, warning output
50128001	GS 63B/6	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable, 2,000 mm, 5-wire, multiturn potentiometer
50128008	GS 63B/6D.3-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8, 4-pin, teach button
50128009	GS 63B/6D.3-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8, 4-pin, teach button
50128010	GS 63B/6D-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8, 4-pin, multiturn potentiometer

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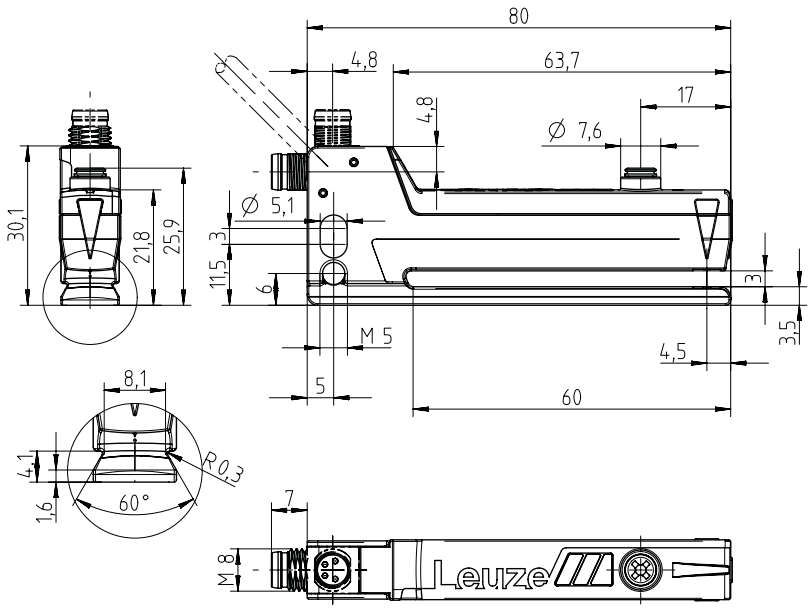
Part no.	Part description	Principle of physics	Mouth width	Switching frequency	Light source	Switching output 1	Response time	Description
50128015	IGS 63B/6D.3,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable with connector, M12, 200 mm, 5-pin, teach button, warning output
50128007	GS 63B/6D,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable with connector, M12, 200 mm, 5-pin, multiturn potentiometer
50131604	GS 63B/6D,200-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable with connector, M8, 200 mm, 4-pin, multiturn potentiometer
50128006	GS 63B/6D	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable, 2,000 mm, 5-wire, multiturn potentiometer

Dimensioned drawings: GS 63B



GS 63B forked sensor

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24/7 support

On-Call Service and technical support all around the clock

"In our Service Center in Owen, we have many competent sensor people who can reliably handle your questions and problems – around the clock."

Simone Fischer,
Customer Care Center

You can reach the sensor people around the clock: **www.leuze.com/en/support**

/// GK 14

The capacitive forked sensor is particularly well suited for transparent labels without metallic coating.

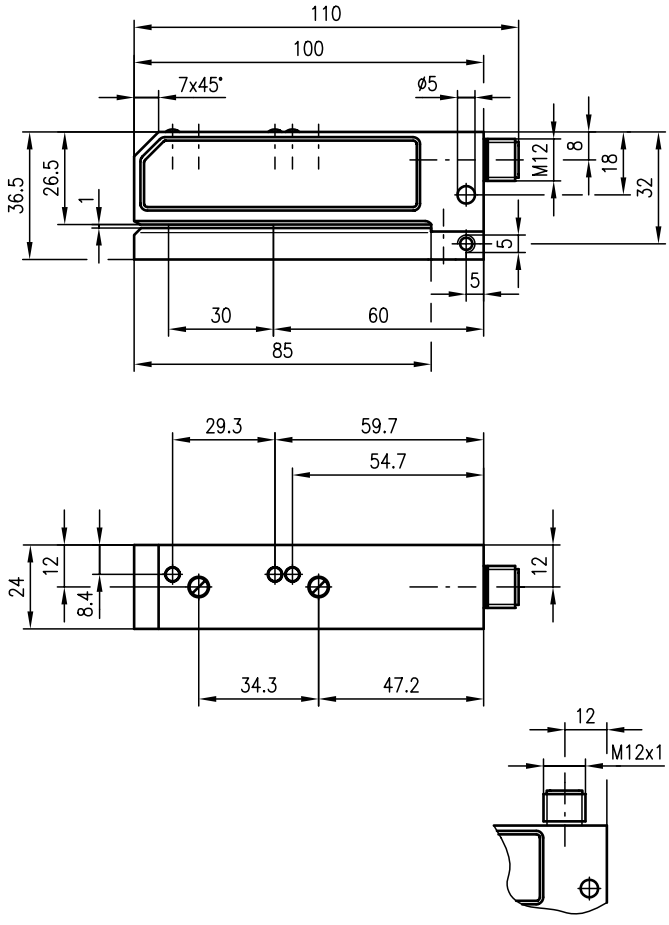
Benefits:

- Forked sensor for reliable detection of transparent and opaque labels
- PNP and NPN transistor output for optimum adaptation to the controller
- Robust metal housing with beveled inlet edges
- Inverting input for easy adaptation of the output signal level

Direct access to the online product selector at **www.leuze.com/en/gk14**

Part no.	Part description	Principle of physics	Mouth width	Switching frequency	Switching output 1	Switching output 2	Response time	Description
50026371	GK 14/24 L	Capacitive	1 mm	5,000 Hz	Transistor, PNP, switching signal in label gap, reversible	Transistor, NPN, switching signal in label gap, reversible	0.1 ms	Connector, M12, 5-pin, multiturn potentiometer
50031714	GK 14/24 L.2	Capacitive	1 mm	5,000 Hz	Transistor, PNP, switching signal in label gap, reversible	Transistor, NPN, switching signal in label gap, reversible	0.1 ms	Connector, M12, 5-pin, multiturn potentiometer

Dimensioned drawings: GK 14



GK 14 capacitive forked sensor

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/// GSU 06

This forked sensor with metal housing is very well suited for the detection of foil labels, metallic-coated foil labels and thin metal foils. A special variant for paper tear monitoring is also available .

Benefits:

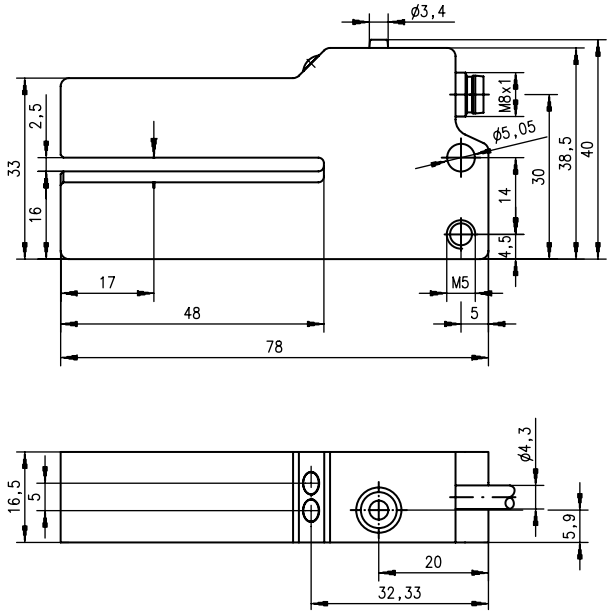
- Reliable detection of foil labels on foil carriers or paper carriers, paper labels on paper carriers, metallic foil labels and thin metal foils
- Simple adjustment via teach-in by pressing a button or remote calibration 1
- Static PNP and NPN transistor outputs for optimum adaptation to the controller
- M8/M12 connector or cable version

Direct access to the online product selector at **www.leuze.com/en/gsu06**

Part no.	Part description	Principle of physics	Mouth width	Switching output 1	Switching output 2	Response time	Description
50039638	GSU 06/24-2-S8	Ultrasonics	2.5 mm	Transistor, PNP, switching signal in label gap	Transistor, NPN, switching signal in label gap	0.3 ms	Connector, M8, 4-pin, teach button
50040191	GSU 06/24-2	Ultrasonics	2.5 mm	Transistor, PNP, switching signal in label gap	Transistor, NPN, switching signal in label gap	0.3 ms	Cable, 2,000 mm, 5-wire, teach button
50040190	GSU 06/24D-2-S8	Ultrasonics	2.5 mm	Transistor, PNP, switching signal on label	Transistor, NPN, switching signal on label	0.3 ms	Connector, M8, 4-pin, teach button
50040192	GSU 06/24D-2	Ultrasonics	2.5 mm	Transistor, PNP, switching signal on label	Transistor, NPN, switching signal on label	0.3 ms	Cable, 2,000 mm, 5-wire, teach button

The switching frequency is dependent on the conveyor speed, label length and spacing between labels

Dimensioned drawings: GSU 06



GSU 06 ultrasonic forked sensor

/// GSU 14D

Ultrasonic forked sensor for reliable detection and universal application. With its large mouth width, this ultrasonic forked sensor is also suitable for leaflet and booklet labels.

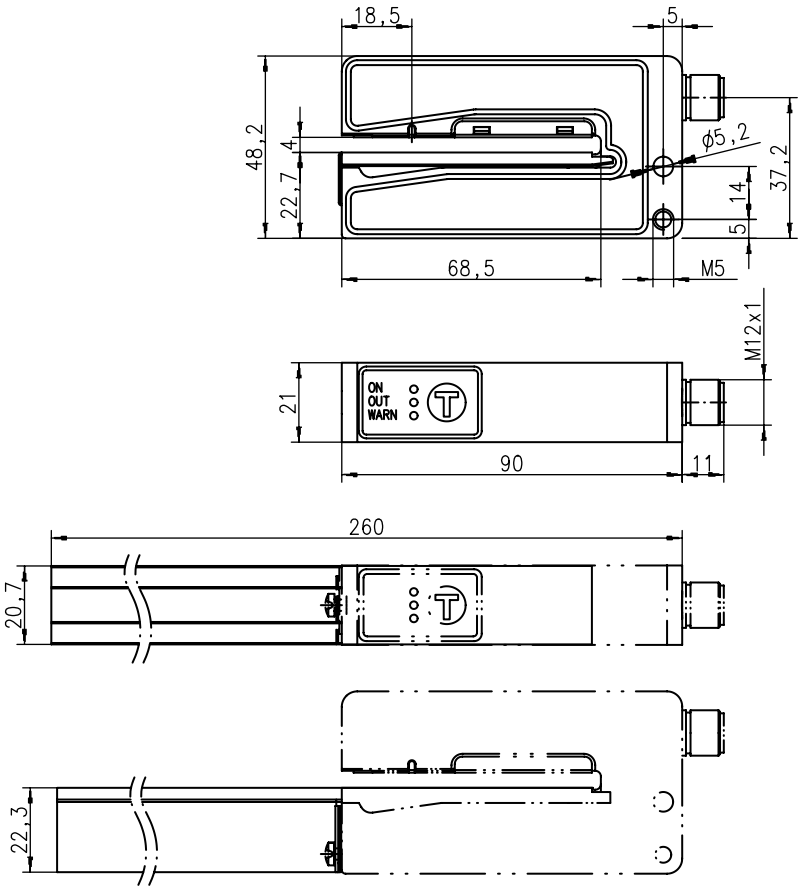
Benefits:

- Reliable detection of foil labels on foil carriers, foil labels on paper carriers, paper labels on paper carriers, metallic foil labels and thin metal foils

Direct access to the online product selector at **www.leuze.com/en/gsu14d**

Part no.	Part description	Principle of physics	Mouth width	Switching output 1	Switching output 2	Response time	Description
50126781	GSU 14D/66.3-S12	Ultrasonics	4 mm	Transistor, push-pull, switching signal in label gap	Transistor, push-pull, switching signal on label	0.2 ms	Connector, M12, 5-pin, teach button, teach input
50126782	GSU 14D/66D.3-S12	Ultrasonics	4 mm	Transistor, push-pull, switching signal on label	Transistor, push-pull, switching signal in label gap	0.2 ms	Connector, M12, 5-pin, teach button
50126783	GSU 14D/66D.31-S12	Ultrasonics	4 mm	Transistor, push-pull, switching signal on label	Transistor, push-pull, switching signal in label gap	0.2 ms	Connector, M12, 5-pin, teach button

Dimensioned drawings: GSU 14D



GSU 14D ultrasonic forked sensor

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/// IGSU 14D

The model with chemically nickel-plated metal housing is ideal for applications in the foodstuffs sector where it is critical that no paint chipping occurs. With easyTeach (press button, dispense labels, done), static teaching without loss of labels, ALC function for readjustment of the switching threshold, warning output and practical accessories, this forked sensor is always the first choice for universal label detection. And, with its large mouth width, it is also ideal for booklet and leaflet labels.

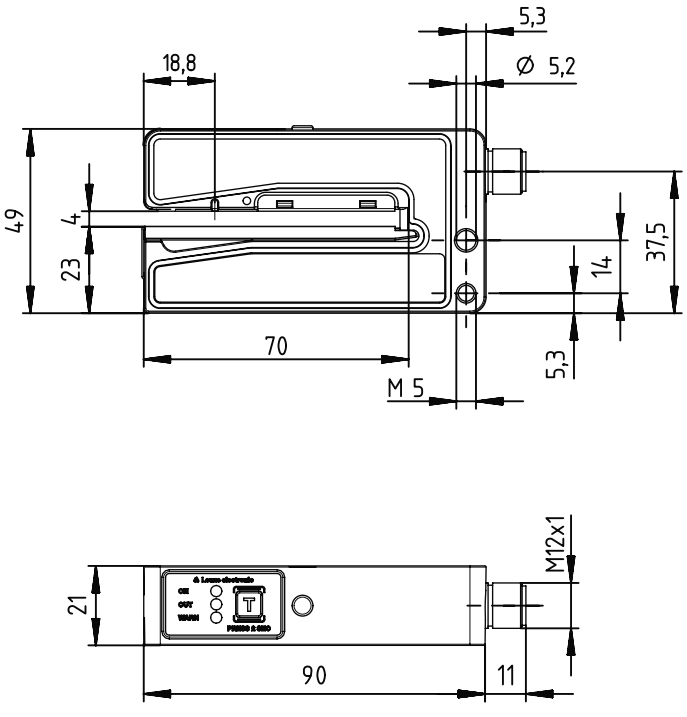
Benefits:

- Forked sensor for reliable detection of foil labels on foil carriers or paper carriers, paper labels on paper carriers, metallic foil labels and thin metal foils
- Model for the reliable detection of splice on paper web or plastic web
- easyTeach function: press button – dispense labels – done
- ALC function (auto level control): maximum function reserve via automatic online optimization of the switching threshold

Direct access to the online product selector at **www.leuze.com/en/igsu14d**

Part no.	Part description	Principle of physics	Mouth width	Switching frequency	Switching output 1	Switching output 2	Response time	Description
50127969	IGSU 14D/6.3G-S12	Ultrasonics	4 mm		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, 0 V switching	0.2 ms	Connector, M12, 5-pin, teach button, warning output, pre-mounted tape guide
50125790	IGSU 14DN/6.3G-S12	Ultrasonics	4 mm		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, 0 V switching	0.2 ms	Connector, M12, 5-pin, teach button, warning output, pre-mounted tape guide
50126784	IGSU 14D/6.3-S12	Ultrasonics	4 mm		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, 0 V switching	0.2 ms	Connector, M12, 5-pin, teach button, warning output
50126786	IGSU 14D/6.31-S12	Ultrasonics	4 mm		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, 0 V switching	0.2 ms	Connector, M12, 5-pin, teach button, warning output
50126788	IGSU 14DN/6.3-S12	Ultrasonics	4 mm		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, 0 V switching	0.2 ms	Connector, M12, 5-pin, teach button, warning output
50126785	IGSU 14D/6D.3-S12	Ultrasonics	4 mm		Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	Transistor, push-pull, 0 V switching	0.2 ms	Connector, M12, 5-pin, teach button, warning output
50126787	IGSU 14D/6.3SD-S12	Ultrasonics	4 mm	2,000 Hz	Transistor, push-pull, switching signal on splice, reversible		0.25 ms	Connector, M12, 5-pin, teach button, warning output

Dimensioned drawings: IGSU 14D



IGSU 14D ultrasonic forked sensor

ACCESSORIES: FORKED SENSORS FOR LABEL DETECTION

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
50020502	KD 095-5	Connector, M12, angled, female	5-pin
50020501	KD 095-5A	Connector, M12, axial, female	5-pin

Further connectors can be found on our website

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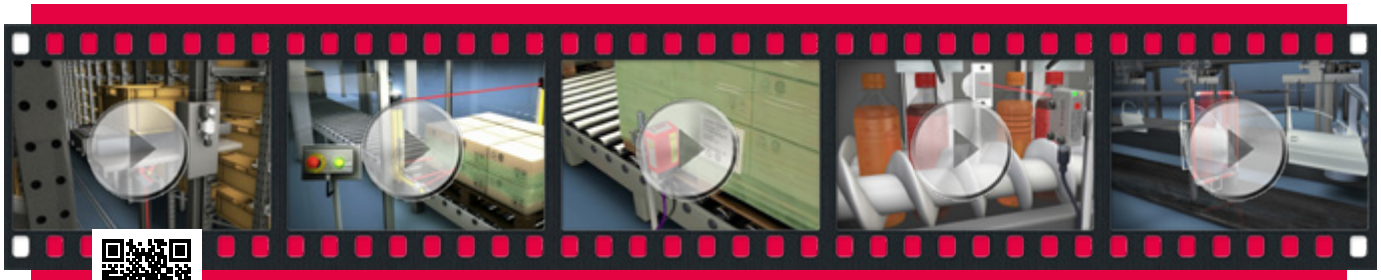

Take a look at our product clips: **www.leuze.com/en/product-clips**

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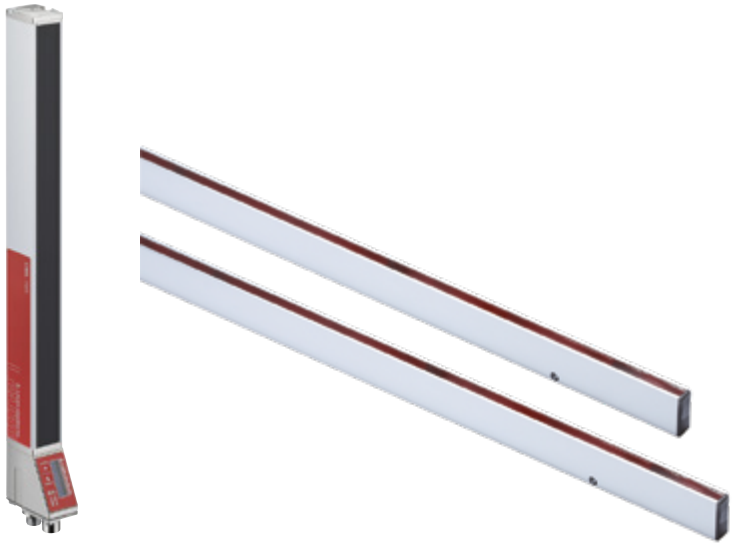
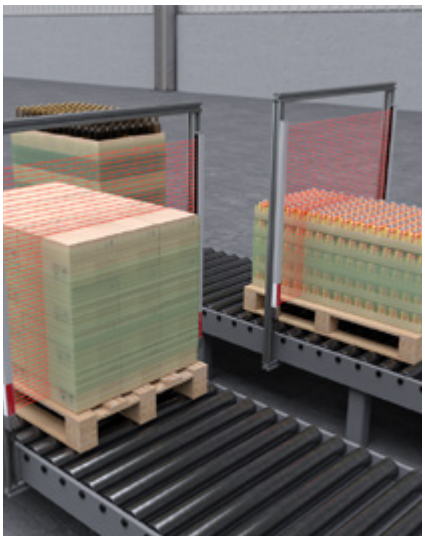
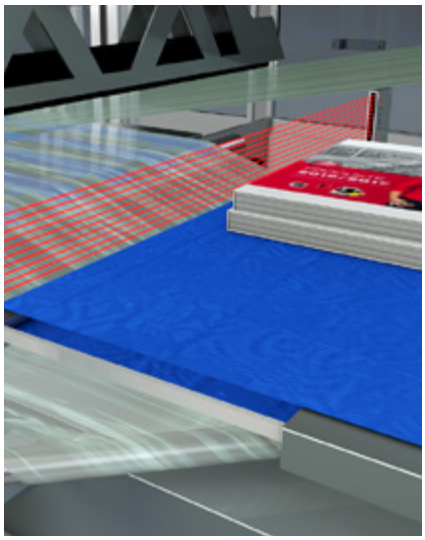
/ LIGHT CURTAINS

OBJECT DETECTION MADE EASY

The switching light curtains from Leuze electronic are able to monitor a large measurement field and respond if sensor beams in the field are interrupted. Various resolutions and measurement field lengths enable reliable use in a variety of applications.







/// CSL 505

The cost-optimized, CSL 505 switching light curtain is specially designed for simple applications. With its slim design, integrated evaluation unit and large opening angle for quick and simple alignment, is can be used for projection monitoring, free field monitoring and object detection.

Benefits:

- Different measurement field lengths
- Selectable resolution
- M8 connector plug
- Slim housing
- Operating range up to 5 m
- Short cycle time
- Prefailure message (soiling)

Direct access to the online product selector at **www.leuze.com/en/csl505**

Part no.	Part description	Beam spacing	Measurement field length	Number of beams	Operating range	Switching outputs	Switching output	Connection
50131365	► CSL505-T05-35-M8	5 mm	35 mm	8x	0.3 … 5 m			Connector, M8, 4-pin
50131308	◄ CSL505-R05-35-M8	5 mm	35 mm	8x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131366	► CSL505-T05-75-M8	5 mm	75 mm	16x	0.3 … 5 m			Connector, M8, 4-pin
50131309	◄ CSL505-R05-75-M8	5 mm	75 mm	16x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131367	► CSL505-T05-115-M8	5 mm	115 mm	24x	0.3 … 5 m			Connector, M8, 4-pin
50131310	◄ CSL505-R05-115-M8	5 mm	115 mm	24x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131368	► CSL505-T05-155-M8	5 mm	155 mm	32x	0.3 … 5 m			Connector, M8, 4-pin
50131311	◄ CSL505-R05-155-M8	5 mm	155 mm	32x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131369	► CSL505-T05-195-M8	5 mm	195 mm	40x	0.3 … 5 m			Connector, M8, 4-pin
50131312	◄ CSL505-R05-195-M8	5 mm	195 mm	40x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131370	► CSL505-T05-235-M8	5 mm	235 mm	48x	0.3 … 5 m			Connector, M8, 4-pin
50131313	◄ CSL505-R05-235-M8	5 mm	235 mm	48x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131371	► CSL505-T05-275-M8	5 mm	275 mm	56x	0.3 … 5 m			Connector, M8, 4-pin
50131314	◄ CSL505-R05-275-M8	5 mm	275 mm	56x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131372	► CSL505-T05-315-M8	5 mm	315 mm	64x	0.3 … 5 m			Connector, M8, 4-pin
50131315	◄ CSL505-R05-315-M8	5 mm	315 mm	64x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131373	► CSL505-T05-355-M8	5 mm	355 mm	72x	0.3 … 5 m			Connector, M8, 4-pin
50131316	◄ CSL505-R05-355-M8	5 mm	355 mm	72x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131374	► CSL505-T05-395-M8	5 mm	355 mm	72x	0.3 … 5 m			Connector, M8, 4-pin
50131317	◄ CSL505-R05-395-M8	5 mm	355 mm	72x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131375	► CSL505-T12.5-88-M8	12.5 mm	88 mm	8x	0.3 … 5 m			Connector, M8, 4-pin
50131318	◄ CSL505-R12.5-88-M8	12.5 mm	88 mm	8x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131376	► CSL505-T12.5-188-M8	12.5 mm	188 mm	16x	0.3 … 5 m			Connector, M8, 4-pin
50131319	◄ CSL505-R12.5-188-M8	12.5 mm	188 mm	16x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131377	► CSL505-T12.5-288-M8	12.5 mm	288 mm	24x	0.3 … 5 m			Connector, M8, 4-pin
50131321	◄ CSL505-R12.5-288-M8	12.5 mm	288 mm	24x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131378	► CSL505-T12.5-388-M8	12.5 mm	388 mm	32x	0.3 … 5 m			Connector, M8, 4-pin
50131322	◄ CSL505-R12.5-388-M8	12.5 mm	388 mm	32x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131379	► CSL505-T12.5-488-M8	12.5 mm	488 mm	40x	0.3 … 5 m			Connector, M8, 4-pin
50131323	◄ CSL505-R12.5-488-M8	12.5 mm	488 mm	40x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131380	► CSL505-T12.5-588-M8	12.5 mm	588 mm	48x	0.3 … 5 m			Connector, M8, 4-pin
50131324	◄ CSL505-R12.5-588-M8	12.5 mm	588 mm	48x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131381	► CSL505-T12.5-688-M8	12.5 mm	688 mm	56x	0.3 … 5 m			Connector, M8, 4-pin
50131325	◄ CSL505-R12.5-688-M8	12.5 mm	688 mm	56x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131382	► CSL505-T12.5-788-M8	12.5 mm	788 mm	64x	0.3 … 5 m			Connector, M8, 4-pin
50131326	◄ CSL505-R12.5-788-M8	12.5 mm	788 mm	64x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131383	► CSL505-T12.5-888-M8	12.5 mm	887.5 mm	72x	0.3 … 5 m			Connector, M8, 4-pin
50131327	◄ CSL505-R12.5-888-M8	12.5 mm	887.5 mm	72x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131384	► CSL505-T12.5-988-M8	12.5 mm	987.5 mm	80x	0.3 … 5 m			Connector, M8, 4-pin
50131328	◄ CSL505-R12.5-988-M8	12.5 mm	987.5 mm	80x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131385	► CSL505-T25-175-M8	25 mm	175 mm	8x	0.3 … 5 m			Connector, M8, 4-pin
50131329	◄ CSL505-R25-175-M8	25 mm	175 mm	8x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131386	► CSL505-T25-275-M8	25 mm	275 mm	12x	0.3 … 5 m			Connector, M8, 4-pin
50131330	◄ CSL505-R25-275-M8	25 mm	275 mm	12x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131387	► CSL505-T25-375-M8	25 mm	375 mm	16x	0.3 … 5 m			Connector, M8, 4-pin
50131331	◄ CSL505-R25-375-M8	25 mm	375 mm	16x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131388	► CSL505-T25-475-M8	25 mm	475 mm	20x	0.3 … 5 m			Connector, M8, 4-pin
50131332	◄ CSL505-R25-475-M8	25 mm	475 mm	20x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131389	► CSL505-T25-575-M8	25 mm	575 mm	24x	0.3 … 5 m			Connector, M8, 4-pin
50131333	◄ CSL505-R25-575-M8	25 mm	575 mm	24x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131390	► CSL505-T25-675-M8	25 mm	675 mm	28x	0.3 … 5 m			Connector, M8, 4-pin
50131334	◄ CSL505-R25-675-M8	25 mm	675 mm	28x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin

► transmitter / ◄ receiver

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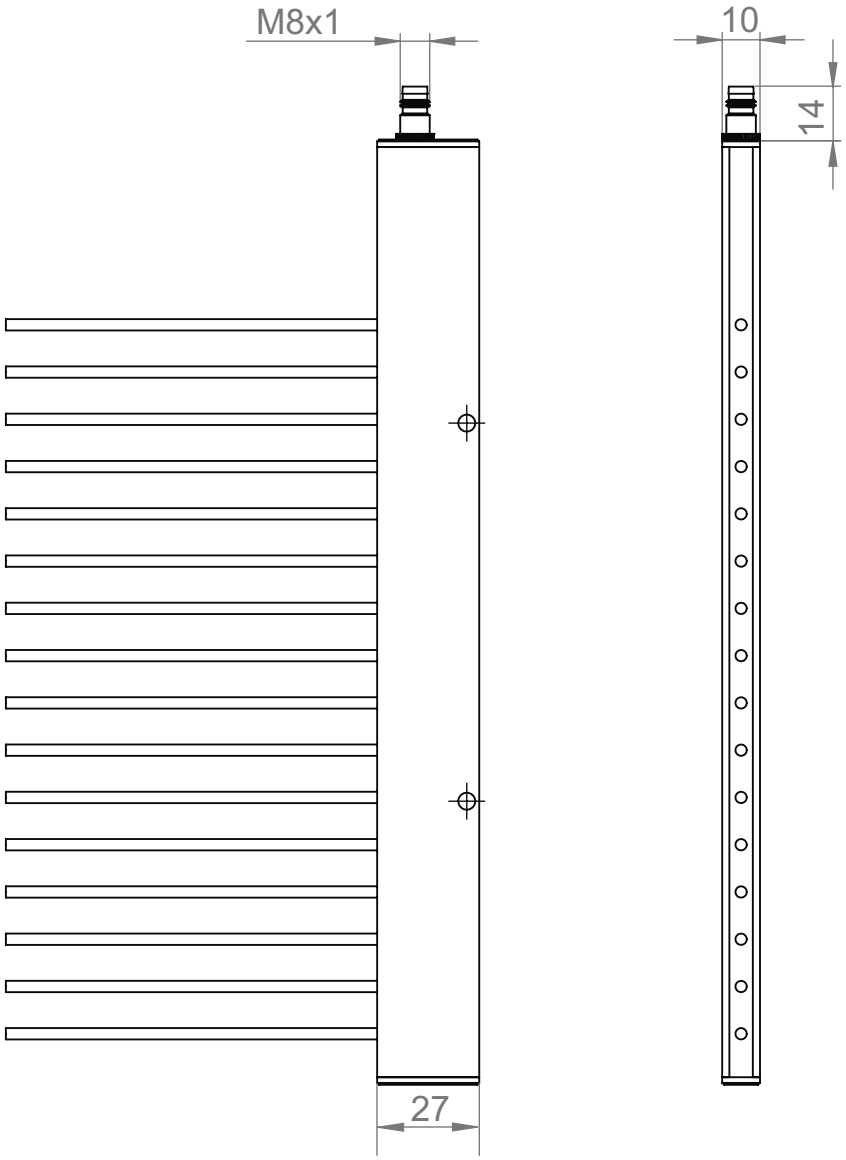
Part no.	Part description	Beam spacing	Measurement field length	Number of beams	Operating range	Switching outputs	Switching output	Connection
50131391	► CSL505-T25-775-M8	25 mm	775 mm	32x	0.3 … 5 m			Connector, M8, 4-pin
50131335	◄ CSL505-R25-775-M8	25 mm	775 mm	32x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131392	► CSL505-T25-875-M8	25 mm	875 mm	36x	0.3 … 5 m			Connector, M8, 4-pin
50131336	◄ CSL505-R25-875-M8	25 mm	875 mm	36x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131393	► CSL505-T25-975-M8	25 mm	975 mm	40x	0.3 … 5 m			Connector, M8, 4-pin
50131337	◄ CSL505-R25-975-M8	25 mm	975 mm	40x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131394	► CSL505-T25-1075-M8	25 mm	1,075 mm	44x	0.3 … 5 m			Connector, M8, 4-pin
50131338	◄ CSL505-R25-1075-M8	25 mm	1,075 mm	44x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131395	► CSL505-T25-1175-M8	25 mm	1,175 mm	48x	0.3 … 5 m			Connector, M8, 4-pin
50131339	◄ CSL505-R25-1175-M8	25 mm	1,175 mm	48x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131396	► CSL505-T25-1275-M8	25 mm	1,275 mm	52x	0.3 … 5 m			Connector, M8, 4-pin
50131340	◄ CSL505-R25-1275-M8	25 mm	1,275 mm	52x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131397	► CSL505-T25-1375-M8	25 mm	1,375 mm	56x	0.3 … 5 m			Connector, M8, 4-pin
50131341	◄ CSL505-R25-1375-M8	25 mm	1,375 mm	56x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131398	► CSL505-T25-1475-M8	25 mm	1,475 mm	60x	0.3 … 5 m			Connector, M8, 4-pin
50131342	◄ CSL505-R25-1475-M8	25 mm	1,475 mm	60x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131399	► CSL505-T25-1575-M8	25 mm	1,575 mm	64x	0.3 … 5 m			Connector, M8, 4-pin
50131343	◄ CSL505-R25-1575-M8	25 mm	1,575 mm	64x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131400	► CSL505-T25-1675-M8	25 mm	1,675 mm	68x	0.3 … 5 m			Connector, M8, 4-pin
50131344	◄ CSL505-R25-1675-M8	25 mm	1,675 mm	68x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131401	► CSL505-T25-1775-M8	25 mm	1,775 mm	72x	0.3 … 5 m			Connector, M8, 4-pin
50131345	◄ CSL505-R25-1775-M8	25 mm	1,775 mm	72x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131402	► CSL505-T25-1875-M8	25 mm	1,875 mm	76x	0.3 … 5 m			Connector, M8, 4-pin
50131346	◄ CSL505-R25-1875-M8	25 mm	1,875 mm	76x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131403	► CSL505-T25-1975-M8	25 mm	1,975 mm	80x	0.3 … 5 m			Connector, M8, 4-pin
50131347	◄ CSL505-R25-1975-M8	25 mm	1,975 mm	80x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131404	► CSL505-T25-2175-M8	25 mm	2,175 mm	88x	0.3 … 5 m			Connector, M8, 4-pin
50131348	◄ CSL505-R25-2175-M8	25 mm	2,175 mm	88x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131405	► CSL505-T25-2375-M8	25 mm	2,375 mm	96x	0.3 … 5 m			Connector, M8, 4-pin
50131349	◄ CSL505-R25-2375-M8	25 mm	2,375 mm	96x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131406	► CSL505-T50-350-M8	50 mm	350 mm	8x	0.3 … 5 m			Connector, M8, 4-pin
50131350	◄ CSL505-R50-350-M8	50 mm	350 mm	8x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131407	► CSL505-T50-750-M8	50 mm	750 mm	16x	0.3 … 5 m			Connector, M8, 4-pin
50131351	◄ CSL505-R50-750-M8	50 mm	750 mm	16x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131408	► CSL505-T50-1150-M8	50 mm	1,150 mm	24x	0.3 … 5 m			Connector, M8, 4-pin
50131352	◄ CSL505-R50-1150-M8	50 mm	1,150 mm	24x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131409	► CSL505-T50-1550-M8	50 mm	1,550 mm	32x	0.3 … 5 m			Connector, M8, 4-pin
50131353	◄ CSL505-R50-1550-M8	50 mm	1,550 mm	32x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131410	► CSL505-T50-1950-M8	50 mm	1,950 mm	40x	0.3 … 5 m			Connector, M8, 4-pin
50131354	◄ CSL505-R50-1950-M8	50 mm	1,950 mm	40x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131411	► CSL505-T50-2350-M8	50 mm	2,350 mm	48x	0.3 … 5 m			Connector, M8, 4-pin
50131355	◄ CSL505-R50-2350-M8	50 mm	2,350 mm	48x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131412	► CSL505-T50-2750-M8	50 mm	2,750 mm	56x	0.3 … 5 m			Connector, M8, 4-pin
50131356	◄ CSL505-R50-2750-M8	50 mm	2,750 mm	56x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131413	► CSL505-T50-3150-M8	50 mm	3,150 mm	64x	0.3 … 5 m			Connector, M8, 4-pin
50131357	◄ CSL505-R50-3150-M8	50 mm	3,150 mm	64x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131414	► CSL505-T100-700-M8	100 mm	700 mm	8x	0.3 … 5 m			Connector, M8, 4-pin
50131358	◄ CSL505-R100-700-M8	100 mm	700 mm	8x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131415	► CSL505-T100-1100-M8	100 mm	1,100 mm	12x	0.3 … 5 m			Connector, M8, 4-pin
50131359	◄ CSL505-R100-1100-M8	100 mm	1,100 mm	12x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131416	► CSL505-T100-1500-M8	100 mm	1,500 mm	16x	0.3 … 5 m			Connector, M8, 4-pin
50131360	◄ CSL505-R100-1500-M8	100 mm	1,500 mm	16x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131417	► CSL505-T100-1900-M8	100 mm	1,900 mm	20x	0.3 … 5 m			Connector, M8, 4-pin
50131361	◄ CSL505-R100-1900-M8	100 mm	1,900 mm	20x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131418	► CSL505-T100-2300-M8	100 mm	2,300 mm	24x	0.3 … 5 m			Connector, M8, 4-pin
50131362	◄ CSL505-R100-2300-M8	100 mm	2,300 mm	24x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131419	► CSL505-T100-2700-M8	100 mm	2,700 mm	28x	0.3 … 5 m			Connector, M8, 4-pin
50131363	◄ CSL505-R100-2700-M8	100 mm	2,700 mm	28x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin
50131420	► CSL505-T100-3100-M8	100 mm	3,100 mm	32x	0.3 … 5 m			Connector, M8, 4-pin
50131364	◄ CSL505-R100-3100-M8	100 mm	3,100 mm	32x	0.3 … 5 m	2x	Transistor, push-pull, light/dark reversible	Connector, M8, 4-pin

► transmitter / ◄ receiver

Dimensioned drawings: CSL 505



CSL 505 switching light curtain, > 5 mm beam spacing

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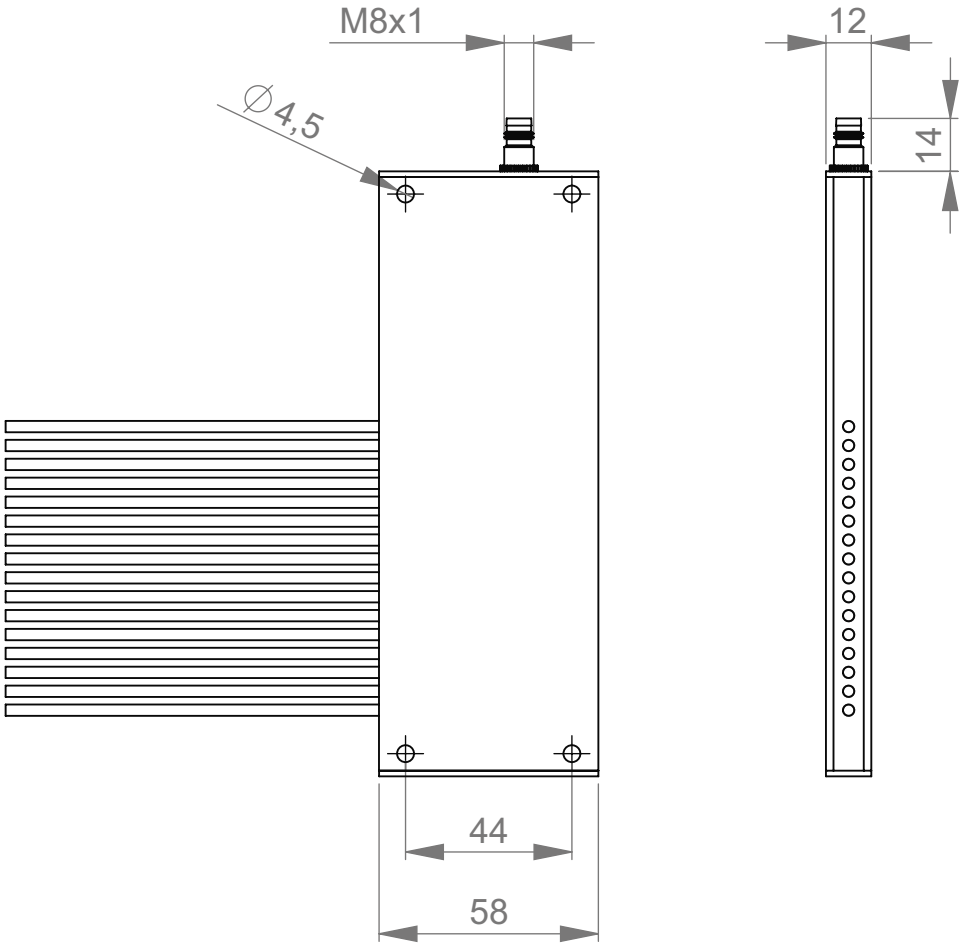
Dimensioned drawings: CSL 505



CSL 505 switching light curtain, 5 mm beam spacing

ACCESSORIES: CSL 505

Connection technology

Connection cables

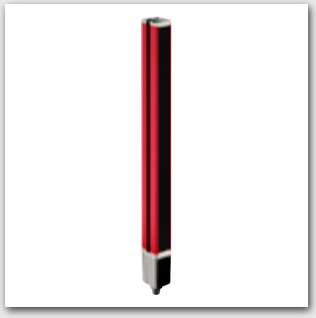
Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Configuration devices

Part no.	Part description	Connection 1	No. of pins	Connection 2	Function
50132069	CSL505 interface	Sub-D	9-pin	Terminal	Configuration and test device

/// CSL 710



The CSL 710 is a switching light curtain with selectable resolution, various measurement field lengths and many useful technical details such as, e.g., a display for simple alignment.

Benefits:

- Operating range of up to 6 m for larger function reserve
- Response time of 30 µs per beam for the reliable detection of fast processes
- Large, easy-to-read display in 5 languages for easy alignment and configuration
- Maximum measurement field length of nearly 3 m for measurement on large objects
- Sturdy metal housing also for use in rough industrial environments
- Connection via M12 connector for fast installation
- 4 configurable inputs or outputs

Direct access to the online product selector at **www.leuze.com/en/csl710**

Part no.	Part description	Beam spacing	Measurement field length	Number of beams	Operating range	Switching output	Connection
50128977	► CSL710-T05-160.A-M12	5 mm	160 mm	32x	0.1 … 3.5 m		Connector, M12, 5-pin
50128889	◄ CSL710-R05-160.A/L-M12	5 mm	160 mm	32x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128978	► CSL710-T05-240.A-M12	5 mm	240 mm	48x	0.1 … 3.5 m		Connector, M12, 5-pin
50128890	◄ CSL710-R05-240.A/L-M12	5 mm	240 mm	48x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128979	► CSL710-T05-320.A-M12	5 mm	320 mm	64x	0.1 … 3.5 m		Connector, M12, 5-pin
50128891	◄ CSL710-R05-320.A/L-M12	5 mm	320 mm	64x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128980	► CSL710-T05-400.A-M12	5 mm	400 mm	80x	0.1 … 3.5 m		Connector, M12, 5-pin
50128892	◄ CSL710-R05-400.A/L-M12	5 mm	400 mm	80x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128981	► CSL710-T05-480.A-M12	5 mm	480 mm	96x	0.1 … 3.5 m		Connector, M12, 5-pin
50128893	◄ CSL710-R05-480.A/L-M12	5 mm	480 mm	96x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128982	► CSL710-T05-560.A-M12	5 mm	560 mm	112x	0.1 … 3.5 m		Connector, M12, 5-pin
50128894	◄ CSL710-R05-560.A/L-M12	5 mm	560 mm	112x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128983	► CSL710-T05-640.A-M12	5 mm	640 mm	128x	0.1 … 3.5 m		Connector, M12, 5-pin
50128895	◄ CSL710-R05-640.A/L-M12	5 mm	640 mm	128x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128984	► CSL710-T05-720.A-M12	5 mm	720 mm	144x	0.1 … 3.5 m		Connector, M12, 5-pin
50128896	◄ CSL710-R05-720.A/L-M12	5 mm	720 mm	144x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128985	► CSL710-T05-800.A-M12	5 mm	800 mm	160x	0.1 … 3.5 m		Connector, M12, 5-pin
50128897	◄ CSL710-R05-800.A/L-M12	5 mm	800 mm	160x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128986	► CSL710-T05-880.A-M12	5 mm	880 mm	176x	0.1 … 3.5 m		Connector, M12, 5-pin
50128898	◄ CSL710-R05-880.A/L-M12	5 mm	880 mm	176x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128987	► CSL710-T05-960.A-M12	5 mm	960 mm	192x	0.1 … 3.5 m		Connector, M12, 5-pin
50128899	◄ CSL710-R05-960.A/L-M12	5 mm	960 mm	192x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128988	► CSL710-T05-1040.A-M12	5 mm	1,040 mm	208x	0.1 … 3.5 m		Connector, M12, 5-pin
50128900	◄ CSL710-R05-1040.A/L-M12	5 mm	1,040 mm	208x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128989	► CSL710-T05-1120.A-M12	5 mm	1,120 mm	224x	0.1 … 3.5 m		Connector, M12, 5-pin
50128901	◄ CSL710-R05-1120.A/L-M12	5 mm	1,120 mm	224x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128990	► CSL710-T05-1200.A-M12	5 mm	1,200 mm	240x	0.1 … 3.5 m		Connector, M12, 5-pin
50128902	◄ CSL710-R05-1200.A/L-M12	5 mm	1,200 mm	240x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128991	► CSL710-T05-1280.A-M12	5 mm	1,280 mm	256x	0.1 … 3.5 m		Connector, M12, 5-pin
50128903	◄ CSL710-R05-1280.A/L-M12	5 mm	1,280 mm	256x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128992	► CSL710-T05-1360.A-M12	5 mm	1,360 mm	272x	0.1 … 3.5 m		Connector, M12, 5-pin
50128904	◄ CSL710-R05-1360.A/L-M12	5 mm	1,360 mm	272x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128993	► CSL710-T05-1440.A-M12	5 mm	1,440 mm	288x	0.1 … 3.5 m		Connector, M12, 5-pin
50128905	◄ CSL710-R05-1440.A/L-M12	5 mm	1,440 mm	288x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128994	► CSL710-T05-1520.A-M12	5 mm	1,520 mm	304x	0.1 … 3.5 m		Connector, M12, 5-pin
50128906	◄ CSL710-R05-1520.A/L-M12	5 mm	1,520 mm	304x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128995	► CSL710-T05-1600.A-M12	5 mm	1,600 mm	320x	0.1 … 3.5 m		Connector, M12, 5-pin
50128907	◄ CSL710-R05-1600.A/L-M12	5 mm	1,600 mm	320x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128996	► CSL710-T05-1680.A-M12	5 mm	1,680 mm	336x	0.1 … 3.5 m		Connector, M12, 5-pin
50128908	◄ CSL710-R05-1680.A/L-M12	5 mm	1,680 mm	336x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128997	► CSL710-T05-1760.A-M12	5 mm	1,760 mm	352x	0.1 … 3.5 m		Connector, M12, 5-pin
50128909	◄ CSL710-R05-1760.A/L-M12	5 mm	1,760 mm	352x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128998	► CSL710-T05-1840.A-M12	5 mm	1,840 mm	368x	0.1 … 3.5 m		Connector, M12, 5-pin
50128910	◄ CSL710-R05-1840.A/L-M12	5 mm	1,840 mm	368x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50128999	► CSL710-T05-1920.A-M12	5 mm	1,920 mm	384x	0.1 … 3.5 m		Connector, M12, 5-pin
50128911	◄ CSL710-R05-1920.A/L-M12	5 mm	1,920 mm	384x	0.1 … 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin

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Part no.	Part description	Beam spacing	Measurement field length	Number of beams	Operating range	Switching output	Connection
50129000	► CSL710-T05-2000.A-M12	5 mm	2,000 mm	400x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128912	◄ CSL710-R05-2000.A/L-M12	5 mm	2,000 mm	400x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129001	► CSL710-T05-2080.A-M12	5 mm	2,080 mm	416x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128913	◄ CSL710-R05-2080.A/L-M12	5 mm	2,080 mm	416x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129002	► CSL710-T05-2160.A-M12	5 mm	2,160 mm	432x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128914	◄ CSL710-R05-2160.A/L-M12	5 mm	2,160 mm	432x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129003	► CSL710-T05-2240.A-M12	5 mm	2,240 mm	448x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128915	◄ CSL710-R05-2240.A/L-M12	5 mm	2,240 mm	448x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129004	► CSL710-T05-2320.A-M12	5 mm	2,320 mm	464x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128916	◄ CSL710-R05-2320.A/L-M12	5 mm	2,320 mm	464x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129005	► CSL710-T05-2400.A-M12	5 mm	2,400 mm	480x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128917	◄ CSL710-R05-2400.A/L-M12	5 mm	2,400 mm	480x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129006	► CSL710-T05-2480.A-M12	5 mm	2,480 mm	496x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128918	◄ CSL710-R05-2480.A/L-M12	5 mm	2,480 mm	496x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129007	► CSL710-T05-2560.A-M12	5 mm	2,560 mm	512x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128919	◄ CSL710-R05-2560.A/L-M12	5 mm	2,560 mm	512x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129008	► CSL710-T05-2640.A-M12	5 mm	2,640 mm	528x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128920	◄ CSL710-R05-2640.A/L-M12	5 mm	2,640 mm	528x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129009	► CSL710-T05-2720.A-M12	5 mm	2,720 mm	544x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128921	◄ CSL710-R05-2720.A/L-M12	5 mm	2,720 mm	544x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129010	► CSL710-T05-2800.A-M12	5 mm	2,800 mm	560x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128922	◄ CSL710-R05-2800.A/L-M12	5 mm	2,800 mm	560x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129011	► CSL710-T05-2880.A-M12	5 mm	2,880 mm	576x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128923	◄ CSL710-R05-2880.A/L-M12	5 mm	2,880 mm	576x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129012	► CSL710-T05-2960.A-M12	5 mm	2,960 mm	592x	0.1 ... 3.5 m		Connector, M12, 5-pin
50128924	◄ CSL710-R05-2960.A/L-M12	5 mm	2,960 mm	592x	0.1 ... 3.5 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129013	► CSL710-T10-160.A-M12	10 mm	160 mm	16x	0.3 ... 7 m		Connector, M12, 5-pin
50128929	◄ CSL710-R10-160.A/L-M12	10 mm	160 mm	16x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129014	► CSL710-T10-320.A-M12	10 mm	320 mm	32x	0.3 ... 7 m		Connector, M12, 5-pin
50128930	◄ CSL710-R10-320.A/L-M12	10 mm	320 mm	32x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129015	► CSL710-T10-480.A-M12	10 mm	480 mm	48x	0.3 ... 7 m		Connector, M12, 5-pin
50128931	◄ CSL710-R10-480.A/L-M12	10 mm	480 mm	48x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129016	► CSL710-T10-640.A-M12	10 mm	640 mm	64x	0.3 ... 7 m		Connector, M12, 5-pin
50128932	◄ CSL710-R10-640.A/L-M12	10 mm	640 mm	64x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129017	► CSL710-T10-800.A-M12	10 mm	800 mm	80x	0.3 ... 7 m		Connector, M12, 5-pin
50128933	◄ CSL710-R10-800.A/L-M12	10 mm	800 mm	80x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129018	► CSL710-T10-960.A-M12	10 mm	960 mm	96x	0.3 ... 7 m		Connector, M12, 5-pin
50128934	◄ CSL710-R10-960.A/L-M12	10 mm	960 mm	96x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129019	► CSL710-T10-1120.A-M12	10 mm	1,120 mm	112x	0.3 ... 7 m		Connector, M12, 5-pin
50128935	◄ CSL710-R10-1120.A/L-M12	10 mm	1,120 mm	112x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129020	► CSL710-T10-1280.A-M12	10 mm	1,280 mm	128x	0.3 ... 7 m		Connector, M12, 5-pin
50128936	◄ CSL710-R10-1280.A/L-M12	10 mm	1,280 mm	128x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129021	► CSL710-T10-1440.A-M12	10 mm	1,440 mm	144x	0.3 ... 7 m		Connector, M12, 5-pin
50128937	◄ CSL710-R10-1440.A/L-M12	10 mm	1,440 mm	144x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129022	► CSL710-T10-1600.A-M12	10 mm	1,600 mm	160x	0.3 ... 7 m		Connector, M12, 5-pin
50128938	◄ CSL710-R10-1600.A/L-M12	10 mm	1,600 mm	160x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129023	► CSL710-T10-1760.A-M12	10 mm	1,760 mm	176x	0.3 ... 7 m		Connector, M12, 5-pin
50128939	◄ CSL710-R10-1760.A/L-M12	10 mm	1,760 mm	176x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129024	► CSL710-T10-1920.A-M12	10 mm	1,920 mm	192x	0.3 ... 7 m		Connector, M12, 5-pin
50128940	◄ CSL710-R10-1920.A/L-M12	10 mm	1,920 mm	192x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129025	► CSL710-T10-2080.A-M12	10 mm	2,080 mm	208x	0.3 ... 7 m		Connector, M12, 5-pin
50128941	◄ CSL710-R10-2080.A/L-M12	10 mm	2,080 mm	208x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129026	► CSL710-T10-2240.A-M12	10 mm	2,240 mm	224x	0.3 ... 7 m		Connector, M12, 5-pin
50128942	◄ CSL710-R10-2240.A/L-M12	10 mm	2,240 mm	224x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129027	► CSL710-T10-2400.A-M12	10 mm	2,400 mm	240x	0.3 ... 7 m		Connector, M12, 5-pin
50128943	◄ CSL710-R10-2400.A/L-M12	10 mm	2,400 mm	240x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129028	► CSL710-T10-2560.A-M12	10 mm	2,560 mm	256x	0.3 ... 7 m		Connector, M12, 5-pin
50128944	◄ CSL710-R10-2560.A/L-M12	10 mm	2,560 mm	256x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129029	► CSL710-T10-2720.A-M12	10 mm	2,720 mm	272x	0.3 ... 7 m		Connector, M12, 5-pin
50128945	◄ CSL710-R10-2720.A/L-M12	10 mm	2,720 mm	272x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129030	► CSL710-T10-2880.A-M12	10 mm	2,880 mm	288x	0.3 ... 7 m		Connector, M12, 5-pin
50128946	◄ CSL710-R10-2880.A/L-M12	10 mm	2,880 mm	288x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129031	► CSL710-T20-150.A-M12	20 mm	150 mm	8x	0.3 ... 7 m		Connector, M12, 5-pin
50128948	◄ CSL710-R20-150.A/L-M12	20 mm	150 mm	8x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129032	► CSL710-T20-310.A-M12	20 mm	310 mm	16x	0.3 ... 7 m		Connector, M12, 5-pin
50128949	◄ CSL710-R20-310.A/L-M12	20 mm	310 mm	16x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129033	► CSL710-T20-470.A-M12	20 mm	470 mm	24x	0.3 ... 7 m		Connector, M12, 5-pin
50128950	◄ CSL710-R20-470.A/L-M12	20 mm	470 mm	24x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129034	► CSL710-T20-630.A-M12	20 mm	630 mm	32x	0.3 ... 7 m		Connector, M12, 5-pin
50128951	◄ CSL710-R20-630.A/L-M12	20 mm	630 mm	32x	0.3 ... 7 m	Inputs/outputs selectable	Connector, M12, 8-pin

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Part no.	Part description	Beam spacing	Measurement field length	Number of beams	Operating range	Switching output	Connection
50129035	► CSL710-T20-790.A-M12	20 mm	790 mm	40x	0.3 … 7 m		Connector, M12, 5-pin
50128952	◄ CSL710-R20-790.A/L-M12	20 mm	790 mm	40x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129036	► CSL710-T20-950.A-M12	20 mm	950 mm	48x	0.3 … 7 m		Connector, M12, 5-pin
50128953	◄ CSL710-R20-950.A/L-M12	20 mm	950 mm	48x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129037	► CSL710-T20-1110.A-M12	20 mm	1,110 mm	56x	0.3 … 7 m		Connector, M12, 5-pin
50128954	◄ CSL710-R20-1110.A/L-M12	20 mm	1,110 mm	56x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129038	► CSL710-T20-1270.A-M12	20 mm	1,270 mm	64x	0.3 … 7 m		Connector, M12, 5-pin
50128955	◄ CSL710-R20-1270.A/L-M12	20 mm	1,270 mm	64x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129039	► CSL710-T20-1430.A-M12	20 mm	1,430 mm	72x	0.3 … 7 m		Connector, M12, 5-pin
50128956	◄ CSL710-R20-1430.A/L-M12	20 mm	1,430 mm	72x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129040	► CSL710-T20-1590.A-M12	20 mm	1,590 mm	80x	0.3 … 7 m		Connector, M12, 5-pin
50128957	◄ CSL710-R20-1590.A/L-M12	20 mm	1,590 mm	80x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129041	► CSL710-T20-1750.A-M12	20 mm	1,750 mm	88x	0.3 … 7 m		Connector, M12, 5-pin
50128958	◄ CSL710-R20-1750.A/L-M12	20 mm	1,750 mm	88x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129042	► CSL710-T20-1910.A-M12	20 mm	1,910 mm	96x	0.3 … 7 m		Connector, M12, 5-pin
50128959	◄ CSL710-R20-1910.A/L-M12	20 mm	1,910 mm	96x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129043	► CSL710-T20-2070.A-M12	20 mm	2,070 mm	104x	0.3 … 7 m		Connector, M12, 5-pin
50128960	◄ CSL710-R20-2070.A/L-M12	20 mm	2,070 mm	104x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129044	► CSL710-T20-2230.A-M12	20 mm	2,230 mm	112x	0.3 … 7 m		Connector, M12, 5-pin
50128961	◄ CSL710-R20-2230.A/L-M12	20 mm	2,230 mm	112x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129045	► CSL710-T20-2390.A-M12	20 mm	2,390 mm	120x	0.3 … 7 m		Connector, M12, 5-pin
50128962	◄ CSL710-R20-2390.A/L-M12	20 mm	2,390 mm	120x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129046	► CSL710-T20-2550.A-M12	20 mm	2,550 mm	128x	0.3 … 7 m		Connector, M12, 5-pin
50128963	◄ CSL710-R20-2550.A/L-M12	20 mm	2,550 mm	128x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129047	► CSL710-T20-2710.A-M12	20 mm	2,710 mm	136x	0.3 … 7 m		Connector, M12, 5-pin
50128964	◄ CSL710-R20-2710.A/L-M12	20 mm	2,710 mm	136x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129048	► CSL710-T20-2870.A-M12	20 mm	2,870 mm	144x	0.3 … 7 m		Connector, M12, 5-pin
50128965	◄ CSL710-R20-2870.A/L-M12	20 mm	2,870 mm	144x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129049	► CSL710-T40-290.A-M12	40 mm	290 mm	8x	0.3 … 7 m		Connector, M12, 5-pin
50128967	◄ CSL710-R40-290.A/L-M12	40 mm	290 mm	8x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129050	► CSL710-T40-610.A-M12	40 mm	610 mm	16x	0.3 … 7 m		Connector, M12, 5-pin
50128968	◄ CSL710-R40-610.A/L-M12	40 mm	610 mm	16x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129051	► CSL710-T40-930.A-M12	40 mm	930 mm	24x	0.3 … 7 m		Connector, M12, 5-pin
50128969	◄ CSL710-R40-930.A/L-M12	40 mm	930 mm	24x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129052	► CSL710-T40-1250.A-M12	40 mm	1,250 mm	32x	0.3 … 7 m		Connector, M12, 5-pin
50128970	◄ CSL710-R40-1250.A/L-M12	40 mm	1,250 mm	32x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129053	► CSL710-T40-1570.A-M12	40 mm	1,570 mm	40x	0.3 … 7 m		Connector, M12, 5-pin
50128971	◄ CSL710-R40-1570.A/L-M12	40 mm	1,570 mm	40x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129054	► CSL710-T40-1890.A-M12	40 mm	1,890 mm	48x	0.3 … 7 m		Connector, M12, 5-pin
50128972	◄ CSL710-R40-1890.A/L-M12	40 mm	1,890 mm	48x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129055	► CSL710-T40-2210.A-M12	40 mm	2,210 mm	56x	0.3 … 7 m		Connector, M12, 5-pin
50128973	◄ CSL710-R40-2210.A/L-M12	40 mm	2,210 mm	56x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129056	► CSL710-T40-2530.A-M12	40 mm	2,530 mm	64x	0.3 … 7 m		Connector, M12, 5-pin
50128974	◄ CSL710-R40-2530.A/L-M12	40 mm	2,530 mm	64x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin
50129057	► CSL710-T40-2850.A-M12	40 mm	2,850 mm	72x	0.3 … 7 m		Connector, M12, 5-pin
50128975	◄ CSL710-R40-2850.A/L-M12	40 mm	2,850 mm	72x	0.3 … 7 m	Inputs/outputs selectable	Connector, M12, 8-pin

► transmitter / ◄ receiver

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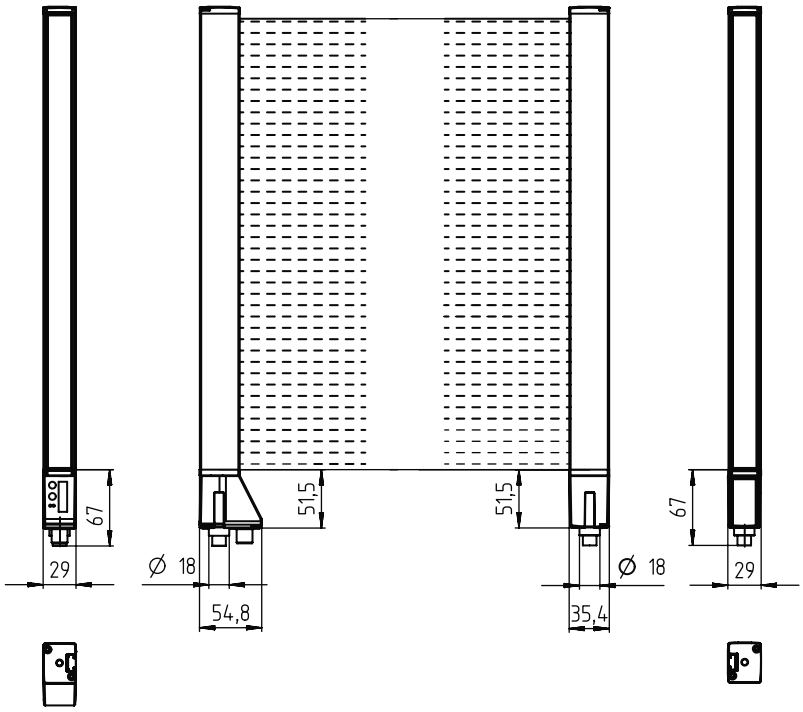
Dimensioned drawings: CSL 710



CSL 710 switching light curtain, transmitter and receiver

ACCESSORIES: CSL 710

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135121	KD U-M12-8A-P1-020	Connector, M12, axial, female	8-pin	2,000 mm	PUR
50135122	KD U-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135123	KD U-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50120999	K-DS M12A-8P-4P-2m-L-PUR	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	4-pin	2,000 mm		PUR
50121000	K-DS M12A-8P-4P-5m-L-PUR	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	4-pin	5,000 mm		PUR
50129779	KDS DN-M12-5A-M12-5A-P3-010	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	1,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129780	KDS DN-M12-5A-M12-5A-P3-020	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	2,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129781	KDS DN-M12-5A-M12-5A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	5,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129782	KDS DN-M12-5A-M12-5A-P3-100	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	10,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129783	KDS DN-M12-5A-M12-5A-P3-200	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	20,000 mm	IO-Link, DeviceNet, CANopen	PUR

Further interconnection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
429178	CB-M12-8GF	Connector, M12, axial, female	8-pin

Further connectors can be found on our website

IO-Link USB master

Part no.	Part description	Specification	COM mode	Connection 1	Connection 2
50121098	SET MD12-US2-IL1.1 + acc.	1.0, 1.1	COM1, COM2, COM3	Connector, M12	USB

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
429056	BT-2L	Angle, L-shape	Screw type	Through-hole mounting	Metal
429057	BT-2Z	Angle, Z-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Swivel mounts

Part no.	Part description	Fastening at device	Fastening at system	Material
429046	BT-2R1	Clampable	Through-hole mounting	Metal, plastic

Further swivel mounts can be found on our website

Other mounting systems

Part no.	Part description	Description	Fastening at device	Fastening at system	Material	Contains
424417	BT-2P40	Mounting bracket set	Groove mounting	Groove mounting	Metal	2x BT-P40 clamp bracket
429058	BT-2SSD	Mounting bracket set	Groove mounting, clampable, screw type	Through-hole mounting	Metal	
429049	BT-2SSD-270	Mounting bracket set	Screw type, clampable, groove mounting	Through-hole mounting	Metal	
429059	BT-4SSD	Mounting bracket set	Groove mounting, clampable, screw type	Through-hole mounting	Metal	4x
425740	BT-10NC60	Sliding block set	Groove mounting	Mounting thread	Metal	10x BT-NC sliding block
425741	BT-10NC64	Sliding block set	Groove mounting	Mounting thread	Metal	10x BT-NC-M4-M6 sliding block
425742	BT-10NC65	Sliding block set	Groove mounting	Mounting thread	Metal	10x BT-NC-M5-M6 sliding block

Further mounting systems can be found on our website

/// CSR 780

The CSR 780 is a switching light curtain that functions according to the reflection principle and has high resolution and fast response time specifically for counting objects on machines or for ejection monitoring.

Benefits:

- Transmitter and receiver in one housing
- Reflection principle against a reflector
- Complete detection of small objects (e.g. 10 mm x 10 mm x 1 mm)
- Max. object speed 3.5 m/s
- Readjustment when soiled
- Warning output for prefailure message
- Time-saving adjustment by means of teach-in

Direct access to the online product selector at **www.leuze.com/en/csr780**

Part no.	Part description	Beam spacing	Measurement field length	Switching outputs	Switching output	Connection	Special design
50128287	CSR780-01-96/6WHE-M12	1 mm	96 mm	1x	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Connector, M12, 5-pin	Warning output
50128288	CSR780-01-96/GWHE-M12	1 mm	96 mm	1x	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	Connector, M12, 5-pin	Warning output
50128289	CSR780-01-432/6WHE-M12	1 mm	432 mm	1x	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Connector, M12, 5-pin	Warning output
50128290	CSR780-01-432/GWHE-M12	1 mm	432 mm	1x	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	Connector, M12, 5-pin	Warning output

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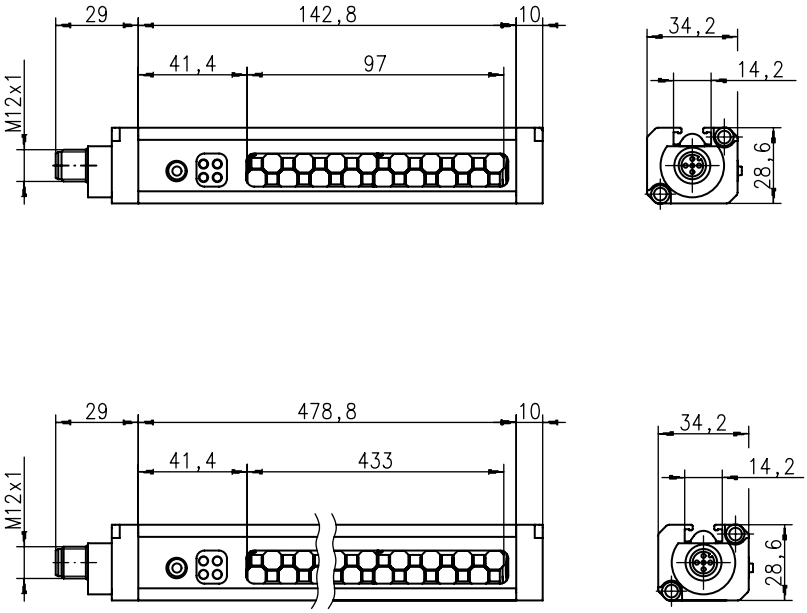
Dimensioned drawings: CSR 780



CSR 780 switching light curtain

ACCESSORIES: CSR 780

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Reflectors

Standard reflectors

Part no.	Part description	Design	Reflective surface	Material
50111155	OCS 110x80mm-M reflector	Rectangular	120 mm x 85 mm	Plastic
50111154	OCS 450x80mm-M reflector	Rectangular	488 mm x 105 mm	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

/ SPECIAL SENSORS

RELIABLE, EVEN WHEN THINGS GET CHALLENGING

Under this heading are sensor solutions that must perform special detection tasks or which were developed for specific applications. Here you will find contrast and luminescence scanners as well as color sensors and systems for monitoring double sheets and splices as well as for overlap detection.

Contrast sensors Page 195

Luminescence sensors Page 205

Color sensors Page 207

//CONTRAST SENSORS

THE CONTRAST MAKES THE DIFFERENCE

This sensor type can use various light sources – such as white light, laser-generated red light or RGB light – to very precisely detect and compare contrasts and report the results to the process with minimal signal jitter. Through the automatic selection of the right transmitter colors, various color or gray value combinations can be reliably detected.

/// KRT 3B

The contrast sensors of the KRT 3B series distinguish between grayscale values, enabling them to detect minimal contrasts. As a result, a check can be performed for the presence of text or imprints or so-called marks detected.

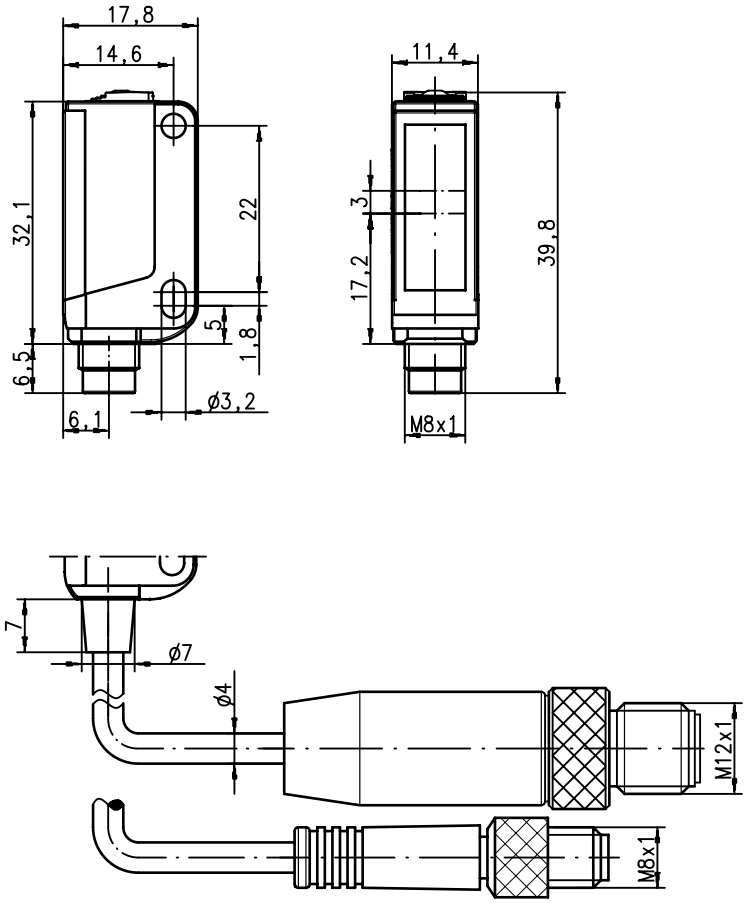
Benefits:

- Range 14.5 mm / 60 mm (laser)
- Multicolor (RGB), white or laser light
- Various teach-in processes,
- Switching-threshold correction via EasyTune
- Min. response time 50 µs
- Switching frequency up to 10 kHz
- Pulse stretching
- IO-Link interface

Direct access to the online product selector at **www.leuze.com/en/krt3b**

Part no.	Part description	Operating range	Switching frequency	Light source	Digital switching output	Connection	Description
50110592	KRTL 3B/4.3111-S8	0.04 … 0.08 m	4,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110594	KRTL 3B/4.3111,200-S12	0.04 … 0.08 m	4,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50134932	KRTL 3B/4.3111	0.04 … 0.08 m	4,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	Cable, 2,000 mm, 4-wire	Time function, teach input
50110593	KRTL 3B/2.3111-S8	0.04 … 0.08 m	4,000 Hz	Laser, red	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110595	KRTL 3B/2.3111,200-S12	0.04 … 0.08 m	4,000 Hz	Laser, red	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50111321	KRTL 3B/6.3111-S8	0.04 … 0.08 m	4,000 Hz	Laser, red	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50110582	KRTW 3B/4.1321,200-S12	0.0125 … 165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110572	KRTW 3B/4.1110-S8	0.0125 … 0.0165 m	6,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110576	KRTW 3B/4.1121-S8	0.0125 … 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110580	KRTW 3B/4.1321-S8	0.0125 … 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50111769	KRTW 3B/4.2121-S8	0.0125 … 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110578	KRTW 3B/4.1121,200-S12	0.0125 … 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110573	KRTW 3B/2.1110-S8	0.0125 … 0.0165 m	6,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110577	KRTW 3B/2.1121-S8	0.0125 … 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110581	KRTW 3B/2.1321-S8	0.0125 … 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110579	KRTW 3B/2.1121,200-S12	0.0125 … 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110583	KRTW 3B/2.1321,200-S12	0.0125 … 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50111319	KRTW 3B/6.1121-S8	0.0125 … 0.0165 m	10,000 Hz	LED, white	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50111320	KRTW 3B/6.1321-S8	0.0125 … 0.0165 m	10,000 Hz	LED, white	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50110584	KRTM 3B/4.1121-S8	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110588	KRTM 3B/4.1221-S8	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50111768	KRTM 3B/4.2121-S8	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110586	KRTM 3B/4.1121,200-S12	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110590	KRTM 3B/4.1221,200-S12	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110585	KRTM 3B/2.1121-S8	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110589	KRTM 3B/2.1221-S8	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110587	KRTM 3B/2.1121,200-S12	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110591	KRTM 3B/2.1221,200-S12	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50111312	KRTM 3B/6.1121-S8	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50111313	KRTM 3B/6.1221-S8	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50118393	KRTM 3B/6.2121-S8	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50135163	KRTM 3B/L6.1121-S8	0.0125 … 0.0165 m	10,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, time function

Dimensioned drawings: KRT 3B



KRT 3B contrast sensors

ACCESSORIES: KRT 3B

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

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Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50105546	BT 3B	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117256	BTU 200M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

/// KRT 18B

In many packaging processes, contrast marks must be reliably detected on film, bag and blister packaging or on labels. The KRT 18B contrast sensor combines ease-of-use via permanent signal indicators with high performance. It is also available with an analog output for particularly demanding mark detection.

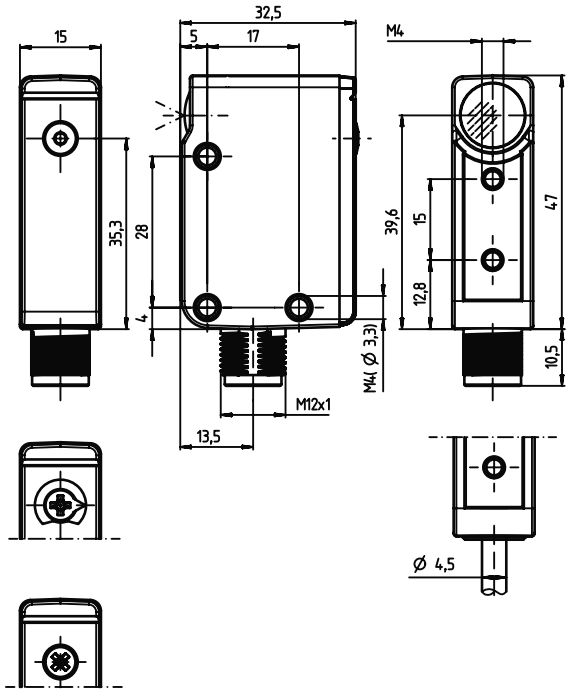
Benefits:

- Multicolor (RGB)
- Models with teach buttons and potentiometers
- Self-adjusting bar graph for signal display
- Recipe management via IO-Link
- Automatic sensitivity readjustment
- Nickel-plated metal housing
- Switching frequency up to 15/22 kHz
- Degree of protection IP 67 and IP 69K with ECOLAB
- Operating range 13 (± 3) mm
- Response time 20/30 µs
- Adjustment without tool

Direct access to the online product selector at **www.leuze.com/en/krt18b**

Part no.	Part description	Operating range	Switching frequency	Light source	Digital switching output	Analog switching output	Connection	Description
50131247	KRT18BM.H2/G6T-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible		Connector, M12, 5-pin	
50132612	KRT18BM.H2/GCT-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible	Current	Connector, M12, 5-pin	
50131249	KRT18BM.H3/G6X-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible		Connector, M12, 5-pin	
50131246	KRT18BM.V2/G6T-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible		Connector, M12, 5-pin	
50132613	KRT18BM.V2/GC1T-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible	Current	Connector, M12, 5-pin	
50132572	KRT18BM.V2/GCT-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible	Current	Connector, M12, 5-pin	
50132614	KRT18BM.V2/GV1T-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible	Voltage	Connector, M12, 5-pin	
50131248	KRT18BM.V3/G6X-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible		Connector, M12, 5-pin	
50131241	KRT18BM.H5/L6T-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (NPN)/dark switching (PNP)		Connector, M12, 5-pin	Interface: IO-Link, teach input
50131245	KRT18BM.HS5/L6T-M12	0.01 … 0.016 m	22,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (NPN)/dark switching (PNP)		Connector, M12, 5-pin	Interface: IO-Link, teach input
50131243	KRT18BM.HT5/L6T-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (NPN)/dark switching (PNP)		Connector, M12, 5-pin	Interface: IO-Link, teach input, tracking function
50130950	KRT18BM.V5/L6T-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (NPN)/dark switching (PNP)		Connector, M12, 5-pin	Interface: IO-Link, teach input
50131244	KRT18BM.VS5/L6T-M12	0.01 … 0.016 m	22,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (NPN)/dark switching (PNP)		Connector, M12, 5-pin	Interface: IO-Link, teach input
50131242	KRT18BM.VT5/L6T-M12	0.01 … 0.016 m	15,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (NPN)/dark switching (PNP)		Connector, M12, 5-pin	Interface: IO-Link, teach input, tracking function

Dimensioned drawings: KRT 18B



KRT 18B contrast sensors

ACCESSORIES: KRT 18B

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50020833	BT 95	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117256	BTU 200M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal
50120426	BTU 200M.5-D12	Mounting system	Screw type	For 12 mm rod	Stainless steel

Further rod mounts can be found on our website

Other mounting systems

Part no.	Part description	Fastening at device	Fastening at system	Material
50133412	BTX 018M	Screw type	Through-hole mounting	Metal

Further mounting systems can be found on our website

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/// KRT 55

Wherever food, beverages, pharmaceutical products or even cosmetics are manufactured, processed and packaged, hygienic design has become a central requirement. These contrast sensors in WASH-DOWN design can withstand even more intensive cleaning and disinfection cycles. The IO-Link interface facilitates simple adaptation to complex applications.

Benefits:

- Stainless steel housing AISI 316L
- Operating range 13 mm
- RGB or white light
- Various teach-in processes
- Switching-threshold correction via EasyTune
- Response time 50 µs
- Switching frequency 10 kHz
- Pulse stretching
- IO-Link interface

Direct access to the online product selector at **www.leuze.com/en/krt55**

Part no.	Part description	Operating range	Switching frequency	Light source	Digital switching output	Connection	Description
50111642	KRTW 55/4.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110602	KRTW 55/4.1121,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50114075	KRTW 55/4.1121,5000	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Cable, 5,000 mm, 4-wire	Teach input, time function
50110601	KRTW 55/2.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110603	KRTW 55/2.1121,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50111644	KRTM 55/4.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110613	KRTM 55/4.1221-S8	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110611	KRTM 55/4.1121,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110615	KRTM 55/4.1221,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50114074	KRTM 55/4.1121,5000	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Cable, 5,000 mm, 4-wire	Teach input, time function
50110610	KRTM 55/2.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110614	KRTM 55/2.1221-S8	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110612	KRTM 55/2.1121,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110616	KRTM 55/2.1221,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50111643	KRTM 55/6.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50135164	KRTM 55/L6.1121,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Cable with connector, 200 mm, M12, 4-pin	Interface: IO-Link, time function

SMART IS TO BE **CLOSE**

International sales locations –
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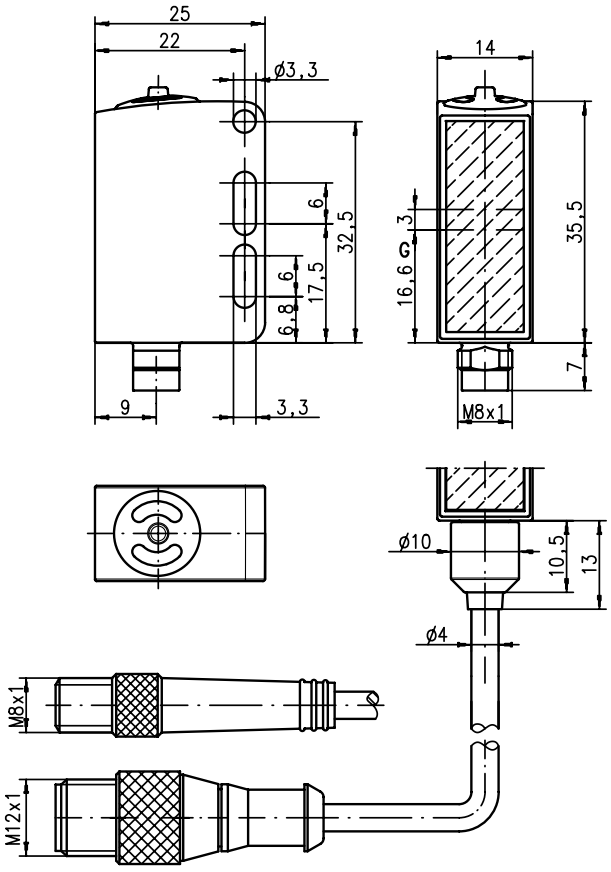
Information on our worldwide locations and partners: **www.leuze.com/en/worldwide**

Dimensioned drawings: KRT 55



KRT 55 contrast sensors

ACCESSORIES: KRT 55

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50040269	BT 25	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

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/// KRT 20

With jitter times < 7 µs, with precise, round and small light spots, with memory bank administration and freely programmable interface, with perfect temperature compensation, these devices in a robust metal housing can handle even the fastest processes.

Benefits:

- Metal housing with interchangeable lenses
- 12/20 mm and 50 mm operating range
- Very high resolution
- Response time 10 ms
- Switching frequency 50 kHz
- Switching and analog output
- Temperature compensation
- Pulse stretching
- Switching-threshold changeover
- Freely programmable
- Rectangular or round light-spot profile

Direct access to the online product selector at **www.leuze.com/en/krt20**

Part no.	Part description	Operating range	Switching frequency	Light source	Digital switching output	Analog switching output	Connection	Description
50116177	KRTM 20M/P-50-6320-S12	0.045 … 0.055 m	50,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M12, 5-pin	Autocollimation, synchronization input, time function
50035674	KRTM 20M/V-20-0001-S12	0.018 … 0.022 m	16,000 Hz	LED, RGB	Transistor, PNP, light switching	Current	Connector, M12, 5-pin	Autocollimation, crop mark system
50041007	KRTM 20M/V-20-0004-S12	0.018 … 0.022 m	16,000 Hz	LED, RGB	Transistor, PNP, light switching	Current	Connector, M12, 5-pin	Autocollimation, time function, crop mark system
50113438	KRTM 20M/C-20-6526-S12	0.018 … 0.022 m	50,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Current	Connector, M12, 5-pin	Autocollimation, time function
50114202	KRTM 20M/P-20-3320-S12	0.018 … 0.022 m	50,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M12, 5-pin	Autocollimation, synchronization input, time function
50113435	KRTM 20M/P-20-6320-S12	0.018 … 0.022 m	50,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M12, 5-pin	Autocollimation, synchronization input, time function
50113437	KRTM 20M/C-20-6626-S12	0.018 … 0.022 m	50,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Current	Connector, M12, 5-pin	Autocollimation, time function
50114201	KRTM 20M/N-20-3320-S12	0.018 … 0.022 m	50,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Connector, M12, 5-pin	Autocollimation, synchronization input, t ime function
50113436	KRTM 20M/N-20-6320-S12	0.018 … 0.022 m	50,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Connector, M12, 5-pin	Autocollimation, time function
50133896	KRTM 20M/V-12-0004-S12	0.01 … 0.014 m	16,000 Hz	LED, RGB	Transistor, PNP, light switching	Current	Connector, M12, 5-pin	Autocollimation, crop mark system, time function
50116474	KRTM 20M/P-12-6420-S12	0.011 … 0.013 m	50,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M12, 5-pin	Autocollimation, synchronization input, time function

Other operating ranges of 12 ± 1 mm, 20 ± 2 mm or 50 ± 5 mm are possible by changing the lens

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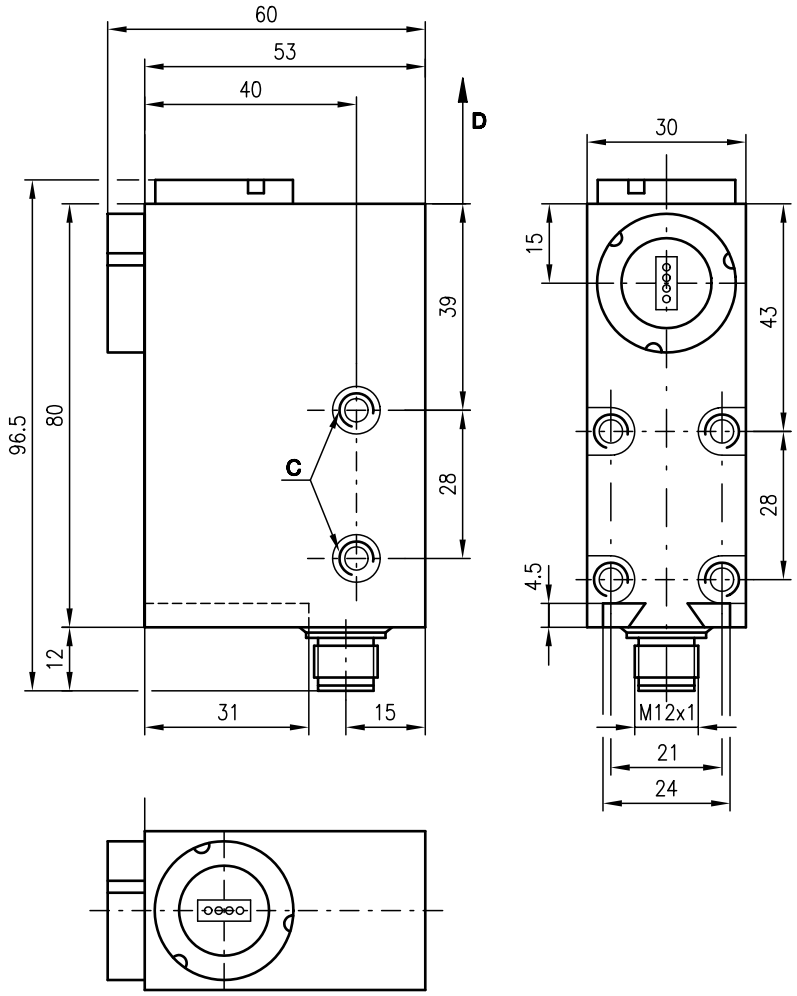
Only with the proper accessories is your solution complete.

We place great value on flexible mounting solutions, simple integration through variable connection technology, alignment aids and innovative mounting systems. Pre-configured and pre-mounted systems also facilitate fast and simple commissioning of, e.g., muting systems for applications in safety at work.

Discover our extensive line of accessories on the web at: **www.leuze.com/en/accessories**

Dimensioned drawings: KRT 20



KRT 20 contrast sensors

ACCESSORIES: KRT 20

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

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/// KRT 21

With a response time of 33 µs, RGB transmitter, interchangeable lenses and other fundamental equipment details, any contrast marks are reliably detected. The simple adjustment to mark and background makes for uncomplicated commissioning.

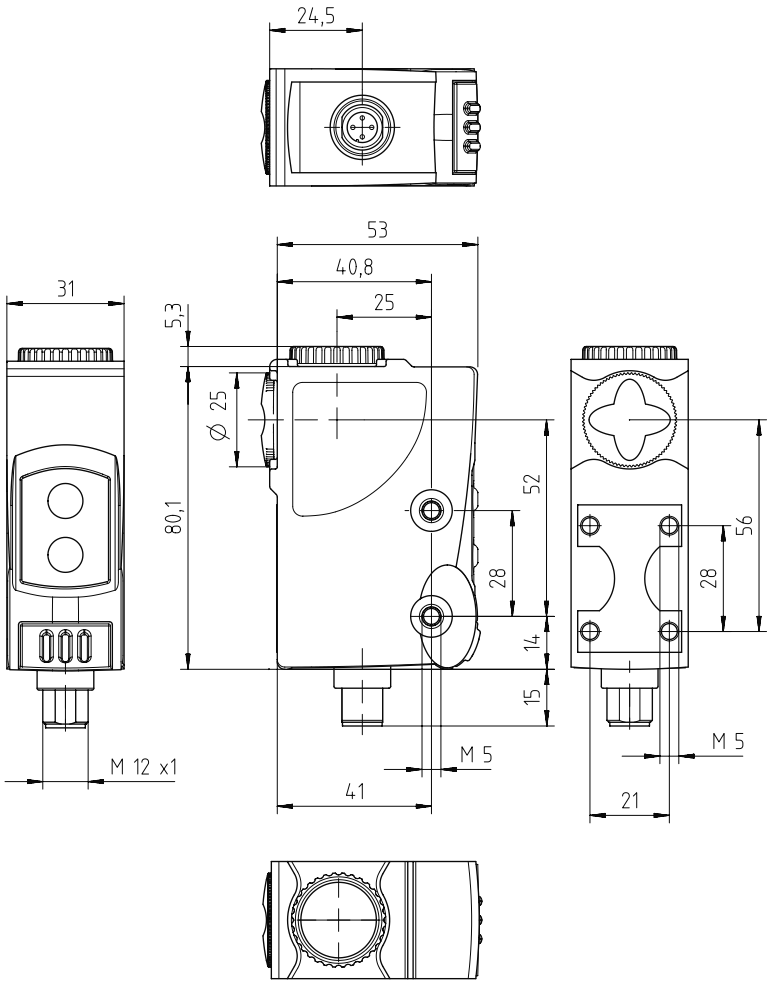
Benefits:

- 9 mm or 18 mm operating range
- Interchangeable lenses made of glass and plastic
- Multicolor (RGB) transmitter
- Static teach-in
- Response time 33 µs
- Switching frequency 15 kHz
- Pulse stretching

Direct access to the online product selector at **www.leuze.com/en/krt21**

Part no.	Part description	Operating range	Switching frequency	Light source	Digital switching output	Connection	Description
50127841	KRT21M-09.PL3/42-M12	0.006 … 0.012 m	15,000 Hz	LED, RGB	Transistor, PNP, switching signal on mark	Connector, M12, 4-pin	Pulse stretching

Dimensioned drawings: KRT 21



KRT 21 contrast sensors

ACCESSORIES: KRT 21

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	**KD U-M12-4W-P1-020**	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	**KD U-M12-4W-P1-050**	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	**KD U-M12-4W-V1-020**	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	**KD U-M12-4W-V1-050**	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	**KD U-M12-4A-P1-020**	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	**KD U-M12-4A-P1-050**	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	**KD U-M12-4A-V1-020**	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	**KD U-M12-4A-V1-050**	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

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//LUMINESCENCE SENSORS

I SEE WHAT YOU DON'T SEE

This sensor detects both visible as well as invisible luminescent markings. It sends the result as switching output or analog value and is used primarily for sorting and inspection tasks in areas in which other detection methods fail to supply reliable results or where the markings should not or must not be visible.

/// LRT 8

With various light spot profiles, filters, transmitter variants and accessories, this compact design includes everything needed for detecting luminescent objects.

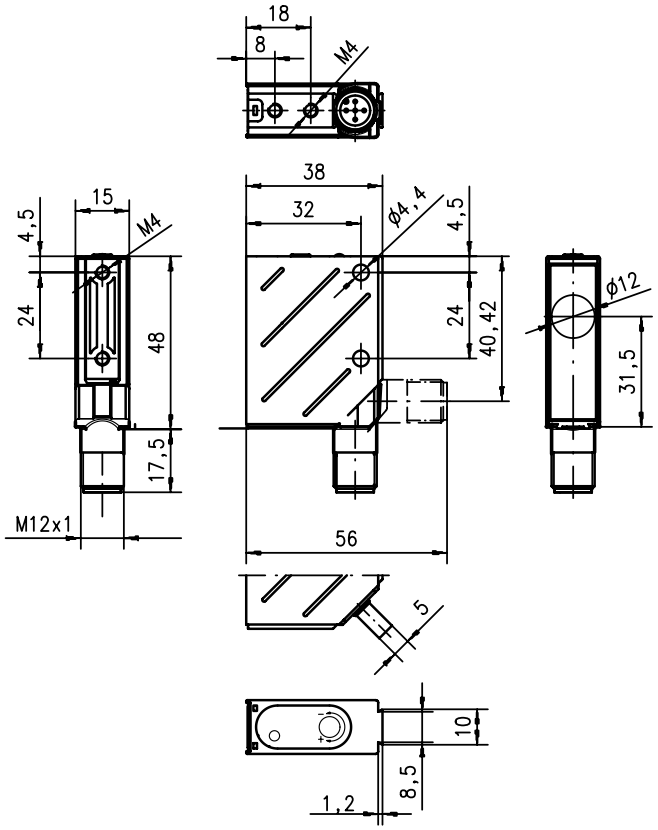
Benefits:

- Ranges up to 200 mm
- Very compact metal construction
- Switching frequency 1.5 kHz
- Sensitivity adjustment via potentiometer
- Turnable M12 connector
- Filter variants

Direct access to the online product selector at **www.leuze.com/en/lrt8**

Part no.	Part description	Operating range	Light source	Switching frequency	Switching output 1	Switching output 2	Description
50109343	LRT 8/24.04-100-S12	0 ... 0.22 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, NPN, light switching	Detection of white paper, detection of any kind of luminescence
50041840	LRT 8/24.04-50-S12	0 ... 0.15 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, NPN, light switching	Detection of any kind of luminescence, detection of white paper
50119033	LRT 8/24.10-150-S12	0 ... 0.5 m	LED, blue	1,500 Hz	Transistor, PNP, light switching	Transistor, NPN, light switching	Detection of red marks on wood
50119032	LRT 8/24.14-150-S12	0 ... 0.4 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, NPN, light switching	Detection of any kind of luminescence, detection of white paper
50124693	LRT 8/44.14-150-S12	0 ... 0.4 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, PNP, dark switching	Detection of white paper, detection of any kind of luminescence
50116732	LRT 8/24.16-80-S12	0 ... 0.1 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, NPN, light switching	Detection of yellow print marks

Dimensioned drawings: LRT 8



LRT 8 luminescence sensors

ACCESSORIES: LRT 8

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50036195	BT 8	Angle, L-shape	Screw type	Through-hole mounting	Metal
50118543	BT 300M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel, V2A

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117253	BTU 300M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117252	BTU 300M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117251	BTU 300M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

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//COLOR SENSORS

ALWAYS GOOD WHEN THINGS GET COLORFUL

This sensor type detects colors and compares them to a stored reference value. They are the right solution whenever the color of an object or marking can serve as a sorting or inspection criteria. Depending on the configuration and specified tolerance values of the system, the result is output as a switching signal.

/// CRT 20B

Thanks to extensive configuration options and 1 or 4 color channels with individually adjustable color tolerance, this series can be used for fast processes with short response times.

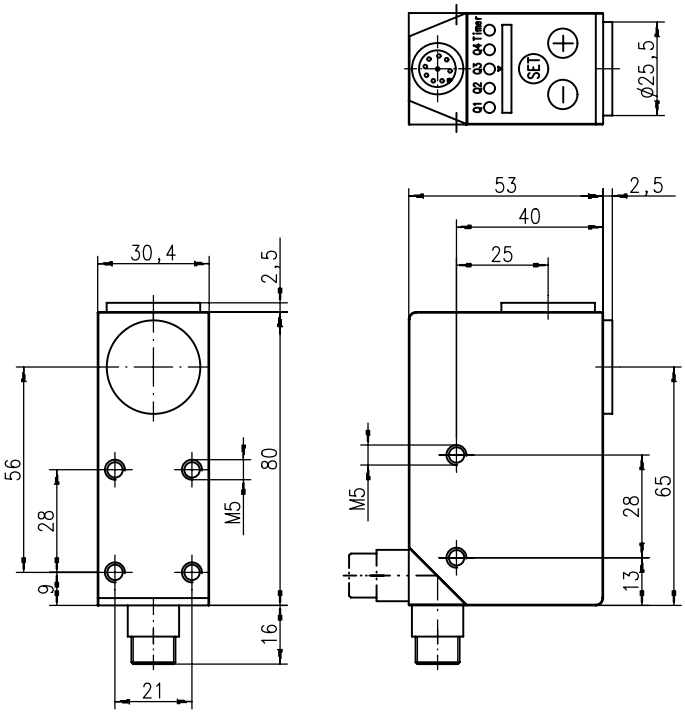
Benefits:

- 12,5 mm or 60 mm operating range
- Very robust metal construction
- Simple teach-in of up to 4 reference colors
- Sensitivity adjustment following teach-in
- Color tolerance separately adjustable per color channel
- Switching frequency up to 6 kHz
- Extensive configuration options
- Turnable M12 connector

Direct access to the online product selector at **www.leuze.com/en/crt20b**

Part no.	Part description	Operating range	Switching frequency	Light source	Switching outputs	Connection	Description
50109595	CRT 20B M/N-60-001-S12	0.051 … 0.069 m	6,000 Hz	LED, RGB	1x, transistor, NPN, light/dark reversible	Connector, M12, 5-pin	Detection of one color, autocollimation, teach input
50109597	CRT 20B M/P-60-001-S12	0.051 … 0.069 m	6,000 Hz	LED, RGB	1x, transistor, PNP, light/dark reversible	Connector, M12, 5-pin	Detection of one color, autocollimation, teach input
50109599	CRT 20B M/N-60-004-S12	0.051 … 0.069 m	3,500 Hz	LED, RGB	4x, transistor, NPN, light/dark reversible	Connector, M12, 8-pin	Detection of four colors, autocollimation, teach input
50109601	CRT 20B M/P-60-004-S12	0.051 … 0.069 m	3,500 Hz	LED, RGB	4x, transistor, PNP, light/dark reversible	Connector, M12, 8-pin	Detection of four colors, autocollimation, teach input
50109594	CRT 20B M/N-12-001-S12	0.0095 … 0.0155 m	6,000 Hz	LED, RGB	1x, transistor, NPN, light/dark reversible	Connector, M12, 5-pin	Detection of one color, autocollimation, teach input
50109596	CRT 20B M/P-12-001-S12	0.0095 … 0.0155 m	6,000 Hz	LED, RGB	1x, transistor, PNP, light/dark reversible	Connector, M12, 5-pin	Detection of one color, autocollimation, teach input
50109598	CRT 20B M/N-12-004-S12	0.0095 … 0.0155 m	3,500 Hz	LED, RGB	4x, transistor, NPN, light/dark reversible	Connector, M12, 8-pin	Detection of four colors, autocollimation, teach input
50109600	CRT 20B M/P-12-004-S12	0.0095 … 0.0155 m	3,500 Hz	LED, RGB	4x, transistor, PNP, light/dark reversible	Connector, M12, 8-pin	Detection of four colors, autocollimation, teach input

Dimensioned drawings: CRT 20B



CRT 20B color sensor

ACCESSORIES: CRT 20B

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50135133	KD S-M12-8W-P1-050	Connector, M12, angled, female	8-pin	5,000 mm	PUR
50135134	KD S-M12-8W-P1-100	Connector, M12, angled, female	8-pin	10,000 mm	PUR
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC
50135127	KD S-M12-8A-P1-020	Connector, M12, axial, female	8-pin	2,000 mm	PUR
50135121	KD U-M12-8A-P1-020	Connector, M12, axial, female	8-pin	2,000 mm	PUR
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135122	KD U-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135123	KD U-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR

Further connection cables can be found on our website

/// CRT 448

This series with 3 color channels and the scan function for color gradients can be used flexibly in many areas of applications.

Benefits:

- 22 mm or 32 mm operating range
- Small plastic construction
- Simple teach-in of three reference colors
- Scan function for color gradients
- Color tolerance separately adjustable per color channel
- 500 Hz switching frequency
- Configuration options
- Turnable M12 connector

Direct access to the online product selector at **www.leuze.com/en/crt448**

Part no.	Part description	Operating range	Switching frequency	Light source	Switching outputs	Connection	Description
50121293	CRT 448.S3/222-M12	0.012 … 0.032 m	500 Hz	LED, white	3x, transistor, NPN	Connector, M12, 8-pin	Detection of three colors, teach input, synchronization input
50121294	CRT 448.S3/444-M12	0.012 … 0.032 m	500 Hz	LED, white	3x, transistor, PNP	Connector, M12, 8-pin	Detection of three colors, synchronization input
50121291	CRT 448.L3/222-M12	0.018 … 0.022 m	500 Hz	LED, white	3x, transistor, NPN	Connector, M12, 8-pin	Detection of three colors, teach input, synchronization input
50121292	CRT 448.L3/444-M12	0.018 … 0.022 m	500 Hz	LED, white	3x, transistor, PNP	Connector, M12, 8-pin	Detection of three colors, synchronization input

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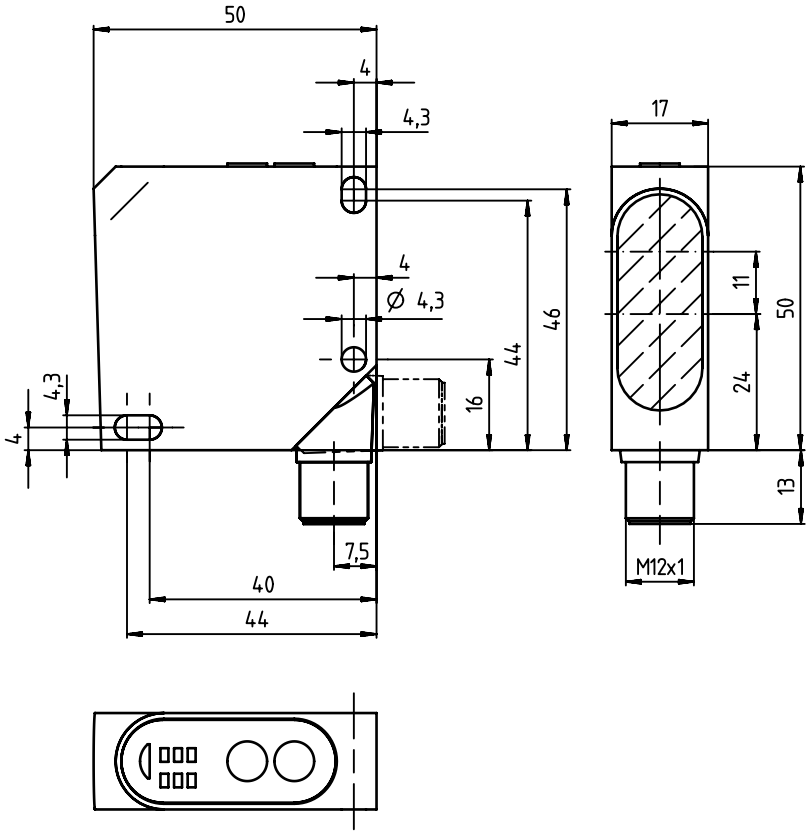
Dimensioned drawings: CRT 448



CRT 448 color sensor

ACCESSORIES: CRT 448

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135133	KD S-M12-8W-P1-050	Connector, M12, angled, female	8-pin	5,000 mm	PUR
50135134	KD S-M12-8W-P1-100	Connector, M12, angled, female	8-pin	10,000 mm	PUR
50135127	KD S-M12-8A-P1-020	Connector, M12, axial, female	8-pin	2,000 mm	PUR
50135121	KD U-M12-8A-P1-020	Connector, M12, axial, female	8-pin	2,000 mm	PUR
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135122	KD U-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135123	KD U-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR

Further connection cables can be found on our website

Reflectors

Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

MEASURING SENSORS

INTELLIGENT MONITORING AND CONTROL THROUGH MEASURING SENSORS

Measuring sensors can actively check distances, position system parts and monitor other parameters in order to intelligently and independently initiate actions to, e.g., intervene in processes for control purposes. Here, you will find a large selection of technologies and designs for as efficient and fault-free system operation as possible.

"Measuring sensors are suitable for a wide variety of complex detection tasks. In addition to classic features, such as high accuracy, resolution or operating range, our sensors feature characteristics such as the integration of intelligent data evaluations and various interface technologies, easy operation and simple mounting. These make the sensors from Leuze electronic especially attractive for a given task."

Tilo Wolf,
Technical Head of Product Center
Measuring Sensors

/ Optical distance sensors Page 212

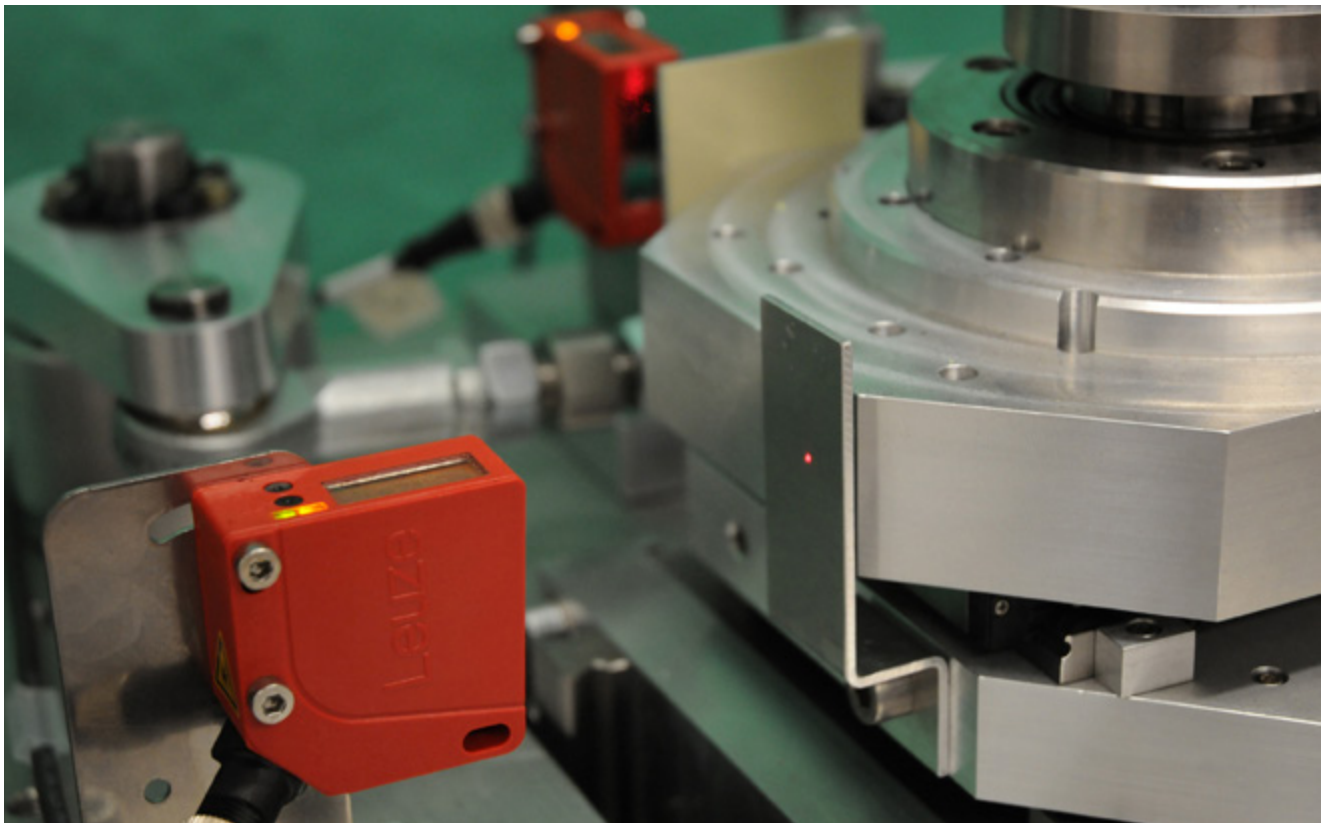
/ Ultrasonic distance sensors Page 224

/ Sensors for positioning Page 232

/ 3D sensors Page 247

/ Light curtains Page 254

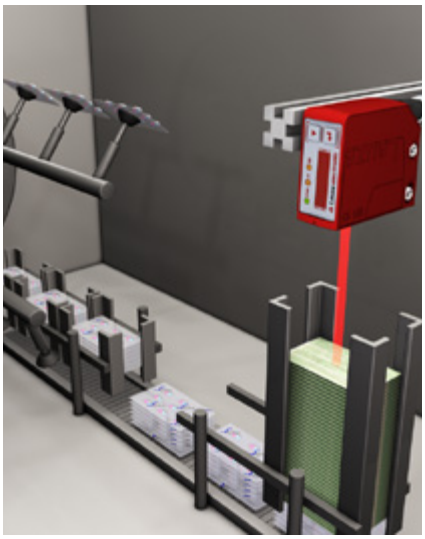
/ Measuring forked sensors Page 267

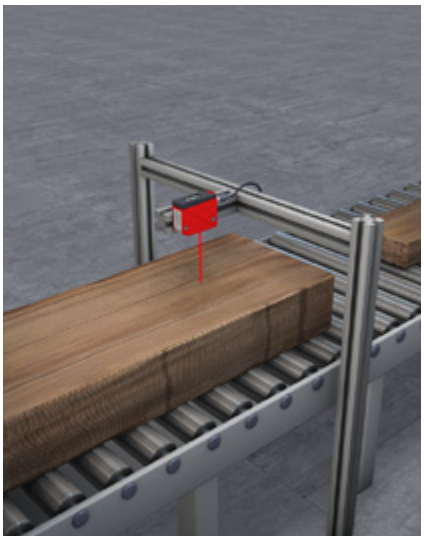


/ OPTICAL DISTANCE SENSORS

LIGHTS ON – MEASUREMENT STARTS

These sensors use laser or LED light to quickly and precisely measure distances on a wide range of materials, even at large ranges.





/// ODSL 8

The compact laser distance sensors of this series in a compact metal housing supply reflection-independent distance information. The sensor can be quickly commissioned through teach-in.

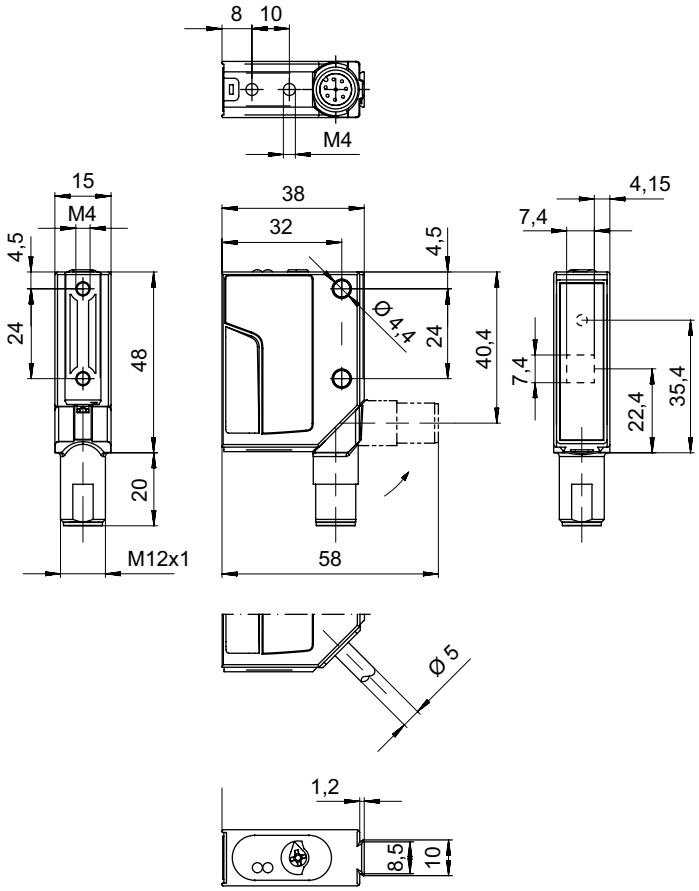
Benefits:

- 20 mm ... 500 mm measurement range
- Robust metal housing
- Teachable analog and switching outputs
- Turnable M12 connector

Direct access to the online product selector at **www.leuze.com/en/odsl8**

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time	Description
50101880	ODSL 8/66-500-S12	20 ... 500 mm	Laser, red, 2	2 mm x 6 mm		2x	0.1 ... 0.5 mm	2 ... 7 ms	Connector, M12, metal, 5-pin
50108361	ODSL 8/C66-500-S12	20 ... 500 mm	Laser, red, 2	2 mm x 6 mm	1x, current	2x	0.1 ... 0.5 mm	2 ... 7 ms	Connector, M12, metal, 5-pin
50101879	ODSL 8/V66-500-S12	20 ... 500 mm	Laser, red, 2	2 mm x 6 mm	1x, voltage	2x	0.1 ... 0.5 mm	2 ... 7 ms	Connector, M12, metal, 5-pin
50111175	ODSL 8/V66.01-500-S12	20 ... 500 mm	Laser, red, 2	2 mm x 6 mm	1x, voltage	2x	0.1 ... 0.5 mm	2 ... 7 ms	Connector, M12, metal, 5-pin
50108362	ODSL 8/C66-200-S12	20 ... 200 mm	Laser, red, 2	1 mm	1x, current	2x	0.1 ... 0.2 mm	2 ... 7 ms	Connector, M12, metal, 5-pin
50105761	ODSL 8/V66-200-S12	20 ... 200 mm	Laser, red, 2	1 mm	1x, voltage	2x	0.1 ... 0.2 mm	2 ... 7 ms	Connector, M12, metal, 5-pin
50108364	ODSL 8/C66-45-S12	25 ... 45 mm	Laser, red, 2	1 mm	1x, current	2x	0,03 mm	2 ... 7 ms	Connector, M12, metal, 5-pin
50108363	ODSL 8/V66-45-S12	25 ... 45 mm	Laser, red, 2	1 mm	1x, voltage	2x	0,03 mm	2 ... 7 ms	Connector, M12, metal, 5-pin

Dimensioned drawings: ODSL 8



ODSL 8 optical distance sensor

ACCESSORIES: ODSL 8

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50036195	BT 8	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50127177	BTU 008M-D10	Mounting system	Screw type	Sheet-metal mounting, for 10 mm rod	Metal

Further rod mounts can be found on our website

/// ODSL 9

The ODSL 9 optical distance sensors set new standards in precision and ease of use. The sensor enables accurate measurements even under difficult conditions, e.g., with glossy objects. The integrated display shows the measurement values and facilitates easy adjustment of the sensor. The distance sensors reveal their enormous potential for precision when used in combination with digital interfaces.

Direct access to the online product selector at **www.leuze.com/en/odsl9**

ODSL 9

This series measures very precisely even over longer distances making it suitable for the positioning of actuators and robots.

Benefits:

- High accuracy up to 650 mm
- Reflection-independent distance measurement
- Display for measured value display and configuration
- Analog current/voltage output
- Switching outputs adjustable with millimeter accuracy
- IO-Link, serial interface RS 232/485

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time	Description
50113583	ODSL 9/C6-650-S12	50 … 650 mm	Laser, red, 2	1 mm	1x, current	1x	0.1 … 0.5 mm	2 ms	Connector, M12, plastic, 5-pin
50120000	ODSL 9/D36-650-S12	50 … 650 mm	Laser, red, 2	1 mm		1x	0.1 … 0.5 mm	2 ms	Interface: RS 485, connector, M12, plastic, 5-pin
50120825	ODSL 9/L-650-S12	50 … 650 mm	Laser, red, 2	1 mm			0.1 … 0.5 mm	2 ms	Interface: IO-Link, connector, M12, plastic, 5-pin
50114627	ODSL 9/V6-650-S12	50 … 650 mm	Laser, red, 2	1 mm	1x, voltage	1x	0.1 … 0.5 mm	2 ms	Connector, M12, plastic, 5-pin
50111157	ODSL 9/C6-450-S12	50 … 450 mm	Laser, red, 2	1 mm	1x, current	1x	0.1 mm	2 ms	Connector, M12, plastic, 5-pin
50111161	ODSL 9/C66-450-S12	50 … 450 mm	Laser, red, 2	1 mm	1x, current	2x	0.1 mm	2 ms	Connector, M12, plastic, 5-pin
50111159	ODSL 9/D26-450-S12	50 … 450 mm	Laser, red, 2	1 mm		1x	0.1 mm	2 ms	Interface: RS 232, connector, M12, plastic, 5-pin

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Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time	Description
50111160	ODSL 9/D36-450-S12	50 … 450 mm	Laser, red, 2	1 mm		1x	0.1 mm	2 ms	Interface: RS 485, connector, M12, plastic, 5-pin
50111166	ODSL 9/L-450-S12	50 … 450 mm	Laser, red, 2	1 mm			0.1 mm	2 ms	Interface: IO-Link, connector, M12, plastic, 5-pin
50111158	ODSL 9/V6-450-S12	50 … 450 mm	Laser, red, 2	1 mm	1x, voltage	1x	0.1 mm	2 ms	Connector, M12, plastic, 5-pin
50111162	ODSL 9/V66-450-S12	50 … 450 mm	Laser, red, 2	1 mm	1x, voltage	2x	0.1 mm	2 ms	Connector, M12, plastic, 5-pin
50115029	ODSL 9/C6.C1-450-S12	50 … 450 mm	Laser, red, 1	1 mm	1x, current	1x	0.1 mm	4 ms	Connector, M12, plastic, 5-pin
50115030	ODSL 9/V6.C1-450-S12	50 … 450 mm	Laser, red, 1	1 mm	1x, voltage	1x	0.1 mm	4 ms	Connector, M12, plastic, 5-pin
50117334	ODSL 9/C6-200-S12	50 … 200 mm	Laser, red, 2	1 mm	1x, current	1x	0.1 mm	2 ms	Connector, M12, plastic, 5-pin
50113332	ODSL 9/V6-200-S12	50 … 200 mm	Laser, red, 2	1 mm	1x, voltage	1x	0.1 mm	2 ms	Connector, M12, plastic, 5-pin

ODSL 9 high resolution

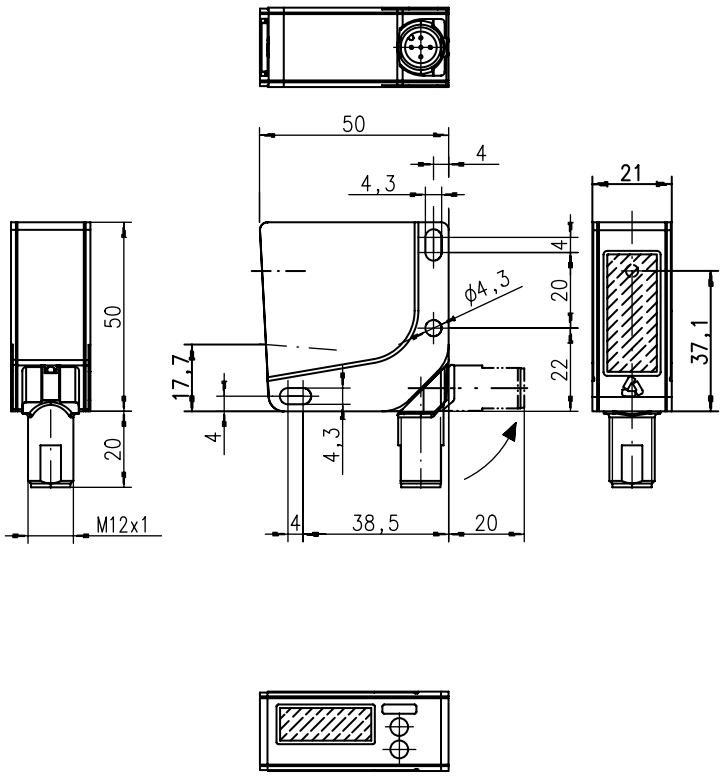
With a resolution of 0.01 mm, the sensors are designed for the contour measurement of small objects and quality control on assembly lines.

Benefits:

- Maximum accuracy in compact design
- Resolution of 0.01 mm with measurement range of 50 mm
- Reflection-independent distance measurement
- Display for measured value display and configuration
- Analog voltage/current output, switching outputs
- IO-Link, serial interface RS 232

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time	Description
50111167	ODSL 9/C6-100-S12	50 … 100 mm	Laser, red, 2	1 mm	1x, current	1x	0,01 mm	2 ms	Connector, M12, plastic, 5-pin
50111171	ODSL 9/C66-100-S12	50 … 100 mm	Laser, red, 2	1 mm	1x, current	2x	0,01 mm	2 ms	Connector, M12, plastic, 5-pin
50111169	ODSL 9/D26-100-S12	50 … 100 mm	Laser, red, 2	1 mm		1x	0,01 mm	2 ms	Interface: RS 232, connector, M12, plastic, 5-pin
50111170	ODSL 9/D36-100-S12	50 … 100 mm	Laser, red, 2	1 mm		1x	0,01 mm	2 ms	Interface: RS 485, connector, M12, plastic, 5-pin
50111174	ODSL 9/L-100-S12	50 … 100 mm	Laser, red, 2	1 mm			0,01 mm	2 ms	Interface: IO-Link, connector, M12, plastic, 5-pin
50111168	ODSL 9/V6-100-S12	50 … 100 mm	Laser, red, 2	1 mm	1x, voltage	1x	0,01 mm	2 ms	Connector, M12, plastic, 5-pin
50111172	ODSL 9/V66-100-S12	50 … 100 mm	Laser, red, 2	1 mm	1x, voltage	2x	0,01 mm	2 ms	Connector, M12, plastic, 5-pin

Dimensioned drawings: ODSL 9



ODSL 9 optical distance sensor

ACCESSORIES: ODSL 9

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50036195	BT 8	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117253	BTU 300M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117252	BTU 300M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117251	BTU 300M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

/// ODS 10

The ODS 10 is an optical distance sensor that measures distance against a non-cooperating target and makes the information available as a measurement value. The maximum range of the device is 8,000 mm, whereby an accuracy of ± 15 mm is achieved. Against a reflector, operating ranges of up to 25,000 mm are achieved. The level of accuracy is almost fully independent of the material.

Benefits:

- Eye-safe laser class 1
- Reliable detection of dark, glossy and colored objects
- Recess for M4 bolts enables the installation of this device using just one tool
- No tools required for locking of nuts and screws
- Turnable M12 connection, space-saving cable outlet or pigtail
- Large buttons enable finger operation without tools
- Status LED indicators on top and front allow detection of switching state from afar
- Configuration options via I/O-Link and Sensor Studio
- Compact housing

Direct access to the online product selector at **www.leuze.com/en/ods10**

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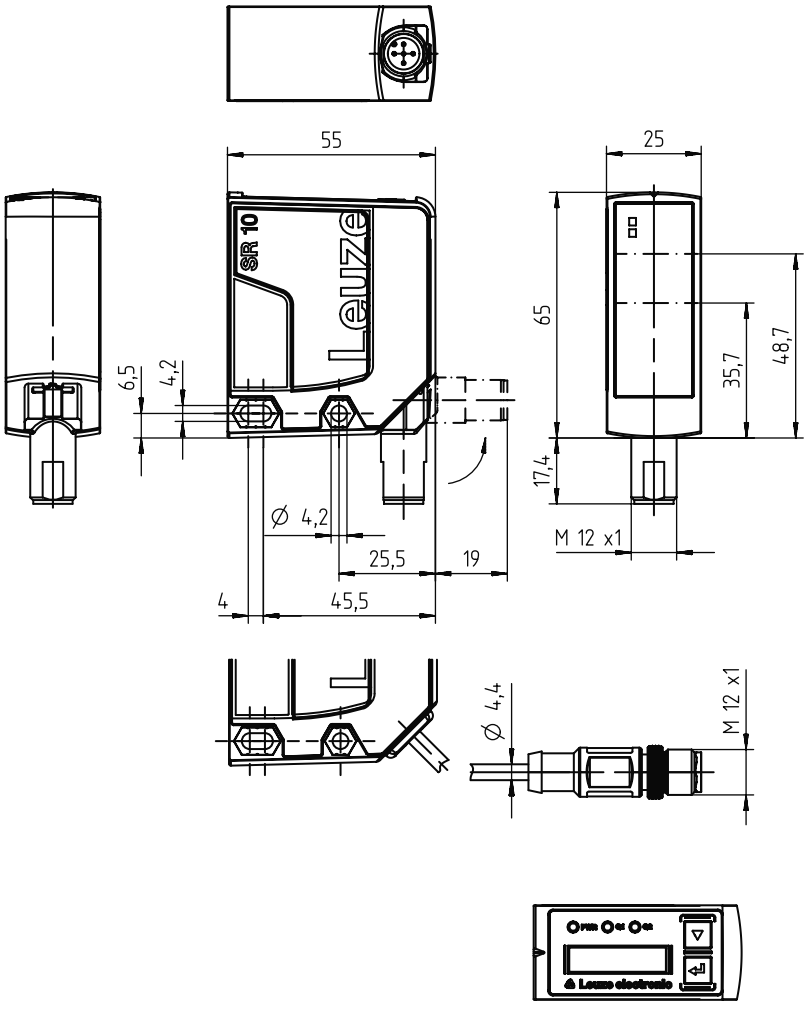
Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time	Description
50129533	ODS10L1-25M.8/LAK	100 … 25,000 mm	Laser, red, 1	25 mm x 25 mm	1x, configurable, factory setting: current	1x	1.0 mm	3.5 … 1000 ms	Interface: IO-Link, deactivation input, activation input, teach input, cable, 2,000 mm, 5-wire
50129536	ODS10L1-25M.8/LAK,200-M12	100 … 25,000 mm	Laser, red, 1	25 mm x 25 mm	1x, configurable, factory setting: current	1x	1.0 mm	3.5 … 1000 ms	Interface: IO-Link, deactivation input, activation input, teach input, cable with connector, 200 mm, M12, plastic, 5-pin
50129530	ODS10L1-25M.8/LAK-M12	100 … 25,000 mm	Laser, red, 1	25 mm x 25 mm	1x, configurable, factory setting: current	1x	1.0 mm	3.5 … 1000 ms	Interface: IO-Link, deactivation input, activation input, teach input, connector, M12, plastic, 5-pin
50129528	ODS10L1.8/L6X-M12	50 … 8,000 mm	Laser, red, 1	7 mm x 7 mm		2x	1.0 mm		Interface: IO-Link, connector, M12, plastic, 5-pin
50129532	ODS10L1.8/LA6	50 … 8,000 mm	Laser, red, 1	7 mm x 7 mm	1x, configurable, factory setting: current	2x	1.0 mm		Interface: IO-Link, cable, 2,000 mm, 5-wire
50129535	ODS10L1.8/LA6,200-M12	50 … 8,000 mm	Laser, red, 1	7 mm x 7 mm	1x, configurable, factory setting: current	2x	1.0 mm		Interface: IO-Link, cable with connector, 200 mm, M12, plastic, 5-pin
50129529	ODS10L1.8/LA6-M12	50 … 8,000 mm	Laser, red, 1	7 mm x 7 mm	1x, configurable, factory setting: current	2x	1.0 mm		Interface: IO-Link, connector, M12, plastic, 5-pin
50129531	ODS10L1.8/LAK	50 … 8,000 mm	Laser, red, 1	7 mm x 7 mm	1x, configurable, factory setting: current	1x	1.0 mm		Interface: IO-Link, deactivation input, activation input, teach input, cable, 2,000 mm, 5-wire
50129534	ODS10L1.8/LAK,200-M12	50 … 8,000 mm	Laser, red, 1	7 mm x 7 mm	1x, configurable, factory setting: current	1x	1.0 mm		Interface: IO-Link, deactivation input, activation input, teach input, cable with connector, 200 mm, M12, plastic, 5-pin
50127853	ODS10L1.8/LAK-M12	50 … 8,000 mm	Laser, red, 1	7 mm x 7 mm	1x, configurable, factory setting: current	1x	1.0 mm		Interface: IO-Link, deactivation input, activation input, teach input, connector, M12, plastic, 5-pin

Dimensioned drawings: ODS 10



ODS 10 optical distance sensor

ACCESSORIES: ODS 10

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50128379	BTU 460M-D10	Mounting system	Screw type	For 10 mm rod	Metal
50128380	BTU 460M-D12	Mounting system	Screw type	For 12 mm rod	Metal

Further rod mounts can be found on our website

Reflective tapes

Reflective tapes for distance sensors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50111527	REF 7-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// ODS 96B

Series ODS 96B distance sensors with large measurement ranges of 60 to 25,000 mm are suitable for many different applications and, thanks to the metal housing, are extremely robust. They measure in the ms range. The integrated display shows the measurement values and allows the sensor to be easily adapted to the measurement task. Apart from analog current/voltage interfaces and binary switching outputs, digital interfaces are also available. Digital interfaces prevent conversion losses in the sensor, control and during measurement data transfer.

IO-Link

Direct access to the online product selector at **www.leuze.com/en/ods96b**

ODS(R) 96B

Measures with either red LED light or infrared light and is suitable for large-area objects, such as bulk material.

Benefits:

- For measurements on objects with large surface area, e.g. bulk material, band materials, plate materials
- Robust metal housing
- High accuracy - reflection-independent distance measurement
- Display for measured value display and configuration

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time	Description
50106727	ODS 96B M/C66.01-1400-S12	120 … 1,400 mm	LED, infrared	15 mm x 15 mm	1x, current	2x	0.1 … 0.5 mm	1 … 5 ms	Connector, M12, metal, 5-pin
50110231	ODS 96B M/V6-1400-S12	120 … 1,400 mm	LED, infrared	15 mm x 15 mm	1x, voltage	1x	0.1 … 2.0 mm	1 … 5 ms	Connector, M12, metal, 5-pin
50106730	ODSR 96B M/C6-600-S12	100 … 600 mm	LED, red	15 mm x 15 mm	1x, current	1x	0.1 … 0.5 mm	1 … 5 ms	Connector, M12, metal, 5-pin
50106731	ODSR 96B M/V6-600-S12	100 … 600 mm	LED, red	15 mm x 15 mm	1x, voltage	1x	0.1 … 0.5 mm	1 … 5 ms	Connector, M12, metal, 5-pin

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Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time	Description
50106720	ODS 96B M/C6-600-S12	100 … 600 mm	LED, infrared	15 mm x 15 mm	1x, current	1x	0.1 … 0.5 mm	1 … 5 ms	Connector, M12, metal, 5-pin
50106721	ODS 96B M/V6-600-S12	100 … 600 mm	LED, infrared	15 mm x 15 mm	1x, voltage	1x	0.1 … 0.5 mm	1 … 5 ms	Connector, M12, metal, 5-pin

ODSL 96B-S

Small laser light spot for the precise measurement of small objects, objects with color structures or for glossy surfaces.

Benefits:

- Small laser light spot
- Precise measurement on small objects and objects with colored structure
- For measurement on metallic surfaces

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measure-ment time	Description
50123687	ODSL 96B M/C6.C1S-1500-S12	150 … 1,500 mm	Laser, red, 1	1 mm	1x, current	1x	0.1 … 2.0 mm	12 … 60 ms	Small light spot (S), connector, M12, metal, 5-pin
50123686	ODSL 96B M/V6.C1S-1500-S12	150 … 1,500 mm	Laser, red, 1	1 mm	1x, voltage	1x	0.1 … 2.0 mm	12 … 60 ms	Small light spot (S), connector, M12, metal, 5-pin
50106728	ODSL 96B M/C6.S-800-S12	150 … 800 mm	Laser, red, 2	1 mm	1x, current	1x	0.1 … 0.8 mm	1 … 5 ms	Small light spot (S), connector, M12, metal, 5-pin
50111035	ODSL 96B M/D26.S-800-S12	150 … 800 mm	Laser, red, 2	1 mm		1x	0.1 … 0.8 mm	1 … 5 ms	Interface: RS 232, small light spot (S), connector, M12, metal, 5-pin
50112065	ODSL 96B M/D36.S-800-S12	150 … 800 mm	Laser, red, 2	1 mm		1x	0.1 … 0.8 mm	1 … 5 ms	Interface: RS 485, small light spot (S), connector, M12, metal, 5-pin
50106729	ODSL 96B M/V6.S-800-S12	150 … 800 mm	Laser, red, 2	1 mm	1x, voltage	1x	0.1 … 0.8 mm	1 … 5 ms	Small light spot (S), connector, M12, metal, 5-pin

ODSL 96B-XL

Elongated light spot for precise measurements on porous objects and objects with openings (e.g. corrugated cardboard) as well as on objects that are not aligned precisely.

Benefits:

- Elongated light spot for precise measurement

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time	Description
50106736	ODSL 96B M/C6.XL-1200-S12	150 … 1,200 mm	Laser, red, 2	15 mm x 4 mm	1x, current	1x	0.1 … 1.5 mm (XL)	1 … 5 ms	Extra long light spot (XL), connector, M12, metal, 5-pin
50106737	ODSL 96B M/V6.XL-1200-S12	150 … 1,200 mm	Laser, red, 2	15 mm x 4 mm	1x, voltage	1x	0.1 … 1.5 mm (XL)	1 … 5 ms	Extra long light spot (XL), connector, M12, metal, 5-pin

ODSL(R) 96B

Even over large ranges of up to 2 m, this sensor measures in the ms range with millimeter precision. High resolving power in compact, robust design.

Benefits:

- For measurements in ms cycle at large operating ranges
- Stable and precise measurement values, even at varying temperatures and objects
- Robust: IP 67, IP 69K

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measure-ment time	Description
50106732	ODSLR 96B M/C6-2000-S12	60 … 2,000 mm	Laser, red, 2, LED, red	2 mm x 6 mm	1x, current	1x	1.0 … 5.0 mm	1 … 5 ms	Connector, M12, metal, 5-pin
50106733	ODSLR 96B M/V6-2000-S12	60 … 2,000 mm	Laser, red, 2, LED, red	2 mm x 6 mm	1x, voltage	1x	1.0 … 5.0 mm	1 … 5 ms	Connector, M12, metal, 5-pin
50106599	ODSL 96B M/66-2000-S12	150 … 2,000 mm	Laser, red, 2	2 mm x 6 mm		2x	1.0 … 3.0 mm	1 … 5 ms	Connector, M12, metal, 5-pin
50106735	ODSL 96B M/C6-2000 Ex d	150 … 2,000 mm	Laser, red, 2	2 mm x 6 mm	1x, current	1x	1.0 … 3.0 mm	1 … 5 ms	Ex-protected, cable, 15,000 mm, 5-wire
50106593	ODSL 96B M/C6-2000-S12	150 … 2,000 mm	Laser, red, 2	2 mm x 6 mm	1x, current	1x	1.0 … 3.0 mm	1 … 5 ms	Connector, M12, metal, 5-pin
50106597	ODSL 96B M/D26-2000-S12	150 … 2,000 mm	Laser, red, 2	2 mm x 6 mm		1x	1.0 … 3.0 mm	1 … 5 ms	Interface: RS 232, connector, M12, metal, 5-pin
50106598	ODSL 96B M/D36-2000-S12	150 … 2,000 mm	Laser, red, 2	2 mm x 6 mm		1x	1.0 … 3.0 mm	1 … 5 ms	Interface: RS 485, connector, M12, metal, 5-pin
50136154	ODSL 96B M/L-2000 Ex d	150 … 2,000 mm	Laser, red, 2	2 mm x 6 mm			1.0 … 3.0 mm	1 … 5 ms	Interface: IO-Link, Ex-protected, cable, 15,000 mm, 5-wire
50111164	ODSL 96B M/L-2000-S12	150 … 2,000 mm	Laser, red, 2	2 mm x 6 mm			1.0 … 3.0 mm	1 … 5 ms	Interface: IO-Link, connector, M12, metal, 5-pin
50106594	ODSL 96B M/V6-2000-S12	150 … 2,000 mm	Laser, red, 2	2 mm x 6 mm	1x, voltage	1x	1.0 … 3.0 mm	1 … 5 ms	Connector, M12, metal, 5-pin

ODSL 96-Teach

For simple applications, these sensors with plastic housing offer a large measurement range. The sensor can be quickly commissioned through teach-in.

Benefits:

- Reflection-independent distance information
- 2 teachable switching outputs (push-pull)
- Easy alignment through visible red light
- Degree of protection IP 67
- Measurement range/operating range up to 2,300 mm

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time	Description
50101882	ODSL 96K/66-2300-S12	150 … 2,300 mm	Laser, red, 2	3 mm x 8 mm		2x	1.0 … 5.0 mm	2 … 7 ms	Connector, M12, plastic, 5-pin
50101881	ODSL 96K/V66-2300-S12	150 … 2,300 mm	Laser, red, 2	3 mm x 8 mm	1x, voltage	2x	1.0 … 5.0 mm	2 … 7 ms	Connector, M12, plastic, 5-pin

ODSL 96B-TOF

Large range also with dark objects. Measurement according to the “time of flight” principle.

Benefits:

- Large range even with dark objects
- Various operating modes for fast or precise measurement
- Robust measurement procedure
- Very high immunity to ambient light
- Display for measured value display and configuration

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measure-ment time	Description
50109290	ODSL 96B M/C6-S12	300 … 10,000 mm	Laser, red, 2	7 mm x 7 mm	1x, current	1x	3.0 mm	1.4 … 50 ms	Connector, M12, metal, 5-pin
50109295	ODSL 96B M/C66-S12	300 … 10,000 mm	Laser, red, 2	7 mm x 7 mm	1x, current	2x	3.0 mm	1.4 … 50 ms	Connector, M12, metal, 5-pin
50109292	ODSL 96B M/D26-S12	300 … 10,000 mm	Laser, red, 2	7 mm x 7 mm		1x	3.0 mm	1.4 … 50 ms	Interface: RS 232, connector, M12, metal, 5-pin
50109293	ODSL 96B M/D36-S12	300 … 10,000 mm	Laser, red, 2	7 mm x 7 mm		1x	3.0 mm	1.4 … 50 ms	Interface: RS 485, connector, M12, metal, 5-pin
50109294	ODSL 96B M/L-S12	300 … 10,000 mm	Laser, red, 2	7 mm x 7 mm			3.0 mm	1.4 … 50 ms	Interface: IO-Link, connector, M12, metal, 5-pin
50109291	ODSL 96B M/V6-S12	300 … 10,000 mm	Laser, red, 2	7 mm x 7 mm	1x, voltage	1x	3.0 mm	1.4 … 50 ms	Connector, M12, metal, 5-pin
50109302	ODSIL 96B M/C6-S12	300 … 10,000 mm	Laser, infrared, 1	7 mm x 7 mm	1x, current	1x	3.0 mm	2.8 … 100 ms	Connector, M12, metal, 5-pin
50127488	ODSIL 96B M/L-S12	300 … 10,000 mm	Laser, infrared, 1	7 mm x 7 mm			3.0 mm	2.8 … 100 ms	Interface: IO-Link, connector, M12, metal, 5-pin
50109303	ODSIL 96B M/V6-S12	300 … 10,000 mm	Laser, infrared, 1	7 mm x 7 mm	1x, voltage	1x	3.0 mm	2.8 … 100 ms	Connector, M12, metal, 5-pin

ODKL 96B

A visible light spot ensures easy alignment. By measuring on reflectors, ranges of up to 25 m are no problem.

Benefits:

- Fast and easy alignment due to well visible laser light spot
- Very high range by measuring on reflective tape
- Compact design

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measure-ment time	Description
50109297	ODKL 96B M/C6-S12	300 … 25,000 mm	Laser, red, 2	7 mm x 7 mm	1x, current	1x	3.0 mm	1.4 … 50 ms	Connector, M12, metal, 5-pin
50109299	ODKL 96B M/D26-S12	300 … 25,000 mm	Laser, red, 2	7 mm x 7 mm		1x	3.0 mm	1.4 … 50 ms	Interface: RS 232, connector, M12, metal, 5-pin
50109300	ODKL 96B M/D36-S12	300 … 25,000 mm	Laser, red, 2	7 mm x 7 mm		1x	3.0 mm	1.4 … 50 ms	Interface: RS 485, connector, M12, metal, 5-pin
50109301	ODKL 96B M/L-S12	300 … 25,000 mm	Laser, red, 2	7 mm x 7 mm			3.0 mm	1.4 … 50 ms	Interface: IO-Link, connector, M12, metal, 5-pin
50109298	ODKL 96B M/V6-S12	300 … 25,000 mm	Laser, red, 2	7 mm x 7 mm	1x, voltage	1x	3.0 mm	1.4 … 50 ms	Connector, M12, metal, 5-pin

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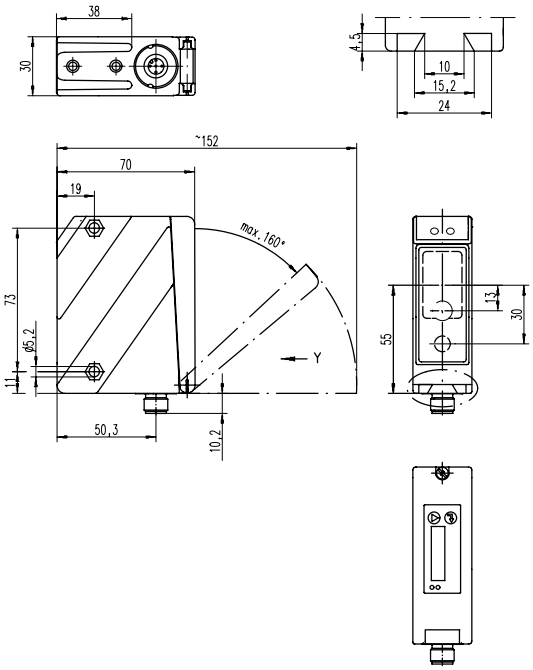
Dimensioned drawings: ODS 96B



ODS 96B optical distance sensor

ACCESSORIES: ODS 96B

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50025570	BT 96	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50082084	BT 450.1-96	Mounting system	Screw type	For 10 mm rod	Metal
50026204	UMS 96	Mounting system	Clampable	For 10 mm rod, for 12 mm rod, 14 mm rod, 16 mm rod	Metal

Further rod mounts can be found on our website

Reflective tapes

Reflective tapes for distance sensors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50111527	REF 7-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// ODSL 30

The ODSL 30 measures distances on black objects up to 30 m away and on bright objects as far as 65 m away. The sensor resolution of 1 mm enables highly accurate measurements over the complete measurement range. The integrated display shows the measurement values and allows the sensor to be easily adapted to the measurement task. Apart from analog current/voltage interfaces and binary switching outputs, digital interfaces are also available. The distance sensors reveal their enormous potential for precision when used in combination with digital interfaces.

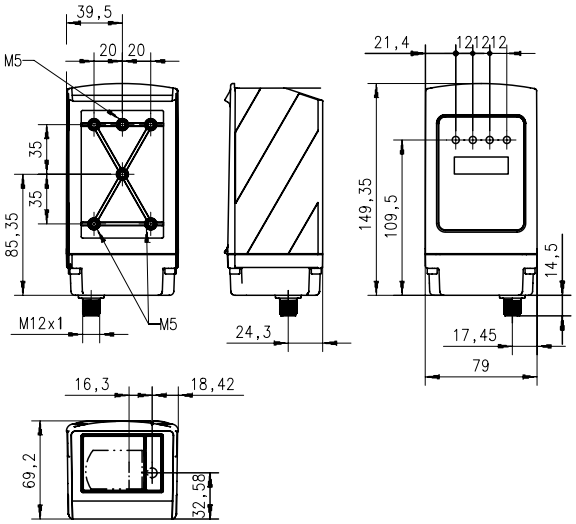
Benefits:

- Absolute measurement accuracy ± 2 mm over the entire measuring range
- Distances of 0.2–30 m on bright and black objects
- Referencing function for preventing fluctuations in measurement values
- Display for measured value display and configuration
- Ex model available

Direct access to the online product selector at **www.leuze.com/en/odsl30**

Part no.	Part description	Measurement range	Light source Protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measure-ment time	Description
50041203	ODSL 30/D232-30M-S12	0 … 65,000 mm	Laser, red, 2	6 mm		2x	1.0 mm	30 … 100 ms	Interface: RS 232, connector, M12, plastic, 8-pin
50041204	ODSL 30/D485-30M-S12	0 … 65,000 mm	Laser, red, 2	6 mm		2x	1.0 mm	30 … 100 ms	Interface: RS 485, connector, M12, plastic, 8-pin
50040720	ODSL 30/24-30M-S12	0 … 30,000 mm	Laser, red, 2	6 mm		3x	1.0 mm	30 … 100 ms	Connector, M12, plastic, 8-pin
50039447	ODSL 30/V-30M-S12	0 … 30,000 mm	Laser, red, 2	6 mm	2x, current, voltage	1x	1.0 mm	30 … 100 ms	Connector, M12, plastic, 8-pin
50122319	ODSL 30/V-30M Ex d	0 … 30,000 mm	Laser, red, 2	6 mm	2x, current, voltage	1x	1.0 mm	30 … 100 ms	Ex-protected, cable, 15,000 mm, 8-wire

Dimensioned drawings: ODSL 30



ODSL 30 optical distance sensor

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ACCESSORIES: ODSL 30

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135121	KD U-M12-8A-P1-020	Connector, M12, axial, female	8-pin	2,000 mm	PUR
50135122	KD U-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135123	KD U-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Cable length	Sheathing material
50115050	K-DS M12A-MA-8P-3m-S-PUR	Connector, M12, axial, female	8-pin	JST ZHR	3,000 mm	PUR

Further interconnection cables can be found on our website

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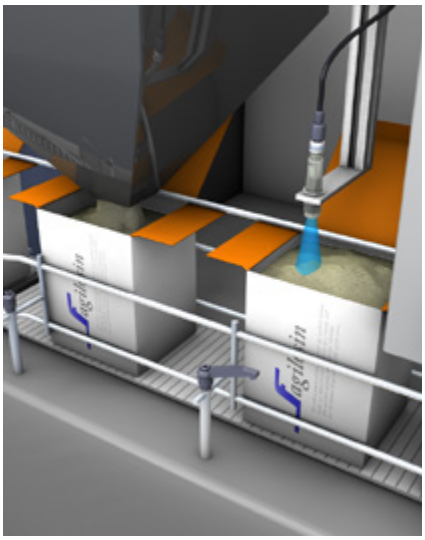
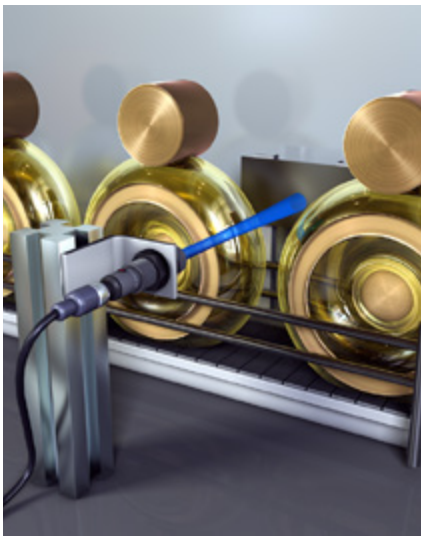
/ ULTRASONIC DISTANCE SENSORS

WHEN LIGHT ISN'T ENOUGH

With ultrasonic technology, it is possible to reliably detect even partially or completely transparent objects and to perform reliable distance measurements. In addition, measurements can be performed in dusty, hazy or humid environments.





/// 318 series

Optimum integration into cylindrical, standard or short design. The plastic housing and temperature compensation make use possible under adverse conditions.

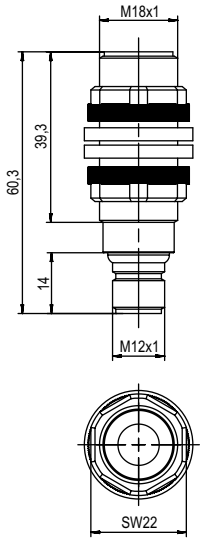
Benefits:

- Color and transmission independent detection of objects
- Current or voltage output configurable via cable or teach button
- Also available with combined analog and digital output
- To avoid mutual interference, max. 6 sensors may be synchronized via one cable
- Independent indicator diodes in devices with 2 switching outputs
- An additional diode as an indicator for the detection range simplifies installation
- Sensor configuration is unnecessary due to internal synchronization and multiplex function
- Operating range up to 1,600 mm

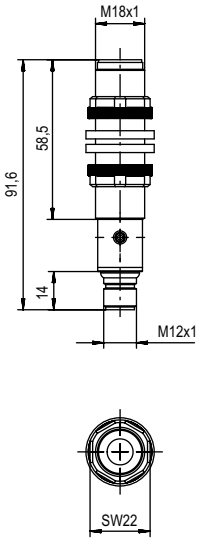
Direct access to the online product selector at **www.leuze.com/en/br318**

Part no.	Part description	Measurement range	Digital switching output	Analog output	Switching frequency	Resolution	Description
50136073	DMU318-300/CT-M12	40 … 300 mm		Current		< 2 mm	Teach input, connector, M12, 4-pin
50136072	DMU318-300/VT-M12	40 … 300 mm		Voltage		< 2 mm	Teach input, connector, M12, 4-pin
50136087	DMU318-400.3/2CK-M12	50 … 400 mm	Transistor, NPN, NO (normally open)	Current	10 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136085	DMU318-400.3/2VK-M12	50 … 400 mm	Transistor, NPN, NO (normally open)	Voltage	10 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136086	DMU318-400.3/4CK-M12	50 … 400 mm	Transistor, PNP, NO (normally open)	Current	10 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136084	DMU318-400.3/4VK-M12	50 … 400 mm	Transistor, PNP, NO (normally open)	Voltage	10 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136103	DMU318-400.W3/2CK-M12	50 … 400 mm	Transistor, NPN, NO (normally open)	Current	10 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136101	DMU318-400.W3/2VK-M12	50 … 400 mm	Transistor, NPN, NO (normally open)	Voltage	10 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136102	DMU318-400.W3/4CK-M12	50 … 400 mm	Transistor, PNP, NO (normally open)	Current	10 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136100	DMU318-400.W3/4VK-M12	50 … 400 mm	Transistor, PNP, NO (normally open)	Voltage	10 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136077	DMU318-1200/CT-M12	80 … 1,200 mm		Current		< 2 mm	Teach input, connector, M12, 4-pin
50136076	DMU318-1200/VT-M12	80 … 1,200 mm		Voltage		< 2 mm	Teach input, connector, M12, 4-pin
50136093	DMU318-1600.3/2CK-M12	150 … 1,600 mm	Transistor, NPN, NO (normally open)	Current	2 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136091	DMU318-1600.3/2VK-M12	150 … 1,600 mm	Transistor, NPN, NO (normally open)	Voltage	2 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136092	DMU318-1600.3/4CK-M12	150 … 1,600 mm	Transistor, PNP, NO (normally open)	Current	2 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136090	DMU318-1600.3/4VK-M12	150 … 1,600 mm	Transistor, PNP, NO (normally open)	Voltage	2 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136109	DMU318-1600.W3/2CK-M12	150 … 1,600 mm	Transistor, NPN, NO (normally open)	Current	2 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136107	DMU318-1600.W3/2VK-M12	150 … 1,600 mm	Transistor, NPN, NO (normally open)	Voltage	2 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136108	DMU318-1600.W3/4CK-M12	150 … 1,600 mm	Transistor, PNP, NO (normally open)	Current	2 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136106	DMU318-1600.W3/4VK-M12	150 … 1,600 mm	Transistor, PNP, NO (normally open)	Voltage	2 Hz	< 2 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin

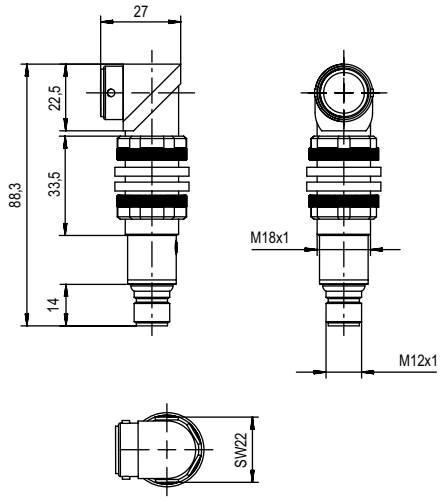
Dimensioned drawings: 318 series



DMU 318
ultrasonic distance sensor



DMU 318 with control button
ultrasonic distance sensor



DMU 318…W with control button
ultrasonic distance sensor

ACCESSORIES: 318 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113548	BT D18M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117490	BTU D18M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	Through-hole mounting	Metal

Further rod mounts can be found on our website

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/// 330 series

The new M30 models in plastic housing provide high measurement accuracy through propagation time measurement. They are much more compact and ideal for the detection of objects independent of their color (e. g. glass, liquid and film). In addition the integrated temperature compensation ensures high measurement accuracy for optimum results.

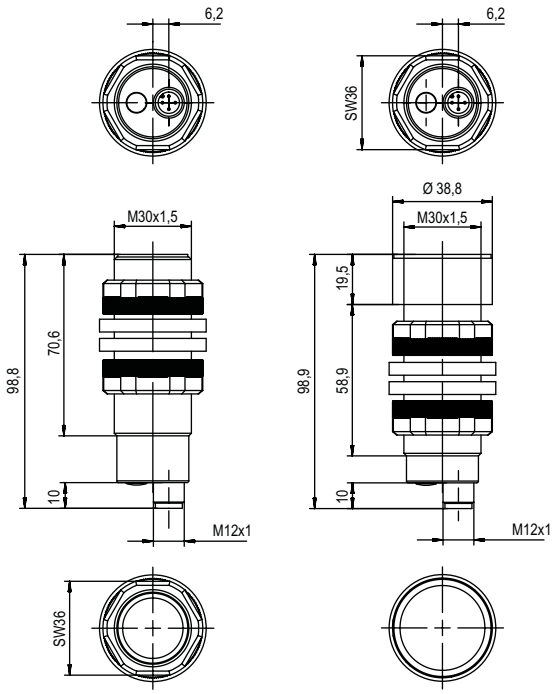
Benefits:

- Ideal for detection of levels of liquids, bulk material, transparent media and highly reflective objects
- Distance information largely independent of surface properties
- Current or voltage output configurable via teach button
- Also available with combined analog and digital output
- To avoid mutual interference, any number of sensors may be synchronized via one cable
- Independent indicator diodes
- An additional diode as an indicator for the detection range simplifies installation
- High accuracy through temperature compensation
- Operating range up to 6,000 mm

Direct access to the online product selector at **www.leuze.com/en/br330**

Part no.	Part description	Measurement range	Digital switching output	Analog output	Switching frequency	Resolution	Description
50136115	DMU330-3500.3/2CK-M12	250 … 3,500 mm	Transistor, NPN, NO (normally open)	Current	2 Hz	5 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136113	DMU330-3500.3/2VK-M12	250 … 3,500 mm	Transistor, NPN, NO (normally open)	Voltage	2 Hz	5 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136114	DMU330-3500.3/4CK-M12	250 … 3,500 mm	Transistor, PNP, NO (normally open)	Current	2 Hz	5 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136112	DMU330-3500.3/4VK-M12	250 … 3,500 mm	Transistor, PNP, NO (normally open)	Voltage	2 Hz	5 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136117	DMU330-6000.3/4CK-M12	350 … 6,000 mm	Transistor, PNP, NO (normally open)	Current	1 Hz	6 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin

Dimensioned drawings: 330 series



DMU 330 ultrasonic distance sensor

ACCESSORIES: 330 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113510	BT D30M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

/// 418 series

With its small, cylindrical design, this ultrasonic distance sensor can be integrated problem-free. The full-metal housing and temperature compensation make use possible under adverse conditions.

IO-Link

Benefits:

- Color and transmission independent detection of objects
- Current or voltage output configurable via PC software
- To avoid mutual interference, max. 10 sensors may be synchronized via one cable
- Sensitivity, average value calculation, reduction of the response time and outputs configurable via IO-Link
- Teach button

Direct access to the online product selector at **www.leuze.com/en/br418mu**

Part no.	Part description	Measurement range	Digital switching output	Analog output	Interface	Switching frequency	Resolution	Description
50124260	DMU418B-400.X3/LTC-M12	25 … 400 mm	Transistor, push-pull, break-contact/ make-contact	Current	IO-Link	7 Hz	1.0 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50124261	DMU418B-400.X3/LTV-M12	25 … 400 mm	Transistor, push-pull, break-contact/ make-contact	Voltage	IO-Link	7 Hz	1.0 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50124263	DMU418B-1300.X3/LTC-M12	150 … 1,300 mm	Transistor, push-pull, break-contact/ make-contact	Current	IO-Link	8 Hz	1.0 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50124264	DMU418B-1300.X3/LTV-M12	150 … 1,300 mm	Transistor, push-pull, break-contact/ make-contact	Voltage	IO-Link	8 Hz	1.0 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin

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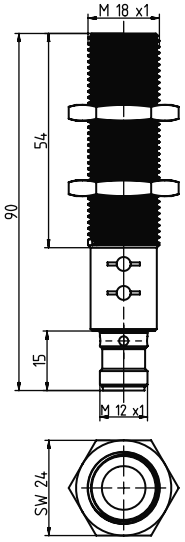
Dimensioned drawings: 418 series



DMU 418B ultrasonic distance sensor

ACCESSORIES: 418 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113548	BT D18M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117490	BTU D18M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	Through-hole mounting	Metal

Further rod mounts can be found on our website

/// 430 series

The new M30 models in metal housing are much more compact and ideal for detecting levels of liquids and bulk material. High accuracy through temperature compensation.

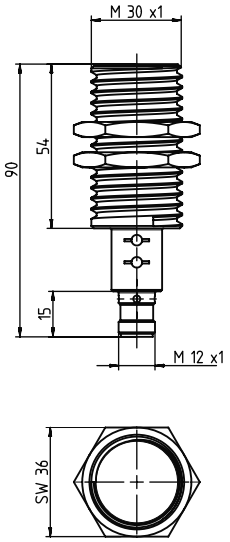
Benefits:

- Ideal for detection of levels of liquids, bulk material, transparent media and highly reflective objects
- Distance information largely independent of surface properties
- Current or voltage output and a switching output configurable via PC software
- To avoid mutual interference, max. 10 sensors may be synchronized via one cable
- Sensitivity, average value calculation, reduction of the response time and outputs configurable via IO-Link
- Teach button

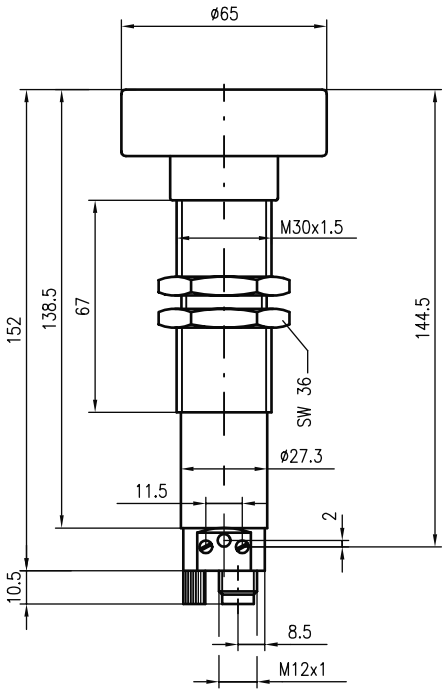
Direct access to the online product selector at **www.leuze.com/en/br430mu**

Part no.	Part description	Measurement range	Digital switching output	Analog output	Interface	Switching frequency	Resolution	Description
50124265	DMU430B-3000.X3/LTC-M12	300 … 3,000 mm	Transistor, push-pull, break-contact/make-contact	Current	IO-Link	4 Hz	1.0 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50124266	DMU430B-3000.X3/LTV-M12	300 … 3,000 mm	Transistor, push-pull, break-contact/make-contact	Voltage	IO-Link	4 Hz	1.0 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136115	DMU330-3500.3/2CK-M12	250 … 3,500 mm	Transistor, NPN, NO (normally open)	Current		2 Hz	5 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136113	DMU330-3500.3/2VK-M12	250 … 3,500 mm	Transistor, NPN, NO (normally open)	Voltage		2 Hz	5 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136114	DMU330-3500.3/4CK-M12	250 … 3,500 mm	Transistor, PNP, NO (normally open)	Current		2 Hz	5 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136112	DMU330-3500.3/4VK-M12	250 … 3,500 mm	Transistor, PNP, NO (normally open)	Voltage		2 Hz	5 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50136117	DMU330-6000.3/4CK-M12	350 … 6,000 mm	Transistor, PNP, NO (normally open)	Current		1 Hz	6 mm	Inputs/outputs: 1; Operational controls: control buttons, connector, M12, 5-pin
50036269	VRTU 430M/V-1710-6000-S12	600 … 6,000 mm	Transistor	Current		1 Hz	1.0 mm	Connector, M12, 5-pin

Dimensioned drawings: 430 series



DMU 430B ultrasonic distance sensor



VRTU 430 ultrasonic distance sensor

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ACCESSORIES: 430 SERIES

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113510	BT D30M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

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Product selector

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Customer Care Center

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/ SENSORS FOR POSITIONING

AT THE RIGHT POSITION WITH MILLIMETER ACCURACY

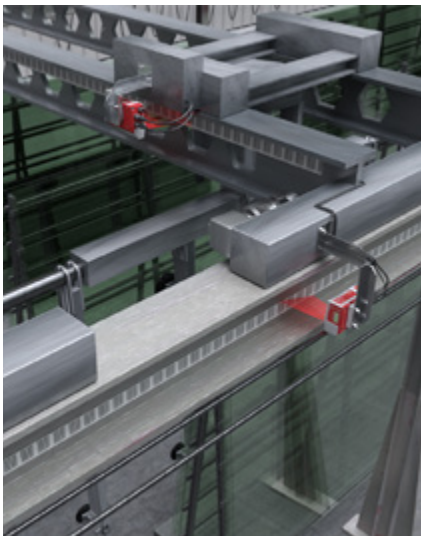
With moving system parts that need to automatically work together, the positioning of parts or work pieces with millimeter accuracy is of great importance. We offer devices here with 2 operating principles. One is a laser distance measurement device that measures against a reflector and the other is a bar code positioning system that has a red light laser which determines the position and speed relative to a bar code tape.

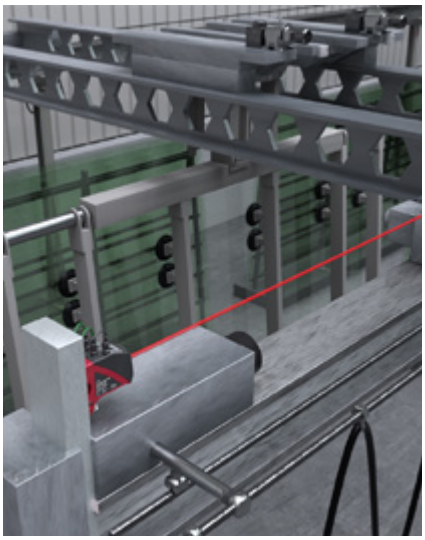
Optical laser measurement systems **Page 233**

Bar code positioning systems **Page 238**

Camera-based positioning sensors **Page 243**

Optical guidance **Page 245**





//OPTICAL LASER MEASUREMENT SYSTEMS

THE POWER OF OPTICAL LASER DISTANCE MEASUREMENT

The AMS 300i sensor calculates distances to moving system parts contact-free, fast and with absolute precision at ranges up to 300 m. In cycles lasting just milliseconds, the laser distance measuring system provides the distances required for dynamic control functions with millimeter accuracy using a unique selection of Industrial Ethernet and fieldbus interfaces.

/// AMS 300i

With the AMS 300i, distances of up to 300 m can be calculated with maximum accuracy and in intervals on the order of milliseconds through the use of the latest signal processors. Borderline situations are detected and indicated with the integrated, extensive functionality catalog.

Benefits:

- Repeatability of 1 mm, with tested absolute measurement accuracy from ± 2 mm to ± 5 mm at a range of 300 m
- Simultaneous calculation and monitoring of position and speed
- Integrated interface diversity for problem-free integration into a large array of control systems
- Red light laser for simple alignment and real-time position measurement
- Integrated intelligent mounting solution for simple alignment and fastening
- Plain-text display in five languages for international use
- With the PROFINET and PROFIBUS variants, a parallel SSI interface is available

Direct access to the online product selector at **www.leuze.com/en/ams300i**

Part no.	Part description	Measurement range	Reproducibility (3 sigma)	Interface	Light source	Description
50113693	AMS 335i 40	200 … 40,000 mm	0.9 mm	CANopen	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113697	AMS 335i 40 H	200 … 40,000 mm	0.9 mm	CANopen	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113694	AMS 335i 120	200 … 120,000 mm	1.5 mm	CANopen	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113698	AMS 335i 120 H	200 … 120,000 mm	1.5 mm	CANopen	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113695	AMS 335i 200	200 … 200,000 mm	2.1 mm	CANopen	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113699	AMS 335i 200 H	200 … 200,000 mm	2.1 mm	CANopen	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113696	AMS 335i 300	200 … 300,000 mm	3 mm	CANopen	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113700	AMS 335i 300 H	200 … 300,000 mm	3 mm	CANopen	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113717	AMS 355i 40	200 … 40,000 mm	0.9 mm	DeviceNet	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113721	AMS 355i 40 H	200 … 40,000 mm	0.9 mm	DeviceNet	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113718	AMS 355i 120	200 … 120,000 mm	1.5 mm	DeviceNet	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113722	AMS 355i 120 H	200 … 120,000 mm	1.5 mm	DeviceNet	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113719	AMS 355i 200	200 … 200,000 mm	2.1 mm	DeviceNet	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113723	AMS 355i 200 H	200 … 200,000 mm	2.1 mm	DeviceNet	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113720	AMS 355i 300	200 … 300,000 mm	3 mm	DeviceNet	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113724	AMS 355i 300 H	200 … 300,000 mm	3 mm	DeviceNet	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113701	AMS 338i 40	200 … 40,000 mm	0.9 mm	EtherCAT	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED

Part no.	Part description	Measurement range	Reproducibility (3 sigma)	Interface	Light source	Description
50113705	AMS 338i 40 H	200 … 40,000 mm	0.9 mm	EtherCAT	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113702	AMS 338i 120	200 … 120,000 mm	1.5 mm	EtherCAT	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113706	AMS 338i 120 H	200 … 120,000 mm	1.5 mm	EtherCAT	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113703	AMS 338i 200	200 … 200,000 mm	2.1 mm	EtherCAT	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113707	AMS 338i 200 H	200 … 200,000 mm	2.1 mm	EtherCAT	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113704	AMS 338i 300	200 … 300,000 mm	3 mm	EtherCAT	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113708	AMS 338i 300 H	200 … 300,000 mm	3 mm	EtherCAT	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113725	AMS 358i 40	200 … 40,000 mm	0.9 mm	EtherNet IP	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113729	AMS 358i 40 H	200 … 40,000 mm	0.9 mm	EtherNet IP	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113726	AMS 358i 120	200 … 120,000 mm	1.5 mm	EtherNet IP	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113730	AMS 358i 120 H	200 … 120,000 mm	1.5 mm	EtherNet IP	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113727	AMS 358i 200	200 … 200,000 mm	2.1 mm	EtherNet IP	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113731	AMS 358i 200 H	200 … 200,000 mm	2.1 mm	EtherNet IP	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113728	AMS 358i 300	200 … 300,000 mm	3 mm	EtherNet IP	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113732	AMS 358i 300 H	200 … 300,000 mm	3 mm	EtherNet IP	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113685	AMS 308i 40	200 … 40,000 mm	0.9 mm	Ethernet	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113689	AMS 308i 40 H	200 … 40,000 mm	0.9 mm	Ethernet	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113686	AMS 308i 120	200 … 120,000 mm	1.5 mm	Ethernet	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113690	AMS 308i 120 H	200 … 120,000 mm	1.5 mm	Ethernet	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113687	AMS 308i 200	200 … 200,000 mm	2.1 mm	Ethernet	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113691	AMS 308i 200 H	200 … 200,000 mm	2.1 mm	Ethernet	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113688	AMS 308i 300	200 … 300,000 mm	3 mm	Ethernet	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113692	AMS 308i 300 H	200 … 300,000 mm	3 mm	Ethernet	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113733	AMS 384i 40	200 … 40,000 mm	0.9 mm	Interbus-S	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113737	AMS 384i 40 H	200 … 40,000 mm	0.9 mm	Interbus-S	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113734	AMS 384i 120	200 … 120,000 mm	1.5 mm	Interbus-S	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113738	AMS 384i 120 H	200 … 120,000 mm	1.5 mm	Interbus-S	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113735	AMS 384i 200	200 … 200,000 mm	2.1 mm	Interbus-S	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113739	AMS 384i 200 H	200 … 200,000 mm	2.1 mm	Interbus-S	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113736	AMS 384i 300	200 … 300,000 mm	3 mm	Interbus-S	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113740	AMS 384i 300 H	200 … 300,000 mm	3 mm	Interbus-S	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113677	AMS 304i 40	200 … 40,000 mm	0.9 mm	PROFIBUS DP, SSI	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113681	AMS 304i 40 H	200 … 40,000 mm	0.9 mm	PROFIBUS DP, SSI	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113678	AMS 304i 120	200 … 120,000 mm	1.5 mm	PROFIBUS DP, SSI	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113682	AMS 304i 120 H	200 … 120,000 mm	1.5 mm	PROFIBUS DP, SSI	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113679	AMS 304i 200	200 … 200,000 mm	2.1 mm	PROFIBUS DP, SSI	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113683	AMS 304i 200 H	200 … 200,000 mm	2.1 mm	PROFIBUS DP, SSI	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113680	AMS 304i 300	200 … 300,000 mm	3 mm	PROFIBUS DP, SSI	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113684	AMS 304i 300 H	200 … 300,000 mm	3 mm	PROFIBUS DP, SSI	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113709	AMS 348i 40	200 … 40,000 mm	0.9 mm	PROFINET	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113713	AMS 348i 40 H	200 … 40,000 mm	0.9 mm	PROFINET	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113710	AMS 348i 120	200 … 120,000 mm	1.5 mm	PROFINET	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113714	AMS 348i 120 H	200 … 120,000 mm	1.5 mm	PROFINET	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating

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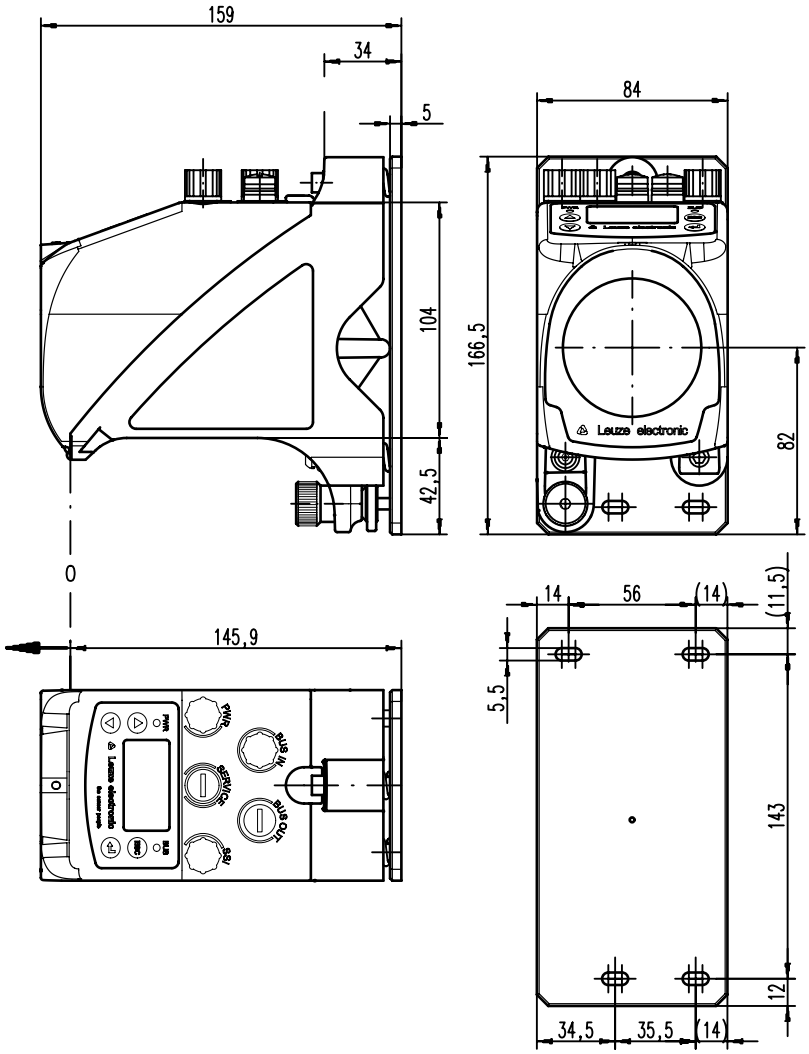
Part no.	Part description	Measurement range	Reproducibility (3 sigma)	Interface	Light source	Description
50113711	AMS 348i 200	200 … 200,000 mm	2.1 mm	PROFINET	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113715	AMS 348i 200 H	200 … 200,000 mm	2.1 mm	PROFINET	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113712	AMS 348i 300	200 … 300,000 mm	3 mm	PROFINET	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113716	AMS 348i 300 H	200 … 300,000 mm	3 mm	PROFINET	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50127219	AMS 348i 40 SSI	200 … 40,000 mm	0.9 mm	PROFINET, SSI	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LED, LC Display
50127223	AMS 348i 40 H SSI	200 … 40,000 mm	0.9 mm	PROFINET, SSI	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LED, LC Display; Functions: heating
50127220	AMS 348i 120 SSI	200 … 120,000 mm	1.5 mm	PROFINET, SSI	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LED, LC Display
50127224	AMS 348i 120 H SSI	200 … 120,000 mm	1.5 mm	PROFINET, SSI	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LED, LC Display; Functions: heating
50127221	AMS 348i 200 SSI	200 … 200,000 mm	2.1 mm	PROFINET, SSI	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LED, LC Display
50127225	AMS 348i 200 H SSI	200 … 200,000 mm	2.1 mm	PROFINET, SSI	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LED, LC Display; Functions: heating
50127222	AMS 348i 300 SSI	200 … 300,000 mm	3 mm	PROFINET, SSI	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LED, LC Display
50127226	AMS 348i 300 H SSI	200 … 300,000 mm	3 mm	PROFINET, SSI	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LED, LC Display; Functions: heating
50113661	AMS 300i 40	200 … 40,000 mm	0.9 mm	RS 232, RS 422	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113665	AMS 300i 40 H	200 … 40,000 mm	0.9 mm	RS 232, RS 422	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113662	AMS 300i 120	200 … 120,000 mm	1.5 mm	RS 232, RS 422	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113666	AMS 300i 120 H	200 … 120,000 mm	1.5 mm	RS 232, RS 422	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113663	AMS 300i 200	200 … 200,000 mm	2.1 mm	RS 232, RS 422	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113667	AMS 300i 200 H	200 … 200,000 mm	2.1 mm	RS 232, RS 422	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113664	AMS 300i 300	200 … 300,000 mm	3 mm	RS 232, RS 422	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113668	AMS 300i 300 H	200 … 300,000 mm	3 mm	RS 232, RS 422	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113669	AMS 301i 40	200 … 40,000 mm	0.9 mm	RS 485	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113673	AMS 301i 40 H	200 … 40,000 mm	0.9 mm	RS 485	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113670	AMS 301i 120	200 … 120,000 mm	1.5 mm	RS 485	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113674	AMS 301i 120 H	200 … 120,000 mm	1.5 mm	RS 485	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113671	AMS 301i 200	200 … 200,000 mm	2.1 mm	RS 485	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113675	AMS 301i 200 H	200 … 200,000 mm	2.1 mm	RS 485	Laser, red	Absolute measurement accuracy: 3 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50113672	AMS 301i 300	200 … 300,000 mm	3 mm	RS 485	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED
50113676	AMS 301i 300 H	200 … 300,000 mm	3 mm	RS 485	Laser, red	Absolute measurement accuracy: 5 mm; Max. traverse rate: 10 m/s; Display: LC Display, LED; Functions: heating
50137593	AMS 307i 40	200 … 40,000 mm	0.9 mm	SSI	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LED, LC Display
50137594	AMS 307i 120	200 … 120,000 mm	0.9 mm	SSI	Laser, red	Absolute measurement accuracy: 2 mm; Max. traverse rate: 10 m/s; Display: LED, LC Display

Dimensioned drawings: AMS 300i



AMS 300i optical laser measurement system

ACCESSORIES: AMS 300i

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm		PUR
50114696	KB DN/CAN-5000 BA	Connector, M12, axial, female	5-pin	5,000 mm	DeviceNet, CANopen	PUR
50114697	KB DN/CAN-5000 SA	Connector, M12, axial, male	5-pin	5,000 mm	CANopen, DeviceNet	PUR
50135074	KS ET-M12-4A-P7-050	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50108596	KB IBS-5000-SA	Connector, M12, axial, male	5-pin	5,000 mm	Interbus-S	PUR
50104171	KB SSI/IBS-5000-BA	Connector, M12, axial, female	5-pin	5,000 mm	SSI, Interbus-S	PUR
50135248	KS PB-M12-4A-P3-050	Connector, M12, axial, male	5-pin	5,000 mm	PROFIBUS DP	PUR
50135243	KD PB-M12-4A-P3-050	Connector, M12, axial, female	5-pin	5,000 mm	PROFIBUS DP	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50114698	KB DN/CAN-5000 SBA	Connector, M12, axial, male	5-pin	Connector, M12, axial, female	5-pin	5,000 mm	DeviceNet, CANopen	PUR
50130631	KSS ET-M12-4A-M12-4A-P7-010	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	Ethernet	PUR
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR

Further interconnection cables can be found on our website

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Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50137077	KSS ET-M12-4A-M12-4A-P7-020	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50137078	KSS ET-M12-4A-M12-4A-P7-050	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45		5,000 mm	Ethernet	PUR
50137079	KSS ET-M12-4A-M12-4A-P7-100	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50137080	KSS ET-M12-4A-M12-4A-P7-150	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR
50135254	KDS PB-M12-4A-M12-4A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	5,000 mm	PROFIBUS DP	PUR

Further interconnection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins	Interface
50040097	KD 01-5-BA	Connector, M12, axial, female	5-pin	
50040098	KD 01-5-SA	Connector, M12, axial, male	5-pin	
50038538	KD 02-5-BA	Connector, M12, axial, female	5-pin	PROFIBUS DP, multiNet Plus
50038537	KD 02-5-SA	Connector, M12, axial, male	5-pin	PROFIBUS DP, multiNet Plus
50020501	KD 095-5A	Connector, M12, axial, female	5-pin	

Further connectors can be found on our website

Reflective tape

Reflective tapes

Part no.	Part description	Design	Reflective surface	Reflector material	Fastening	Base material
50104364	Reflective tape 200x200mm-M	Rectangular	200 mm x 200 mm		Through-hole mounting, mounting plate	Aluminum composite
50104361	Reflective tape 200x200mm-S	Rectangular	200 mm x 200 mm	PMMA	Adhesive	
50104365	Reflective tape 500x500mm-M	Rectangular	500 mm x 500 mm		Through-hole mounting, mounting plate	Aluminum composite
50104362	Reflective tape 500x500mm-S	Rectangular	500 mm x 500 mm	PMMA	Adhesive	
50104366	Reflective tape 914x914mm-M	Rectangular	914 mm x 914 mm		Through-hole mounting, mounting plate	Aluminum
50108988	Reflective tape 914x914mm-S	Rectangular	914 mm x 914 mm	PMMA	Adhesive	

Further reflective tapes can be found on our website

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Customer Care Center

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//BAR CODE POSITIONING SYSTEMS

POSITION DATA WITHOUT LIMIT – “INFINITE”, CURVE-GOING AND WITH MILLIMETER ACCURACY

The read head of the bar code positioning system is moved along a bar code tape. It calculates the absolute position data in the direction of travel with millimeter accuracy up to a distance of 10,000 m. The bar code tape is extremely simple to use and can be bonded both in straight lines and in curves. Maximum flexibility, simple mounting, transparent diagnosis as well as a large selection of integrated interfaces are the strengths of this system.

/// BPS 300i

The BPS 300i is the second generation of bar code positioning and sets standards both in performance characteristics and in handling. The new “availability control” function allows diagnosis to be performed during operation. The large working range of ± 60 mm makes mechanical installation easier and precise measurements possible even if the distance to the tape varies.

Benefits:

- Availability control: To reliably prevent failures resulting from contamination, the device constantly reports its function reserve, thereby indicating possible problems due to contamination
- Easy handling: Fast, secure mounting and precise positioning of replacement devices through easy-mount mounting technology
- Absolute positioning up to 10,000 m with reproducible accuracy of ± 0.15 mm
- Maximum speed 10 m/s
- Modularity: 3 selectable connection technologies, heating and display

Direct access to the online product selector at **www.leuze.com/en/bps300i**

Part no.	Part description	Working range	Reproducibility (3 sigma)	Measurement value output	Interface	Light beam exit	Display element	Description
50125670	BPS 300i SM 100	50 … 170 mm	0.15 mm	1 … 30 ms	RS 232, RS 422	Lateral	LED	Light source: laser
50125669	BPS 300i SM 100 D	50 … 170 mm	0.15 mm	1 … 30 ms	RS 232, RS 422	Lateral	LED, monochromatic graphical display, 128 x 32 pixels	Light source: laser
50125668	BPS 300i SM 100 D H	50 … 170 mm	0.15 mm	1 … 30 ms	RS 232, RS 422	Lateral	LED, monochromatic graphical display, 128 x 32 pixels	Light source: laser; Functions: heating
50125673	BPS 301i SM 100	50 … 170 mm	0.15 mm	1 … 30 ms	RS 485	Lateral	LED	Light source: laser
50125672	BPS 301i SM 100 D	50 … 170 mm	0.15 mm	1 … 30 ms	RS 485	Lateral	LED, monochromatic graphical display, 128 x 32 pixels	Light source: laser
50125671	BPS 301i SM 100 D H	50 … 170 mm	0.15 mm	1 … 30 ms	RS 485	Lateral	LED, monochromatic graphical display, 128 x 32 pixels	Light source: laser; Functions: heating
50125676	BPS 304i SM 100	50 … 170 mm	0.15 mm	2 ms	PROFIBUS DP	Lateral	LED	Light source: laser
50125675	BPS 304i SM 100 D	50 … 170 mm	0.15 mm	2 ms	PROFIBUS DP	Lateral	LED, monochromatic graphical display, 128 x 32 pixels	Light source: laser
50125674	BPS 304i SM 100 D H	50 … 170 mm	0.15 mm	2 ms	PROFIBUS DP	Lateral	LED, monochromatic graphical display, 128 x 32 pixels	Light source: laser; Functions: heating
50136335	BPS 304i SM 100 H	50 … 170 mm	0.15 mm	2 ms	PROFIBUS DP	Lateral	LED	Light source: laser; Functions: heating
50125679	BPS 307i SM 100	50 … 170 mm	0.15 mm	0.05 … 2 ms	SSI	Lateral	LED	Light source: laser
50125678	BPS 307i SM 100 D	50 … 170 mm	0.15 mm	0.05 … 2 ms	SSI	Lateral	LED, monochromatic graphical display, 128 x 32 pixels	Light source: laser
50125677	BPS 307i SM 100 D H	50 … 170 mm	0.15 mm	0.05 … 2 ms	SSI	Lateral	LED, monochromatic graphical display, 128 x 32 pixels	Light source: laser; Functions: heating
50136334	BPS 307i SM 100 H	50 … 170 mm	0.15 mm	0.05 … 2 ms	SSI	Lateral	LED	Light source: laser; Functions: heating
50124983	BPS 348i SM 100	50 … 170 mm	0.15 mm	2 ms	PROFINET	Lateral	LED	Light source: laser
50124982	BPS 348i SM 100 D	50 … 170 mm	0.15 mm	2 ms	PROFINET	Lateral	LED, monochromatic graphical display, 128 x 32 pixels	Light source: laser
50124981	BPS 348i SM 100 D H	50 … 170 mm	0.15 mm	2 ms	PROFINET	Lateral	LED, monochromatic graphical display, 128 x 32 pixels	Light source: laser; Functions: heating
50136336	BPS 348i SM 100 H	50 … 170 mm	0.15 mm	2 ms	PROFINET	Lateral	LED	Light source: laser; Functions: heating

Necessary accessories: A modular connector hood or terminal hood and a bar code tape are required for operation of the BPS 300i!

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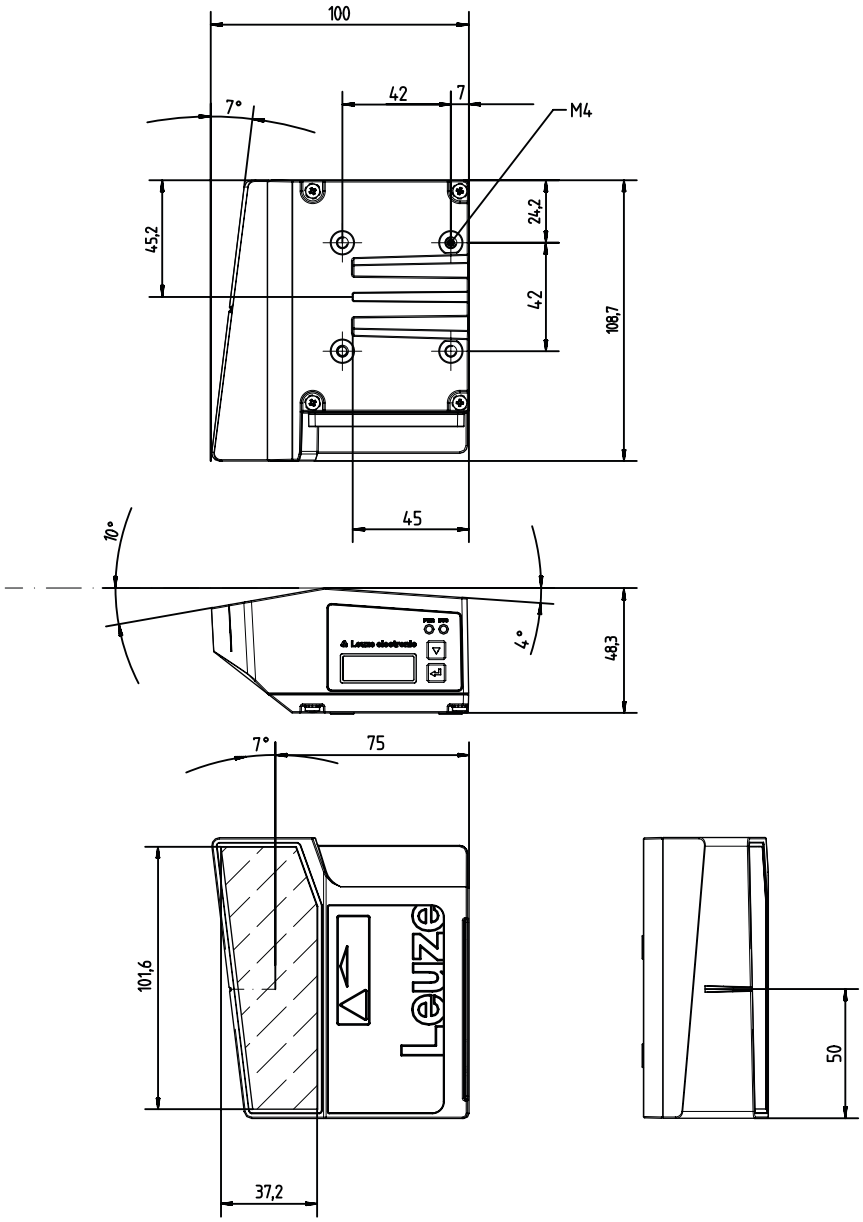
Dimensioned drawings: BPS 300i



Bar code positioning system BPS 300i

ACCESSORIES: BPS 300i

Connection technology

Terminal boxes

Part no.	Part description	Connections	Connection	Suitable for interface
50131256	ME 348 103	4x	Cable with connector	PROFINET
50116465	MK 304	4x	Terminal, M16	PROFIBUS DP
50126131	MK 307	3x	Terminal, M16	SSI
50134931	MK 338	4x	Terminal, M16	EtherCAT
50116467	MK 348	4x	Terminal, M16	PROFINET
50116470	MS 304	4x	Connector, M12	PROFIBUS DP
50126130	MS 307	3x	Connector, M12	SSI
50134930	MS 338	4x	Connector, M12	EtherCAT
50116471	MS 348	4x	Connector, M12	PROFINET

Further terminal boxes can be found on our website

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm		PUR
50104171	KB SSI/IBS-5000-BA	Connector, M12, axial, female	5-pin	5,000 mm	SSI, Interbus-S	PUR
50135248	KS PB-M12-4A-P3-050	Connector, M12, axial, male	5-pin	5,000 mm	PROFIBUS DP	PUR
50135243	KD PB-M12-4A-P3-050	Connector, M12, axial, female	5-pin	5,000 mm	PROFIBUS DP	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50130631	KSS ET-M12-4A-M12-4A-P7-010	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	Ethernet	PUR
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR
50137077	KSS ET-M12-4A-M12-4A-P7-020	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50137078	KSS ET-M12-4A-M12-4A-P7-050	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45		5,000 mm	Ethernet	PUR
50137079	KSS ET-M12-4A-M12-4A-P7-100	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50137080	KSS ET-M12-4A-M12-4A-P7-150	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR
50135254	KDS PB-M12-4A-M12-4A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	5,000 mm	PROFIBUS DP	PUR

Further interconnection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins	Interface
50040097	KD 01-5-BA	Connector, M12, axial, female	5-pin	
50038538	KD 02-5-BA	Connector, M12, axial, female	5-pin	PROFIBUS DP, multiNet Plus
50038537	KD 02-5-SA	Connector, M12, axial, male	5-pin	PROFIBUS DP, multiNet Plus
50020501	KD 095-5A	Connector, M12, axial, female	5-pin	

Further connectors can be found on our website

Bar code tapes

Bar code tapes

Part no.	Part description	Suitable for	Dimensions	Grid dimension
50040041	BCB 010	Bar code positioning system, BPS 300i series	47 mm x 10,000 mm	40 mm
50037489	BCB 020	Bar code positioning system, BPS 300i series	47 mm x 20,000 mm	40 mm
50038894	BCB 050	Bar code positioning system, BPS 300i series	47 mm x 50,000 mm	40 mm
50104801	BCB 8 100	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 100,000 mm	30 mm
50037493	BCB 100	Bar code positioning system, BPS 300i series	47 mm x 100,000 mm	40 mm

Further bar code tapes can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50121433	BT 300 W	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50027375	BT 56	Mounting system	Clampable	For 16 mm rod, for 18 mm rod, 20 mm rod	Metal

Further rod mounts can be found on our website

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/// BPS 8

Our BPS 8 compact bar code positioning system convinces with its robust metal housing and turnable M12 connector. The RS 232 or RS 485 interface allows the system to be incorporated in your system architecture. The BPS 8 is available with either front beam exit or with a deflection mirror.

Benefits:

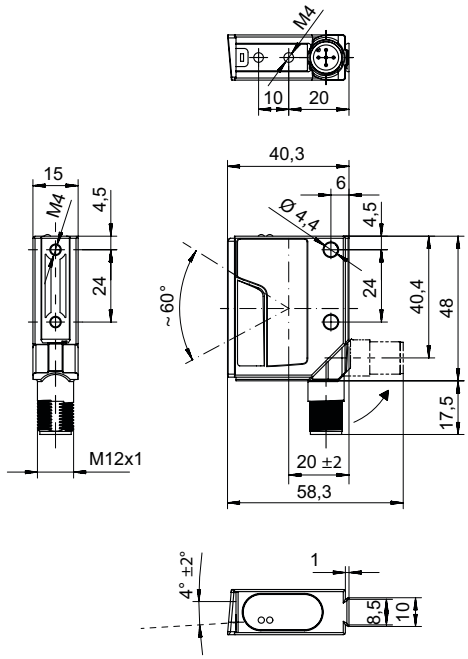
- Absolute position measurement up to 10,000 m
- Curve-going, horizontally and vertically
- Degree of protection: IP 67
- Various protocols on RS 232, RS 485 via MA 8
- Reproducibility: ± 1 mm
- Exact positioning at switches by means of special labels

Direct access to the online product selector at **www.leuze.com/en/bps8**

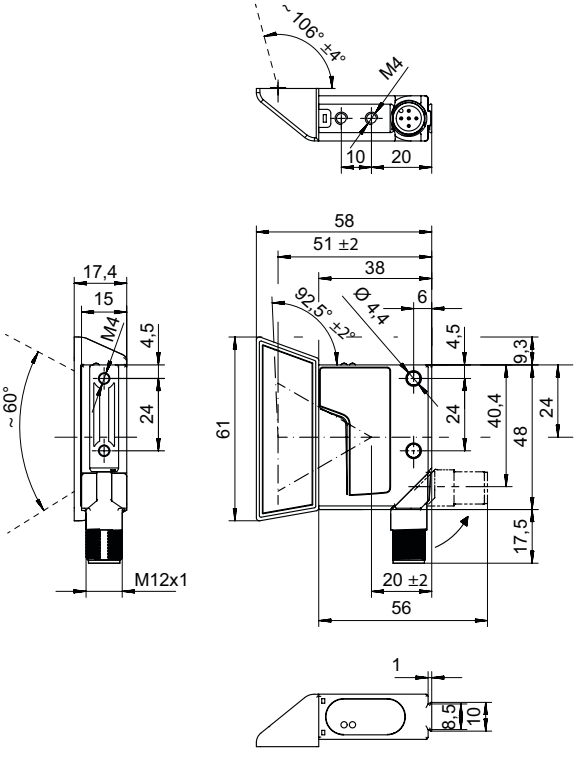
Part no.	Part description	Working range	Reproducibility (3 sigma)	Measurement value output	Interface	Light beam exit	Display element	Description
50104784	BPS 8 SM 100-01	60 … 120 mm	1 mm	3.3 ms	RS 232	Lateral with deflecting mirror	LED	Light source: laser
50104783	BPS 8 SM 102-01	80 … 140 mm	1 mm	3.3 ms	RS 232	Front	LED	Light source: laser

Necessary accessories: A bar code tape is required for operation!

Dimensioned drawings: BPS 8



Bar code positioning system BPS 8 SM 102-01 with front beam exit



Bar code positioning system BPS 8 SM 100-01 with lateral beam exit

ACCESSORIES: BPS 8

Connection technology

Connection unit

Part no.	Part description	Suitable for	Interface	Supply voltage	Degree of protection
50104790	MA 8-01	BCL 8 series bar code readers, BPS 8 series bar code positioning system	RS 485	10 … 30 V, DC	IP 67

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50101941	KB-008-3000 A-S	Connector, M12, axial, male	5-pin	3,000 mm	PUR
50040757	KB 008-3000 A	Connector, M12, axial, female	5-pin	3,000 mm	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Sheathing material
50133891	KDS S-M12-5A-M12-5A-P1-030	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	3,000 mm	PUR
50133884	KDS S-M12-5A-M12-5W-P1-030	Connector, M12, axial, female	5-pin	Connector, M12, angled, male	5-pin	3,000 mm	PUR

Further interconnection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
50040097	KD 01-5-BA	Connector, M12, axial, female	5-pin

Further connectors can be found on our website

Bar code tapes

Bar code tapes

Part no.	Part description	Suitable for	Dimensions	Grid dimension
50104792	BCB 8 010	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 10,000 mm	30 mm
50104793	BCB 8 020	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 20,000 mm	30 mm
50104796	BCB 8 050	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 50,000 mm	30 mm
50104801	BCB 8 100	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 100,000 mm	30 mm

Further bar code tapes can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Fastening at device	Fastening at system	Material
50104791	BT 8-01	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50127177	BTU 008M-D10	Mounting system	Screw type	Sheet-metal mounting, for 10 mm rod	Metal
50036196	BT 8-0	Mounting clamp	Clampable	Mounting thread	Metal

Further rod mounts can be found on our website

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//CAMERA-BASED POSITIONING SENSORS

HIGH-BAY STORAGE DEVICES – FROM ROUGH TO FINE POSITIONING

The camera-based sensor is designed for the compartment fine positioning of chassis (X-axis) and lifting unit (Y-axis) of the high-bay storage device. Any deviations from the target reference position that occur during absolute positioning are thereby detected. The reference position is defined by simple bore holes (markers) in the steel profiles (crossbeams or columns) in the shelf compartments. If the bore hole is located in the working range (image field) of the sensor, it delivers the current position relative to the reference position via the integrated Ethernet TCP/IP interface or via 4 digital switching outputs. When the current absolute and reference positions match, the ideal positioning of the high-bay storage device is reached. Smallest size, simple operation, configuration via the integrated web server or directly on the sensor are just a few of the highlights of this device.

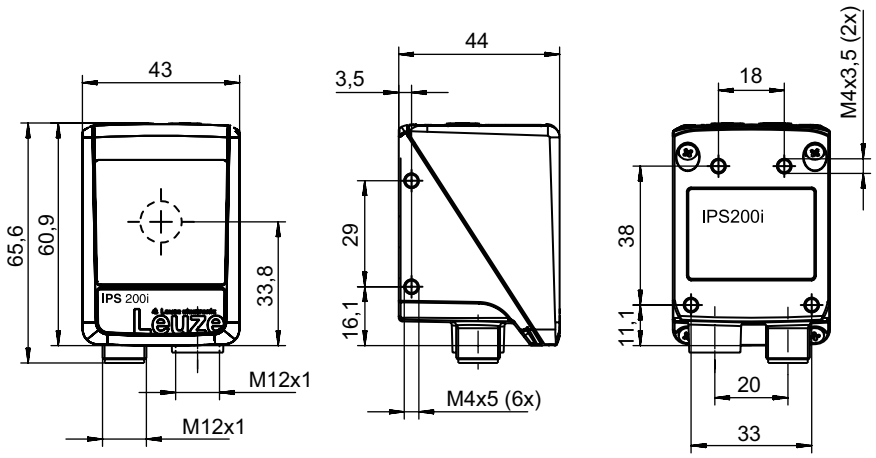
/// IPS 200i

The IPS 200i is a camera-based sensor for the compartment fine positioning of a high-bay storage device with single compartment depth. With just one device model, a large working range from 100 to 600 mm can be achieved; the also available, heated version can be used at ambient temperatures as low as –30 °C. Its dimensions are unrivalled with respect to the small size. As a result, installation in constrained spaces poses no problem. Other highlights include the simple operation, the configuration via the integrated web server or directly on the sensor, the 4 alignment LEDs and the information about the function reserve, which is output as a quality score.

Direct access to the online product selector at **www.leuze.com/en/ips200i**

Part no.	Part description	Working range	Marker size	Resolution, horizontal Resolution, vertical	Interface	Functions	Degree of protection
50135331	IPS 208i FIX-M3-102-I3	100 … 600 mm	5 … 20 mm	1,280 px 960 px	Ethernet	Compartment fine positioning	IP 65

Dimensioned drawings: IPS 200i



IPS 200i camera-based positioning sensor

ACCESSORIES: IPS 200i

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50134943	KD S-M12-CW-P1-050	Connector, M12, angled, female	12-pin	5,000 mm	PUR
50130281	KD S-M12-CA-P1-020	Connector, M12, axial, female	12-pin	2,000 mm	PUR
50130282	KD S-M12-CA-P1-050	Connector, M12, axial, female	12-pin	5,000 mm	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Sheathing material
50130284	KDS S-M12-CA-M12-CA-P1-020	Connector, M12, axial, female	12-pin	Connector, M12, axial, male	12-pin	2,000 mm	PUR
50130285	KDS S-M12-CA-M12-CA-P1-050	Connector, M12, axial, female	12-pin	Connector, M12, axial, male	12-pin	5,000 mm	PUR

Further interconnection cables can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50132150	BTU 320M-D12	Mounting system	Screw type	For 12 mm rod	Metal

Further rod mounts can be found on our website

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50132151	BT 320M	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Reflectors

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Bore hole diameter	Fastening	Material	Contains
50130343	MTKZ 13-30 SET	Round	15 mm	13 mm	Clip	Plastic	100x
50129092	MTKZ 15-30 SET	Round	15 mm	15 mm	Clip	Plastic	100x
50132911	REF 7-A-15-30 SET	Round	15 mm	15 mm		Reflective tape, plastic	500x

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

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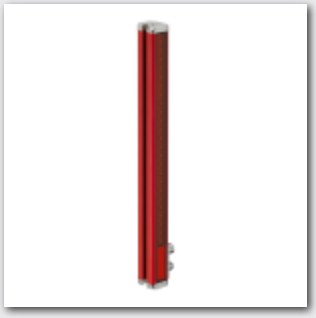
//OPTICAL GUIDANCE

REACH YOUR GOAL QUICKLY – OPTICAL TRACKING THROUGH EDGE DETECTION

Optical tracking through edge detection is an economical option for automating automated guided vehicles. For expansive production and storage areas in which the routes of the vehicles frequently need to be changed, the OGS 600 is the optimum solution.

/// OGS 600



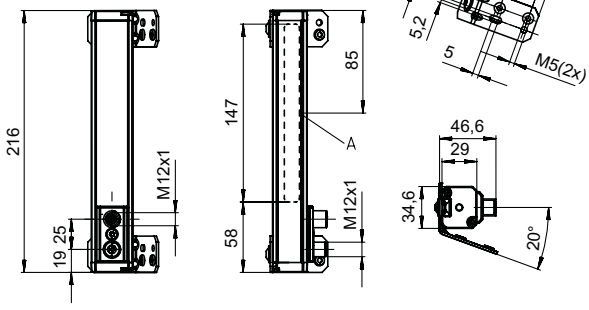
The OGS 600 compact sensor is available in various models with different detection widths and interfaces. It is especially well suited for integration in flat vehicles, as the minimum distance from the floor is just 10 mm.

CE

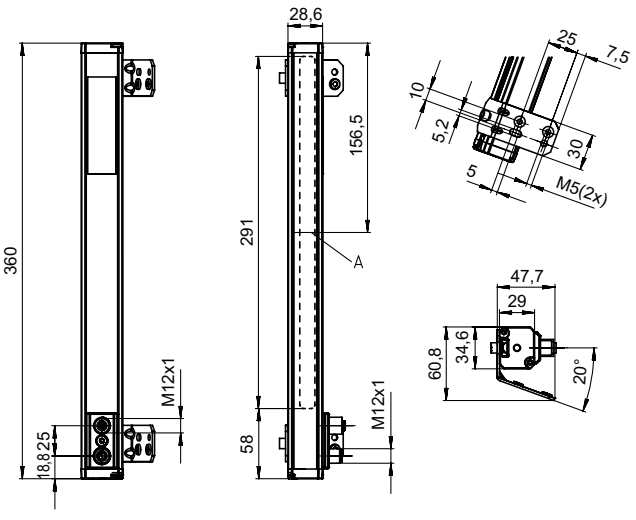
Direct access to the online product selector at **www.leuze.com/en/ogs600**

Part no.	Part description	Working range	Detection width for complete trace	Optics cover	Light source	Interface	Measurement value resolution	Degree of protection
50137473	OGS 600-140/CN-M12	10 … 70 mm	115 mm	Plastic	LED, red	CANopen	1 mm	IP 65
50137477	OGS 600-140/D2-M12.8	10 … 70 mm	115 mm	Plastic	LED, red	RS 422	1 mm	IP 65
50137475	OGS 600-140/D3-M12.8	10 … 70 mm	115 mm	Plastic	LED, red	RS 485	1 mm	IP 65
50137472	OGS 600-280/CN-M12	10 … 70 mm	265 mm	Plastic	LED, red	CANopen	1 mm	IP 65
50137476	OGS 600-280/D2-M12.8	10 … 70 mm	265 mm	Plastic	LED, red	RS 422	1 mm	IP 65
50137474	OGS 600-280/D3-M12.8	10 … 70 mm	265 mm	Plastic	LED, red	RS 485	1 mm	IP 65

Dimensioned drawings: OGS 600

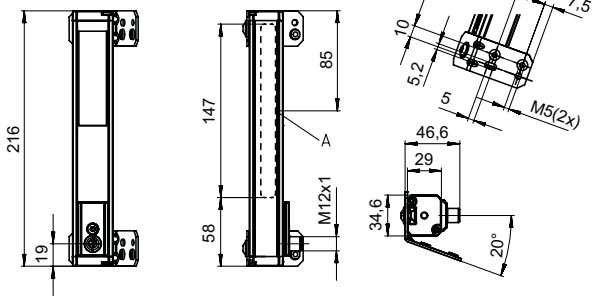


OGS 600-140/CN optical guidance

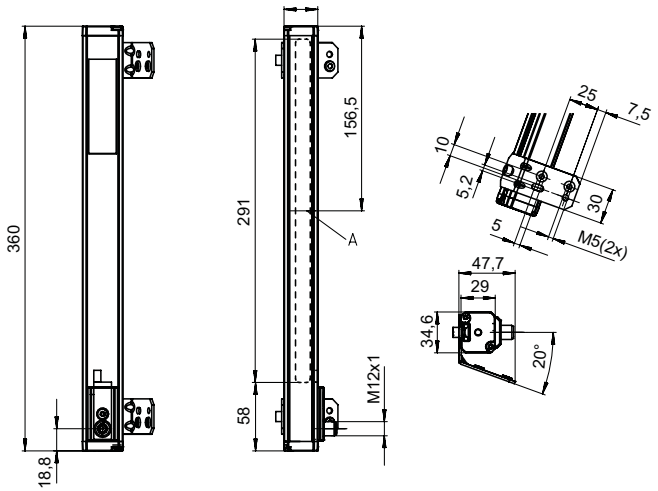


OGS 600-280/CN optical guidance

Dimensioned drawings: OGS 600



OGS 600-140/Dx optical guidance



OGS 600-280/Dx optical guidance

ACCESSORIES: OGS 600

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50114693	KB DN/CAN-2000 SA	Connector, M12, axial, male	5-pin	2,000 mm	DeviceNet, CANopen	PUR
50114692	KB DN/CAN-2000 BA	Connector, M12, axial, female	5-pin	2,000 mm	DeviceNet, CANopen	PUR
50135120	KD U-M12-8A-P1-010	Connector, M12, axial, female	8-pin	1,000 mm		PUR
50135121	KD U-M12-8A-P1-020	Connector, M12, axial, female	8-pin	2,000 mm		PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50118184	K-YCN M12A-5m-M12A-S-PUR	Connector, M12, 5-pin, axial, male		Connector, M12, 5-pin, axial, female				PUR
50118185	K-YCN M12A-M12A-S-PUR	Connector, M12, axial, male	5-pin	Connector, M12, axial, female	5-pin		CANopen	PUR
50114691	KB DN/CAN-1000 SBA	Connector, M12, axial, male	5-pin	Connector, M12, axial, female	5-pin	1,000 mm	DeviceNet, CANopen	PUR
50114694	KB DN/CAN-2000 SBA	Connector, M12, axial, male	5-pin	Connector, M12, axial, female	5-pin	2,000 mm	DeviceNet, CANopen	PUR
50129779	KDS DN-M12-5A-M12-5A-P3-010	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	1,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129780	KDS DN-M12-5A-M12-5A-P3-020	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	2,000 mm	IO-Link, DeviceNet, CANopen	PUR

Further interconnection cables can be found on our website

Tapes for guidance

Tapes for guidance

Part no.	Part description	Color	Dimension (W x L)	Material	Ambient temperature
50137876	OTB 30/100-BK/WH250	Striped (black and white)	100 mm x 25,000 mm	PVC	–20 … 55 °C
50137874	OTB 40-BK250	Black	40 mm x 25,000 mm	PVC	–20 … 55 °C
50137873	OTB 40-GN250	Green	40 mm x 25,000 mm	PVC	–20 … 55 °C
50137875	OTB 40-WH250	White	40 mm x 25,000 mm	PVC	–20 … 55 °C
50137877	OTB SET-GN/BK/WH003	Striped (green, black, white, black and white)	40 mm x 300 mm	PVC	–20 … 55 °C

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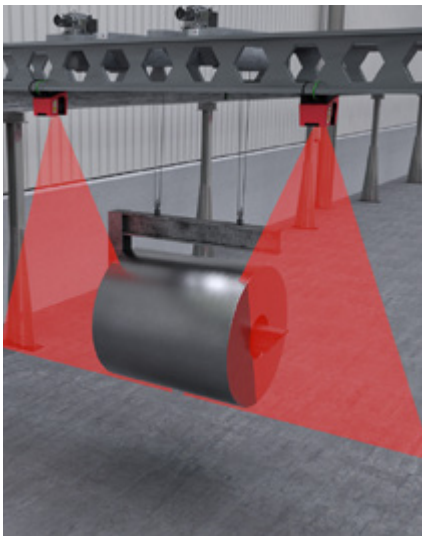
/ 3D SENSORS

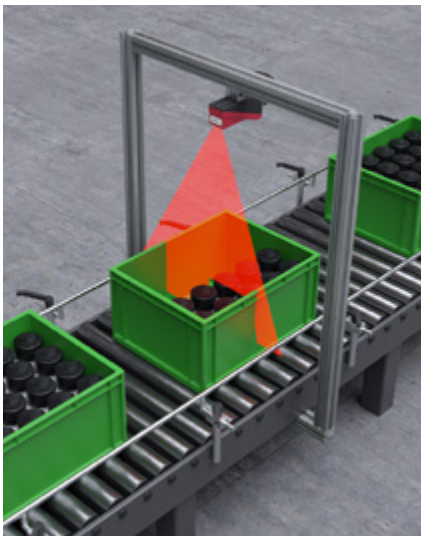
WOULD YOU LIKE ANOTHER DIMENSION WITH THAT?

These sensors determine height contours. 3D data can be easily generated for moving objects or by moving the sensor. The measurement data can either be output for external processing or preprocessed in the sensor for convenient object measurement or detection.

Light section sensors Page 248

Laser scanners Page 252





//LIGHT SECTION SENSORS

ALONG THE LINE

Light section sensors measure height profiles along a projected laser line. With these sensors, objects with high resolution can be detected quickly and reliably in 3D. Depending on the model, the function range extends from simply presence control to edge measurement to 3D measurement of objects.

/// LPS 36

The LPS 36 profile camera is used wherever height profiles need to be determined for moving or static objects. An additional encoder port supports the generation of calibrated 3D data. This opens numerous application possibilities, such as robot guidance as well as contour/volume measurements.

Benefits:

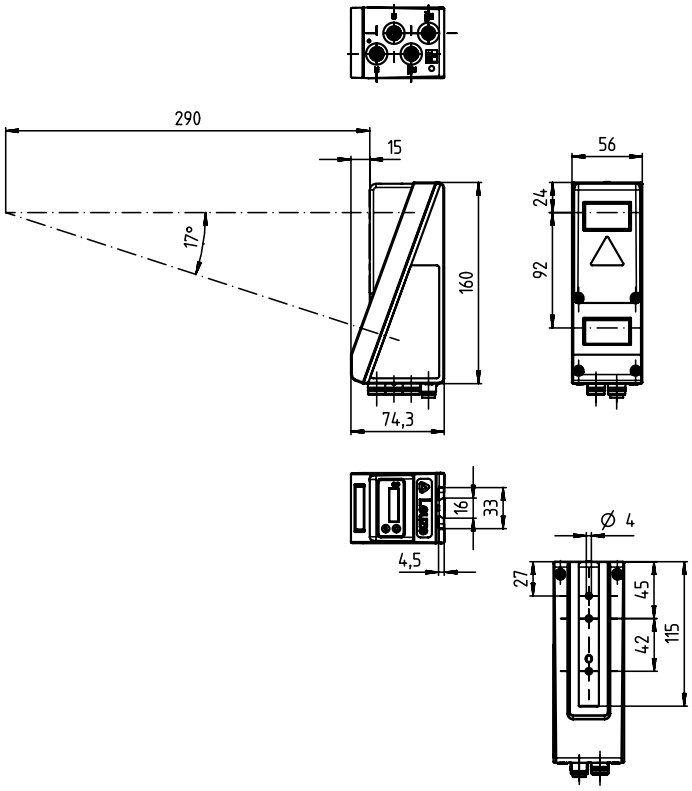
- Laser measurement technology with light-section method
- 600 mm laser line at a distance of 800 mm
- Measurement time: 10 ms
- Measurement range: 200 … 800 mm
- Compact size: 160 x 74 x 56 mm
- Interface: Ethernet
- Optional: encoder input

Direct access to the online product selector at **www.leuze.com/en/lps36**

Part no.	Part description	Application	Measurement range, z-axis	Measurement range, x-axis	Resolution	Light source	Switching inputs Switching outputs	Description
50111325	LPS 36	Contour measurement, object measurement	200 … 800 mm	150 … 600 mm	1 … 3 mm	Laser, 2M, red	2x 2x	Interface: Ethernet; Lens cover: glass
50111324	LPS 36/EN	Contour measurement, object measurement	200 … 800 mm	150 … 600 mm	1 … 3 mm	Laser, 2M, red	2x 2x	Interface: Ethernet; Lens cover: glass
50111334	LPS 36HI/EN	Contour measurement, object measurement	200 … 600 mm	46 … 140 mm	0.1 … 0.9 mm	Laser, 2M, red	2x 2x	Interface: Ethernet; Lens cover: glass
50137351	LPS 36HI/EN.10	Contour measurement, object measurement	200 … 600 mm	46 … 140 mm	0.1 … 0.9 mm	Laser, 2M, red	2x 2x	Interface: Ethernet; Lens cover: plastic

Measurement ranges: Luminosity coefficient 6 … 90 %, entire measurement range, at 20 °C after 30 minutes warmup time, medium range of U_B Resolution: minimum and maximum value depend on measurement distance

Dimensioned drawings: LPS 36



LPS 36 line profile sensor

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/// LES 36

The integrated edge detection of LES sensors determines the dimensions of objects or measures the exterior edges of web material products. The calibrated measurement data can easily be further processed via Ethernet, analog interface or fieldbus. Height, width and position measurements can be quickly and easily realized through configuration.

Benefits:

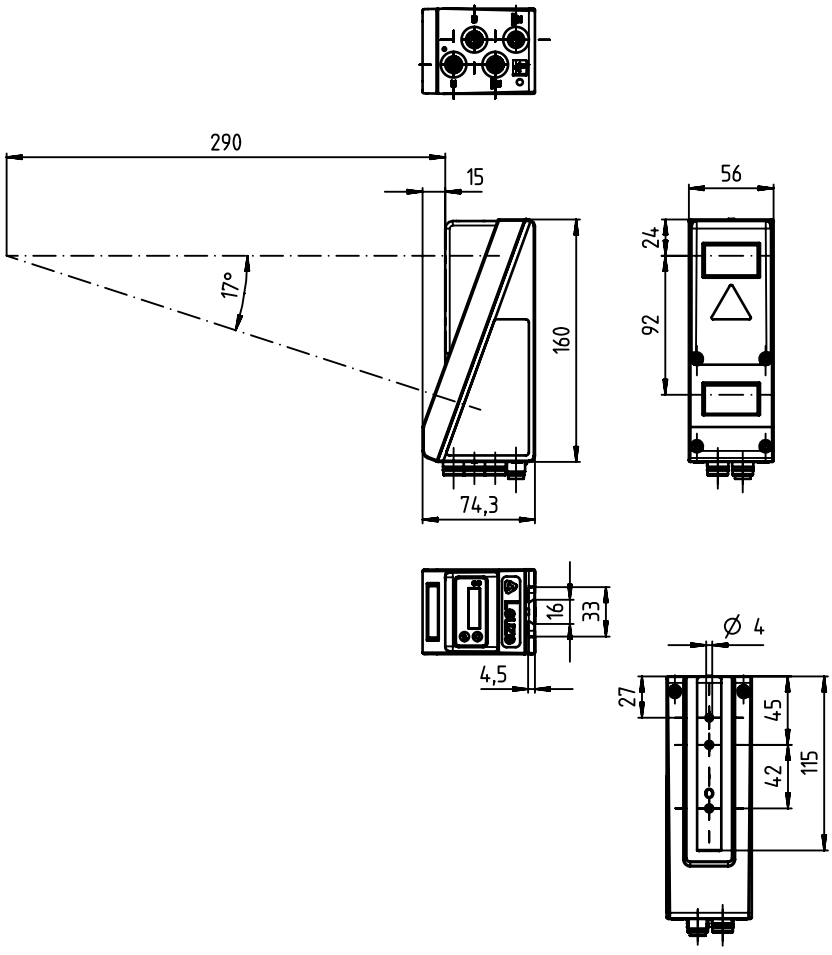
- Laser measurement technology with light-section method
- Up to 4 measurement fields in 16 inspection tasks
- Measurement time: 10 ms
- Measurement range: 200 … 800 mm
- Data calculation and processing directly inside the sensor
- Compact size: 160 x 74 x 56 mm
- Interface: Ethernet, analog or fieldbus

Direct access to the online product selector at **www.leuze.com/en/les36**

Part no.	Part description	Application	Measurement range, z-axis	Measurement range, x-axis	Resolution	Minimum object size	Light source	Analog output	Switching inputs Switching outputs	Description
50111327	LES 36/PB	3D object detection, object measurement	200 … 800 mm	150 … 600 mm	1 … 3 mm	2 … 6 mm	Laser, 2M, red		2x 2x	Interface: PROFIBUS DP, Ethernet; Lens cover: glass
50111333	LES 36/VC6	3D object detection, object measurement	200 … 800 mm	150 … 600 mm	1 … 3 mm	2 … 6 mm	Laser, 2M, red	Current, voltage	5x 6x	Interface: Ethernet; Lens cover: glass
50111331	LES 36HI/PB	Object measurement, 3D object detection	200 … 600 mm	50 … 140 mm	0.1 … 0.9 mm	0.4 … 3 mm	Laser, 2M, red		2x 2x	Interface: PROFIBUS DP, Ethernet; Lens cover: glass
50111329	LES 36HI/VC6	3D object detection, object measurement	200 … 600 mm	50 … 140 mm	0.1 … 0.9 mm	0.4 … 3 mm	Laser, 2M, red	Current, voltage	5x 6x	Interface: Ethernet; Lens cover: glass
50136678	LES 36HI/VC6.10	3D object detection, object measurement	200 … 600 mm	50 … 140 mm	0.1 … 0.9 mm	0.4 … 3 mm	Laser, 2M, red	Current, voltage	5x 6x	Interface: Ethernet; Lens cover: plastic

Measurement ranges: Luminosity coefficient 6 … 90 %, entire measurement range, at 20 °C after 30 minutes warmup time, medium range of U_B Resolution: minimum and maximum value depend on measurement distance

Dimensioned drawings: LES 36



LES 36 line profile sensor

/// LRS 36

Line range sensors are designed to perform scanning, two-dimensional object detection along a laser line. Up to 16 objects can be simultaneously detected with one sensor. Through configuration settings, complex detection tasks can be mastered with just one sensor. Results are output via Ethernet, fieldbus interfaces or binary switching outputs. A perfect solution, e. g., for multiple track transport or completeness monitoring.

Benefits:

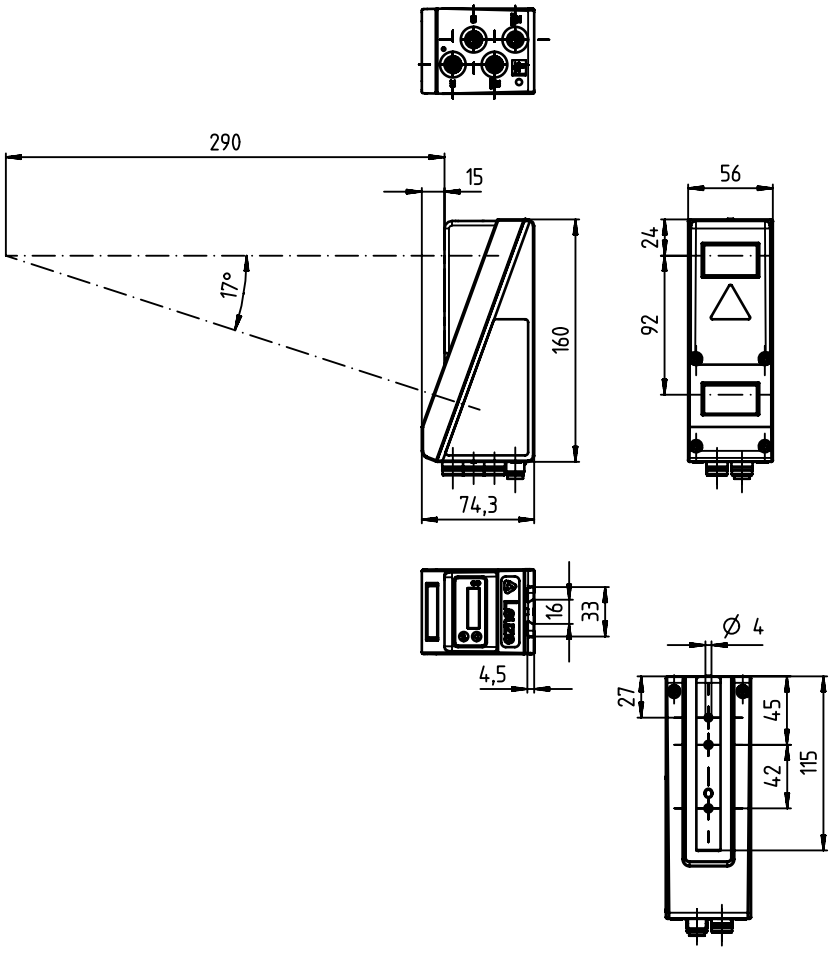
- Laser scanning using the light section method
- Up to 16 detection fields in 16 inspection tasks
- Measurement time: 10 ms
- Scanning range: 200 … 800 mm
- Data calculation and processing directly inside the sensor
- Compact size: 160 x 74 x 56 mm
- Interface: Ethernet, I/O or fieldbus

Direct access to the online product selector at **www.leuze.com/en/lrs36**

Part no.	Part description	Application	Detection range, z-axis	Detection range, x-axis	Minimum object size	Light source	Switching inputs Switching outputs	Description
50111330	LRS 36/6	3D object detection	200 … 800 mm	150 … 600 mm	2 … 6 mm	Laser, 2M, red	5x 6x	Interface: Ethernet; Lens cover: glass
50115418	LRS 36/6.10	3D object detection	200 … 800 mm	150 … 600 mm	2 … 6 mm	Laser, 2M, red	5x 6x	Interface: Ethernet; Lens cover: plastic
50111332	LRS 36/PB	3D object detection	200 … 800 mm	150 … 600 mm	2 … 6 mm	Laser, 2M, red	2x 2x	Interface: PROFIBUS DP, Ethernet; Lens cover: glass

Measurement ranges: Luminosity coefficient 6 … 90 %, entire measurement range, at 20 °C after 30 minutes warmup time, medium range of U_B Resolution: minimum and maximum value depend on measurement distance

Dimensioned drawings: LRS 36



LRS 36 line profile sensor

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ACCESSORIES: LXS 36

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50135139	KS S-M12-8A-P1-050	Connector, M12, axial, male	8-pin	5,000 mm		PUR
50135122	KD U-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm		PUR
50135248	KS PB-M12-4A-P3-050	Connector, M12, axial, male	5-pin	5,000 mm	PROFIBUS DP	PUR
50135243	KD PB-M12-4A-P3-050	Connector, M12, axial, female	5-pin	5,000 mm	PROFIBUS DP	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material	Description
50125541	K-DS M12A-8P-0,75m-LxS36-CP	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	8-pin	750 mm		PUR	Configuration cable
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR	
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45		5,000 mm	Ethernet	PUR	

Further interconnection cables can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50027375	BT 56	Mounting system	Clampable	For 16 mm rod, for 18 mm rod, 20 mm rod	Metal

Further rod mounts can be found on our website

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//LASER SCANNERS

HIGH OPERATING RANGES WITH LARGE VIEWING ANGLES

Laser scanners detect their environment using a quickly-rotating laser measurement beam. This allows objects to be detected over large distances with very large viewing angles and also enables contours to be measured.

/// ROD 4

Contactless laser scanners for object detection and contour measurement. A laser measurement beam is deflected a rotating mirror and covers an area of 190 ° with a radius of up to 65 m. The measurement contour is output via Ethernet or a serial interface. In addition, there are models for object detection in up to 4 simultaneous detection fields.

Benefits:

- Measurement range 0 … 65 m, radius of detection field up to max. 50 m
- 7 configurable and selectable detection field pairs (near and far) for object detection
- Simple device exchange without PC by means of config. connector
- Reference contour for presence/absence control of objects
- Independent, simultaneous monitoring of 4 detection fields
- Interference suppression in the event of particles in the air
- ROD 4-36 with heating and ROD 4-38 with heating, dust-insensitive version

Direct access to the online product selector at **www.leuze.com/en/rod4**

Part no.	Part description	Measurement range	Light source Laser protection class	Scanning rate	Digital switching outputs	Number of connections	Interface	Special design
50106481	ROD4 plus	0 … 65,000 mm	Laser, infrared, 1	25 scans/s	4x	4x	Ethernet, RS 232, RS 422	Warning output
50110238	ROD4-30	0 … 65,000 mm	Laser, infrared, 1	25 scans/s	4x	2x	RS 232, RS 422	Warning output
50110666	ROD4-36	0 … 65,000 mm	Laser, infrared, 1	25 scans/s	4x	2x	RS 232, RS 422	Heating, warning output
50113226	ROD4-50 plus	0 … 65,000 mm	Laser, infrared, 1	50 scans/s		4x	Ethernet, RS 232, RS 422	Warning output
50129795	ROD4-56 plus	0 … 65,000 mm	Laser, infrared, 1	50 scans/s		4x	Ethernet, RS 232, RS 422	Heating, warning output
50106480	ROD4-08 plus	0 … 25,000 mm	Laser, infrared, 1	25 scans/s	4x	4x	Ethernet, RS 232, RS 422	Dust suppression, heating, warning output
50110667	ROD4-38	0 … 25,000 mm	Laser, infrared, 1	25 scans/s	4x	2x	RS 232, RS 422	Dust suppression, heating, warning output
50113225	ROD4-58 plus	0 … 25,000 mm	Laser, infrared, 1	50 scans/s		4x	Ethernet, RS 232, RS 422	Dust suppression, heating, warning output

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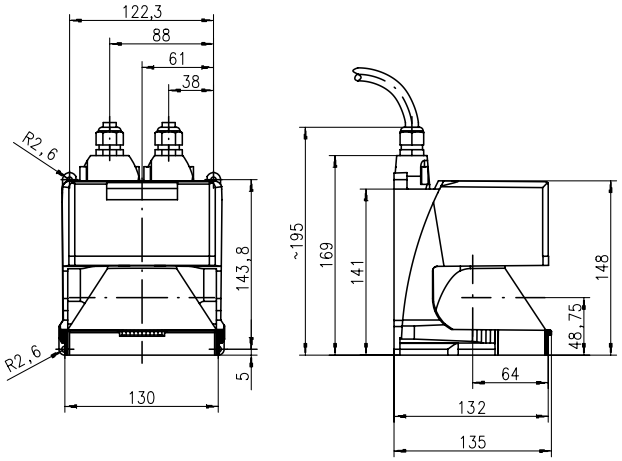
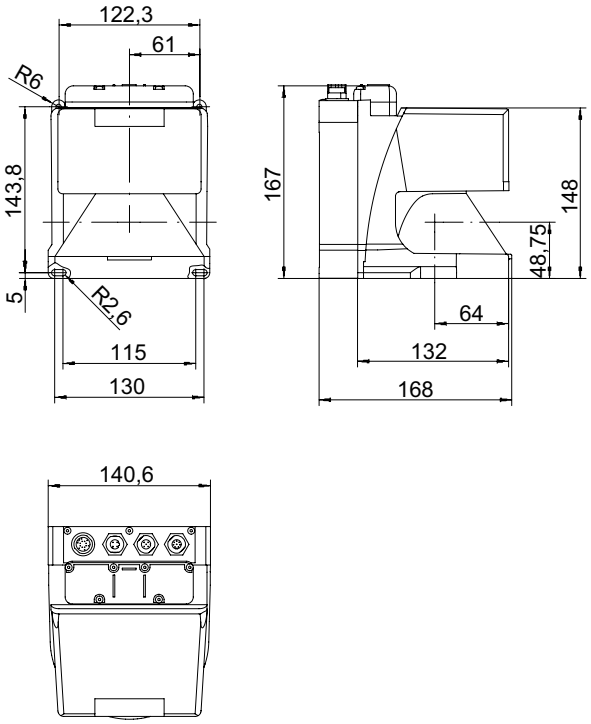
Dimensioned drawings: ROD 4



ROD 4 laser scanner



ROD 4 plus laser scanner

ACCESSORIES: ROD 4

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50108138	KB-ROD4-CP-5000	Sub-D, female, axial	15-pin	5,000 mm	PVC
50106976	KB-014S- 5000-14	Connector, M16, angled, female	14-pin	5,000 mm	PVC
50135122	KD U-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50038069	KB-ROD4PC-3000	Sub-D, male, axial	9-pin	Sub-D, female, axial		3,000 mm		PVC
50106881	KB-ROD4 plus-5000	Sub-D, female, axial	9-pin	Connector, M12, axial, male	5-pin	5,000 mm		PUR
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45		5,000 mm	Ethernet	PUR
50110677	KB-RS232-USB	Sub-D, male, axial	9-pin	USB		1,000 mm	RS 232, USB	PVC

Further interconnection cables can be found on our website

Mounting systems

Other mounting systems

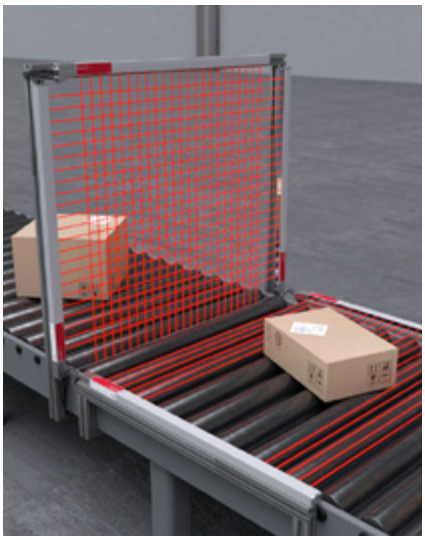
Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50038066	ROD4-MS	Mounting system	Screw type	Through-hole mounting	Metal

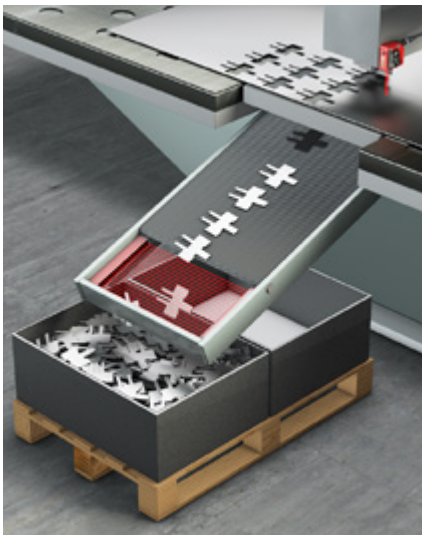
Further mounting systems can be found on our website

/ LIGHT CURTAINS

MANY BEAMS SEE MORE THAN ONE

Our measuring light curtains monitor a large measurement field and output measurement information from this field. Depending on the configuration and model, the devices are suitable for a variety of measurement tasks with various resolutions and can be integrated in different fieldbus environments.





/// CML700i

Integrated interfaces enable the quick and easy integration of these measuring light curtains into fieldbus environments without additional gateway boxes and corresponding space requirements and mounting effort. Cascade mounting with a dead zone of just 23 mm between beams, fast response times and the detection of transparent media enable e.g. continuous object tracing on a transport system. Available in this series are variants that are certified for use in potentially explosive areas of group II, category 3, zone 2 (gas) and zone 22 (dust).

Direct access to the online product selector at **www.leuze.com/en/cml700i**

PART NUMBER CODES –
CML 700i measuring light curtains

CML 7x0i-T05-1920.A -PS-M12-EX
CML 7x0i-R05-1920.A/CN-PS-M12-EX

Operating principle

CML	Measuring light curtain

Series

720i	720i series
730i	730i series

Function

T	Transmitter
R	Receiver

Beam spacing[1]

05	5 mm
10	10 mm
20	20 mm
40	40 mm

Measurement field length

xxxx	Measurement field length [mm], depends on beam spacing

Equipment[2]

A	Plug outlet, axial
R	Plug outlet rear side

Interface[3]

L	IO-Link
CN	CANopen
PB	PROFIBUS-DP
PN	PROFINET
CV	Analog: current and voltage
D3	RS 485 (Modbus)

Special variant (CML 730i only)

PS	Power setting

Electrical connection

M12	M12 connector

Explosion protection (CML 720i only)

Ex	explosion-proof:	II 3G Ex nA op is IIB T4 Gc X II 3D Ex tc IIIB T85 °C Dc IP54 X

[1] For devices with Ex protection: the 5 mm and 40 mm beam spacings can only be ordered following consultation with Leuze electronic
[2] For devices with Ex protection: only A, axial plug outlet
[3] For devices with Ex protection: only CN, CANopen

CML720i

With 6 m operating range and a response time of 30 microseconds per beam, the light curtains of the CML720i series are the perfect introduction to easy detection and measurement even of moving objects.

Benefits:

- Operating range of up to 6 m for larger function reserve
- Response time of 30 µs per beam for the reliable detection of fast processes
- Integrated PROFIBUS, PROFINET, CANopen, RS485 and IO-Link interfaces for direct configuration via the control
- Large, easy-to-read display in 5 languages with robust membrane keyboard and bar graph display for easy alignment
- Maximum measurement field length of nearly 3 m for measurement on large objects
- Sturdy metal housing also for use in rough industrial environments
- Connection via M12 connector for fast installation

Part no.	Part description	Beam spacing	Number of beams	Measurement field length	Cycle time	Operating range	Interface	Analog outputs	Switching inputs/outputs	Connection
50119377	► CML720i-T05-800.A-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m				Connector, M12, axial, 5-pin
50119805	◄ CML720i-R05-800.A/CV-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m		Voltage, current	2x	Connector, M12, axial, 8-pin
50119615	◄ CML720i-R05-800.A/CN-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m	CANopen		2x	Connector, M12, axial, 8-pin
50119724	◄ CML720i-R05-800.A/L-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m	IO-Link		4x	Connector, M12, axial, 8-pin
50122954	◄ CML720i-R05-800.A/PB-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m	PROFIBUS DP		2x	Connector, M12, axial, 8-pin
50131908	◄ CML720i-R05-800.A/PN-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m	PROFINET		2x	Connector, M12, axial, 8-pin
50123449	◄ CML720i-R05-800.A/D3-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m	RS 485		2x	Connector, M12, axial, 8-pin
50119458	► CML720i-T05-800.R-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m				Connector, M12, rear side, 5-pin
50120131	◄ CML720i-R05-800.R/CV-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m		Voltage, current	2x	Connector, M12, rear side, 8-pin
50119913	◄ CML720i-R05-800.R/CN-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m	CANopen		2x	Connector, M12, rear side, 8-pin
50119994	◄ CML720i-R05-800.R/L-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m	IO-Link		4x	Connector, M12, rear side, 8-pin
50122957	◄ CML720i-R05-800.R/PB-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m	PROFIBUS DP		2x	Connector, M12, rear side, 8-pin
50131909	◄ CML720i-R05-800.R/PN-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m	PROFINET		2x	Connector, M12, rear side, 8-pin
50123584	◄ CML720i-R05-800.R/D3-M12	5 mm	160x	800 mm	5.2 ms	0.1 … 3.5 m	RS 485		2x	Connector, M12, rear side, 8-pin
50119409	► CML720i-T10-800.A-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m				Connector, M12, axial, 5-pin
50119837	◄ CML720i-R10-800.A/CV-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m		Voltage, current	2x	Connector, M12, axial, 8-pin
50119647	◄ CML720i-R10-800.A/CN-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m	CANopen		2x	Connector, M12, axial, 8-pin
50119756	◄ CML720i-R10-800.A/L-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m	IO-Link		4x	Connector, M12, axial, 8-pin
50122989	◄ CML720i-R10-800.A/PB-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m	PROFIBUS DP		2x	Connector, M12, axial, 8-pin
50131946	◄ CML720i-R10-800.A/PN-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m	PROFINET		2x	Connector, M12, axial, 8-pin
50123482	◄ CML720i-R10-800.A/D3-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m	RS 485		2x	Connector, M12, axial, 8-pin
50119491	► CML720i-T10-800.R-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m				Connector, M12, rear side, 5-pin
50120164	◄ CML720i-R10-800.R/CV-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m		Voltage, current	2x	Connector, M12, rear side, 8-pin
50119945	◄ CML720i-R10-800.R/CN-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m	CANopen		2x	Connector, M12, rear side, 8-pin
50120080	◄ CML720i-R10-800.R/L-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m	IO-Link		4x	Connector, M12, rear side, 8-pin
50122998	◄ CML720i-R10-800.R/PB-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m	PROFIBUS DP		2x	Connector, M12, rear side, 8-pin
50131947	◄ CML720i-R10-800.R/PN-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m	PROFINET		2x	Connector, M12, rear side, 8-pin
50123616	◄ CML720i-R10-800.R/D3-M12	10 mm	80x	800 mm	2.8 ms	0.3 … 7 m	RS 485		2x	Connector, M12, rear side, 8-pin

► transmitter / ◄ receiver
Further products of this series can be found on our website

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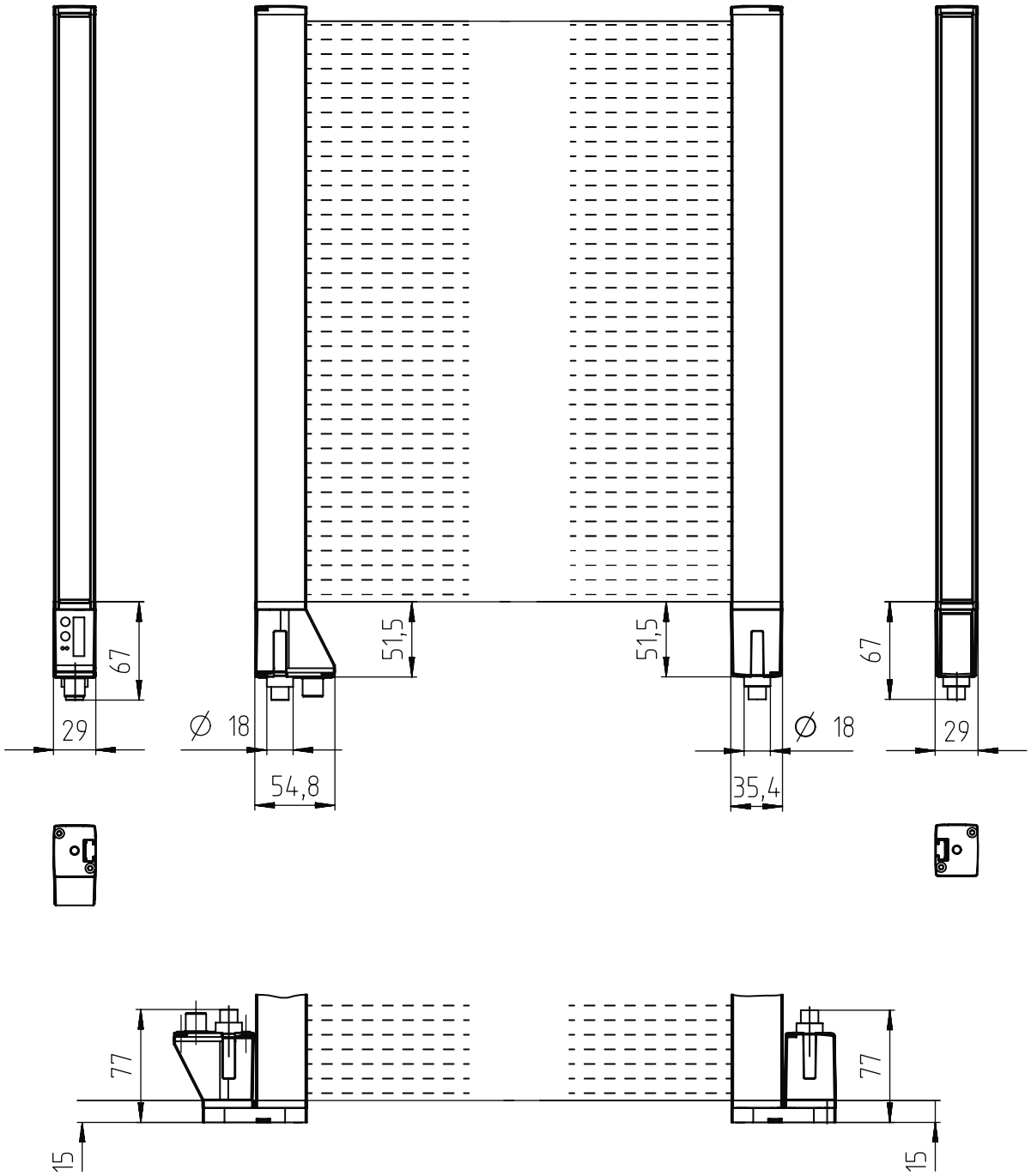
Part no.	Part description	Beam spacing	Number of beams	Measurement field length	Cycle time	Operating range	Interface	Analog outputs	Switching inputs/outputs	Connection
50119427	► CML720i-T20-790.A-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m				Connector, M12, axial, 5-pin
50119855	◄ CML720i-R20-790.A/CV-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m		Voltage, current	2x	Connector, M12, axial, 8-pin
50119665	◄ CML720i-R20-790.A/CN-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m	CANopen		2x	Connector, M12, axial, 8-pin
50119774	◄ CML720i-R20-790.A/L-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m	IO-Link		4x	Connector, M12, axial, 8-pin
50123046	◄ CML720i-R20-790.A/PB-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m	PROFIBUS DP		2x	Connector, M12, axial, 8-pin
50131982	◄ CML720i-R20-790.A/PN-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m	PROFINET		2x	Connector, M12, axial, 8-pin
50123553	◄ CML720i-R20-790.A/D3-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m	RS 485		2x	Connector, M12, axial, 8-pin
50119509	► CML720i-T20-790.R-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m				Connector, M12, rear side, 5-pin
50120182	◄ CML720i-R20-790.R/CV-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m		Voltage, current	2x	Connector, M12, rear side, 8-pin
50119963	◄ CML720i-R20-790.R/CN-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m	CANopen		2x	Connector, M12, rear side, 8-pin
50120098	◄ CML720i-R20-790.R/L-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m	IO-Link		4x	Connector, M12, rear side, 8-pin
50123037	◄ CML720i-R20-790.R/PB-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m	PROFIBUS DP		2x	Connector, M12, rear side, 8-pin
50131983	◄ CML720i-R20-790.R/PN-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m	PROFINET		2x	Connector, M12, rear side, 8-pin
50123634	◄ CML720i-R20-790.R/D3-M12	20 mm	40x	790 mm	1.6 ms	0.3 … 7 m	RS 485		2x	Connector, M12, rear side, 8-pin
50119443	► CML720i-T40-930.A-M12	40 mm	24x	930 mm	1.12 ms	0.3 … 7 m				Connector, M12, axial, 5-pin
50119871	◄ CML720i-R40-930.A/CV-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m		Voltage, current	2x	Connector, M12, axial, 8-pin
50119681	◄ CML720i-R40-930.A/CN-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m	CANopen		2x	Connector, M12, axial, 8-pin
50119790	◄ CML720i-R40-930.A/L-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m	IO-Link		4x	Connector, M12, axial, 8-pin
50123057	◄ CML720i-R40-930.A/PB-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m	PROFIBUS DP		2x	Connector, M12, axial, 8-pin
50132002	◄ CML720i-R40-930.A/PN-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m	PROFINET		2x	Connector, M12, axial, 8-pin
50123569	◄ CML720i-R40-930.A/D3-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m	RS 485		2x	Connector, M12, axial, 8-pin
50119525	► CML720i-T40-930.R-M12	40 mm	24x	930 mm	1.12 ms	0.3 … 7 m				Connector, M12, rear side, 5-pin
50120198	◄ CML720i-R40-930.R/CV-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m		Voltage, current	2x	Connector, M12, rear side, 8-pin
50119979	◄ CML720i-R40-930.R/CN-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m	CANopen		2x	Connector, M12, rear side, 8-pin
50120115	◄ CML720i-R40-930.R/L-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m	IO-Link		4x	Connector, M12, rear side, 8-pin
50123062	◄ CML720i-R40-930.R/PB-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m	PROFIBUS DP		2x	Connector, M12, rear side, 8-pin
50132003	◄ CML720i-R40-930.R/PN-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m	PROFINET		2x	Connector, M12, rear side, 8-pin
50123652	◄ CML720i-R40-930.R/D3-M12	40 mm	23x	930 mm	1.09 ms	0.3 … 7 m	RS 485		2x	Connector, M12, rear side, 8-pin

► transmitter / ◄ receiver
Further products of this series can be found on our website

Dimensioned drawings: CML720i



CML720i measuring light curtain

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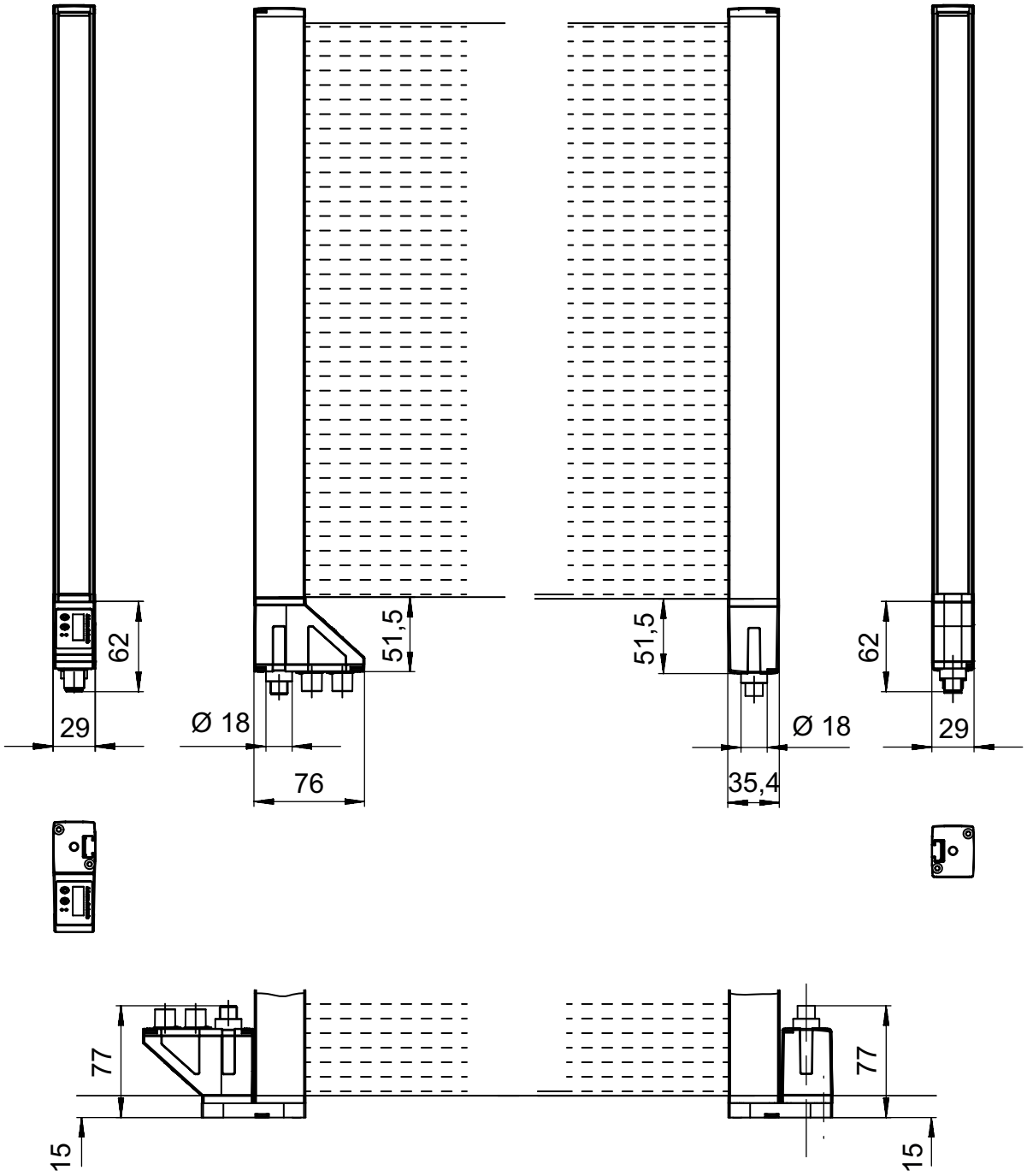
Dimensioned drawings: CML720i



CML720i – PROFINET measuring light curtain

CML720i Ex

Available in this series are variants that are certified for use in potentially explosive areas of group II, category 3, zone 2 (gas) and zone 22 (dust). With 6 m operating range and a response time of 30 µs per beam, the light curtains of the CML720i Ex series are the perfect introduction to easy detection and measurement even of moving objects.

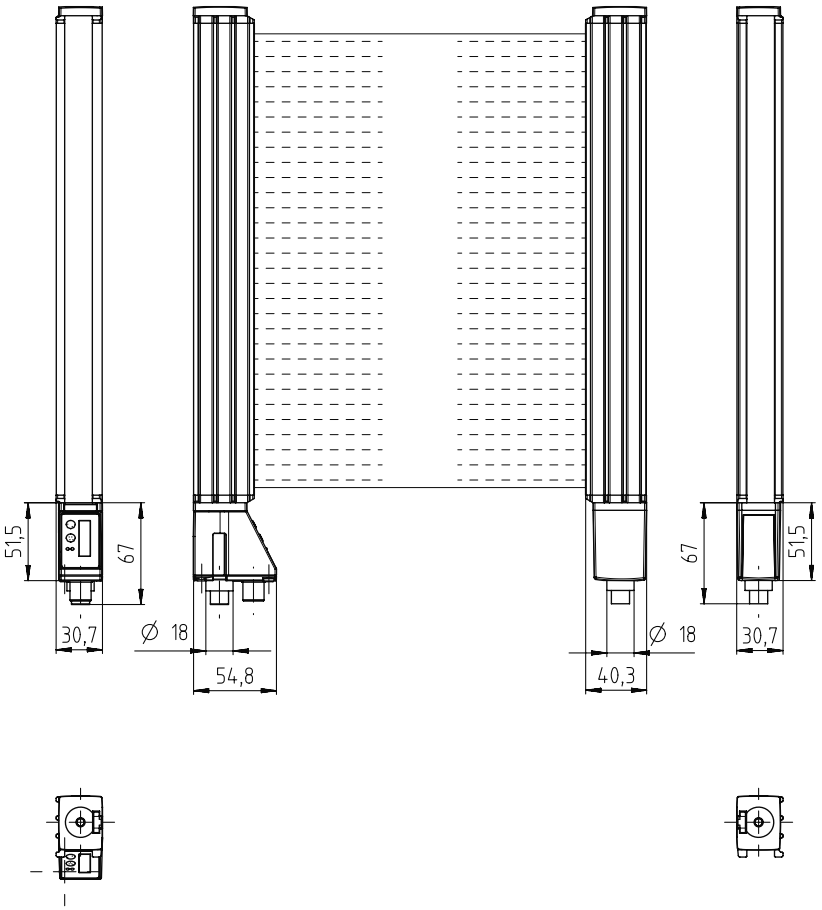
Benefits:

- Operating range of up to 6 m for larger function reserve
- Response time of 30 µs per beam for the reliable detection of fast processes
- Integrated CANopen and IO-Link interfaces for direct configuration via the control
- Large, easy-to-read display in 5 languages with robust membrane keyboard and bar graph display for easy alignment
- Maximum measurement field length of nearly 3 m for measurement on large objects
- Sturdy metal housing also for use in rough industrial environments
- Connection via M12 connector for fast installation

Part no.	Part description	Beam spacing	Number of beams	Measurement field length	Cycle time	Operating range	Interface	Switching inputs/outputs	Connection
50126391	► CML720i-T10-620.A-M12-EX	10 mm	620x	620 mm	2.32 ms	0.3 … 7 m			Connector, M12, axial, 5-pin
50126360	◄ CML720i-R10-620.A/CN-M12-EX	10 mm	62x	620 mm	2.32 ms	0.3 … 7 m	CANopen, IO-Link	2x	Connector, M12, axial, 8-pin
50126392	► CML720i-T10-780.A-M12-EX	10 mm	780x	780 mm	2.8 ms	0.3 … 7 m			Connector, M12, axial, 5-pin
50126361	◄ CML720i-R10-780.A/CN-M12-EX	10 mm	78x	780 mm	2.8 ms	0.3 … 7 m	CANopen, IO-Link	2x	Connector, M12, axial, 8-pin
50126393	► CML720i-T10-940.A-M12-EX	10 mm	940x	940 mm	3.28 ms	0.3 … 7 m			Connector, M12, axial, 5-pin
50126362	◄ CML720i-R10-940.A/CN-M12-EX	10 mm	94x	940 mm	3.28 ms	0.3 … 7 m	CANopen, IO-Link	2x	Connector, M12, axial, 8-pin
50126405	► CML720i-T20-610.A-M12-EX	20 mm	31x	610 mm	1.36 ms	0.3 … 7 m			Connector, M12, axial, 5-pin
50126374	◄ CML720i-R20-610.A/CN-M12-EX	20 mm	31x	610 mm	1.36 ms	0.3 … 7 m	CANopen, IO-Link	2x	Connector, M12, axial, 8-pin
50126406	► CML720i-T20-770.A-M12-EX	20 mm	39x	770 mm		0.3 … 7 m			Connector, M12, axial, 5-pin
50126375	◄ CML720i-R20-770.A/CN-M12-EX	20 mm	39x	770 mm	1.57 ms	0.3 … 7 m	CANopen, IO-Link	2x	Connector, M12, axial, 8-pin
50126407	► CML720i-T20-930.A-M12-EX	20 mm	47x	930 mm	1.84 ms	0.3 … 7 m			Connector, M12, axial, 5-pin
50126376	◄ CML720i-R20-930.A/CN-M12-EX	20 mm	47x	930 mm	1.84 ms	0.3 … 7 m	CANopen, IO-Link	2x	Connector, M12, axial, 8-pin

► transmitter / ◄ receiver
Further products of this series can be found on our website

Dimensioned drawings: CML720i Ex



CML720i EX measuring light curtain

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CML730i

In addition to its integrated interfaces and the innovative plug outlets for gapless object tracing, the CML730i measuring light curtain stands out in particular due to its range of up to 8 m and a unique measurement cycle of 10 µs per beam. In addition, it reliably detects even transparent objects up to 3.5 m.

Benefits:

- Integrated PROFIBUS, PROFINET, CANopen, RS 485 and IO-Link interfaces for direct configuration via the control
- Large, easy-to-read display with robust membrane keyboard and bar graph display for easy alignment
- Reliable detection of even transparent media up to 3.5 m
- Operating range of up to 8 m for larger function reserves
- Extremely short response time of 10 µs per beam for the reliable detection of even fast processes
- Maximum measurement field length of nearly 3 m for measurement on large objects
- Sturdy metal housing also for use in rough industrial environments
- Connection via M12 connector for fast installation

Part no.	Part description	Beam spacing	Number of beams	Measurement field length	Cycle time	Operating range	Interface	Analog outputs	Switching inputs/outputs	Connection
50118585	► CML730i-T05-800.A-M12	5 mm	160x	800 mm	1.8 ms	0.1 … 4 m				Connector, M12, axial, 5-pin
50118827	◄ CML730i-R05-800.A/CV-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m		Voltage, current	2x	Connector, M12, axial, 8-pin
50118664	◄ CML730i-R05-800.A/CN-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m	CANopen		2x	Connector, M12, axial, 8-pin
50118746	◄ CML730i-R05-800.A/L-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m	IO-Link		4x	Connector, M12, axial, 8-pin
50123130	◄ CML730i-R05-800.A/PB-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m	PROFIBUS DP		2x	Connector, M12, axial, 8-pin
50131746	◄ CML730i-R05-800.A/PN-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m	PROFINET		2x	Connector, M12, axial, 8-pin
50123279	◄ CML730i-R05-800.A/D3-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m	RS 485		2x	Connector, M12, axial, 8-pin
50133772	► CML730i-T05-800.A-PS-M12	5 mm	160x	800 mm	1.8 ms	0.1 … 4 m				Connector, M12, axial, 5-pin
50133771	◄ CML730i-R05-800.A/CV-PS-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4 m		Freely configu-rable	3x	Connector, M12, axial, 8-pin
50118921	► CML730i-T05-800.R-M12	5 mm	160x	800 mm	1.8 ms	0.1 … 4 m				Connector, M12, rear side, 5-pin
50119219	◄ CML730i-R05-800.R/CV-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m		Voltage, current	2x	Connector, M12, rear side, 8-pin
50119002	◄ CML730i-R05-800.R/CN-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m	CANopen		2x	Connector, M12, rear side, 8-pin
50119139	◄ CML730i-R05-800.R/L-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m	IO-Link		4x	Connector, M12, rear side, 8-pin
50123137	◄ CML730i-R05-800.R/PB-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m	PROFIBUS DP		2x	Connector, M12, rear side, 8-pin
50131747	◄ CML730i-R05-800.R/PN-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m	PROFINET		2x	Connector, M12, rear side, 8-pin
50123362	◄ CML730i-R05-800.R/D3-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4.5 m	RS 485		2x	Connector, M12, rear side, 8-pin
50133790	► CML730i-T05-800.R-PS-M12	5 mm	160x	800 mm	1.8 ms	0.1 … 4 m				Connector, M12, rear side, 5-pin
50133789	◄ CML730i-R05-800.R/CV-PS-M12	5 mm	160x	800 mm	1.75 ms	0.1 … 4 m		Freely configu-rable	3x	Connector, M12, rear side, 8-pin
50118616	► CML730i-T10-800.A-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m				Connector, M12, axial, 5-pin
50118872	◄ CML730i-R10-800.A/CV-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m		Voltage, current	2x	Connector, M12, axial, 8-pin
50118697	◄ CML730i-R10-800.A/CN-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m	CANopen		2x	Connector, M12, axial, 8-pin
50118778	◄ CML730i-R10-800.A/L-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m	IO-Link		4x	Connector, M12, axial, 8-pin
50123173	◄ CML730i-R10-800.A/PB-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m	PROFIBUS DP		2x	Connector, M12, axial, 8-pin
50131784	◄ CML730i-R10-800.A/PN-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m	PROFINET		2x	Connector, M12, axial, 8-pin
50123312	◄ CML730i-R10-800.A/D3-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m	RS 485		2x	Connector, M12, axial, 8-pin

► transmitter / ◄ receiver
Further products of this series can be found on our website

Part no.	Part description	Beam spacing	Number of beams	Measurement field length	Cycle time	Operating range	Interface	Analog outputs	Switching inputs/outputs	Connection
50118953	► CML730i-T10-800.R-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m				Connector, M12, rear side, 5-pin
50119251	◄ CML730i-R10-800.R/CV-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m		Voltage, current	2x	Connector, M12, rear side, 8-pin
50119090	◄ CML730i-R10-800.R/CN-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m	CANopen		2x	Connector, M12, rear side, 8-pin
50119171	◄ CML730i-R10-800.R/L-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m	IO-Link		4x	Connector, M12, rear side, 8-pin
50123179	◄ CML730i-R10-800.R/PB-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m	PROFIBUS DP		2x	Connector, M12, rear side, 8-pin
50131785	◄ CML730i-R10-800.R/PN-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m	PROFINET		2x	Connector, M12, rear side, 8-pin
50123394	◄ CML730i-R10-800.R/D3-M12	10 mm	80x	800 mm	1 ms	0.3 … 9.5 m	RS 485		2x	Connector, M12, rear side, 8-pin
50118633	► CML730i-T20-790.A-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m				Connector, M12, axial, 5-pin
50118890	◄ CML730i-R20-790.A/CV-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m		Voltage, current	2x	Connector, M12, axial, 8-pin
50118715	◄ CML730i-R20-790.A/CN-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m	CANopen		2x	Connector, M12, axial, 8-pin
50118796	◄ CML730i-R20-790.A/L-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m	IO-Link		4x	Connector, M12, axial, 8-pin
50123206	◄ CML730i-R20-790.A/PB-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m	PROFIBUS DP		2x	Connector, M12, axial, 8-pin
50131820	◄ CML730i-R20-790.A/PN-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m	PROFINET		2x	Connector, M12, axial, 8-pin
50123330	◄ CML730i-R20-790.A/D3-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m	RS 485		2x	Connector, M12, axial, 8-pin
50118970	► CML730i-T20-790.R-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m				Connector, M12, rear side, 5-pin
50119269	◄ CML730i-R20-790.R/CV-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m		Voltage, current	2x	Connector, M12, rear side, 8-pin
50119108	◄ CML730i-R20-790.R/CN-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m	CANopen		2x	Connector, M12, rear side, 8-pin
50119188	◄ CML730i-R20-790.R/L-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m	IO-Link		4x	Connector, M12, rear side, 8-pin
50123221	◄ CML730i-R20-790.R/PB-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m	PROFIBUS DP		2x	Connector, M12, rear side, 8-pin
50131821	◄ CML730i-R20-790.R/PN-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m	PROFINET		2x	Connector, M12, rear side, 8-pin
50123412	◄ CML730i-R20-790.R/D3-M12	20 mm	40x	790 mm	1 ms	0.3 … 9.5 m	RS 485		2x	Connector, M12, rear side, 8-pin
50118649	► CML730i-T40-930.A-M12	40 mm	24x	930 mm	1 ms	0.3 … 9.5 m				Connector, M12, axial, 5-pin
50118906	◄ CML730i-R40-930.A/CV-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m		Voltage, current	2x	Connector, M12, axial, 8-pin
50118731	◄ CML730i-R40-930.A/CN-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m	CANopen		2x	Connector, M12, axial, 8-pin
50118812	◄ CML730i-R40-930.A/L-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m	IO-Link		4x	Connector, M12, axial, 8-pin
50123216	◄ CML730i-R40-930.A/PB-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m	PROFIBUS DP		2x	Connector, M12, axial, 8-pin
50131840	◄ CML730i-R40-930.A/PN-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m	PROFINET		2x	Connector, M12, axial, 8-pin
50123346	◄ CML730i-R40-930.A/D3-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m	RS 485		2x	Connector, M12, axial, 8-pin
50118986	► CML730i-T40-930.R-M12	40 mm	24x	930 mm	1 ms	0.3 … 9.5 m				Connector, M12, rear side, 5-pin
50119285	◄ CML730i-R40-930.R/CV-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m		Voltage, current	2x	Connector, M12, rear side, 8-pin
50119124	◄ CML730i-R40-930.R/CN-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m	CANopen		2x	Connector, M12, rear side, 8-pin
50119204	◄ CML730i-R40-930.R/L-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m	IO-Link		4x	Connector, M12, rear side, 8-pin
50123231	◄ CML730i-R40-930.R/PB-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m	PROFIBUS DP		2x	Connector, M12, rear side, 8-pin
50131841	◄ CML730i-R40-930.R/PN-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m	PROFINET		2x	Connector, M12, rear side, 8-pin
50123432	◄ CML730i-R40-930.R/D3-M12	40 mm	23x	930 mm	1 ms	0.3 … 9.5 m	RS 485		2x	Connector, M12, rear side, 8-pin

► transmitter / ◄ receiver
Further products of this series can be found on our website

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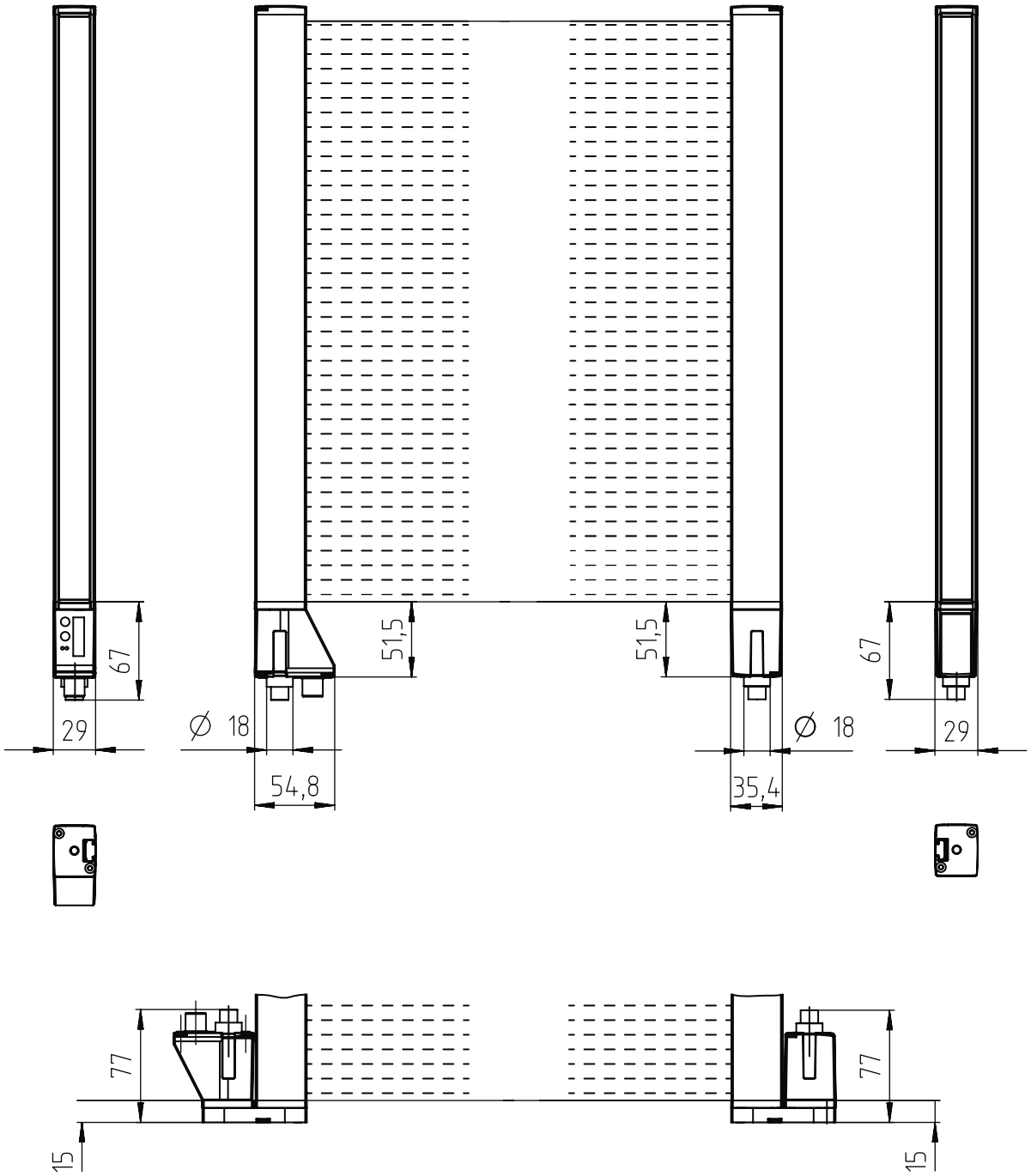
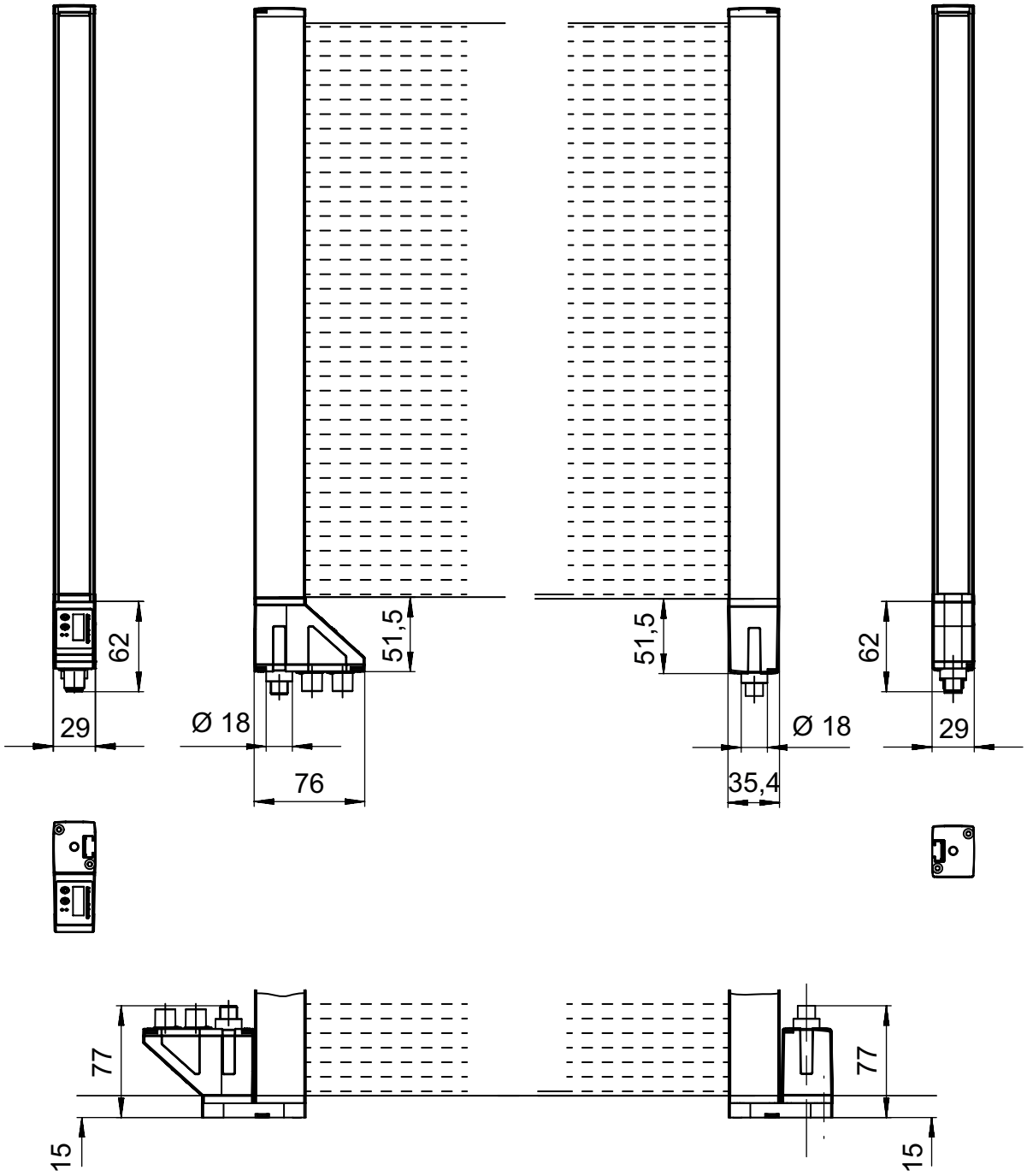
Dimensioned drawings: CML730i



CML730i measuring light curtain

Dimensioned drawings: CML730i



CML730i – PROFINET measuring light curtain

ACCESSORIES: CML700i

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm		PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm		PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm		PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm		PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm		PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm		PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm		PVC

Further connection cables can be found on our website

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Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm		PVC
50135121	KD U-M12-8A-P1-020	Connector, M12, axial, female	8-pin	2,000 mm		PUR
50135122	KD U-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm		PUR
50135123	KD U-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm		PUR
50135247	KS PB-M12-4A-P3-020	Connector, M12, axial, male	5-pin	2,000 mm	PROFIBUS DP	PUR
50135248	KS PB-M12-4A-P3-050	Connector, M12, axial, male	5-pin	5,000 mm	PROFIBUS DP	PUR
50135249	KS PB-M12-4A-P3-100	Connector, M12, axial, male	5-pin	10,000 mm	PROFIBUS DP	PUR
50135250	KS PB-M12-4A-P3-150	Connector, M12, axial, male	5-pin	15,000 mm	PROFIBUS DP	PUR
50135242	KD PB-M12-4A-P3-020	Connector, M12, axial, female	5-pin	2,000 mm	PROFIBUS DP	PUR
50135243	KD PB-M12-4A-P3-050	Connector, M12, axial, female	5-pin	5,000 mm	PROFIBUS DP	PUR
50135244	KD PB-M12-4A-P3-100	Connector, M12, axial, female	5-pin	10,000 mm	PROFIBUS DP	PUR
50135245	KD PB-M12-4A-P3-150	Connector, M12, axial, female	5-pin	15,000 mm	PROFIBUS DP	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50120999	K-DS M12A-8P-4P-2m-L-PUR	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	4-pin	2,000 mm		PUR
50121000	K-DS M12A-8P-4P-5m-L-PUR	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	4-pin	5,000 mm		PUR
50129779	KDS DN-M12-5A-M12-5A-P3-010	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	1,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129780	KDS DN-M12-5A-M12-5A-P3-020	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	2,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129781	KDS DN-M12-5A-M12-5A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	5,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129782	KDS DN-M12-5A-M12-5A-P3-100	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	10,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129783	KDS DN-M12-5A-M12-5A-P3-200	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	20,000 mm	IO-Link, DeviceNet, CANopen	PUR
50135253	KDS PB-M12-4A-M12-4A-P3-020	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	2,000 mm	PROFIBUS DP	PUR
50135254	KDS PB-M12-4A-M12-4A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	5,000 mm	PROFIBUS DP	PUR
50135255	KDS PB-M12-4A-M12-4A-P3-100	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	10,000 mm	PROFIBUS DP	PUR
50135256	KDS PB-M12-4A-M12-4A-P3-150	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	15,000 mm	PROFIBUS DP	PUR

Further interconnection cables can be found on our website

Y-distribution cables

Part no.	Part description	Suitable for	Connection 1	Connection 2	Connection 3	Cable length fork 1 Cable length fork 2	Interface	Sheathing material	Suitable for interface
50118182	K-Y1 M12A-2m-M12A-S-PUR	CML700i light curtains	Connector, M12, 5-pin, axial, female	Connector, M12, 5-pin, axial, male	Connector, M12, 8-pin, axial, female	2,000 mm 150 mm		PUR	
50118183	K-Y1 M12A-5m-M12A-S-PUR	CML700i light curtains	Connector, M12, 5-pin, axial, female	Connector, M12, 5-pin, axial, male	Connector, M12, 8-pin, axial, female	5,000 mm 150 mm		PUR	
50122336	K-Y1 M12A-10m-M12A-S-PUR	CML700i light curtains	Connector, M12, 5-pin, axial, female	Connector, M12, 5-pin, axial, male	Connector, M12, 8-pin, axial, female	10,000 mm 150 mm		PUR	
50122337	K-Y1 M12A-20m-M12A-S-PUR	CML700i light curtains	Connector, M12, 5-pin, axial, female	Connector, M12, 5-pin, axial, male	Connector, M12, 8-pin, axial, female	20,000 mm 150 mm		PUR	
50118185	K-YCN M12A-M12A-S-PUR	CML700i light curtains	Connector, M12, axial, male	Connector, M12, axial, female	Connector, M12, 5-pin, axial, male	250 mm 350 mm	CANopen	PUR	
50118184	K-YCN M12A-5m-M12A-S-PUR	CML700i light curtains	Connector, M12, 5-pin, axial, male	Connector, M12, 5-pin, axial, female	Connector, M12, 5-pin, axial, male	250 mm 5,000 mm		PUR	CANopen
50123265	K-YPB M12A-5m-M12A-S-PUR	CML700i light curtains	Connector, M12, 5-pin, axial, male	Connector, M12, 5-pin, axial, female	Connector, M12, 5-pin, axial, male	5,000 mm 250 mm		PUR	PROFIBUS DP
50123263	K-YPB M12A-M12A-S-PUR	CML700i light curtains	Connector, M12, 5-pin, axial, male	Connector, M12, 5-pin, axial, female	Connector, M12, 5-pin, axial, male	300 mm 250 mm		PUR	PROFIBUS DP

User-configurable connectors

Part no.	Part description	Connection	No. of pins	Interface
50038538	KD 02-5-BA	Connector, M12, axial, female	5-pin	PROFIBUS DP, multiNet Plus
429178	CB-M12-8GF	Connector, M12, axial, female	8-pin	

Further connectors can be found on our website

Termination/bus termination

Part no.	Part description	Connection 1	Connection 2	Cable length	Sheathing material	Function	Suitable for interface
50124297	K-SSPB M12A-M12A-2P-0,3m-S-PUR	Connector, M12, axial, male, 4-pin	Connector, M12, axial, male, 2-pin	300 mm	PUR	Bus termination	PROFIBUS DP
50040099	TS 01-5-SA	Connector, M12, axial, male, 5-pin				Bus termination	DeviceNet, CANopen
50038539	TS 02-4-SA	Connector, M12, axial, male, 4-pin				Bus termination	MultiNet Plus, PROFIBUS DP

Further terminator plugs can be found on our website

Adapter

Part no.	Part description	Connection 1	Connection 2	Connection 3	Suitable for interface
50109834	KDS BUS OUT M12-T-5P	Connector, M12, axial, male, 5-pin	Connector, M12, axial, female, 5-pin	Connector, M12, axial, male, 5-pin	MultiNet Plus, PROFIBUS DP

Further adapters can be found on our website

IO-Link USB master

Part no.	Part description	Functions	Suitable for
50121098	SET MD12-US2-IL1.1 + acc.	Configuration and test device	IO-Link

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
429056	BT-2L	Angle, L-shape	Screw type	Through-hole mounting	Metal
429057	BT-2Z	Angle, Z-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Swivel mounts

Part no.	Part description	Type of mounting device	Fastening at device	Fastening at system	Material
429046	BT-2R1	Turnable, 360 °	Clampable	Through-hole mounting	Metal, plastic

Further swivel mounts can be found on our website

Other mounting systems

Part no.	Part description	Description	Type of mounting device	Fastening at device	Fastening at system	Material
424417	BT-2P40	Mounting bracket set	Clampable	Groove mounting	Groove mounting	Metal
429058	BT-2SSD	Mounting bracket set	Swiveling	Groove mounting, clampable, screw type	Through-hole mounting	Metal
429049	BT-2SSD-270	Mounting bracket set	Swiveling	Screw type, clampable, groove mounting	Through-hole mounting	Metal
429059	BT-4SSD	Mounting bracket set	Swiveling	Groove mounting, clampable, screw type	Through-hole mounting	Metal
425740	BT-10NC60	Sliding block set		Groove mounting	Mounting thread	Metal
425741	BT-10NC64	Sliding block set		Groove mounting	Mounting thread	Metal
425742	BT-10NC65	Sliding block set		Groove mounting	Mounting thread	Metal

Further mounting systems can be found on our website

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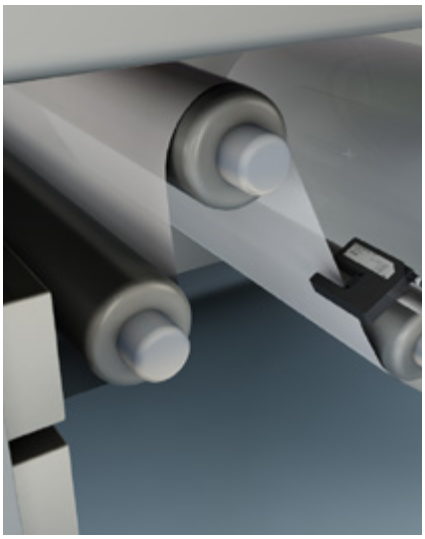
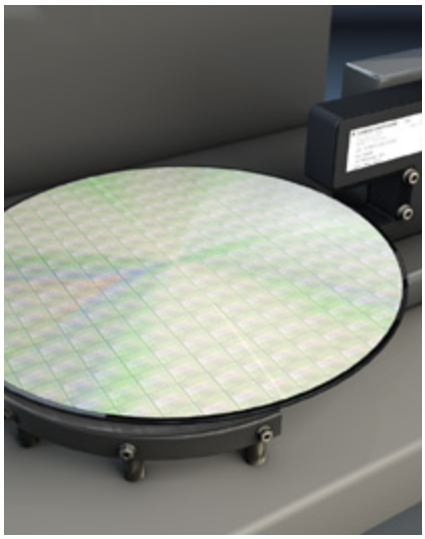
/ MEASURING FORKED SENSORS

FORK IS JUST ANOTHER WORD FOR EXACT

The forked shape offers measurement resolutions as great as 0.014 mm with high reproducibility without time-consuming alignment. An infrared light-band illuminates a line-scan camera (CCD line) and returns analog or digital output signals depending on the illuminated pixels and configuration.





/// GS 754B

With mouth widths of 27 or 98 mm, this forked photoelectric sensor delivers accurate measurement results over a 25 mm long measurement range thanks to its CCD line. Depending on the configuration, it is possible to measure transparent edges, the diameters of wires, threads and much more.

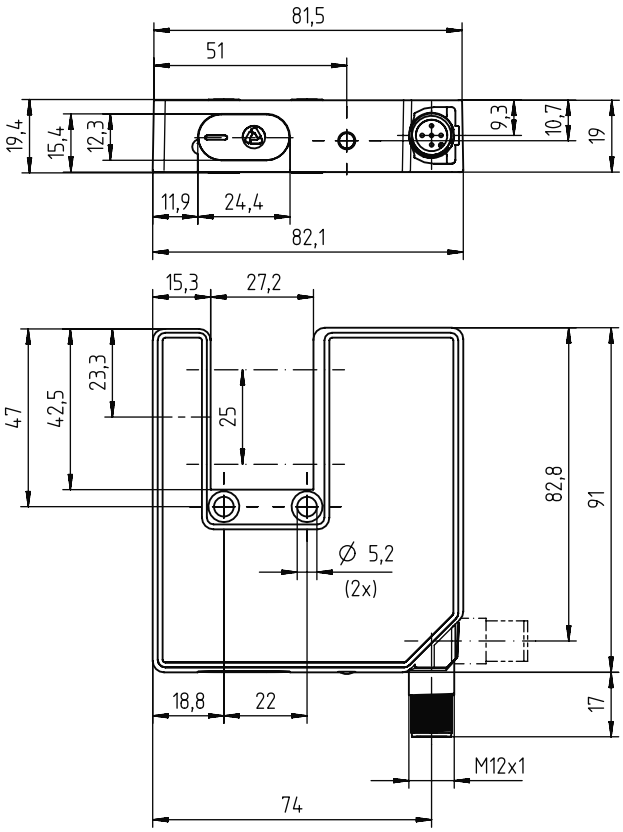
Benefits:

- Measurement range: 25 mm
- Resolution: 14 µm
- Configurable measurement range and measure mode
- Teach-in function, switching or warning output
- Multiple object detection
- Standard interface (RS 232) for configuration and visualization
- M12 data interface (process interface) with analog or digital data output
- M12 turning connector

Direct access to the online product selector at **www.leuze.com/en/gs754b**

Part no.	Part description	Mouth width	Mouth depth	Measurement field length	Light source	Analog output	Switching inputs/outputs	Interface	Connection
50119712	GS 754B/C4-98-S12	98 mm	42 mm	25 mm	LED, infrared	Current	Switching output/switching state, teach input		Connector, M12, metal, 5-pin
50119711	GS 754B/D3-98-S12	98 mm	42 mm	25 mm	LED, infrared			RS 422	Connector, M12, metal, 5-pin
50119710	GS 754B/D24-98-S12	98 mm	42 mm	25 mm	LED, infrared		Switching output/switching state, teach input	RS 232	Connector, M12, metal, 5-pin
50117818	GS 754B/V4-98-S12	98 mm	42 mm	25 mm	LED, infrared	Voltage	Switching output/switching state, teach input		Connector, M12, metal, 5-pin
50115803	GS 754B/C4-27-S12	27 mm	42 mm	25 mm	LED, infrared	Current	Teach input, switching output/ switching state		Connector, M12, metal, 5-pin
50115806	GS 754B/D3-27-S12	27 mm	42 mm	25 mm	LED, infrared			RS 422	Connector, M12, metal, 5-pin
50115807	GS 754B/D24-27-S12	27 mm	42 mm	25 mm	LED, infrared		Teach input, switching output/ switching state	RS 232	Connector, M12, metal, 5-pin
50115809	GS 754B/V4-27-S12	27 mm	42 mm	25 mm	LED, infrared	Voltage	Teach input, switching output/ switching state		Connector, M12, metal, 5-pin

Dimensioned drawings: GS 754B



GS 754B…-27-S12 measuring forked sensor

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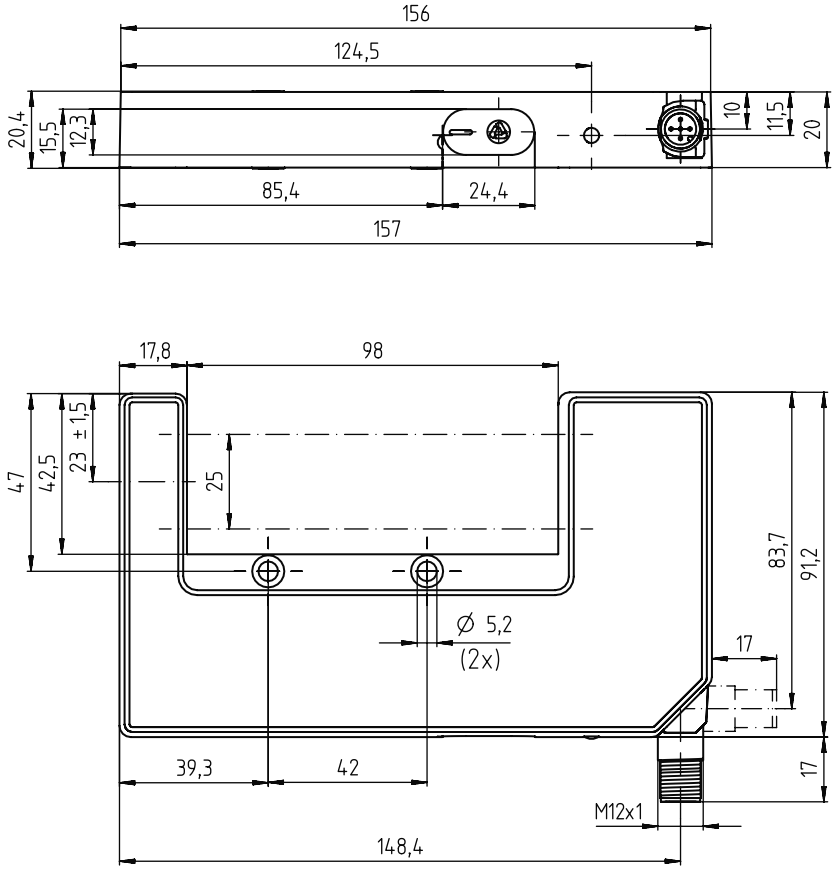
Dimensioned drawings: GS 754B



GS 754B...-98-S12 measuring forked sensor

ACCESSORIES: GS 754B

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC

Further connection cables can be found on our website

PRODUCTS FOR SAFETY AT WORK

EFFICIENTLY SAFEGUARD MACHINES AND SYSTEMS

As one of the technology leaders in the area of optoelectronic safety sensors for industrial automation, we offer efficient personnel protection devices in accordance with international safety standards.

"In addition to reliability, the ideally fault-free integration of a solution in the processes is also decisive for practical use. This is precisely the focus of our products, service and consultation."

Alexander Mielchen,
Product Management –
Product Center Safety

/ Optoelectronic safety sensors Page 272

/ Safe locking devices, switches and proximity sensors Page 331

/ Safe control components Page 358

/ Machine Safety Services Page 385

/ OPTOELECTRONIC SAFETY SENSORS

EVERYTHING FOR SAFETY

Whether individual devices or optimally matched sets: in our extensive line of safety sensors, you will always find a suitable and efficient safety solution for point-of-operation, danger-zone and access guarding. All devices satisfy the applicable legal regulations and standards.

Safety light curtains Page 273

Multiple light beam safety devices Page 291

Single light beam safety devices Page 313

Safety laser scanners Page 325

Protective sensor sets Page 329

//SAFETY LIGHT CURTAINS

CURTAIN FOR EFFICIENT SAFETY

Reliable and interference-immune sensor safety technology ensures high system availability and productivity. Wherever man and machine work “hand in hand”, our safety light curtains can be used vertically as hand and finger protection, as access guarding as well as horizontally as area protection. With respect to integration capability, availability and cost effectiveness, they meet the highest requirements.

/// MLC 500

The MLC 500 series includes the newest generation of extremely sturdy type 4 safety light curtains. 3 function classes – Basic, Standard and Extended – enable the most efficient use of devices from simple standard applications to complex controlled safeguarding processes. The devices can be used universally, due to the flexible fastening concept and the option of form-locking installation. In addition, the series offers custom solutions for further areas of application. These include extra slim design, AIDA-compliant pin assignment, integrated AS-i interface, protection classes IP 67/69K as well as especially impact-resistant, cascadable or EX-certified models.

Direct access to the online product selector at **www.leuze.com/en/mlc500**

PART NUMBER CODES – MLC 500, MLC 300 safety light curtains

MLC 3 00 T 14 hhhh H/A-EX2

Type

MLC	Safety light curtain

Series

3	MLC 300
5	MLC 500

Function

00	Transmitter
01	Transmitter (AIDA)
02	Transmitter with test input
10	Automatic restart
11	Automatic restart (AIDA)
20	EDM/RES selectable
30	Muting/blanking/linkage (MLC 530 only)

Device type

T	Transmitter
R	Receiver

Resolution

14	14 mm / operating range 0–6 m (MLC 500 only)
20	20 mm / operating range 0 ... 14 m
30	30 mm / operating range 0 ... 10 m
40	40 mm / operating range 0 ... 20 m
90	90 mm / operating range 0 ... 20 m

Protective field height

hhhh	150...3000 mm

Host/Guest

H	Host
MG	MiddleGuest
G	Guest

Interface (MLC 500 only)

/A	AS-Interface

Option

EX2	Explosion protection
/V	Extra shock-resistant
SPG	Smart Process Gating

MLC 510

This Basic model of the type 4 safety light curtains provides the most important functions. Range reduction on the transmitter, reversible transmission channels, a LED indicator as well as an automatic start/restart interlock round out the range of service. The type 4 Basic model is suitable for a range of applications and is optionally available with AS-i interface or protection class IP 67/69K.

Benefits:

- Automatic start/restart
- Optimal handling
- Prevention of mutual interference of the sensors by selectable transmission channels and range reduction, if applicable
- Universal application due to standard functions
- Short delivery times and global availability
- QR code on the sensor for quick service information

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68001101	► MLC510R14-150	150 mm	14 mm		Connector, metal, M12, 5-pin	
68000101	◄ MLC500T14-150	150 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68008101	◄ MLC502T14-150	150 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Test signal input
68007101	► MLC510R14-150/A	150 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006101	◄ MLC500T14-150/A	150 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68001103	► MLC510R14-300	300 mm	14 mm		Connector, metal, M12, 5-pin	
68000103	◄ MLC500T14-300	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68008103	◄ MLC502T14-300	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Test signal input
68007103	► MLC510R14-300/A	300 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006103	◄ MLC500T14-300/A	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68001133	► MLC510R14-300/V	300 mm	14 mm		Connector, metal, M12, 5-pin	Extra shock-resistant
68000133	◄ MLC500T14-300/V	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
544007	► MLC510R14-300-IP	300 mm	14 mm		Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
544000	◄ MLC500T14-300-IP	300 mm	14 mm	0 … 4.8 m	Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
68001104	► MLC510R14-450	450 mm	14 mm		Connector, metal, M12, 5-pin	
68000104	◄ MLC500T14-450	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68008104	◄ MLC502T14-450	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Test signal input
68007104	► MLC510R14-450/A	450 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006104	◄ MLC500T14-450/A	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68001134	► MLC510R14-450/V	450 mm	14 mm		Connector, metal, M12, 5-pin	Extra shock-resistant
68000134	◄ MLC500T14-450/V	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
544008	► MLC510R14-450-IP	450 mm	14 mm		Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
544001	◄ MLC500T14-450-IP	450 mm	14 mm	0 … 4.8 m	Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
68001106	► MLC510R14-600	600 mm	14 mm		Connector, metal, M12, 5-pin	
68000106	◄ MLC500T14-600	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68008106	◄ MLC502T14-600	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Test signal input
68007106	► MLC510R14-600/A	600 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006106	◄ MLC500T14-600/A	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68001136	► MLC510R14-600/V	600 mm	14 mm		Connector, metal, M12, 5-pin	Extra shock-resistant
68000136	◄ MLC500T14-600/V	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
544009	► MLC510R14-600-IP	600 mm	14 mm		Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
544002	◄ MLC500T14-600-IP	600 mm	14 mm	0 … 4.8 m	Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
68001107	► MLC510R14-750	750 mm	14 mm		Connector, metal, M12, 5-pin	
68000107	◄ MLC500T14-750	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68008107	◄ MLC502T14-750	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Test signal input
68007107	► MLC510R14-750/A	750 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006107	◄ MLC500T14-750/A	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68001137	► MLC510R14-750/V	750 mm	14 mm		Connector, metal, M12, 5-pin	Extra shock-resistant
68000137	◄ MLC500T14-750/V	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
544010	► MLC510R14-750-IP	750 mm	14 mm		Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
544003	◄ MLC500T14-750-IP	750 mm	14 mm	0 … 4.8 m	Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
68001109	► MLC510R14-900	900 mm	14 mm		Connector, metal, M12, 5-pin	
68000109	◄ MLC500T14-900	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68008109	◄ MLC502T14-900	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Test signal input
68007109	► MLC510R14-900/A	900 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006109	◄ MLC500T14-900/A	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68001139	► MLC510R14-900/V	900 mm	14 mm		Connector, metal, M12, 5-pin	Extra shock-resistant
68000139	◄ MLC500T14-900/V	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant

► receiver / ◄ transmitter
Included in delivery: sliding blocks. For MLC…-IP: mounting bracket.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

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Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
544011	► MLC510R14-900-IP	900 mm	14 mm		Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
544004	◄ MLC500T14-900-IP	900 mm	14 mm	0 ... 4.8 m	Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
68001110	► MLC510R14-1050	1,050 mm	14 mm		Connector, metal, M12, 5-pin	
68000110	◄ MLC500T14-1050	1,050 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68008110	◄ MLC502T14-1050	1,050 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Test signal input
68007110	► MLC510R14-1050/A	1,050 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006110	◄ MLC500T14-1050/A	1,050 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
544012	► MLC510R14-1050-IP	1,050 mm	14 mm		Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
544005	◄ MLC500T14-1050-IP	1,050 mm	14 mm	0 ... 4.8 m	Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
68001112	► MLC510R14-1200	1,200 mm	14 mm		Connector, metal, M12, 5-pin	
68000112	◄ MLC500T14-1200	1,200 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68008112	◄ MLC502T14-1200	1,200 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Test signal input
68007112	► MLC510R14-1200/A	1,200 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006112	◄ MLC500T14-1200/A	1,200 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
544013	► MLC510R14-1200-IP	1,200 mm	14 mm		Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
544006	◄ MLC500T14-1200-IP	1,200 mm	14 mm	0 ... 4.8 m	Cable with connector, metal, M12, 5-pin, 15,000 mm	IP 67 / IP 69K
68001113	► MLC510R14-1350	1,350 mm	14 mm		Connector, metal, M12, 5-pin	
68000113	◄ MLC500T14-1350	1,350 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68008113	◄ MLC502T14-1350	1,350 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Test signal input
68007113	► MLC510R14-1350/A	1,350 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006113	◄ MLC500T14-1350/A	1,350 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68001115	► MLC510R14-1500	1,500 mm	14 mm		Connector, metal, M12, 5-pin	
68000115	◄ MLC500T14-1500	1,500 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68008115	◄ MLC502T14-1500	1,500 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Test signal input
68007115	► MLC510R14-1500/A	1,500 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006115	◄ MLC500T14-1500/A	1,500 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68001116	► MLC510R14-1650	1,650 mm	14 mm		Connector, metal, M12, 5-pin	
68000116	◄ MLC500T14-1650	1,650 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68008116	◄ MLC502T14-1650	1,650 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Test signal input
68007116	► MLC510R14-1650/A	1,650 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006116	◄ MLC500T14-1650/A	1,650 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68001118	► MLC510R14-1800	1,800 mm	14 mm		Connector, metal, M12, 5-pin	
68000118	◄ MLC500T14-1800	1,800 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68008118	◄ MLC502T14-1800	1,800 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Test signal input
68007118	► MLC510R14-1800/A	1,800 mm	14 mm		Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68006118	◄ MLC500T14-1800/A	1,800 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	AS-Interface Safety at Work
68001119	► MLC510R14-1950	1,950 mm	14 mm		Connector, metal, M12, 5-pin	
68000119	◄ MLC500T14-1950	1,950 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68001121	► MLC510R14-2100	2,100 mm	14 mm		Connector, metal, M12, 5-pin	
68000121	◄ MLC500T14-2100	2,100 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68001122	► MLC510R14-2250	2,250 mm	14 mm		Connector, metal, M12, 5-pin	
68000122	◄ MLC500T14-2250	2,250 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68001124	► MLC510R14-2400	2,400 mm	14 mm		Connector, metal, M12, 5-pin	
68000124	◄ MLC500T14-2400	2,400 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68001125	► MLC510R14-2550	2,550 mm	14 mm		Connector, metal, M12, 5-pin	
68000125	◄ MLC500T14-2550	2,550 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68001127	► MLC510R14-2700	2,700 mm	14 mm		Connector, metal, M12, 5-pin	
68000127	◄ MLC500T14-2700	2,700 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68001128	► MLC510R14-2850	2,850 mm	14 mm		Connector, metal, M12, 5-pin	
68000128	◄ MLC500T14-2850	2,850 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	
68001130	► MLC510R14-3000	3,000 mm	14 mm		Connector, metal, M12, 5-pin	
68000130	◄ MLC500T14-3000	3,000 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	

► receiver / ◄ transmitter
Included in delivery: sliding blocks. For MLC...-IP: mounting bracket.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

MLC 511

The devices have a plug connection with AIDA-compliant M12 pin assignment (Automatisierungs-Initiative deutscher Automobilisten (AIDA) = Automation Initiative of German automobile manufacturers).

Benefits:

- Automatic start/restart
- Optimal handling
- Range reduction on demand
- Universal application due to standard functions
- Short delivery times and global availability
- QR code on the sensor for quick service information

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68005103	► MLC511R14-300	300 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004103	◄ MLC501T14-300	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant
68005104	► MLC511R14-450	450 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004104	◄ MLC501T14-450	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant
68005106	► MLC511R14-600	600 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004106	◄ MLC501T14-600	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant
68005107	► MLC511R14-750	750 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004107	◄ MLC501T14-750	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant
68005109	► MLC511R14-900	900 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004109	◄ MLC501T14-900	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant
68005110	► MLC511R14-1050	1,050 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004110	◄ MLC501T14-1050	1,050 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant
68005112	► MLC511R14-1200	1,200 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004112	◄ MLC501T14-1200	1,200 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant
68005113	► MLC511R14-1350	1,350 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004113	◄ MLC501T14-1350	1,350 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant
68005115	► MLC511R14-1500	1,500 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004115	◄ MLC501T14-1500	1,500 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant
68005116	► MLC511R14-1650	1,650 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004116	◄ MLC501T14-1650	1,650 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant
68005118	► MLC511R14-1800	1,800 mm	14 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68004118	◄ MLC501T14-1800	1,800 mm	14 mm	0 … 6 m	Connector, metal, M12, 4-pin	AIDA-compliant

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 30 mm.

MLC 520

The Standard version of these type 4 safety light curtains features a start/restart interlock (RES) and contactor monitoring (EDM) for increased performance – and it is simple to handle and integrate into your systems. Reaching under and stepping behind protection as well as rear zone guarding can be efficiently implemented with the cascadable model.

Benefits:

- Basic functions such as automatic start/restart, start/restart interlock (RES), contactor monitoring (EDM)
- Optimal handling due to function selection without PC as well as LED and 7-segment display with integrated 3-zone alignment aid
- Prevention of mutual interference of the sensors by selectable transmission channels and range reduction, if applicable
- Models for cascading up to 3 devices facilitate easy implementation of reaching under and stepping behind protection as well as rear zone guarding
- Short delivery times and global availability
- QR code on the sensor for quick service information

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68002101	► MLC520R14-150	150 mm	14 mm		Connector, metal, M12, 8-pin	
68000101	◄ MLC500T14-150	150 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002131	► MLC520R14-150/V	150 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000131	◄ MLC500T14-150/V	150 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
68002103	► MLC520R14-300	300 mm	14 mm		Connector, metal, M12, 8-pin	
68000103	◄ MLC500T14-300	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002133	► MLC520R14-300/V	300 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000133	◄ MLC500T14-300/V	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

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Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68002104	► MLC520R14-450	450 mm	14 mm		Connector, metal, M12, 8-pin	
68000104	◄ MLC500T14-450	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002134	► MLC520R14-450/V	450 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000134	◄ MLC500T14-450/V	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
68002106	► MLC520R14-600	600 mm	14 mm		Connector, metal, M12, 8-pin	
68000106	◄ MLC500T14-600	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002136	► MLC520R14-600/V	600 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000136	◄ MLC500T14-600/V	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
68002107	► MLC520R14-750	750 mm	14 mm		Connector, metal, M12, 8-pin	
68000107	◄ MLC500T14-750	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002137	► MLC520R14-750/V	750 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000137	◄ MLC500T14-750/V	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
68002109	► MLC520R14-900	900 mm	14 mm		Connector, metal, M12, 8-pin	
68000109	◄ MLC500T14-900	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002139	► MLC520R14-900/V	900 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000139	◄ MLC500T14-900/V	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
68002110	► MLC520R14-1050	1,050 mm	14 mm		Connector, metal, M12, 8-pin	
68000110	◄ MLC500T14-1050	1,050 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002112	► MLC520R14-1200	1,200 mm	14 mm		Connector, metal, M12, 8-pin	
68000112	◄ MLC500T14-1200	1,200 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002113	► MLC520R14-1350	1,350 mm	14 mm		Connector, metal, M12, 8-pin	
68000113	◄ MLC500T14-1350	1,350 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002115	► MLC520R14-1500	1,500 mm	14 mm		Connector, metal, M12, 8-pin	
68000115	◄ MLC500T14-1500	1,500 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002116	► MLC520R14-1650	1,650 mm	14 mm		Connector, metal, M12, 8-pin	
68000116	◄ MLC500T14-1650	1,650 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002118	► MLC520R14-1800	1,800 mm	14 mm		Connector, metal, M12, 8-pin	
68000118	◄ MLC500T14-1800	1,800 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002119	► MLC520R14-1950	1,950 mm	14 mm		Connector, metal, M12, 8-pin	
68000119	◄ MLC500T14-1950	1,950 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002121	► MLC520R14-2100	2,100 mm	14 mm		Connector, metal, M12, 8-pin	
68000121	◄ MLC500T14-2100	2,100 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002122	► MLC520R14-2250	2,250 mm	14 mm		Connector, metal, M12, 8-pin	
68000122	◄ MLC500T14-2250	2,250 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002124	► MLC520R14-2400	2,400 mm	14 mm		Connector, metal, M12, 8-pin	
68000124	◄ MLC500T14-2400	2,400 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002125	► MLC520R14-2550	2,550 mm	14 mm		Connector, metal, M12, 8-pin	
68000125	◄ MLC500T14-2550	2,550 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002127	► MLC520R14-2700	2,700 mm	14 mm		Connector, metal, M12, 8-pin	
68000127	◄ MLC500T14-2700	2,700 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002128	► MLC520R14-2850	2,850 mm	14 mm		Connector, metal, M12, 8-pin	
68000128	◄ MLC500T14-2850	2,850 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68002130	► MLC520R14-3000	3,000 mm	14 mm		Connector, metal, M12, 8-pin	
68000130	◄ MLC500T14-3000	3,000 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

MLC 520-S (extra slim design)

This model is particularly useful whenever perfect integration with the machine's design is required. It features an extra slim design of only 15.4 mm and a fine gradation of the protective field height with a 30 mm grid. Together with the dead zone-free device concept and optional cascading, the permissible safety distances can be optimally utilized.

Benefits:

- Basic functions such as automatic start/restart, start/restart interlock (RES) and contactor monitoring (EDM)
- Perfect integration in the machine design due to extra slim design of only 15.4 mm, device design without dead zones and fine length gradation in 30 mm grid
- Optimal handling due to function selection without PC as well as LED indicators with alignment aid
- Cascading function for up to 3 devices for easy implementation of reaching under and stepping behind protection

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Connection 2	Design
68601015	MLC520-S-14-150	150 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601021	MLC520-S-14-210	210 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601027	MLC520-S-14-270	270 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601030	MLC520-S-14-300	300 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601033	MLC520-S-14-330	330 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601036	MLC520-S-14-360	360 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601039	MLC520-S-14-390	390 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601042	MLC520-S-14-420	420 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601045	MLC520-S-14-450	450 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601048	MLC520-S-14-480	480 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601051	MLC520-S-14-510	510 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601054	MLC520-S-14-540	540 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601057	MLC520-S-14-570	570 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601060	MLC520-S-14-600	600 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601063	MLC520-S-14-630	630 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601066	MLC520-S-14-660	660 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601069	MLC520-S-14-690	690 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601072	MLC520-S-14-720	720 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601075	MLC520-S-14-750	750 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601078	MLC520-S-14-780	780 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601081	MLC520-S-14-810	810 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601084	MLC520-S-14-840	840 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601087	MLC520-S-14-870	870 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601090	MLC520-S-14-900	900 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601093	MLC520-S-14-930	930 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601096	MLC520-S-14-960	960 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601099	MLC520-S-14-990	990 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601102	MLC520-S-14-1020	1,020 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601105	MLC520-S-14-1050	1,050 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601108	MLC520-S-14-1080	1,080 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601111	MLC520-S-14-1110	1,110 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601114	MLC520-S-14-1140	1,140 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)

Included in the scope of delivery: transmitter and receiver, each with 2x C-mounting brackets, 3x for protective field heights from 600 mm. 2x O-shaped mounting bracket.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 24 mm.

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Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Connection 2	Design
68601117	MLC520-S-14-1170	1,170 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)
68601120	MLC520-S-14-1200	1,200 mm	14 mm	0.2 … 6 m	Cable with connector, plastic, M12, 5-pin, 160 mm	Cable with connector, plastic, M12, 5-pin, 160 mm	Narrow housing (15 mm)

Included in the scope of delivery: transmitter and receiver, each with 2x C-mounting brackets, 3x for protective field heights from 600 mm. 2x O-shaped mounting bracket.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 24 mm.

MLC 530

Whenever you need additional control functions, the MLC 530 Extended version is the perfect choice. With its 5 different operating modes, the integrated muting function and 3 different scan modes, the sensor leaves almost nothing to be desired. Device linking enables the construction of 2-channel, contact-based safety circuits as well as serial connections of several devices with safety-related switching outputs (OSSD).

Benefits:

- Integrated function for timing controlled muting for temporary proper bridging of the protective function, e. g. when transporting materials through the protective field
- Fixed or floating beam blanking, reduced resolution: necessary whenever objects must be in the protective field for operational reasons
- Different scan modes: to adjust availability, select SingleScan, DoubleScan or MaxiScan
- Teaching without PC: configuration and teaching, e. g. of floating beam blanking, is quick and easy

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68003101	► MLC530R14-150	150 mm	14 mm		Connector, metal, M12, 8-pin	
68000101	◄ MLC500T14-150	150 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003103	► MLC530R14-300	300 mm	14 mm		Connector, metal, M12, 8-pin	
68000103	◄ MLC500T14-300	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003133	► MLC530R14-300/V	300 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000133	◄ MLC500T14-300/V	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
68003104	► MLC530R14-450	450 mm	14 mm		Connector, metal, M12, 8-pin	
68000104	◄ MLC500T14-450	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003134	► MLC530R14-450/V	450 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000134	◄ MLC500T14-450/V	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
68003106	► MLC530R14-600	600 mm	14 mm		Connector, metal, M12, 8-pin	
68000106	◄ MLC500T14-600	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003136	► MLC530R14-600/V	600 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000136	◄ MLC500T14-600/V	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
68003107	► MLC530R14-750	750 mm	14 mm		Connector, metal, M12, 8-pin	
68000107	◄ MLC500T14-750	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003137	► MLC530R14-750/V	750 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000137	◄ MLC500T14-750/V	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
68003109	► MLC530R14-900	900 mm	14 mm		Connector, metal, M12, 8-pin	
68000109	◄ MLC500T14-900	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003139	► MLC530R14-900/V	900 mm	14 mm		Connector, metal, M12, 8-pin	Extra shock-resistant
68000139	◄ MLC500T14-900/V	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Extra shock-resistant
68003110	► MLC530R14-1050	1,050 mm	14 mm		Connector, metal, M12, 8-pin	
68000110	◄ MLC500T14-1050	1,050 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003112	► MLC530R14-1200	1,200 mm	14 mm		Connector, metal, M12, 8-pin	
68000112	◄ MLC500T14-1200	1,200 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003113	► MLC530R14-1350	1,350 mm	14 mm		Connector, metal, M12, 8-pin	
68000113	◄ MLC500T14-1350	1,350 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003115	► MLC530R14-1500	1,500 mm	14 mm		Connector, metal, M12, 8-pin	
68000115	◄ MLC500T14-1500	1,500 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003116	► MLC530R14-1650	1,650 mm	14 mm		Connector, metal, M12, 8-pin	
68000116	◄ MLC500T14-1650	1,650 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003118	► MLC530R14-1800	1,800 mm	14 mm		Connector, metal, M12, 8-pin	
68000118	◄ MLC500T14-1800	1,800 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003119	► MLC530R14-1950	1,950 mm	14 mm		Connector, metal, M12, 8-pin	
68000119	◄ MLC500T14-1950	1,950 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003121	► MLC530R14-2100	2,100 mm	14 mm		Connector, metal, M12, 8-pin	
68000121	◄ MLC500T14-2100	2,100 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003122	► MLC530R14-2250	2,250 mm	14 mm		Connector, metal, M12, 8-pin	
68000122	◄ MLC500T14-2250	2,250 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68003124	► MLC530R14-2400	2,400 mm	14 mm		Connector, metal, M12, 8-pin	
68000124	◄ MLC500T14-2400	2,400 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003125	► MLC530R14-2550	2,550 mm	14 mm		Connector, metal, M12, 8-pin	
68000125	◄ MLC500T14-2550	2,550 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003127	► MLC530R14-2700	2,700 mm	14 mm		Connector, metal, M12, 8-pin	
68000127	◄ MLC500T14-2700	2,700 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003128	► MLC530R14-2850	2,850 mm	14 mm		Connector, metal, M12, 8-pin	
68000128	◄ MLC500T14-2850	2,850 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	
68003130	► MLC530R14-3000	3,000 mm	14 mm		Connector, metal, M12, 8-pin	
68000130	◄ MLC500T14-3000	3,000 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

MLC 530 SPG

The MLC 530 SPG Smart Process Gating variant is the specialist for access guarding with material transport. It allows for a particularly compact system design as it works without the use of muting sensors. Process control takes place here in combination with the system controller. This provides a high level of protection against tampering and at the same time a high degree of availability.

Benefits:

- Integrated Smart Process Gating function for process control together with the system controller, no muting sensors necessary
- Allows the system to be very compact and thus saves valuable space
- Optimal handling due to function selection without PC as well as LED and 7-segment display with integrated 3-zone alignment aid
- Reduced risk of tampering and increased reliability for a high degree of system availability

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68009301	► MLC530R30-150-SPG	150 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000301	◄ MLC500T30-150	150 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009302	► MLC530R30-225-SPG	225 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000302	◄ MLC500T30-225	225 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009303	► MLC530R30-300-SPG	300 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000303	◄ MLC500T30-300	300 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009304	► MLC530R30-450-SPG	450 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000304	◄ MLC500T30-450	450 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009306	► MLC530R30-600-SPG	600 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000306	◄ MLC500T30-600	600 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009307	► MLC530R30-750-SPG	750 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000307	◄ MLC500T30-750	750 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009309	► MLC530R30-900-SPG	900 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000309	◄ MLC500T30-900	900 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009310	► MLC530R30-1050-SPG	1,050 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000310	◄ MLC500T30-1050	1,050 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009312	► MLC530R30-1200-SPG	1,200 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000312	◄ MLC500T30-1200	1,200 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009313	► MLC530R30-1350-SPG	1,350 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000313	◄ MLC500T30-1350	1,350 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009315	► MLC530R30-1500-SPG	1,500 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000315	◄ MLC500T30-1500	1,500 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009316	► MLC530R30-1650-SPG	1,650 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000316	◄ MLC500T30-1650	1,650 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009318	► MLC530R30-1800-SPG	1,800 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000318	◄ MLC500T30-1800	1,800 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009319	► MLC530R30-1950-SPG	1,950 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000319	◄ MLC500T30-1950	1,950 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009321	► MLC530R30-2100-SPG	2,100 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000321	◄ MLC500T30-2100	2,100 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009322	► MLC530R30-2250-SPG	2,250 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000322	◄ MLC500T30-2250	2,250 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009324	► MLC530R30-2400-SPG	2,400 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000324	◄ MLC500T30-2400	2,400 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 30 mm, 40 mm, 90 mm.

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Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68009325	► MLC530R30-2550-SPG	2,550 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000325	◄ MLC500T30-2550	2,550 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009327	► MLC530R30-2700-SPG	2,700 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000327	◄ MLC500T30-2700	2,700 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009328	► MLC530R30-2850-SPG	2,850 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000328	◄ MLC500T30-2850	2,850 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	
68009330	► MLC530R30-3000-SPG	3,000 mm	30 mm		Connector, metal, M12, 8-pin	Smart Process Gating
68000330	◄ MLC500T30-3000	3,000 mm	30 mm	0 … 10 m	Connector, metal, M12, 5-pin	

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 30 mm, 40 mm, 90 mm.

MLC 520 Host

The so-called host-guest devices enable the combination of access guarding or point of operation guarding with area protection. In this way, it is possible, for example, to eliminate additional measures such as guards to protect against stepping behind machines. The variants with AS-i interface facilitate the direct and economical integration in an AS-Interface network. Furthermore, the MLC HG devices offer all of the advantages of the MLC 500 series.

Benefits:

- Cascading of up to 3 MLC 520 (Host, Middle Guest, Guest)
- Just one safety connection necessary in the switch cabinet
- Multi-side guarding thanks to optimized cable routing

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Connection 2	Design
68017103	► MLC510R14-300H/A	300 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016103	◄ MLC500T14-300H/A	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012103	► MLC520R14-300H	300 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010103	◄ MLC500T14-300H	300 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68017104	► MLC510R14-450H/A	450 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016104	◄ MLC500T14-450H/A	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012104	► MLC520R14-450H	450 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010104	◄ MLC500T14-450H	450 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68017106	► MLC510R14-600H/A	600 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016106	◄ MLC500T14-600H/A	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012106	► MLC520R14-600H	600 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010106	◄ MLC500T14-600H	600 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68017107	► MLC510R14-750H/A	750 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016107	◄ MLC500T14-750H/A	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012107	► MLC520R14-750H	750 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010107	◄ MLC500T14-750H	750 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68017109	► MLC510R14-900H/A	900 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016109	◄ MLC500T14-900H/A	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012109	► MLC520R14-900H	900 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010109	◄ MLC500T14-900H	900 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68017110	► MLC510R14-1050H/A	1,050 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016110	◄ MLC500T14-1050H/A	1,050 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012110	► MLC520R14-1050H	1,050 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010110	◄ MLC500T14-1050H	1,050 mm	14 mm	0 … 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Connection 2	Design
68017112	► MLC510R14-1200H/A	1,200 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016112	◄ MLC500T14-1200H/A	1,200 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012112	► MLC520R14-1200H	1,200 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010112	◄ MLC500T14-1200H	1,200 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68017113	► MLC510R14-1350H/A	1,350 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016113	◄ MLC500T14-1350H/A	1,350 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012113	► MLC520R14-1350H	1,350 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010113	◄ MLC500T14-1350H	1,350 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68017115	► MLC510R14-1500H/A	1,500 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016115	◄ MLC500T14-1500H/A	1,500 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012115	► MLC520R14-1500H	1,500 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010115	◄ MLC500T14-1500H	1,500 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68017116	► MLC510R14-1650H/A	1,650 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016116	◄ MLC500T14-1650H/A	1,650 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012116	► MLC520R14-1650H	1,650 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010116	◄ MLC500T14-1650H	1,650 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68017118	► MLC510R14-1800H/A	1,800 mm	14 mm		Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68016118	◄ MLC500T14-1800H/A	1,800 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	AS-Interface Safety at Work, host
68012118	► MLC520R14-1800H	1,800 mm	14 mm		Connector, metal, M12, 8-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host
68010118	◄ MLC500T14-1800H	1,800 mm	14 mm	0 ... 6 m	Connector, metal, M12, 5-pin	Cable with connector, plastic, M12, 8-pin, 330 mm	Host

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

MLC 520 MiddleGuest

The so-called host-guest devices enable the combination of access guarding or point of operation guarding with area protection. In this way, it is possible, for example, to eliminate additional measures such as guards to protect against stepping behind machines. The MiddleGuest devices can be used as the middle segment of a 3-link chain.

Benefits:

- For setting up cascading of 3 MLC 520
- Multi-side guarding thanks to optimized cable routing
- Just one safety connection necessary in the switch cabinet

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Connection 2	Design
68023103	► MLC520R14-300MG	300 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022103	◄ MLC500T14-300MG	300 mm	14 mm	0 ... 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68023104	► MLC520R14-450MG	450 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022104	◄ MLC500T14-450MG	450 mm	14 mm	0 ... 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68023106	► MLC520R14-600MG	600 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022106	◄ MLC500T14-600MG	600 mm	14 mm	0 ... 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68023107	► MLC520R14-750MG	750 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022107	◄ MLC500T14-750MG	750 mm	14 mm	0 ... 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68023109	► MLC520R14-900MG	900 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022109	◄ MLC500T14-900MG	900 mm	14 mm	0 ... 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68023110	► MLC520R14-1050MG	1,050 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022110	◄ MLC500T14-1050MG	1,050 mm	14 mm	0 ... 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

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Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Connection 2	Design
68023112	► MLC520R14-1200MG	1,200 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022112	◄ MLC500T14-1200MG	1,200 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68023113	► MLC520R14-1350MG	1,350 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022113	◄ MLC500T14-1350MG	1,350 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68023115	► MLC520R14-1500MG	1,500 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022115	◄ MLC500T14-1500MG	1,500 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68023116	► MLC520R14-1650MG	1,650 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022116	◄ MLC500T14-1650MG	1,650 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68023118	► MLC520R14-1800MG	1,800 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest
68022118	◄ MLC500T14-1800MG	1,800 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Cable with connector, plastic, M12, 8-pin, 330 mm	Middle Guest

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

MLC 520 Guest

The so-called host-guest devices enable the combination of access guarding or point of operation guarding with area protection. In this way, it is possible, for example, to eliminate additional measures such as guards to protect against stepping behind machines. The Guest devices are always the final device in a 2 to 3-link chain.

Benefits:

- For setting up cascading with 2 or 3 MLC 520
- Multi-side guarding thanks to optimized cable routing
- Just one safety connection necessary in the switch cabinet

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68021101	► MLC520R14-150G	150 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020101	◄ MLC500T14-150G	150 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021103	► MLC520R14-300G	300 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020103	◄ MLC500T14-300G	300 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021104	► MLC520R14-450G	450 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020104	◄ MLC500T14-450G	450 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021106	► MLC520R14-600G	600 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020106	◄ MLC500T14-600G	600 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021107	► MLC520R14-750G	750 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020107	◄ MLC500T14-750G	750 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021109	► MLC520R14-900G	900 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020109	◄ MLC500T14-900G	900 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021110	► MLC520R14-1050G	1,050 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020110	◄ MLC500T14-1050G	1,050 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021112	► MLC520R14-1200G	1,200 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020112	◄ MLC500T14-1200G	1,200 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021113	► MLC520R14-1350G	1,350 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020113	◄ MLC500T14-1350G	1,350 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021115	► MLC520R14-1500G	1,500 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020115	◄ MLC500T14-1500G	1,500 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021116	► MLC520R14-1650G	1,650 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020116	◄ MLC500T14-1650G	1,650 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68021118	► MLC520R14-1800G	1,800 mm	14 mm		Cable with connector, plastic, M12, 8-pin, 330 mm	Guest
68020118	◄ MLC500T14-1800G	1,800 mm	14 mm	0 … 6 m	Cable with connector, plastic, M12, 8-pin, 330 mm	Guest

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 14 mm, 20 mm, 30 mm, 40 mm, 90 mm. Operating ranges up to 20 m.

MLC 520 EX

The MLC 520 EX2 series is certified for use in potentially explosive areas of group II, category 3, zone 2 (gas) and zone 22 (dust). The function range of these type 4 safety light curtains corresponds to the MLC 520 standard version and thus also offers a start/restart interlock (RES) and contactor monitoring (EDM) for increased performance – with very simple handling and integration.

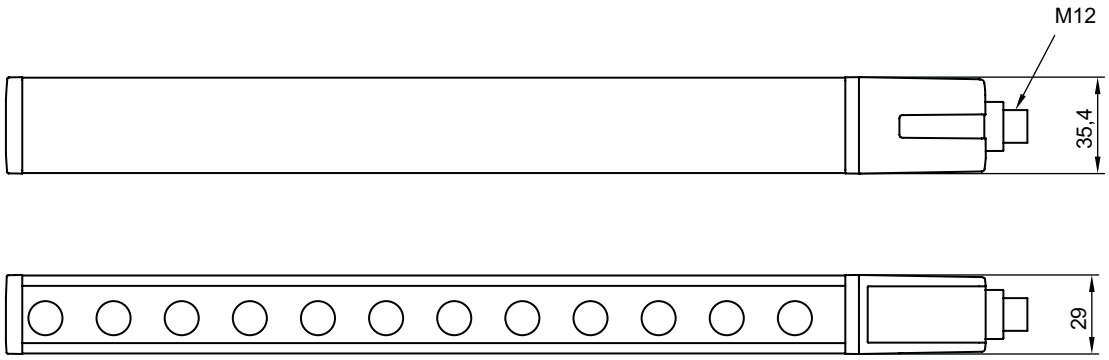
Benefits:

- Basic functions such as automatic start/restart, start/restart interlock (RES), contactor monitoring (EDM)
- Optimal handling due to function selection without PC as well as LED and 7-segment display with integrated 3-zone alignment aid
  Prevention of mutual interference of the sensors by selectable transmission channels and range reduction, if applicable
- Short delivery times and global availability
- QR code on the sensor for quick service information
- Approved for use in potentially explosive areas of group II, category 3, zone 2 (gas) and zone 22 (dust)

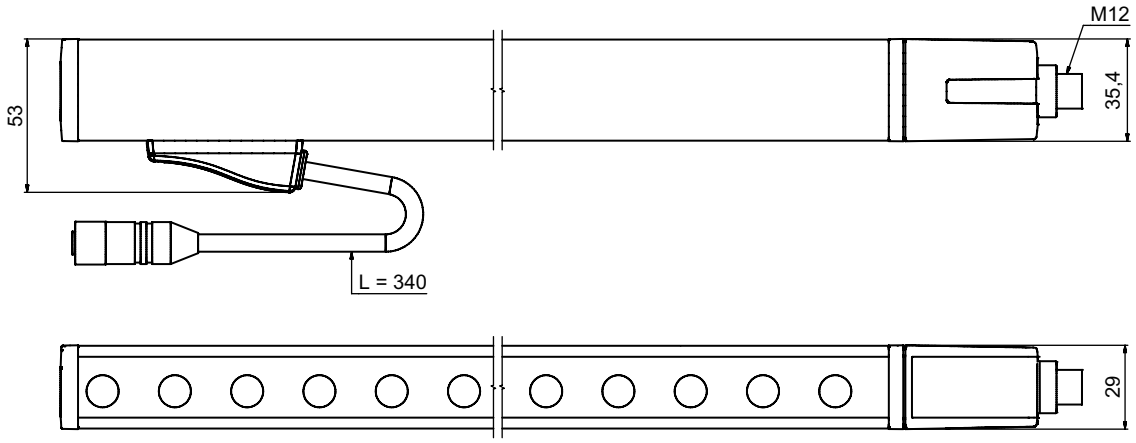
Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68042206	► MLC520R20-600-EX2	600 mm	20 mm		Connector, metal, M12, 8-pin	Ex-protection
68040206	◄ MLC500T20-600-EX2	600 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin	Ex-protection
68042207	► MLC520R20-750-EX2	750 mm	20 mm		Connector, metal, M12, 8-pin	Ex-protection
68040207	◄ MLC500T20-750-EX2	750 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin	Ex-protection
68042209	► MLC520R20-900-EX2	900 mm	20 mm		Connector, metal, M12, 8-pin	Ex-protection
68040209	◄ MLC500T20-900-EX2	900 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin	Ex-protection
68042210	► MLC520R20-1050-EX2	1,050 mm	20 mm		Connector, metal, M12, 8-pin	Ex-protection
68040210	◄ MLC500T20-1050-EX2	1,050 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin	Ex-protection
68042212	► MLC520R20-1200-EX2	1,200 mm	20 mm		Connector, metal, M12, 8-pin	Ex-protection
68040212	◄ MLC500T20-1200-EX2	1,200 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin	Ex-protection
68042213	► MLC520R20-1350-EX2	1,350 mm	20 mm		Connector, metal, M12, 8-pin	Ex-protection
68040213	◄ MLC500T20-1350-EX2	1,350 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin	Ex-protection
68042215	► MLC520R20-1500-EX2	1,500 mm	20 mm		Connector, metal, M12, 8-pin	Ex-protection
68040215	◄ MLC500T20-1500-EX2	1,500 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin	Ex-protection

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 20 mm, 30 mm.

Dimensioned drawings: MLC 500



MLC 500 safety light curtain



MLC 500 safety light curtain, Host

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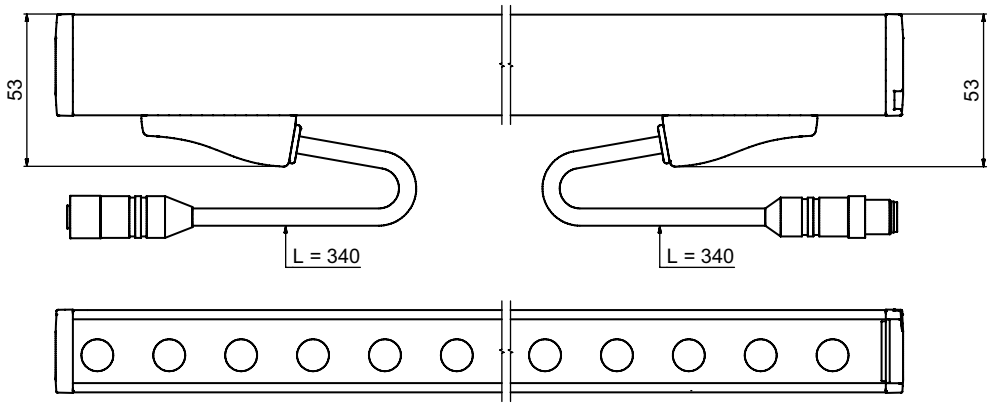
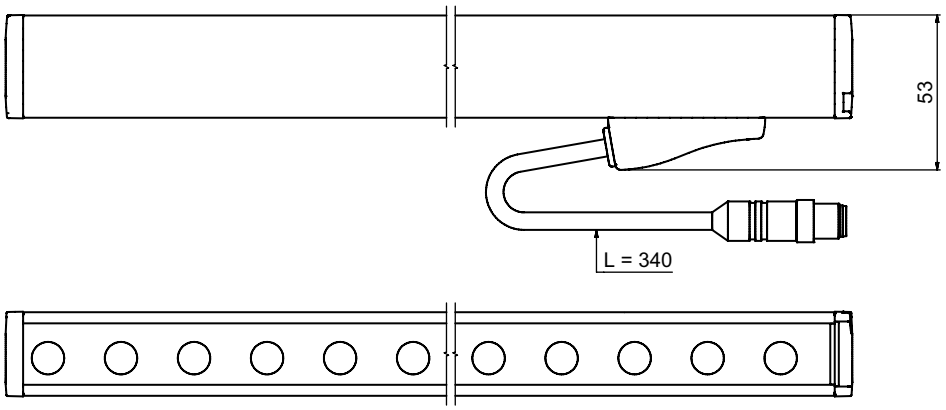
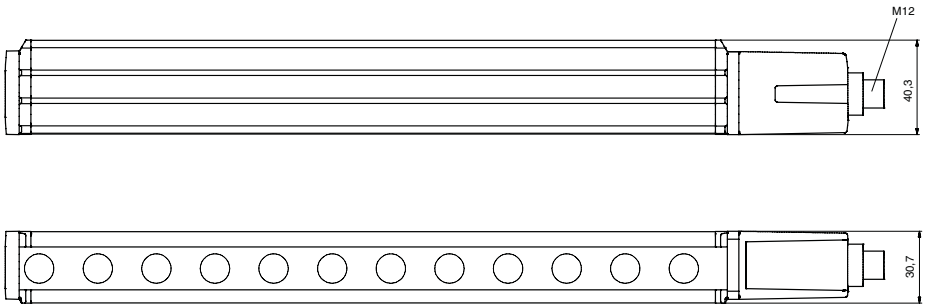
Dimensioned drawings: MLC 500



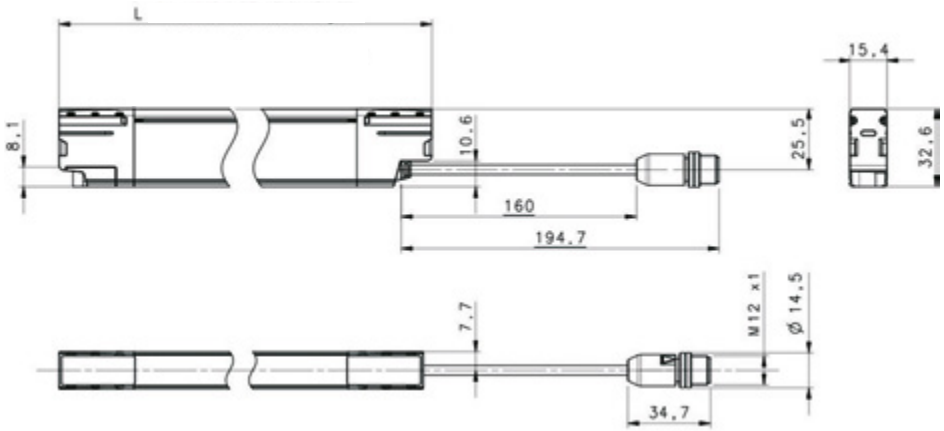
MLC 500 safety light curtain, MiddleGuest



MLC 500 safety light curtain, Guest

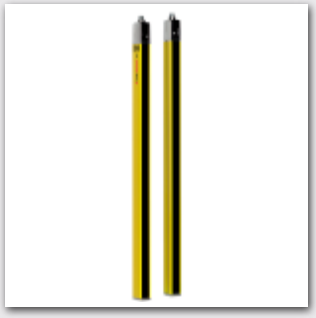


MLC 520 EX safety light curtain



MLC 520-S safety light curtain

/// MLC 300



The 300 series MLC safety light curtains are the latest generation of extremely slim and robust type 2 devices with slightly set back front screen and reinforced side walls. The devices are available in the Basic and Standard versions, thereby fulfilling various requirements. They can be used universally, due to metal end caps, a flexible fastening concept and the option of form-locking installation. There are also variants which have an AIDA-compliant pin assignment.

Direct access to the online product selector at **www.leuze.com/en/mlc300**

PART NUMBER CODES – MLC 500, MLC 300 safety light curtains

M	L	C		3		0	0		T		1	4		h	h	h	h		H	/	A	-	E	X	2

Type

MLC	Safety light curtain

Series

3	MLC 300
5	MLC 500

Function

00	Transmitter
01	Transmitter (AIDA)
02	Transmitter with test input
10	Automatic restart
11	Automatic restart (AIDA)
20	EDM/RES selectable
30	Muting/blanking/linkage (MLC 530 only)

Device type

T	Transmitter
R	Receiver

Resolution

14	14 mm / operating range 0–6 m (MLC 500 only)
20	20 mm / operating range 0 ... 14 m
30	30 mm / operating range 0 ... 10 m
40	40 mm / operating range 0 ... 20 m
90	90 mm / operating range 0 ... 20 m

Protective field height

hhhh	150...3000 mm

Host/Guest

H	Host
MG	MiddleGuest
G	Guest

Interface (MLC 500 only)

/A	AS-Interface

Option

EX2	Explosion protection
/V	Extra shock-resistant
SPG	Smart Process Gating

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MLC 310

This type 2 Basic model provides the most important functions. Range reduction on the transmitter, reversible transmission channels, a LED indicator as well as an automatic start/restart interlock round out the range of service.

Benefits:

- Automatic start/restart
- Optimal handling
- Prevention of mutual interference of the sensors by selectable transmission channels and range reduction, if applicable
- Universal application due to standard functions
- Short delivery times and global availability
- QR code on the sensor for quick service information

Part no.	Part description	Protective field height	Resolution	Operating range	Connection
68091201	► MLC310R20-150	150 mm	20 mm		Connector, metal, M12, 5-pin
68090201	◄ MLC300T20-150	150 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091202	► MLC310R20-225	225 mm	20 mm		Connector, metal, M12, 5-pin
68090202	◄ MLC300T20-225	225 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091203	► MLC310R20-300	300 mm	20 mm		Connector, metal, M12, 5-pin
68090203	◄ MLC300T20-300	300 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091204	► MLC310R20-450	450 mm	20 mm		Connector, metal, M12, 5-pin
68090204	◄ MLC300T20-450	450 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091206	► MLC310R20-600	600 mm	20 mm		Connector, metal, M12, 5-pin
68090206	◄ MLC300T20-600	600 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091207	► MLC310R20-750	750 mm	20 mm		Connector, metal, M12, 5-pin
68090207	◄ MLC300T20-750	750 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091209	► MLC310R20-900	900 mm	20 mm		Connector, metal, M12, 5-pin
68090209	◄ MLC300T20-900	900 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091210	► MLC310R20-1050	1,050 mm	20 mm		Connector, metal, M12, 5-pin
68090210	◄ MLC300T20-1050	1,050 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091212	► MLC310R20-1200	1,200 mm	20 mm		Connector, metal, M12, 5-pin
68090212	◄ MLC300T20-1200	1,200 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091213	► MLC310R20-1350	1,350 mm	20 mm		Connector, metal, M12, 5-pin
68090213	◄ MLC300T20-1350	1,350 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091215	► MLC310R20-1500	1,500 mm	20 mm		Connector, metal, M12, 5-pin
68090215	◄ MLC300T20-1500	1,500 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091216	► MLC310R20-1650	1,650 mm	20 mm		Connector, metal, M12, 5-pin
68090216	◄ MLC300T20-1650	1,650 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68091218	► MLC310R20-1800	1,800 mm	20 mm		Connector, metal, M12, 5-pin
68090218	◄ MLC300T20-1800	1,800 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 20 mm, 30 mm, 40 mm, 90 mm.

MLC 311

The devices have a plug connection with AIDA-compliant M12 pin assignment (Automatisierungs-Initiative deutscher Automobilisten (AIDA) = Automation Initiative of German automobile manufacturers).

Benefits:

- Automatic start/restart
- Optimal handling
- Range reduction on demand
- Universal application due to standard functions
- Short delivery times and global availability
- QR code on the sensor for quick service information

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68095403	► MLC311R40-300	300 mm	40 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68094403	◄ MLC301T40-300	300 mm	40 mm	0 … 20 m	Connector, metal, M12, 4-pin	AIDA-compliant
68095404	► MLC311R40-450	450 mm	40 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68094404	◄ MLC301T40-450	450 mm	40 mm	0 … 20 m	Connector, metal, M12, 4-pin	AIDA-compliant
68095406	► MLC311R40-600	600 mm	40 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68094406	◄ MLC301T40-600	600 mm	40 mm	0 … 20 m	Connector, metal, M12, 4-pin	AIDA-compliant
68095407	► MLC311R40-750	750 mm	40 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68094407	◄ MLC301T40-750	750 mm	40 mm	0 … 20 m	Connector, metal, M12, 4-pin	AIDA-compliant
68095409	► MLC311R40-900	900 mm	40 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68094409	◄ MLC301T40-900	900 mm	40 mm	0 … 20 m	Connector, metal, M12, 4-pin	AIDA-compliant

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 40 mm.

Part no.	Part description	Protective field height	Resolution	Operating range	Connection	Design
68095410	► MLC311R40-1050	1,050 mm	40 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68094410	◄ MLC301T40-1050	1,050 mm	40 mm	0 … 20 m	Connector, metal, M12, 4-pin	AIDA-compliant
68095412	► MLC311R40-1200	1,200 mm	40 mm		Connector, metal, M12, 4-pin	AIDA-compliant
68094412	◄ MLC301T40-1200	1,200 mm	40 mm	0 … 20 m	Connector, metal, M12, 4-pin	AIDA-compliant

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 40 mm.

MLC 320

The Standard version of this type 2 safety light curtain, with a start/restart interlock (RES) and contactor monitoring (EDM), also features practical function extensions for increased performance – still being simple to handle and integrate into your systems.

Benefits:

- Basic functions such as automatic start/restart, start/restart interlock (RES), contactor monitoring (EDM)
- Optimal handling due to function selection without PC as well as LED and 7-segment display with integrated 3-zone alignment aid
- Prevention of mutual interference of the sensors by selectable transmission channels and range reduction, if applicable
- Universal application due to standard functions
- Short delivery times and global availability
- QR code on the sensor for quick service information

Part no.	Part description	Protective field height	Resolution	Operating range	Connection
68092201	► MLC320R20-150	150 mm	20 mm		Connector, metal, M12, 8-pin
68090201	◄ MLC300T20-150	150 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092202	► MLC320R20-225	225 mm	20 mm		Connector, metal, M12, 8-pin
68090202	◄ MLC300T20-225	225 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092203	► MLC320R20-300	300 mm	20 mm		Connector, metal, M12, 8-pin
68090203	◄ MLC300T20-300	300 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092204	► MLC320R20-450	450 mm	20 mm		Connector, metal, M12, 8-pin
68090204	◄ MLC300T20-450	450 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092206	► MLC320R20-600	600 mm	20 mm		Connector, metal, M12, 8-pin
68090206	◄ MLC300T20-600	600 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092207	► MLC320R20-750	750 mm	20 mm		Connector, metal, M12, 8-pin
68090207	◄ MLC300T20-750	750 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092209	► MLC320R20-900	900 mm	20 mm		Connector, metal, M12, 8-pin
68090209	◄ MLC300T20-900	900 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092210	► MLC320R20-1050	1,050 mm	20 mm		Connector, metal, M12, 8-pin
68090210	◄ MLC300T20-1050	1,050 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092212	► MLC320R20-1200	1,200 mm	20 mm		Connector, metal, M12, 8-pin
68090212	◄ MLC300T20-1200	1,200 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092213	► MLC320R20-1350	1,350 mm	20 mm		Connector, metal, M12, 8-pin
68090213	◄ MLC300T20-1350	1,350 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092215	► MLC320R20-1500	1,500 mm	20 mm		Connector, metal, M12, 8-pin
68090215	◄ MLC300T20-1500	1,500 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092216	► MLC320R20-1650	1,650 mm	20 mm		Connector, metal, M12, 8-pin
68090216	◄ MLC300T20-1650	1,650 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin
68092218	► MLC320R20-1800	1,800 mm	20 mm		Connector, metal, M12, 8-pin
68090218	◄ MLC300T20-1800	1,800 mm	20 mm	0 … 15 m	Connector, metal, M12, 5-pin

► receiver / ◄ transmitter
Included in delivery: sliding blocks.
Further products of this series can be found on our website.
Available resolutions: 20 mm, 30 mm, 40 mm, 90 mm.

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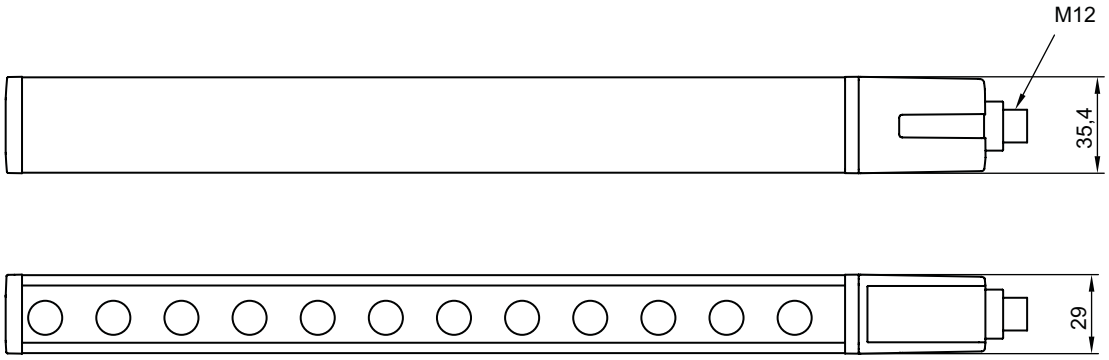
Dimensioned drawings: MLC 300



MLC 300 safety light curtain

ACCESSORIES: MLC 300, MLC 500

Connection technology

Connection cables for MLC 300, MLC 500 transmitter, MLC 510 receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133860	KD S-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50133861	KD S-M12-5A-P1-100	Connector, M12, axial, female	5-pin	10,000 mm	PUR
50136146	KD S-M12-5A-P1-250	Connector, M12, axial, female	5-pin	25,000 mm	PUR
678057	CB-M12-15000E-5GF	Connector, M12, axial, female	5-pin	15,000 mm	PUR
678059	CB-M12-50000E-5GF	Connector, M12, axial, female	5-pin	50,000 mm	PUR

Further connection cables can be found on our website

Connection cables for MLC 520, MLC 530 receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR
678064	CB-M12-50000E-8GF	Connector, M12, axial, female	8-pin	50,000 mm	PUR

Further connection cables can be found on our website

Connection cables for MLC 301, MLC 501 transmitter, MLC 311, MLC 511 receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130726	KD S-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130727	KD S-M12-4A-P1-100	Connector, M12, axial, female	4-pin	10,000 mm	PUR
50132434	KD S-M12-4A-P1-250	Connector, M12, axial, female	4-pin	25,000 mm	PUR

Further connection cables can be found on our website

Interconnection cables for Host/MiddleGuest/Guest

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Sheathing material
50135145	KDS S-M12-8A-M12-8A-P1-020	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	8-pin	2,000 mm	PUR
50135146	KDS S-M12-8A-M12-8A-P1-050	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	8-pin	5,000 mm	PUR

Further interconnection cables can be found on our website

Connection cables for MLC 520-S transmitter and receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132534	KD U-M12-5A-P1-100	Connector, M12, axial, female	5-pin	10,000 mm	PUR
50137531	CB-M12-MLC-S-100-5TP	Cable with connector for cascading	5-pin	100 mm	PUR
50137532	CB-M12-MLC-S-500-5TP	Cable with connector for cascading	5-pin	500 mm	PUR
50137533	CB-M12-MLC-S-1000-5TP	Cable with connector for cascading	5-pin	1,000 mm	PUR

Further connection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
429175	CB-M12-5GF	Connector, M12, axial, female	5-pin
429178	CB-M12-8GF	Connector, M12, axial, female	8-pin

Further connectors can be found on our website

Mounting systems

Swivel mounts

Part no.	Part description	Suitable for	Fastening at device	Fastening at system	Material	Shock absorber
429395	BT-2HF-G	MLC 500 MiddleGuest and Guest safety light curtains	Clampable	Through-hole mounting	Metal, plastic	
429396	BT-2HF-GS	MLC 500 MiddleGuest and Guest safety light curtains	Clampable	Through-hole mounting	Metal, plastic	Yes
429393	BT-2HF	MLC 500, MLC 300 safety light curtains	Clampable	Through-hole mounting	Metal, plastic	
429394	BT-2HF-S	MLC 500, MLC 300 safety light curtains	Clampable	Through-hole mounting	Metal, plastic	Yes

Mounting bracket

Part no.	Part description	Suitable for	Design	Fastening at device	Fastening at system	Material
424440	BT-MLC-S-C	MLC 520S safety light curtains		Clampable	Screw type	Plastic
424441	BT-MLC-S-L	MLC 520S safety light curtains		Clampable	Screw type	Plastic
424442	BT-MLC-S-O	MLC 520S safety light curtains		Pluggable	Screw type	Plastic
429006	BT-2L-HG	MLC 500 Host, MiddleGuest and Guest safety light curtains	Host/Guest connection bracket	Screw type		Metal
429005	BT-L-HG	MLC 500 Host, MiddleGuest and Guest safety light curtains	Host/Guest connection bracket	Screw type		Metal
429056	BT-2L	MLD 500, MLD 300 multiple light beam safety devices, CML700i light curtains, MLC 500, MLC 300 safety light curtains	Angle, L-shape	Screw type	Through-hole mounting	Metal
429057	BT-2Z	MLD 500, MLD 300 multiple light beam safety devices, CML700i light curtains, MLC 500, MLC 300 safety light curtains	Angle, Z-shape	Screw type	Through-hole mounting	Metal

Other mounting systems

Part no.	Part description	Design	Fastening at device	Fastening at system	Material	Swivel range	Shock absorber
424417	BT-2P40	Mounting clamp	Groove mounting	Groove mounting	Metal		
424422	BT-2SB10	Mounting clamp	Clampable, on the lateral C-groove	Through-hole mounting	Metal	–8 … 8 °	
424423	BT-2SB10-S	Mounting clamp	Clampable, on the lateral C-groove	Through-hole mounting	Metal	–8 … 8 °	Yes
425740	BT-10NC60	Sliding block	Groove mounting	Mounting thread	Metal		
425741	BT-10NC64	Sliding block	Groove mounting	Mounting thread	Metal		
425742	BT-10NC65	Sliding block	Groove mounting	Mounting thread	Metal		

Muting

Sensor connection boxes for MLC 530 receiver

Part no.	Part description	Connection	Connections	Fastening
520160	AC-SCM8U	Cable with connector, 500 mm, M12, 8-pin	6x	Through-hole mounting, groove mounting
520162	AC-SCM8U-BT-L	Cable with connector, 500 mm, M12, 8-pin	6x	Mounting plate

Test rods

Part no.	Part description	Diameter 1	Diameter 2
430414	AC-TR14-S	14 mm	
349945	AC-TR14/30	14 mm	30 mm
349939	AC-TR20/40	20 mm	40 mm
430424	AC-TR24-S	24 mm	

Alignment aids

Part no.	Part description	Receiver operating range	Display	Voltage supply
520101	AC-ALM-M	30 m	5 multi-color LEDs	2 AA batteries, replaceable, 2x1.5V

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//MULTIPLE LIGHT BEAM SAFETY DEVICES

WHEN FUNCTIONALITY BECOMES ECONOMICAL

Multiple light beam safety devices with muting function ensure constant personnel protection (access guarding) with unobstructed material infeed, e. g., in conveyor systems. Options such as the integrated Laser Alignment Aid, an integrated muting indicator and the patented swivel mount for easy fastening and alignment round out the program.

/// MLD 500 transmitter/receiver

This type 4 series can be used both for access guarding as well as for applications with and without muting. Through various function classes (MLD 510, 520, 530, 535), the optimum design can always be selected. Configuration via PC or DIP switch is not necessary.

Direct access to the online product selector at **www.leuze.com/en/mld500**

PART NUMBER CODES – MLD 500, MLD 300 multiple light beam safety devices

M L D 3 0 0 T 2 L –

Type

MLD	Multiple light beam safety device

Series

3	MLD 300
5	MLD 500

Function

00	Transmitter
10	Automatic restart
12	External testing (MLD 300 only)
20	Start/restart interlock selectable, contactor monitoring selectable
30	2-sensor muting (timing controlled, sequence controlled)
35	4-sensor muting (timing controlled)

Device type

T	Transmitter
R	Receiver
RT	Transceiver
xT	Transmitter for high range
xR	Receiver for high range

No. of beams

2	2-beam
3	3-beam
4	4-beam

Option

L	Integrated laser alignment aid
M	Integrated indicator
E	Connection socket for external muting indicator (AS-i models only)

Safety-related switching outputs (OSSDs), connection technology

-	Transistor output, M12 plug
A	Integrated AS-i interface, M12 plug, (safety bus system)

MLD 510

These multiple light beam safety devices are equipped with an automatic restart.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Options: integrated laser alignment aid

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66533100	► MLD510-R2	500 mm	2x		Connector, M12, 5-pin, metal	
66501100	◄ MLD500-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66533500	► MLD510-XR2	500 mm	2x		Connector, M12, 5-pin, metal	
66501500	◄ MLD500-XT2	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	
66533101	► MLD510-R2/A	500 mm	2x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66501101	◄ MLD500-T2/A	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66533501	► MLD510-XR2/A	500 mm	2x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66501501	◄ MLD500-XT2/A	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66533102	► MLD510-R2E/A	500 mm	2x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, connection socket for external muting indicator
66501101	◄ MLD500-T2/A	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66533502	► MLD510-XR2E/A	500 mm	2x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, connection socket for external muting indicator
66501501	◄ MLD500-XT2/A	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66534101	► MLD510-R2M/A	500 mm	2x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated muting indicator, integrated status indicator
66501101	◄ MLD500-T2/A	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66535101	► MLD510-R2LM/A	500 mm	2x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66502101	◄ MLD500-T2L/A	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536101	► MLD510-R2L/A	500 mm	2x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid
66502101	◄ MLD500-T2L/A	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536501	► MLD510-XR2L/A	500 mm	2x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid
66502501	◄ MLD500-XT2L/A	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536102	► MLD510-R2LE/A	500 mm	2x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid, connection socket for external muting indicator
66502101	◄ MLD500-T2L/A	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536502	► MLD510-XR2LE/A	500 mm	2x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid, connection socket for external muting indicator
66502501	◄ MLD500-XT2L/A	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536100	► MLD510-R2L	500 mm	2x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66502100	◄ MLD500-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66536500	► MLD510-XR2L	500 mm	2x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66502500	◄ MLD500-XT2L	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66533200	► MLD510-R3	400 mm	3x		Connector, M12, 5-pin, metal	
66501200	◄ MLD500-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66533600	► MLD510-XR3	400 mm	3x		Connector, M12, 5-pin, metal	
66501600	◄ MLD500-XT3	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	
66533201	► MLD510-R3/A	400 mm	3x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66501201	◄ MLD500-T3/A	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66533601	► MLD510-XR3/A	400 mm	3x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66501601	◄ MLD500-XT3/A	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66533202	► MLD510-R3E/A	400 mm	3x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, connection socket for external muting indicator
66501201	◄ MLD500-T3/A	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66533602	► MLD510-XR3E/A	400 mm	3x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, connection socket for external muting indicator
66501601	◄ MLD500-XT3/A	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66534201	► MLD510-R3M/A	400 mm	3x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated muting indicator, integrated status indicator
66501201	◄ MLD500-T3/A	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66535201	► MLD510-R3LM/A	400 mm	3x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66502201	◄ MLD500-T3L/A	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536201	► MLD510-R3L/A	400 mm	3x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid
66502201	◄ MLD500-T3L/A	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536601	► MLD510-XR3L/A	400 mm	3x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid
66502601	◄ MLD500-XT3L/A	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

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Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66536202	► MLD510-R3LE/A	400 mm	3x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid, connection socket for external muting indicator
66502201	◄ MLD500-T3L/A	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536602	► MLD510-XR3LE/A	400 mm	3x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid, connection socket for external muting indicator
66502601	◄ MLD500-XT3L/A	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536200	► MLD510-R3L	400 mm	3x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66502200	◄ MLD500-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66536600	► MLD510-XR3L	400 mm	3x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66502600	◄ MLD500-XT3L	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66533300	► MLD510-R4	300 mm	4x		Connector, M12, 5-pin, metal	
66501300	◄ MLD500-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66533700	► MLD510-XR4	300 mm	4x		Connector, M12, 5-pin, metal	
66501700	◄ MLD500-XT4	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	
66533301	► MLD510-R4/A	300 mm	4x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66501301	◄ MLD500-T4/A	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66533701	► MLD510-XR4/A	300 mm	4x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66501701	◄ MLD500-XT4/A	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66533302	► MLD510-R4E/A	300 mm	4x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, connection socket for external muting indicator
66501301	◄ MLD500-T4/A	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66533702	► MLD510-XR4E/A	300 mm	4x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, connection socket for external muting indicator
66501701	◄ MLD500-XT4/A	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66534301	► MLD510-R4M/A	300 mm	4x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated muting indicator, integrated status indicator
66501301	◄ MLD500-T4/A	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66535301	► MLD510-R4LM/A	300 mm	4x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66502301	◄ MLD500-T4L/A	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536301	► MLD510-R4L/A	300 mm	4x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid
66502301	◄ MLD500-T4L/A	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536701	► MLD510-XR4L/A	300 mm	4x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid
66502701	◄ MLD500-XT4L/A	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536302	► MLD510-R4LE/A	300 mm	4x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid, connection socket for external muting indicator
66502301	◄ MLD500-T4L/A	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536702	► MLD510-XR4LE/A	300 mm	4x		Connector, M12, 5-pin, metal	AS-Interface Safety at Work, reflective element for laser alignment aid, connection socket for external muting indicator
66502701	◄ MLD500-XT4L/A	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated laser alignment aid
66536300	► MLD510-R4L	300 mm	4x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66502300	◄ MLD500-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66536700	► MLD510-XR4L	300 mm	4x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66502700	◄ MLD500-XT4L	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

MLD 520

These multiple light beam safety devices offer a selectable start/restart interlock (RES) and contactor monitoring (EDM).

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Options: integrated laser alignment aid, integrated status indicator

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66553100	► MLD520-R2	500 mm	2x		Connector, M12, 8-pin, metal	
66501100	◄ MLD500-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66553500	► MLD520-XR2	500 mm	2x		Connector, M12, 8-pin, metal	
66501500	◄ MLD500-XT2	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	
66554100	► MLD520-R2M	500 mm	2x		Connector, M12, 8-pin, metal	Integrated status indicator
66501100	◄ MLD500-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66554500	► MLD520-XR2M	500 mm	2x		Connector, M12, 8-pin, metal	Integrated status indicator
66501500	◄ MLD500-XT2	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	
66556100	► MLD520-R2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502100	◄ MLD500-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66555100	► MLD520-R2LM	500 mm	2x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66502100	◄ MLD500-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66556500	► MLD520-XR2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502500	◄ MLD500-XT2L	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66555500	► MLD520-XR2LM	500 mm	2x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66502500	◄ MLD500-XT2L	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66553200	► MLD520-R3	400 mm	3x		Connector, M12, 8-pin, metal	
66501200	◄ MLD500-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66553600	► MLD520-XR3	400 mm	3x		Connector, M12, 8-pin, metal	
66501600	◄ MLD500-XT3	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	
66554200	► MLD520-R3M	400 mm	3x		Connector, M12, 8-pin, metal	Integrated status indicator
66501200	◄ MLD500-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66554600	► MLD520-XR3M	400 mm	3x		Connector, M12, 8-pin, metal	Integrated status indicator
66501600	◄ MLD500-XT3	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	
66556200	► MLD520-R3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502200	◄ MLD500-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66555200	► MLD520-R3LM	400 mm	3x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66502200	◄ MLD500-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66556600	► MLD520-XR3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502600	◄ MLD500-XT3L	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66555600	► MLD520-XR3LM	400 mm	3x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66502600	◄ MLD500-XT3L	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66553300	► MLD520-R4	300 mm	4x		Connector, M12, 8-pin, metal	
66501300	◄ MLD500-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66553700	► MLD520-XR4	300 mm	4x		Connector, M12, 8-pin, metal	
66501700	◄ MLD500-XT4	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	
66554300	► MLD520-R4M	300 mm	4x		Connector, M12, 8-pin, metal	Integrated status indicator
66501300	◄ MLD500-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66554700	► MLD520-XR4M	300 mm	4x		Connector, M12, 8-pin, metal	Integrated status indicator
66501700	◄ MLD500-XT4	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	
66556300	► MLD520-R4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502300	◄ MLD500-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66555300	► MLD520-R4LM	300 mm	4x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66502300	◄ MLD500-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66556700	► MLD520-XR4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502700	◄ MLD500-XT4L	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66555700	► MLD520-XR4LM	300 mm	4x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66502700	◄ MLD500-XT4L	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

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MLD 530

Many functions, such as start/restart interlock, contactor monitoring, timing controlled 2-sensor muting and sequence controlled 2-sensor muting, ensure great flexibility.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Configurable operating modes
- Integrated muting function, no additional muting module is necessary
- 2-sensor muting, (timing controlled, sequence controlled)
- Options: integrated laser alignment aid, integrated muting indicator, 7-segment display

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66563100	► MLD530-R2	500 mm	2x		Connector, M12, 8-pin, metal	
66501100	◄ MLD500-T2	500 mm	2x	0.5 ... 50 m	Connector, M12, 5-pin, metal	
66563500	► MLD530-XR2	500 mm	2x		Connector, M12, 8-pin, metal	
66501500	◄ MLD500-XT2	500 mm	2x	20 ... 70 m	Connector, M12, 5-pin, metal	
66564100	► MLD530-R2M	500 mm	2x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66501100	◄ MLD500-T2	500 mm	2x	0.5 ... 50 m	Connector, M12, 5-pin, metal	
66566100	► MLD530-R2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502100	◄ MLD500-T2L	500 mm	2x	0.5 ... 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66565100	► MLD530-R2LM	500 mm	2x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66502100	◄ MLD500-T2L	500 mm	2x	0.5 ... 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66566500	► MLD530-XR2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502500	◄ MLD500-XT2L	500 mm	2x	20 ... 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66563200	► MLD530-R3	400 mm	3x		Connector, M12, 8-pin, metal	
66501200	◄ MLD500-T3	400 mm	3x	0.5 ... 50 m	Connector, M12, 5-pin, metal	
66563600	► MLD530-XR3	400 mm	3x		Connector, M12, 8-pin, metal	
66501600	◄ MLD500-XT3	400 mm	3x	20 ... 70 m	Connector, M12, 5-pin, metal	
66564200	► MLD530-R3M	400 mm	3x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66501200	◄ MLD500-T3	400 mm	3x	0.5 ... 50 m	Connector, M12, 5-pin, metal	
66566200	► MLD530-R3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502200	◄ MLD500-T3L	400 mm	3x	0.5 ... 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66565200	► MLD530-R3LM	400 mm	3x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66502200	◄ MLD500-T3L	400 mm	3x	0.5 ... 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66566600	► MLD530-XR3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502600	◄ MLD500-XT3L	400 mm	3x	20 ... 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66563300	► MLD530-R4	300 mm	4x		Connector, M12, 8-pin, metal	
66501300	◄ MLD500-T4	300 mm	4x	0.5 ... 50 m	Connector, M12, 5-pin, metal	
66563700	► MLD530-XR4	300 mm	4x		Connector, M12, 8-pin, metal	
66501700	◄ MLD500-XT4	300 mm	4x	20 ... 70 m	Connector, M12, 5-pin, metal	
66564300	► MLD530-R4M	300 mm	4x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66501300	◄ MLD500-T4	300 mm	4x	0.5 ... 50 m	Connector, M12, 5-pin, metal	
66566300	► MLD530-R4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502300	◄ MLD500-T4L	300 mm	4x	0.5 ... 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66565300	► MLD530-R4LM	300 mm	4x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66502300	◄ MLD500-T4L	300 mm	4x	0.5 ... 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66566700	► MLD530-XR4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502700	◄ MLD500-XT4L	300 mm	4x	20 ... 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

MLD 535

Through extensive functions, such as start/restart interlock, contactor monitoring, timing controlled 2-sensor muting, sequence controlled 2-sensor muting and timing controlled 4-sensor muting, these multiple light beam safety devices can be used in different areas.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Configurable operating modes
- Integrated muting function, no additional muting module is necessary
- 2-sensor muting, (timing controlled, sequence controlled)
- Timing controlled 4-sensor muting
- Options: integrated muting indicator, 7-segment display

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66573100	► MLD535-R2	500 mm	2x		Connector, M12, 8-pin, metal	
66501100	◄ MLD500-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66573500	► MLD535-XR2	500 mm	2x		Connector, M12, 8-pin, metal	
66501500	◄ MLD500-XT2	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	
66574100	► MLD535-R2M	500 mm	2x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66501100	◄ MLD500-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66576100	► MLD535-R2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502100	◄ MLD500-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66575100	► MLD535-R2LM	500 mm	2x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66502100	◄ MLD500-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66576500	► MLD535-XR2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502500	◄ MLD500-XT2L	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66573200	► MLD535-R3	400 mm	3x		Connector, M12, 8-pin, metal	
66501200	◄ MLD500-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66573600	► MLD535-XR3	400 mm	3x		Connector, M12, 8-pin, metal	
66501600	◄ MLD500-XT3	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	
66574200	► MLD535-R3M	400 mm	3x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66501200	◄ MLD500-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66576200	► MLD535-R3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502200	◄ MLD500-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66575200	► MLD535-R3LM	400 mm	3x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66502200	◄ MLD500-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66576600	► MLD535-XR3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502600	◄ MLD500-XT3L	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66573300	► MLD535-R4	300 mm	4x		Connector, M12, 8-pin, metal	
66501300	◄ MLD500-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66573700	► MLD535-XR4	300 mm	4x		Connector, M12, 8-pin, metal	
66501700	◄ MLD500-XT4	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	
66574300	► MLD535-R4M	300 mm	4x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66501300	◄ MLD500-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66576300	► MLD535-R4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502300	◄ MLD500-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66575300	► MLD535-R4LM	300 mm	4x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66502300	◄ MLD500-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66576700	► MLD535-XR4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66502700	◄ MLD500-XT4L	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

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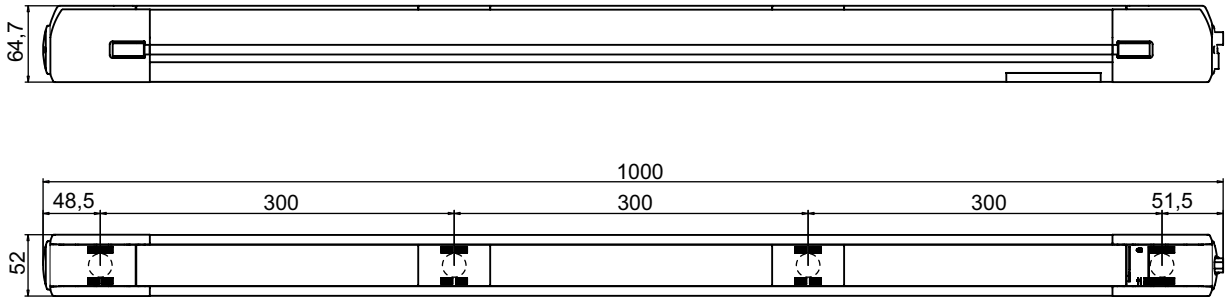
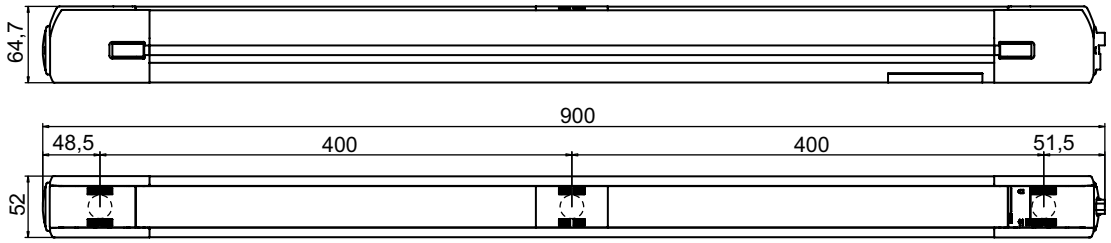
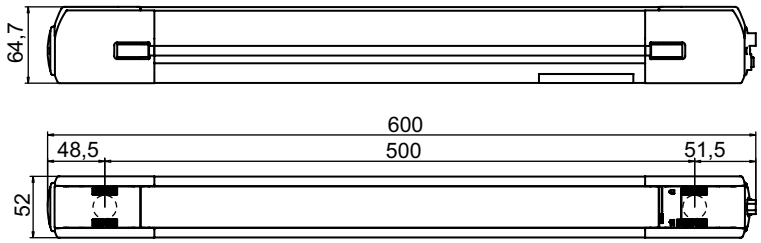
Dimensioned drawings: MLD 500 transmitter/receiver



MLD 500 multiple light beam safety device, 4-beam, transmitter, receiver



MLD 500 multiple light beam safety device, 3-beam, transmitter, receiver



MLD 500 multiple light beam safety device, 2-beam, transmitter, receiver

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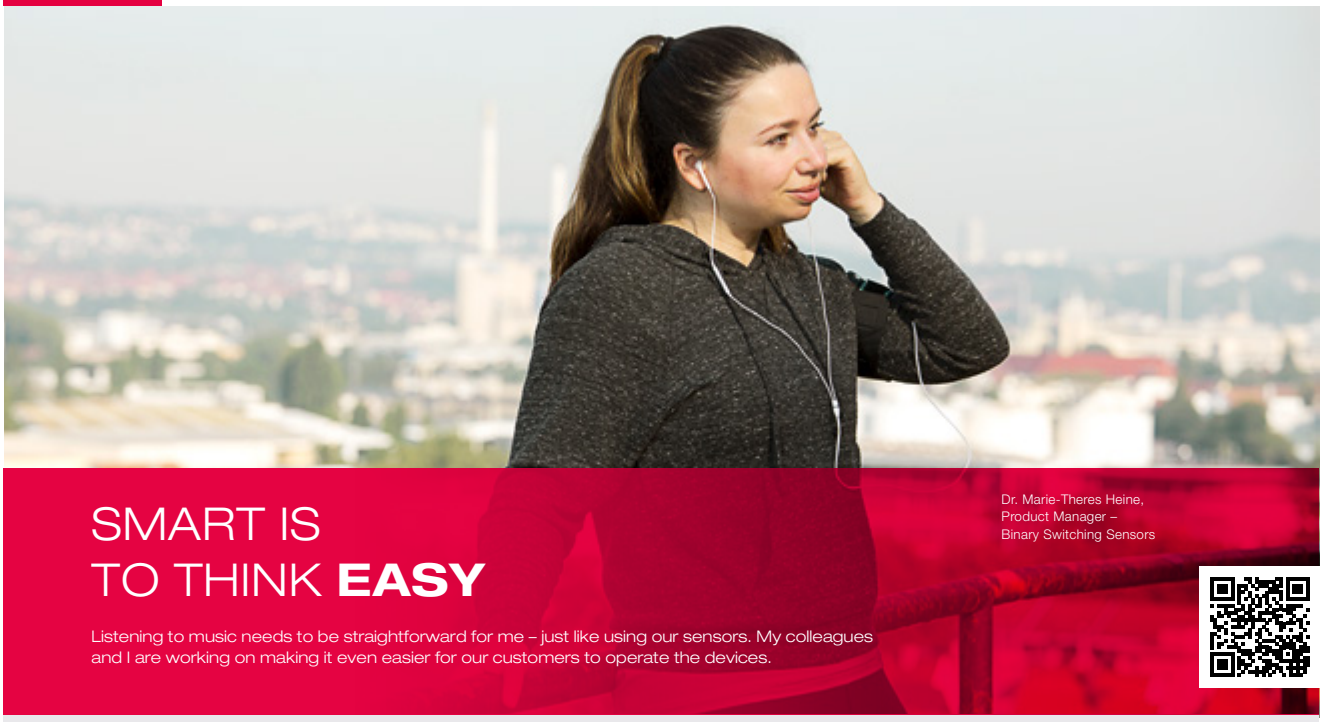

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Dr. Marie-Theres Heine,
Product Manager –
Binary Switching Sensors

www.smart-sensor-business.com

/// MLD 500 transceiver

With this type 4 design, all active components, such as transmitter, receiver and the integrated evaluation unit, are contained in a common housing. The second housing functions as a passive deflecting mirror. This cost-effective solution for operating ranges of up to 8 m considerably reduces installation and wiring work.

Direct access to the online product selector at **www.leuze.com/en/mld500-t**

PART NUMBER CODES – MLD 500, MLD 300 multiple light beam safety devices

MLD 3 00 T 2 L –

Type

MLD	Multiple light beam safety device

Series

3	MLD 300
5	MLD 500

Function

00	Transmitter
10	Automatic restart
12	External testing (MLD 300 only)
20	Start/restart interlock selectable, contactor monitoring selectable
30	2-sensor muting (timing controlled, sequence controlled)
35	4-sensor muting (timing controlled)

Device type

T	Transmitter
R	Receiver
RT	Transceiver
xT	Transmitter for high range
xR	Receiver for high range

No. of beams

2	2-beam
3	3-beam
4	4-beam

Option

L	Integrated laser alignment aid
M	Integrated indicator
E	Connection socket for external muting indicator (AS-i models only)

Safety-related switching outputs (OSSDs), connection technology

-	Transistor output, M12 plug
A	Integrated AS-i interface, M12 plug, (safety bus system)

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MLD 510

These multiple light beam safety devices are equipped with an automatic restart.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66537100	► MLD510-RT2	500 mm	2x	0.5 … 8 m	Connector, M12, 5-pin, metal	
66500100	◄ MLD-M002	500 mm	2x			
66537101	► MLD510-RT2/A	500 mm	2x	0.5 … 8 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66500100	◄ MLD-M002	500 mm	2x			
66537102	► MLD510-RT2E/A	500 mm	2x	0.5 … 8 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, connection socket for external muting indicator
66500100	◄ MLD-M002	500 mm	2x			
66538101	► MLD510-RT2M/A	500 mm	2x	0.5 … 8 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated muting indicator, integrated status indicator
66500100	◄ MLD-M002	500 mm	2x			
66538102	► MLD510-RT2ME/A	500 mm	2x	0.5 … 8 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated muting indicator, integrated status indicator, connection socket for external muting indicator
66500100	◄ MLD-M002	500 mm	2x			
66537200	► MLD510-RT3	400 mm	3x	0.5 … 6 m	Connector, M12, 5-pin, metal	
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		
66537201	► MLD510-RT3/A	400 mm	3x	0.5 … 6 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		
66537202	► MLD510-RT3E/A	400 mm	3x	0.5 … 6 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, connection socket for external muting indicator
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		
66538201	► MLD510-RT3M/A	400 mm	3x	0.5 … 6 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated muting indicator, integrated status indicator
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		
66538202	► MLD510-RT3ME/A	400 mm	3x	0.5 … 6 m	Connector, M12, 5-pin, metal	AS-Interface Safety at Work, integrated muting indicator, integrated status indicator, connection socket for external muting indicator
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		

► transceiver / ◄ deflect. mirror
Included in delivery: sliding blocks

MLD 520

These multiple light beam safety devices offer a selectable start/restart interlock (RES) and contactor monitoring (EDM).

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Options: integrated status indicator

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66557100	► MLD520-RT2	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	
66500100	◄ MLD-M002	500 mm	2x			
66558100	► MLD520-RT2M	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	Integrated status indicator
66500100	◄ MLD-M002	500 mm	2x	0.5 … 8 m		
66557200	► MLD520-RT3	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		
66558200	► MLD520-RT3M	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	Integrated status indicator
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		

► transceiver / ◄ deflect. mirror
Included in delivery: sliding blocks

MLD 530

Many functions, such as start/restart interlock, contactor monitoring, timing controlled 2-sensor muting and sequence controlled 2-sensor muting, ensure great flexibility.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Configurable operating modes
- Integrated muting function, no additional muting module is necessary
- 2-sensor muting, (timing controlled, sequence controlled)
- Options: integrated muting indicator, 7-segment display

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66567100	► MLD530-RT2	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	
66500100	◄ MLD-M002	500 mm	2x			
66568100	► MLD530-RT2M	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66500100	◄ MLD-M002	500 mm	2x			
66567200	► MLD530-RT3	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		
66568200	► MLD530-RT3M	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		

► transceiver / ◄ deflect. mirror
Included in delivery: sliding blocks

MLD 535

Through extensive functions, such as start/restart interlock, contactor monitoring, timing controlled 2-sensor muting, sequence controlled 2-sensor muting and timing controlled 4-sensor muting, these multiple light beam safety devices can be used in different areas.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Configurable operating modes
- Integrated muting function, no additional muting module is necessary
- 2-sensor muting, (timing controlled, sequence controlled)
- Timing controlled 4-sensor muting
- Options: integrated muting indicator, 7-segment display

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66577100	► MLD535-RT2	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	
66500100	◄ MLD-M002	500 mm	2x			
66578100	► MLD535-RT2M	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66500100	◄ MLD-M002	500 mm	2x			
66577200	► MLD535-RT3	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		
66578200	► MLD535-RT3M	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		

► transceiver / ◄ deflect. mirror
Included in delivery: sliding blocks

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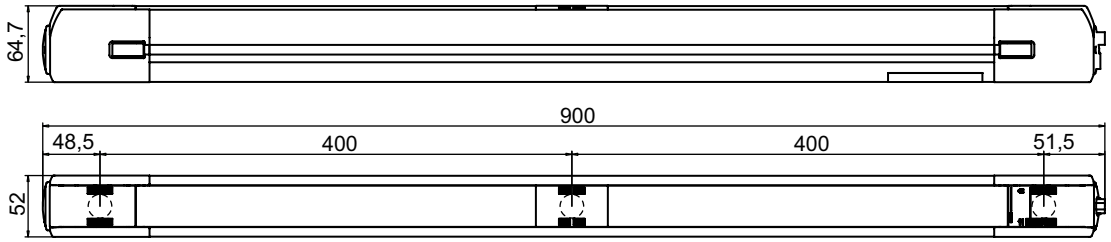
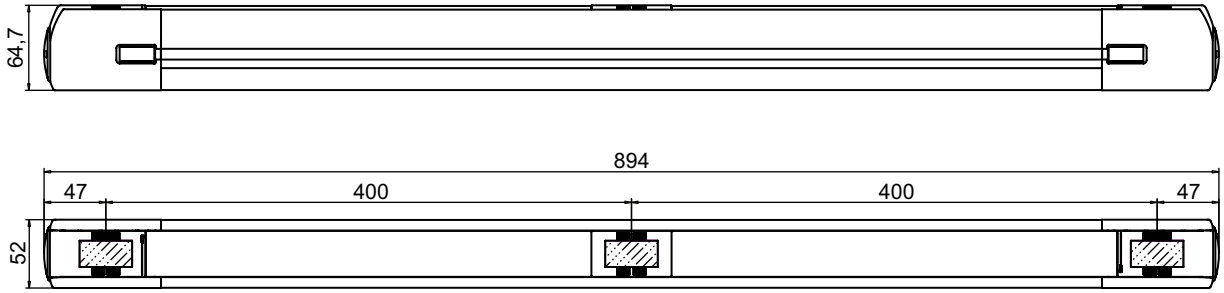
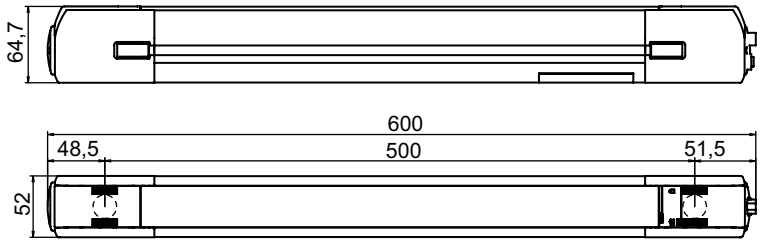
Dimensioned drawings: MLD 500 transceiver



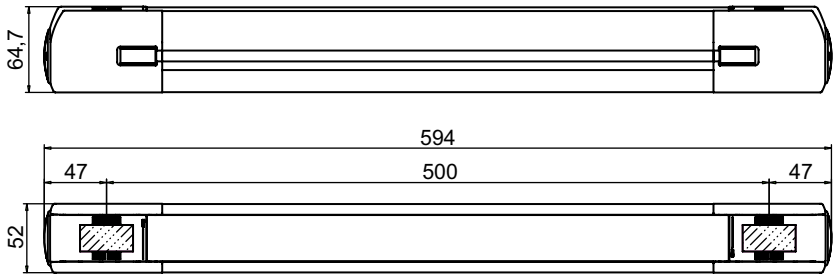
MLD 500 multiple light beam safety device, 3-beam, transceiver



MLD-M multiple light beam safety device, 3-beam, deflecting mirror



MLD 500 multiple light beam safety device, 2-beam, transceiver



MLD-M multiple light beam safety device, 2-beam, deflecting mirror

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/// MLD 300 transmitter/receiver

Like the protective sensors of the MLD 500 series (type 4), these type 2 multiple light beam safety devices are also available in various function classes (MLD 310, 312, 320, 330, 335). Configuration via PC or DIP switch is not necessary.

Direct access to the online product selector at **www.leuze.com/en/mld300-se**

PART NUMBER CODES – MLD 500, MLD 300 multiple light beam safety devices

M L D 3 0 0 T 2 L –

Type

MLD	Multiple light beam safety device

Series

3	MLD 300
5	MLD 500

Function

00	Transmitter
10	Automatic restart
12	External testing (MLD 300 only)
20	Start/restart interlock selectable, contactor monitoring selectable
30	2-sensor muting (timing controlled, sequence controlled)
35	4-sensor muting (timing controlled)

Device type

T	Transmitter
R	Receiver
RT	Transceiver
xT	Transmitter for high range
xR	Receiver for high range

No. of beams

2	2-beam
3	3-beam
4	4-beam

Option

L	Integrated laser alignment aid
M	Integrated indicator
E	Connection socket for external muting indicator (AS-i models only)

Safety-related switching outputs (OSSDs), connection technology

-	Transistor output, M12 plug
A	Integrated AS-i interface, M12 plug, (safety bus system)

MLD 310

These multiple light beam safety devices are equipped with an automatic restart.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66033100	► MLD310-R2	500 mm	2x		Connector, M12, 5-pin, metal	
66001100	◄ MLD300-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66033500	► MLD310-XR2	500 mm	2x		Connector, M12, 5-pin, metal	
66001500	◄ MLD300-XT2	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	

► receiver / ◄ transmitter
Included in delivery: sliding blocks

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Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66036100	► MLD310-R2L	500 mm	2x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002100	◄ MLD300-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66036500	► MLD310-XR2L	500 mm	2x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002500	◄ MLD300-XT2L	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66033200	► MLD310-R3	400 mm	3x		Connector, M12, 5-pin, metal	
66001200	◄ MLD300-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66033600	► MLD310-XR3	400 mm	3x		Connector, M12, 5-pin, metal	
66001600	◄ MLD300-XT3	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	
66036200	► MLD310-R3L	400 mm	3x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002200	◄ MLD300-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66036600	► MLD310-XR3L	400 mm	3x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002600	◄ MLD300-XT3L	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66033300	► MLD310-R4	300 mm	4x		Connector, M12, 5-pin, metal	
66001300	◄ MLD300-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66033700	► MLD310-XR4	300 mm	4x		Connector, M12, 5-pin, metal	
66001700	◄ MLD300-XT4	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	
66036300	► MLD310-R4L	300 mm	4x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002300	◄ MLD300-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66036700	► MLD310-XR4L	300 mm	4x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002700	◄ MLD300-XT4L	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

MLD 312

These multiple light beam safety devices are equipped with an automatic restart. The receivers are equipped with a test input for the periodic function test by means of an external safety monitoring device.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Test input for periodic function test

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66043100	► MLD312-R2	500 mm	2x		Connector, M12, 5-pin, metal	
66001100	◄ MLD300-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66043500	► MLD312-XR2	500 mm	2x		Connector, M12, 5-pin, metal	
66001500	◄ MLD300-XT2	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	
66046100	► MLD312-R2L	500 mm	2x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002100	◄ MLD300-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66046500	► MLD312-XR2L	500 mm	2x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002500	◄ MLD300-XT2L	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66043200	► MLD312-R3	400 mm	3x		Connector, M12, 5-pin, metal	
66001200	◄ MLD300-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66043600	► MLD312-XR3	400 mm	3x		Connector, M12, 5-pin, metal	
66001600	◄ MLD300-XT3	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	
66046200	► MLD312-R3L	400 mm	3x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002200	◄ MLD300-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66046600	► MLD312-XR3L	400 mm	3x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002600	◄ MLD300-XT3L	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66043300	► MLD312-R4	300 mm	4x		Connector, M12, 5-pin, metal	
66001300	◄ MLD300-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66043700	► MLD312-XR4	300 mm	4x		Connector, M12, 5-pin, metal	
66001700	◄ MLD300-XT4	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	
66046300	► MLD312-R4L	300 mm	4x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002300	◄ MLD300-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66046700	► MLD312-XR4L	300 mm	4x		Connector, M12, 5-pin, metal	Reflective element for laser alignment aid
66002700	◄ MLD300-XT4L	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

MLD 320

These multiple light beam safety devices offer a selectable start/restart interlock (RES) and contactor monitoring (EDM).

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Options: integrated laser alignment aid, integrated status indicator

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66053100	► MLD320-R2	500 mm	2x		Connector, M12, 8-pin, metal	
66001100	◄ MLD300-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66053500	► MLD320-XR2	500 mm	2x		Connector, M12, 8-pin, metal	
66001500	◄ MLD300-XT2	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	
66054100	► MLD320-R2M	500 mm	2x		Connector, M12, 8-pin, metal	Integrated status indicator
66001100	◄ MLD300-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66054500	► MLD320-XR2M	500 mm	2x		Connector, M12, 8-pin, metal	Integrated status indicator
66001500	◄ MLD300-XT2	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	
66056100	► MLD320-R2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002100	◄ MLD300-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66055100	► MLD320-R2LM	500 mm	2x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66002100	◄ MLD300-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66056500	► MLD320-XR2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002500	◄ MLD300-XT2L	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66055500	► MLD320-XR2LM	500 mm	2x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66002500	◄ MLD300-XT2L	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66053200	► MLD320-R3	400 mm	3x		Connector, M12, 8-pin, metal	
66001200	◄ MLD300-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66053600	► MLD320-XR3	400 mm	3x		Connector, M12, 8-pin, metal	
66001600	◄ MLD300-XT3	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	
66054200	► MLD320-R3M	400 mm	3x		Connector, M12, 8-pin, metal	Integrated status indicator
66001200	◄ MLD300-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66054600	► MLD320-XR3M	400 mm	3x		Connector, M12, 8-pin, metal	Integrated status indicator
66001600	◄ MLD300-XT3	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	
66056200	► MLD320-R3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002200	◄ MLD300-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66055200	► MLD320-R3LM	400 mm	3x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66002200	◄ MLD300-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66056600	► MLD320-XR3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002600	◄ MLD300-XT3L	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66055600	► MLD320-XR3LM	400 mm	3x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66002600	◄ MLD300-XT3L	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66053300	► MLD320-R4	300 mm	4x		Connector, M12, 8-pin, metal	
66001300	◄ MLD300-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66053700	► MLD320-XR4	300 mm	4x		Connector, M12, 8-pin, metal	
66001700	◄ MLD300-XT4	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	
66054300	► MLD320-R4M	300 mm	4x		Connector, M12, 8-pin, metal	Integrated status indicator
66001300	◄ MLD300-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66054700	► MLD320-XR4M	300 mm	4x		Connector, M12, 8-pin, metal	Integrated status indicator
66001700	◄ MLD300-XT4	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	
66056300	► MLD320-R4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002300	◄ MLD300-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66055300	► MLD320-R4LM	300 mm	4x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66002300	◄ MLD300-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66056700	► MLD320-XR4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002700	◄ MLD300-XT4L	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66055700	► MLD320-XR4LM	300 mm	4x		Connector, M12, 8-pin, metal	Integrated status indicator, reflective element for laser alignment aid
66002700	◄ MLD300-XT4L	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

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MLD 330

Many functions, such as start/restart interlock, contactor monitoring, timing controlled 2-sensor muting, sequence controlled 2-sensor muting, ensure great flexibility.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Configurable operating modes
- Integrated muting function, no additional muting module is necessary
- 2-sensor muting, (timing controlled, sequence controlled)
- Options: integrated laser alignment aid, integrated muting indicator, 7-segment display

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66063100	► MLD330-R2	500 mm	2x		Connector, M12, 8-pin, metal	
66001100	◄ MLD300-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66063500	► MLD330-XR2	500 mm	2x		Connector, M12, 8-pin, metal	
66001500	◄ MLD300-XT2	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	
66064100	► MLD330-R2M	500 mm	2x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66001100	◄ MLD300-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66066100	► MLD330-R2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002100	◄ MLD300-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66065100	► MLD330-R2LM	500 mm	2x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66002100	◄ MLD300-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66066500	► MLD330-XR2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002500	◄ MLD300-XT2L	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66063200	► MLD330-R3	400 mm	3x		Connector, M12, 8-pin, metal	
66001200	◄ MLD300-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66063600	► MLD330-XR3	400 mm	3x		Connector, M12, 8-pin, metal	
66001600	◄ MLD300-XT3	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	
66064200	► MLD330-R3M	400 mm	3x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66001200	◄ MLD300-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66066200	► MLD330-R3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002200	◄ MLD300-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66065200	► MLD330-R3LM	400 mm	3x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66002200	◄ MLD300-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66066600	► MLD330-XR3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002600	◄ MLD300-XT3L	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66063300	► MLD330-R4	300 mm	4x		Connector, M12, 8-pin, metal	
66001300	◄ MLD300-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66063700	► MLD330-XR4	300 mm	4x		Connector, M12, 8-pin, metal	
66001700	◄ MLD300-XT4	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	
66064300	► MLD330-R4M	300 mm	4x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66001300	◄ MLD300-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66066300	► MLD330-R4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002300	◄ MLD300-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66065300	► MLD330-R4LM	300 mm	4x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66002300	◄ MLD300-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66066700	► MLD330-XR4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002700	◄ MLD300-XT4L	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

MLD 335

Through extensive functions, such as start/restart interlock, contactor monitoring, timing controlled 2-sensor muting, sequence controlled 2-sensor muting and timing controlled 4-sensor muting, these multiple light beam safety devices can be used in different areas.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Configurable operating modes
- Integrated muting function, no additional muting module is necessary
- 2-sensor muting, (timing controlled, sequence controlled)
- Timing controlled 4-sensor muting
- Options: integrated muting indicator, 7-segment display

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66073100	► MLD335-R2	500 mm	2x		Connector, M12, 8-pin, metal	
66001100	◄ MLD300-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66073500	► MLD335-XR2	500 mm	2x		Connector, M12, 8-pin, metal	
66001500	◄ MLD300-XT2	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	
66074100	► MLD335-R2M	500 mm	2x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66001100	◄ MLD300-T2	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66076100	► MLD335-R2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002100	◄ MLD300-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66075100	► MLD335-R2LM	500 mm	2x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66002100	◄ MLD300-T2L	500 mm	2x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66076500	► MLD335-XR2L	500 mm	2x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002500	◄ MLD300-XT2L	500 mm	2x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66073200	► MLD335-R3	400 mm	3x		Connector, M12, 8-pin, metal	
66001200	◄ MLD300-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66073600	► MLD335-XR3	400 mm	3x		Connector, M12, 8-pin, metal	
66001600	◄ MLD300-XT3	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	
66074200	► MLD335-R3M	400 mm	3x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66001200	◄ MLD300-T3	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66076200	► MLD335-R3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002200	◄ MLD300-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66075200	► MLD335-R3LM	400 mm	3x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66002200	◄ MLD300-T3L	400 mm	3x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66076600	► MLD335-XR3L	400 mm	3x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002600	◄ MLD300-XT3L	400 mm	3x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66073300	► MLD335-R4	300 mm	4x		Connector, M12, 8-pin, metal	
66001300	◄ MLD300-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66073700	► MLD335-XR4	300 mm	4x		Connector, M12, 8-pin, metal	
66001700	◄ MLD300-XT4	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	
66074300	► MLD335-R4M	300 mm	4x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66001300	◄ MLD300-T4	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	
66076300	► MLD335-R4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002300	◄ MLD300-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66075300	► MLD335-R4LM	300 mm	4x		Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator, reflective element for laser alignment aid
66002300	◄ MLD300-T4L	300 mm	4x	0.5 … 50 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid
66076700	► MLD335-XR4L	300 mm	4x		Connector, M12, 8-pin, metal	Reflective element for laser alignment aid
66002700	◄ MLD300-XT4L	300 mm	4x	20 … 70 m	Connector, M12, 5-pin, metal	Integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

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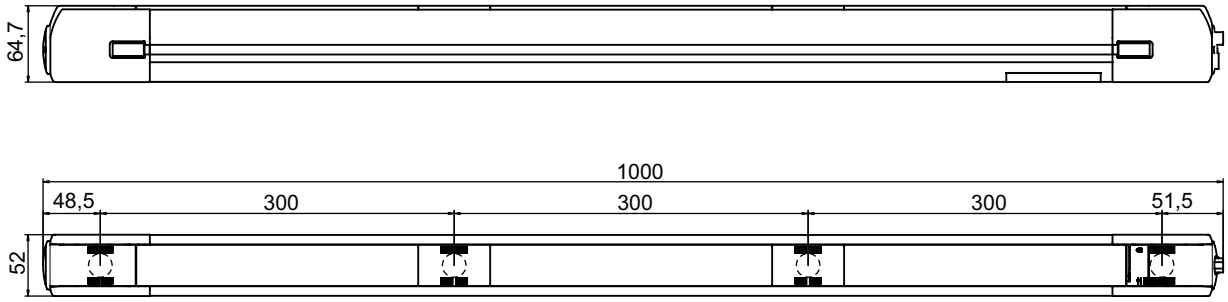
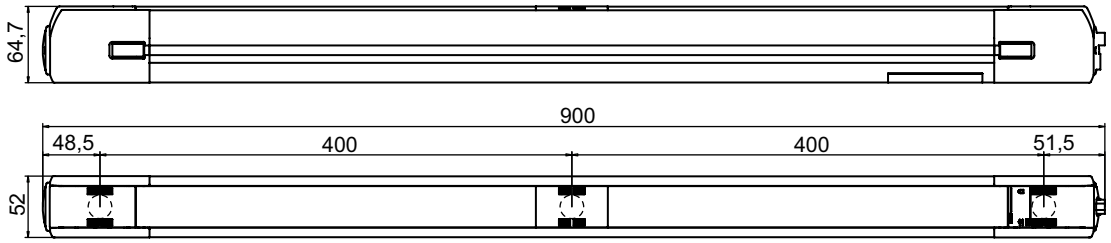
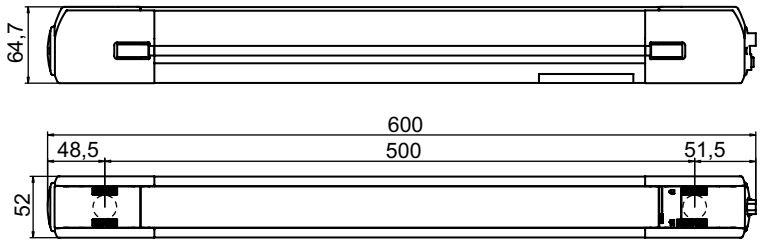
Dimensioned drawings: MLD 300 transmitter/receiver



MLD 300 multiple light beam safety device, 4-beam, transmitter, receiver



MLD 300 multiple light beam safety device, 3-beam, transmitter, receiver



MLD 300 multiple light beam safety device, 2-beam, transmitter, receiver

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/// MLD 300 transceiver

With this type 2 design, all active components, such as transmitter, receiver and the integrated evaluation unit, are contained in a common housing. The second housing functions as a passive deflecting mirror. This cost-effective solution for operating ranges of up to 8 m considerably reduces installation and wiring work.

Direct access to the online product selector at **www.leuze.com/en/mld300-t**

PART NUMBER CODES – MLD 500, MLD 300 multiple light beam safety devices

M L D 3 0 0 T 2 L –

Type

MLD	Multiple light beam safety device

Series

3	MLD 300
5	MLD 500

Function

00	Transmitter
10	Automatic restart
12	External testing (MLD 300 only)
20	Start/restart interlock selectable, contactor monitoring selectable
30	2-sensor muting (timing controlled, sequence controlled)
35	4-sensor muting (timing controlled)

Device type

T	Transmitter
R	Receiver
RT	Transceiver
xT	Transmitter for high range
xR	Receiver for high range

No. of beams

2	2-beam
3	3-beam
4	4-beam

Option

L	Integrated laser alignment aid
M	Integrated indicator
E	Connection socket for external muting indicator (AS-i models only)

Safety-related switching outputs (OSSDs), connection technology

-	Transistor output, M12 plug
A	Integrated AS-i interface, M12 plug, (safety bus system)

MLD 310

These multiple light beam safety devices are equipped with an automatic restart.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection
66037100	► MLD310-RT2	500 mm	2x	0.5 … 8 m	Connector, M12, 5-pin, metal
66500100	◄ MLD-M002	500 mm	2x		
66037200	► MLD310-RT3	400 mm	3x	0.5 … 6 m	Connector, M12, 5-pin, metal
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m	
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m	

► transceiver / ◄ deflect. mirror
Included in delivery: sliding blocks

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MLD 312

These multiple light beam safety devices are equipped with an automatic restart. The transceivers are equipped with a test input for the periodic function test by means of an external safety monitoring device.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Test input for periodic function test

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection
66047100	► MLD312-RT2	500 mm	2x	0.5 … 8 m	Connector, M12, 5-pin, metal
66500100	◄ MLD-M002	500 mm	2x		
66047200	► MLD312-RT3	400 mm	3x	0.5 … 6 m	Connector, M12, 5-pin, metal
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m	
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m	

► transceiver / ◄ deflect. mirror
Included in delivery: sliding blocks

MLD 320

These multiple light beam safety devices offer a selectable start/restart interlock (RES) and contactor monitoring (EDM).

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Options: integrated status indicator

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66057100	► MLD320-RT2	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	
66500100	◄ MLD-M002	500 mm	2x			
66058100	► MLD320-RT2M	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	Integrated status indicator
66500100	◄ MLD-M002	500 mm	2x			
66057200	► MLD320-RT3	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		
66058200	► MLD320-RT3M	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	Integrated status indicator
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		

► transceiver / ◄ deflect. mirror
Included in delivery: sliding blocks

MLD 330

Many functions, such as start/restart interlock, contactor monitoring, timing controlled 2-sensor muting, sequence controlled 2-sensor muting, ensure great flexibility.

Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Configurable operating modes
- Integrated muting function, no additional muting module is necessary
- 2-sensor muting, (timing controlled, sequence controlled)
- Options: integrated muting indicator, 7-segment display

Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66067100	► MLD330-RT2	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	
66500100	◄ MLD-M002	500 mm	2x			
66068100	► MLD330-RT2M	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66500100	◄ MLD-M002	500 mm	2x			
66067200	► MLD330-RT3	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		
66068200	► MLD330-RT3M	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		

► transceiver / ◄ deflect. mirror
Included in delivery: sliding blocks

MLD 335

Through extensive functions, such as start/restart interlock, contactor monitoring, timing controlled 2-sensor muting, sequence controlled 2-sensor muting and timing controlled 4-sensor muting, these multiple light beam safety devices can be used in different areas.

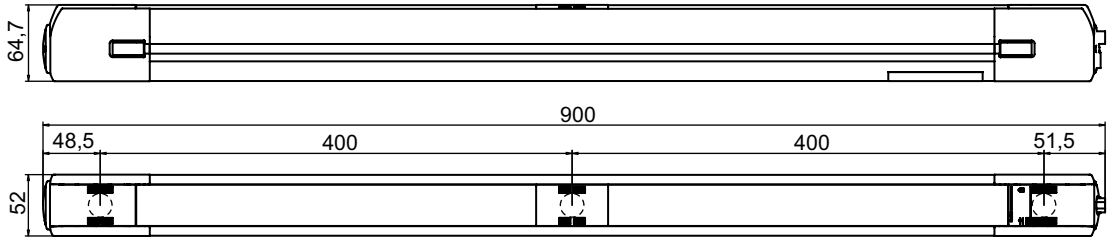
Benefits:

- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Configurable operating modes
- Integrated muting function, no additional muting module is necessary
- 2-sensor muting, (timing controlled, sequence controlled)
- Timing controlled 4-sensor muting
- Options: integrated muting indicator, 7-segment display

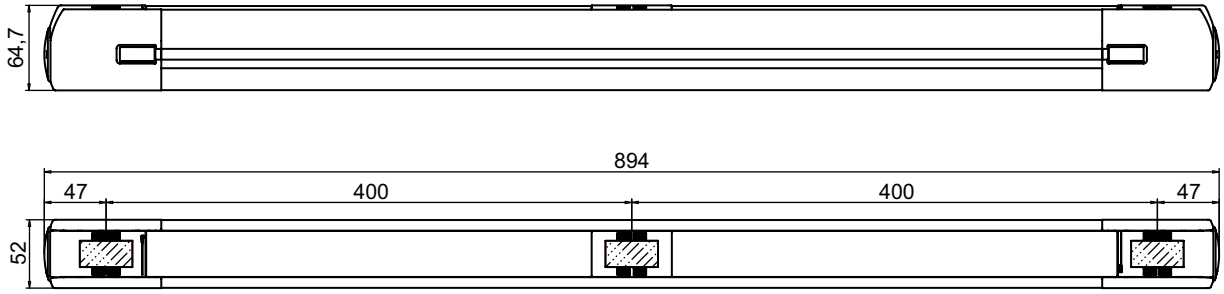
Part no.	Part description	Beam spacing	Number of beams	Operating range	Connection	Design
66077100	► MLD335-RT2	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	
66500100	◄ MLD-M002	500 mm	2x			
66078100	► MLD335-RT2M	500 mm	2x	0.5 … 8 m	Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66500100	◄ MLD-M002	500 mm	2x			
66077200	► MLD335-RT3	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		
66078200	► MLD335-RT3M	400 mm	3x	0.5 … 6 m	Connector, M12, 8-pin, metal	Integrated muting indicator, integrated status indicator
66500200	◄ MLD-M003	400 mm	3x	0.5 … 6 m		
66500201	◄ MLD-XM03	400 mm	3x	0.5 … 8 m		

► transceiver / ◄ deflect. mirror
Included in delivery: sliding blocks

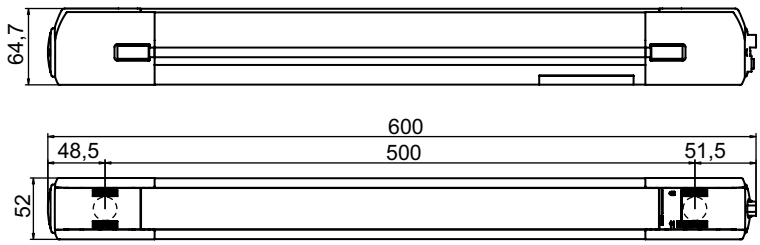
Dimensioned drawings: MLD 300 transceiver



MLD 300 multiple light beam safety device, 3-beam, transceiver



MLD-M multiple light beam safety device, 3-beam, deflecting mirror



MLD 300 multiple light beam safety device, 2-beam, transceiver

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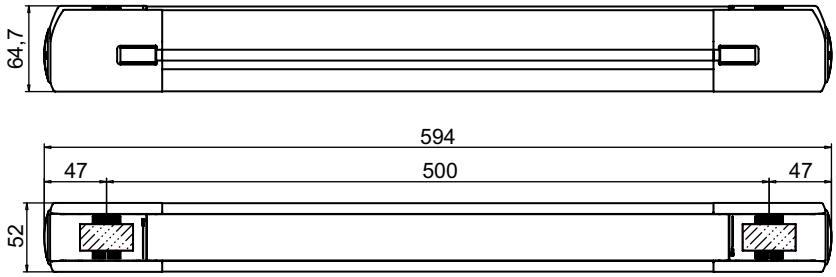
Dimensioned drawings: MLD 300 transceiver



MLD-M multiple light beam safety device, 2-beam, deflecting mirror

ACCESSORIES: MLD 300, MLD 500

Connection technology

Connection cables for MLD 300, MLD 500 transmitter, MLD 310, MLD 312, MLD 510 receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133860	KD S-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50133861	KD S-M12-5A-P1-100	Connector, M12, axial, female	5-pin	10,000 mm	PUR
50136146	KD S-M12-5A-P1-250	Connector, M12, axial, female	5-pin	25,000 mm	PUR
678057	CB-M12-15000E-5GF	Connector, M12, axial, female	5-pin	15,000 mm	PUR
678059	CB-M12-50000E-5GF	Connector, M12, axial, female	5-pin	50,000 mm	PUR

Further connection cables can be found on our website

Connection cables for MLD 320, MLD 330, MLD 335, MLD 520, MLD 530, MLD 535 receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR
678064	CB-M12-50000E-8GF	Connector, M12, axial, female	8-pin	50,000 mm	PUR

Further connection cables can be found on our website

Connection cables for MLD 330, MLD 530 (local interface) receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
678050	CB-M12-5000E-5GM	Connector, M12, axial, male	5-pin	5,000 mm	PUR
678051	CB-M12-10000E-5GM	Connector, M12, axial, male	5-pin	10,000 mm	PUR
678052	CB-M12-15000E-5GM	Connector, M12, axial, male	5-pin	15,000 mm	PUR
678053	CB-M12-25000E-5GM	Connector, M12, axial, male	5-pin	25,000 mm	PUR

Further connection cables can be found on our website

Connection cables for MLD 335, MLD 535 (local interface) receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135140	KS S-M12-8A-P1-100	Connector, M12, axial, male	8-pin	10,000 mm	PUR
50135141	KS S-M12-8A-P1-150	Connector, M12, axial, male	8-pin	15,000 mm	PUR
50135142	KS S-M12-8A-P1-300	Connector, M12, axial, male	8-pin	30,000 mm	PUR

Further connection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
429175	CB-M12-5GF	Connector, M12, axial, female	5-pin
429178	CB-M12-8GF	Connector, M12, axial, female	8-pin

Further connectors can be found on our website

Mounting systems

Swivel mounts

Part no.	Part description	Fastening at device	Fastening at system	Type of mounting device	Material	Suitable for
560340	BT-SET-240BC	Clampable	Through-hole mounting	Turnable, 240 °	Metal	MLD 500, MLD 300 multiple light beam safety devices
540350	BT-SET-240BC-E	Clampable	Through-hole mounting	Turnable, 240 °	Metal, plastic	MLD 500, MLD 300 multiple light beam safety devices
560342	BT-SET-240BCS	Clampable	Through-hole mounting	Turnable, 240 °, shock absorber	Metal	MLD 500, MLD 300 multiple light beam safety devices
540352	BT-SET-240BCS-E	Clampable	Through-hole mounting	Shock absorber, turnable, 240 °	Metal, plastic	MLD 500, MLD 300 multiple light beam safety devices
560341	BT-SET-240CC	Clampable	Through-hole mounting	Turnable, 240 °	Metal	MLD-M002, MLD-M003 deflecting mirror
540351	BT-SET-240CC-E	Clampable	Through-hole mounting	Turnable, 240 °	Metal, plastic	MLD-M002, MLD-M003 deflecting mirror
560343	BT-SET-240CCS	Clampable	Through-hole mounting	Turnable, 240 °, shock absorber	Metal	MLD-M002, MLD-M003 deflecting mirror
540353	BT-SET-240CCS-E	Clampable	Through-hole mounting	Turnable, 240 °, shock absorber	Metal, plastic	MLD-M002, MLD-M003 deflecting mirror

Other mounting systems

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
424417	BT-2P40	Mounting clamp	Groove mounting	Groove mounting	Metal

Muting

Mounting systems for MLD 330, MLD 530 receiver

Part no.	Part description	Number of muting sensors	Type of muting sensors	Number of reflectors
426490	Set-AC-ML-2SA	2x	PRK 3B retro-reflective photoelectric sensors	2x
426491	Set-AC-ML-2SB	2x	PRK 3B retro-reflective photoelectric sensors	2x
426520	Set-AC-MLX-2SA	2x	PRK 25B retro-reflective photoelectric sensors	2x
426521	Set-AC-MLX-2SB	2x	PRK 25B retro-reflective photoelectric sensors	2x

Mounting systems for MLD 335, MLD 535 receiver

Part no.	Part description	Number of muting sensors	Type of muting sensors	Number of reflectors
426492	Set-AC-MT-4S	4x	PRK 3B retro-reflective photoelectric sensors	4x
426522	Set-AC-MTX-4S	4x	PRK 25B retro-reflective photoelectric sensors	4x

Sensor connection boxes for MLD 330, MLD 530 receiver

Part no.	Part description	Number of connections	Type of fastening
520150	AC-SCM5U	5x	Through-hole mounting
520151	AC-SCM5U-BT	5x	Mounting plate, groove mounting
520152	AC-SCM5U-BT-L	5x	Mounting plate with L-angle, groove mounting

Sensor connection boxes for MLD 335, MLD 535 receiver

Part no.	Part description	Number of connections	Type of fastening
520140	AC-SCM6U	7x	Through-hole mounting, groove mounting
520141	AC-SCM6U-BT	7x	Mounting plate
520142	AC-SCM6U-BT-L	7x	Mounting plate with L-angle

Display/operating elements

Part no.	Part description	LED indicator	Reset button
426296	AC-ABF70	Yes	Yes

Alignment aids

Part no.	Part description	Description	Function
520071	AC-MK1	Adapter	Activation of the laser alignment aid

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//SINGLE LIGHT BEAM SAFETY DEVICES

SAFETY CAN ALSO BE FLEXIBLE

Due to their compact dimensions, single beam safety devices are able to make full use of their advantages in constrained spaces or where no flat planar areas exist. They can be very flexibly integrated in various installation heights as well as in existing machine designs and very reliably perform a wide range of point of operation and access guarding tasks here.

Type 4 single light beam safety devices

The single beam safety devices of the MLD series are self-monitoring and have operating ranges of up to 100 m. They can, thus, be used very flexibly in a wide range of applications. Configuration is simply performed without a PC via the wiring. The single beam safety devices of the SLS series are operated in combination with a suitable test unit. Together with it, they form type 4 electro-sensitive protective equipment. They are a cost-optimized alternative. With their compact housing dimensions, these devices can be easily integrated.

/// SLS 46C

These single beam safety devices are operated in combination with the MSI-TRM monitoring device. Together with this, they form type 4 electro-sensitive protective equipment for applications that require PL d or PL e. With their compact housing dimensions, the SLS 46C can be easily integrated.

Benefits:

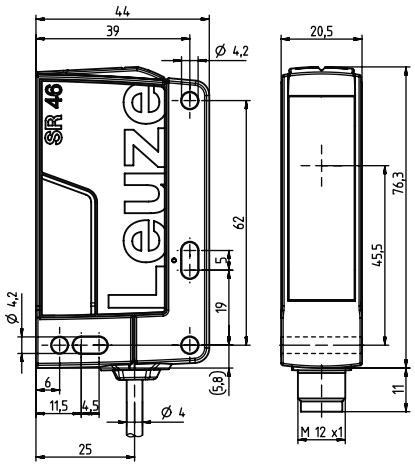
- Red light and infrared light models with operating ranges of up to 40 m or up to 70 m
- Solid plastic housing with degree of protection IP 67 / IP 69K
- Use at temperatures as low as –30 °C is possible
- Status LEDs visible from all sides
- Clearly visible alignment indicator in the front screen of the receiver
- Integration via M12 plug or cable

Direct access to the online product selector at **www.leuze.com/en/sls46c**

Part no.	Part description	Operating range	Connection	Light source
50126549	► SLS46CI-40.K48	0.25 … 40 m	Cable, 4-wire, 2,000 mm, PUR	LED, infrared
50126331	◄ SLE46CI-40.K4/4P		Cable, 4-wire, 2,000 mm, PUR	
50126545	► SLS46C-40.K48	0.25 … 40 m	Cable, 4-wire, 2,000 mm, PUR	LED, red
50126327	◄ SLE46C-40.K4/4P		Cable, 4-wire, 2,000 mm, PUR	
50126550	► SLS46CI-40.K48-M12	0.25 … 40 m	Connector, M12, 4-pin, plastic	LED, infrared
50126332	◄ SLE46CI-40.K4/4P-M12		Connector, M12, 4-pin, plastic	
50126546	► SLS46C-40.K48-M12	0.25 … 40 m	Connector, M12, 4-pin, plastic	LED, red
50126328	◄ SLE46C-40.K4/4P-M12		Connector, M12, 4-pin, plastic	
50126551	► SLS46CI-70.K48	5 … 70 m	Cable, 4-wire, 2,000 mm, PUR	LED, infrared
50126333	◄ SLE46CI-70.K4/4P		Cable, 4-wire, 2,000 mm, PUR	
50126547	► SLS46C-70.K48	5 … 70 m	Cable, 4-wire, 2,000 mm, PUR	LED, red
50126329	◄ SLE46C-70.K4/4P		Cable, 4-wire, 2,000 mm, PUR	
50126552	► SLS46CI-70.K48-M12	5 … 70 m	Connector, M12, 4-pin, plastic	LED, infrared
50126334	◄ SLE46CI-70.K4/4P-M12		Connector, M12, 4-pin, plastic	
50126548	► SLS46C-70.K48-M12	5 … 70 m	Connector, M12, 4-pin, plastic	LED, red
50126330	◄ SLE46C-70.K4/4P-M12		Connector, M12, 4-pin, plastic	

► transmitter / ◄ receiver

Dimensioned drawings: SLS 46C



SLS 46C single light beam safety device

ACCESSORIES: SLS 46C

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130658	KD U-M12-4A-P1-100	Connector, M12, axial, female	4-pin	10,000 mm	PUR

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50105315	BT 46	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117253	BTU 300M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117252	BTU 300M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117251	BTU 300M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal
50120425	BTU 300M.5-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Stainless steel
50119332	BTU 900M-D10	Mounting system, clampable, turnable, 360 °, swiveling	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50119331	BTU 900M-D12	Mounting system, clampable, turnable, 360 °, swiveling	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50119330	BTU 900M-D14	Mounting system, clampable, turnable, 360 °, swiveling	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Alignment aids

Part no.	Part description
50109545	SAT 5

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/// MLD 510

These Single Light Beam Safety Devices are equipped with an automatic restart.

Benefits:

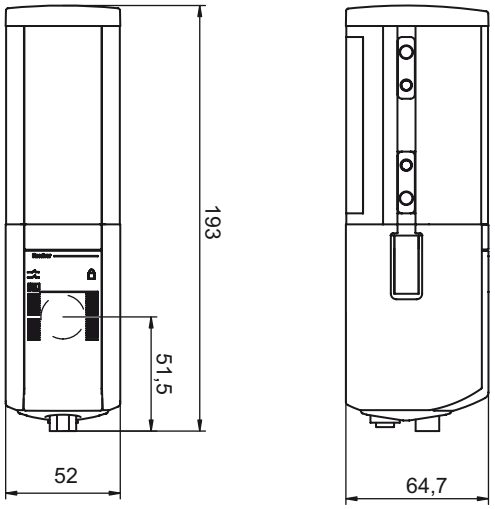
- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Options: integrated laser alignment aid

Direct access to the online product selector at **www.leuze.com/en/mld510**

Part no.	Part description	Operating range	Connection	Light source	Design
66533000	► MLD510-R1		Connector, M12, 5-pin, metal		
66501000	◄ MLD500-T1	0.5 … 70 m	Connector, M12, 5-pin, metal	LED, infrared	
66533400	► MLD510-XR1		Connector, M12, 5-pin, metal		
66501400	◄ MLD500-XT1	20 … 100 m	Connector, M12, 5-pin, metal	LED, infrared	
66533001	► MLD510-R1/A		Connector, M12, 5-pin, metal		AS-Interface Safety at Work
66501001	◄ MLD500-T1/A	0.5 … 70 m	Connector, M12, 5-pin, metal	LED, infrared	AS-Interface Safety at Work
66533401	► MLD510-XR1/A		Connector, M12, 5-pin, metal		AS-Interface Safety at Work
66501401	◄ MLD500-XT1/A	20 … 100 m	Connector, M12, 5-pin, metal	LED, infrared	AS-Interface Safety at Work
66533002	► MLD510-R1E/A		Connector, M12, 5-pin, metal		AS-Interface Safety at Work, connection socket for external muting indicator
66501001	◄ MLD500-T1/A	0.5 … 70 m	Connector, M12, 5-pin, metal	LED, infrared	AS-Interface Safety at Work
66533402	► MLD510-XR1E/A		Connector, M12, 5-pin, metal		AS-Interface Safety at Work, connection socket for external muting indicator
66501401	◄ MLD500-XT1/A	20 … 100 m	Connector, M12, 5-pin, metal	LED, infrared	AS-Interface Safety at Work
66536001	► MLD510-R1L/A		Connector, M12, 5-pin, metal		AS-Interface Safety at Work, reflective element for laser alignment aid
66502001	◄ MLD500-T1L/A	0.5 … 70 m	Connector, M12, 5-pin, metal	LED, infrared	AS-Interface Safety at Work, integrated laser alignment aid
66536002	► MLD510-R1LE/A		Connector, M12, 5-pin, metal		AS-Interface Safety at Work, reflective element for laser alignment aid, connection socket for external muting indicator
66502001	◄ MLD500-T1L/A	0.5 … 70 m	Connector, M12, 5-pin, metal	LED, infrared	AS-Interface Safety at Work, integrated laser alignment aid
66536000	► MLD510-R1L		Connector, M12, 5-pin, metal		Reflective element for laser alignment aid
66502000	◄ MLD500-T1L	0.5 … 70 m	Connector, M12, 5-pin, metal	LED, infrared	Integrated laser alignment aid

► receiver / ◄ transmitter
Included in delivery: sliding blocks

Dimensioned drawings: MLD 510



MLD 510 single light beam safety device

/// MLD 520

These Single Light Beam Safety Devices offer a selectable start/restart interlock (RES) and contactor monitoring (EDM)

Benefits:

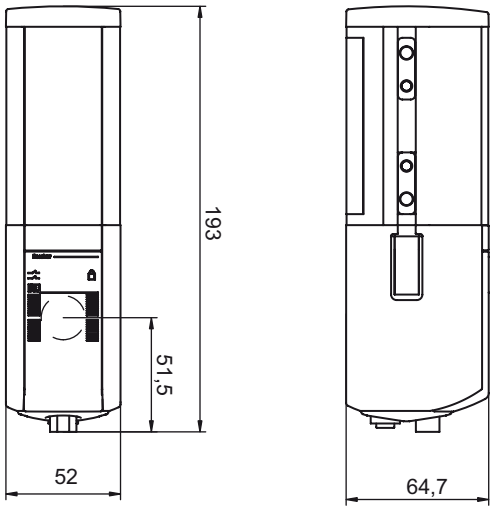
- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Options: integrated laser alignment aid

Direct access to the online product selector at **www.leuze.com/en/mld520**

Part no.	Part description	Operating range	Connection	Light source	Design
66553000	► MLD520-R1		Connector, M12, 8-pin, metal		
66501000	◄ MLD500-T1	0.5 … 70 m	Connector, M12, 5-pin, metal	LED, infrared	
66556000	► MLD520-R1L		Connector, M12, 8-pin, metal		Reflective element for laser alignment aid
66502000	◄ MLD500-T1L	0.5 … 70 m	Connector, M12, 5-pin, metal	LED, infrared	Integrated laser alignment aid
66553400	► MLD520-XR1		Connector, M12, 8-pin, metal		
66501400	◄ MLD500-XT1	20 … 100 m	Connector, M12, 5-pin, metal	LED, infrared	

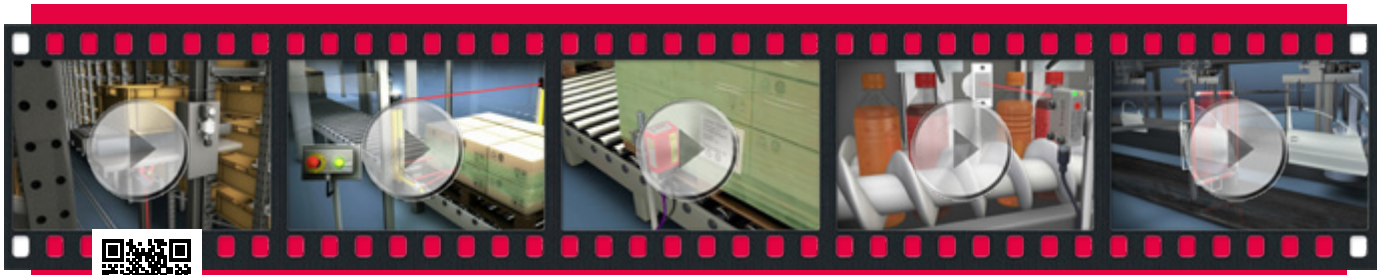
► receiver / ◄ transmitter
Included in delivery: sliding blocks

Dimensioned drawings: MLD 520



MLD 520 single light beam safety device

SMART IS TO SHARE **EXPERIENCE**



Take a look at our product clips: **www.leuze.com/en/product-clips**

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/// MLD 530

Many functions, such as start/restart interlock, contactor monitoring, timing controlled 2-sensor muting and sequence controlled 2-sensor muting, ensure great flexibility.

Benefits:

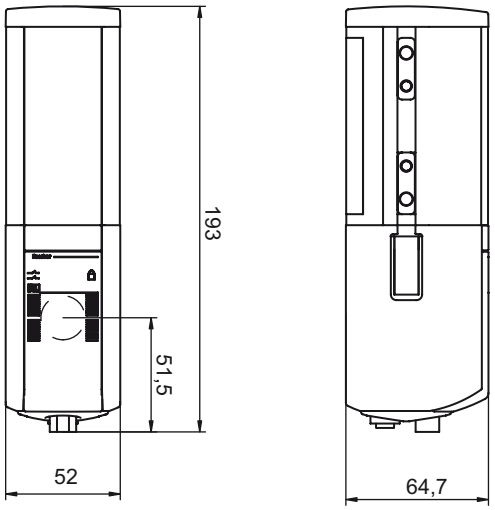
- The configuration is simply performed by means of wiring, i.e. no software, PC or DIP switch are necessary
- The use at ambient temperatures as low as –30 °C is possible
- Start/restart interlock (RES), selectable
- Contactor monitoring (EDM), selectable
- Configurable operating modes
- Integrated muting function, no additional muting module is necessary
- 2-sensor muting, (timing controlled, sequence controlled)
- Options: integrated laser alignment aid, 7-segment display

Direct access to the online product selector at **www.leuze.com/en/mld530**

Part no.	Part description	Operating range	Connection	Light source	Design
66563000	► MLD530-R1		Connector, M12, 8-pin, metal		
66501000	◄ MLD500-T1	0.5 ... 70 m	Connector, M12, 5-pin, metal	LED, infrared	
66566000	► MLD530-R1L		Connector, M12, 8-pin, metal		Reflective element for laser alignment aid
66502000	◄ MLD500-T1L	0.5 ... 70 m	Connector, M12, 5-pin, metal	LED, infrared	Integrated laser alignment aid
66563400	► MLD530-XR1		Connector, M12, 8-pin, metal		
66501400	◄ MLD500-XT1	20 ... 100 m	Connector, M12, 5-pin, metal	LED, infrared	

► receiver / ◄ transmitter
Included in delivery: sliding blocks

Dimensioned drawings: MLD 530



MLD 530 single light beam safety device

ACCESSORIES: MLD 500

Connection technology

Connection cables for MLD 500 transmitter, MLD 510 receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133860	KD S-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50133861	KD S-M12-5A-P1-100	Connector, M12, axial, female	5-pin	10,000 mm	PUR
678057	CB-M12-15000E-5GF	Connector, M12, axial, female	5-pin	15,000 mm	PUR
678059	CB-M12-50000E-5GF	Connector, M12, axial, female	5-pin	50,000 mm	PUR

Further connection cables can be found on our website

Connection cables for MLD 520, MLD 530 receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR
678064	CB-M12-50000E-8GF	Connector, M12, axial, female	8-pin	50,000 mm	PUR

Further connection cables can be found on our website

Connection cables for MLD 530 (local interface) receiver

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
678050	CB-M12-5000E-5GM	Connector, M12, axial, male	5-pin	5,000 mm	PUR
678051	CB-M12-10000E-5GM	Connector, M12, axial, male	5-pin	10,000 mm	PUR
678052	CB-M12-15000E-5GM	Connector, M12, axial, male	5-pin	15,000 mm	PUR
678053	CB-M12-25000E-5GM	Connector, M12, axial, male	5-pin	25,000 mm	PUR

Further connection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
429175	CB-M12-5GF	Connector, M12, axial, female	5-pin
429178	CB-M12-8GF	Connector, M12, axial, female	8-pin

Further connectors can be found on our website

Mounting systems

Swivel mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
560344	BT-SET-240C	Turnable, 240 °	Clampable	Through-hole mounting	Metal
540354	BT-SET-240C-E	Turnable, 240 °	Clampable	Through-hole mounting	Metal, plastic
560345	BT-SET-240CS	Turnable, 240 °, shock absorber	Clampable	Through-hole mounting	Metal
540355	BT-SET-240CS-E	Shock absorber, turnable, 240 °	Clampable	Through-hole mounting	Metal, plastic

Alignment aids

Part no.	Part description	Function
520071	AC-MK1	Activation of the laser alignment aid

/// SLS 518

If single beam safety devices need to be integrated in very constrained spaces, the SLS 518 version is the preferred choice. With its cylindrical construction and compact housing dimensions, it is easy to integrate. These single beam safety devices SLS 518 are operated in combination with the MSI-TRM monitoring device. Together with this, they form type 4 electro-sensitive protective equipment for applications up to PL e.

Benefits:

- Designs with infrared light LED and red light laser for operating ranges up to 8 m and 40 m
- Compact plastic housing with degree of protection IP 67
- Compact, cylindrical M18 construction for use in limited spaces
- Simple integration via M12 plug

Direct access to the online product selector at **www.leuze.com/en/sls518**

Part no.	Part description	Operating range	Connection	Light source
50134012	► SLS518I-K48-M12	0 … 8 m	Connector, M12, 4-pin, plastic	LED, infrared
50134013	◄ SLE518I-K4/4-M12		Connector, M12, 4-pin, plastic	
50134014	► SLS518L1-K48-M12	0 … 40 m	Connector, M12, 4-pin, plastic	Laser, red
50134015	◄ SLE518L1-K4/4-M12		Connector, M12, 4-pin, plastic	

► transmitter / ◄ receiver

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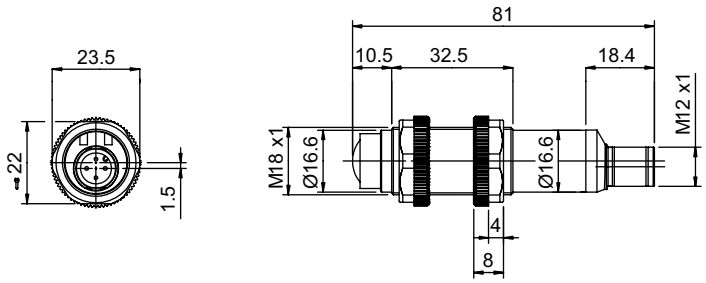
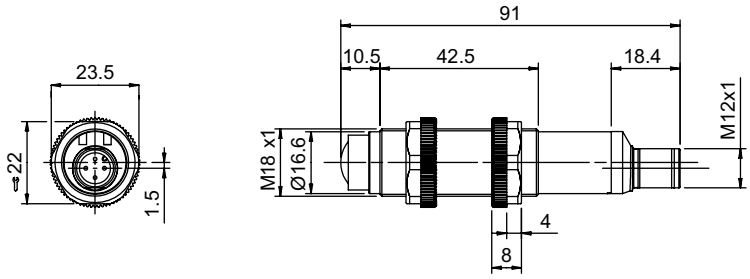
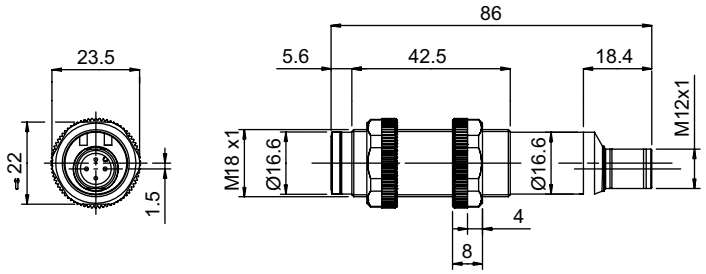
Dimensioned drawings: SLS 518



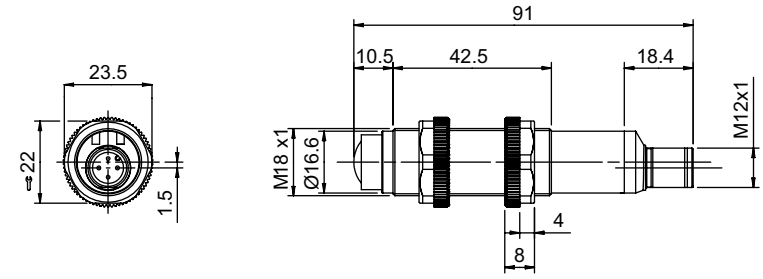
SLS518I-K48-M12



SLE518I-K4/4-M12



SLS518L1-K48-M12



SLE518L1-K4/4-M12

ACCESSORIES: SLS 518

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130651	KD U-M12-4A-V1-030	Connector, M12, axial, female	4-pin	3,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130653	KD U-M12-4A-V1-100	Connector, M12, axial, female	4-pin	10,000 mm	PVC
50132431	KD U-M12-4A-V1-200	Connector, M12, axial, female	4-pin	20,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50083189	BT 318-ARH	Mounting plate	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Alignment aids

Part no.	Part description
50109545	SAT 5

Type 2 single light beam safety devices

These single beam safety devices are operated in combination with a suitable test unit. Together with these, they form type 2 electro-sensitive protective equipment. They are a cost-optimized alternative if shorter ranges are needed. With their compact housing dimensions, they can be easily integrated.

/// SLS 46C

The SLS 46C protective sensor can be optimally integrated thanks to its modular design and operating ranges of up to 70 m. Alignment aids and status LEDs visible from all sides support simple handling.

Benefits:

- Red light and infrared light models with operating ranges of up to 40 m or up to 70 m
- Solid plastic housing with degree of protection IP 67 / IP 69K
- Temperature range from –30 to +60 °C
- Status LEDs visible from all sides
- Clearly visible alignment indicator in the front screen of the receiver
- Integration via M12 plug or cable

Direct access to the online product selector at **www.leuze.com/en/sls46c**

Part no.	Part description	Operating range	Connection	Light source
50121914	► SLS46CI-40.K28	0.5 … 40 m	Cable, 4-wire, 2,000 mm, PUR	LED, infrared
50121922	◄ SLE46CI-40.K2/4P		Cable, 4-wire, 2,000 mm, PUR	
50121910	► SLS46C-40.K28	0.5 … 40 m	Cable, 4-wire, 2,000 mm, PUR	LED, red
50121918	◄ SLE46C-40.K2/4P		Cable, 4-wire, 2,000 mm, PUR	
50121913	► SLS46CI-40.K28-M12	0.5 … 40 m	Connector, M12, 4-pin, plastic	LED, infrared
50121921	◄ SLE46CI-40.K2/4P-M12		Connector, M12, 4-pin, plastic	
50121909	► SLS46C-40.K28-M12	0.5 … 40 m	Connector, M12, 4-pin, plastic	LED, red
50121917	◄ SLE46C-40.K2/4P-M12		Connector, M12, 4-pin, plastic	
50121912	► SLS46CI-70.K28	5 … 70 m	Cable, 4-wire, 2,000 mm, PUR	LED, infrared
50121920	◄ SLE46CI-70.K2/4P		Cable, 4-wire, 2,000 mm, PUR	
50121908	► SLS46C-70.K28	5 … 70 m	Cable, 4-wire, 2,000 mm, PUR	LED, red
50121916	◄ SLE46C-70.K2/4P		Cable, 4-wire, 2,000 mm, PUR	
50121911	► SLS46CI-70.K28-M12	5 … 70 m	Connector, M12, 4-pin, plastic	LED, infrared
50121919	◄ SLE46CI-70.K2/4P-M12		Connector, M12, 4-pin, plastic	
50121907	► SLS46C-70.K28-M12	5 … 70 m	Connector, M12, 4-pin, plastic	LED, red
50121915	◄ SLE46C-70.K2/4P-M12		Connector, M12, 4-pin, plastic	

► transmitter / ◄ receiver

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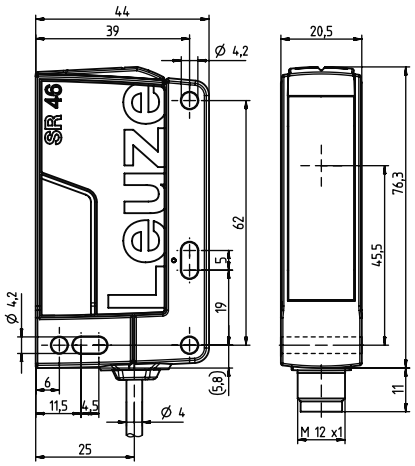
Dimensioned drawings: SLS 46C



SLS 46C single light beam safety device

ACCESSORIES: SLS 46C

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135971	KS U-M12-4A-V1-020	Connector, M12, axial, male	4-pin	2,000 mm	PVC
50135972	KS U-M12-4A-V1-050	Connector, M12, axial, male	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130658	KD U-M12-4A-P1-100	Connector, M12, axial, female	4-pin	10,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50132431	KD U-M12-4A-V1-200	Connector, M12, axial, female	4-pin	20,000 mm	PVC
50132430	KD U-M12-4A-V1-300	Connector, M12, axial, female	4-pin	30,000 mm	PVC

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50105315	BT 46	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117253	BTU 300M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117252	BTU 300M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117251	BTU 300M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal
50120425	BTU 300M.5-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Stainless steel
50119332	BTU 900M-D10	Mounting system, clampable, turnable, 360 °, swiveling	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50119331	BTU 900M-D12	Mounting system, clampable, turnable, 360 °, swiveling	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50119330	BTU 900M-D14	Mounting system, clampable, turnable, 360 °, swiveling	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Alignment aids

Part no.	Part description
50109545	SAT 5

/// SLSR 25B

The SLSR 25B light beam safety device scores with its optimized light beam propagation (opening angle) with time-saving alignment. In combination with a safety-relevant control system (testing according to EN IEC 61496-1), it forms a category 2 contactless protective device and works with a range of up to 22 m.

Benefits:

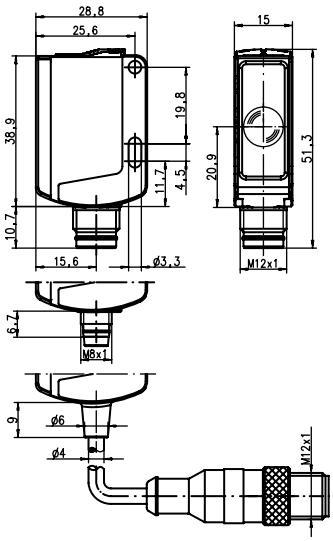
- Single light beam safety device with visible red light and high function reserve
- Solid plastic housing, degree of protection IP 67 for industrial application
- Wide voltage range from 10 to 30 V with PNP transistor output for PLC applications
- All common connection variants

Direct access to the online product selector at **www.leuze.com/en/slsr25b**

Part no.	Part description	Operating range	Connection	Light source	Design
50108491	► SLSSR 25B.8	0 … 20 m	Cable, 4-wire, 2,000 mm, PUR	LED, red	Activation input
50108494	◄ SLSER 25B/66		Cable, 4-wire, 2,000 mm, PUR		
50110151	► SLSSR 25B.8,200-S12	0 … 20 m	Cable with connector, M12, 4-pin, metal, 200 mm, PUR	LED, red	Activation input
50110152	◄ SLSER 25B/66,200-S12		Cable with connector, M12, 4-pin, metal, 200 mm, PUR		
50108490	► SLSSR 25B.8-S8	0 … 20 m	Connector, M8, 4-pin, plastic	LED, red	Activation input
50108493	◄ SLSER 25B/66-S8		Connector, M8, 4-pin, plastic		
50108489	► SLSSR 25B.8-S12	0 … 20 m	Connector, M12, 4-pin, plastic	LED, red	Activation input
50108492	◄ SLSER 25B/66-S12		Connector, M12, 4-pin, plastic		

► transmitter / ◄ receiver

Dimensioned drawings: SLSR 25B



SLSR 25B single light beam safety device

ACCESSORIES: SLSR 25B

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130658	KD U-M12-4A-P1-100	Connector, M12, axial, female	4-pin	10,000 mm	PUR
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130857	KD U-M8-4A-P1-100	Connector, M8, axial, female	4-pin	10,000 mm	PUR

Further connection cables can be found on our website

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Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50040269	BT 25	Angle, L-shape	Screw type	Through-hole mounting	Metal
50124651	BT 205M	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117830	BTP 200M-D10	Protection hood, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod	Metal
50117829	BTP 200M-D12	Protection hood, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod	Metal
50117828	BTP 200M-D14	Protection hood, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod	Metal
50117256	BTU 200M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal
50122797	BTU 346M-D12	Mounting system, turnable, 360 °, clampable, adjustable	Screw type	For 12 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Alignment aids

Part no.	Part description
50109545	SAT 5

/// SLS 318

The case often arises in which single beam safety devices have to be integrated into very tight installation areas. In this instance, SLS 318 protective sensors are the preferred choice. Because of their slender cylindrical construction they can be mounted quickly and easily, even in areas where space is restricted.

Benefits:

- Protective throughbeam photoelectric sensors with high function reserve in visible red light and straight optics
- Sturdy stainless steel or plastic housing with cylindrical M18 design
- Degree of protection IP 67 for industrial application
- Activation input for testing and interlinking of the sensor
- Complementary switching outputs for light/dark switching or as a control function
- Very short construction for use in limited spaces
- LED indicator in transmitter and receiver

Direct access to the online product selector at **www.leuze.com/en/sls318**

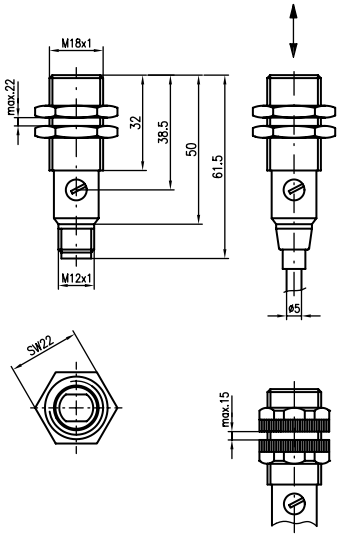
Part no.	Part description	Operating range	Connection	Light source	Housing material	Design
50083132	► SLSS 318K	0 … 10 m	Cable, 4-wire, 2,000 mm, PVC	LED, red	Plastic	Activation input
50083133	◄ SLSE 318K/P		Cable, 4-wire, 2,000 mm, PVC		Plastic	
50083116	► SLSS 318K-S12	0 … 10 m	Connector, M12, 4-pin, plastic	LED, red	Plastic	Activation input
50083117	◄ SLSE 318K/P-S12		Connector, M12, 4-pin, plastic		Plastic	
50082199	► SLSS 318M-S12	0 … 10 m	Connector, M12, 4-pin, plastic	LED, red	Stainless steel	Activation input
50082200	◄ SLSE 318M/P-S12		Connector, M12, 4-pin, plastic		Stainless steel	

► transmitter / ◄ receiver

FUTURE

We have a very clear idea of what the future will look like:
www.smart-sensor-business.com

Dimensioned drawings: SLS 318



SLS 318 single light beam safety device

ACCESSORIES: SLS 318

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130658	KD U-M12-4A-P1-100	Connector, M12, axial, female	4-pin	10,000 mm	PUR

Further connection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113548	BT D18M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117490	BTU D18M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	Through-hole mounting	Metal

Further rod mounts can be found on our website

Other mounting systems

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50083189	BT 318-ARH	Mounting plate	Screw type	Through-hole mounting	Metal
50117258	BT 318P-LS	Mounting clamp	Clampable	Through-hole mounting	Plastic

Further mounting brackets can be found on our website

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//SAFETY LASER SCANNERS

UNIVERSAL ALL-ROUNDER FOR YOUR SAFETY TASKS

Danger zone guarding, access guarding or point of operation guarding: you can use safety laser scanners in all areas of personnel protection effectively and for a range of applications. With their freely definable and individual protective fields and their compact design, they enable a very flexible installation position as well as use in mobile applications.

/// RSL 400

The RSL 400 family of safety laser scanners comprises 16 device types in four staggered operating ranges and function variants. As a result, you can always select the best scanner at the best price performance ratio – if necessary, with a scanning range of 160 square meters thanks to a scanning angle of 270 ° and operating range of 8.25 meters. Whether mobile or stationary – the RSL 400 family covers all conceivable applications.

Direct access to the online product selector at **www.leuze.com/en/rsl400**

RSL 410

For safeguarding large areas of up to 160 m², the RSL 410 safety laser scanners convince with very simple integration in the machine control thanks to an 8-pin, M12 connection. The scanners are also available with AIDA-compliant pin assignment (Automatisierungs-Initiative deutscher Automobilisten (AIDA) = Automation Initiative of German automobile manufacturers).

Benefits:

- Any type of protective/warning field contours (1 field pair/quad)
- Basic functions such as automatic start/restart, start/restart interlock (RES) and selectable contactor monitoring (EDM)
- Optimum handling by means of separate intelligent connection unit and large, plain-text display with integrated electronic spirit level
- Ethernet TCP/IP and Bluetooth interface for simple and convenient configuration and diagnosis

Part no.	Part description	Number of field pairs	Operating range	Connection	Safety-related switching outputs	Design
53800201	RSL410-S/CU408-M12	1	0 … 3 m	Connector, M12, 8-pin	2x, transistor, PNP	
53800202	RSL410-M/CU408-M12	1	0 … 4.5 m	Connector, M12, 8-pin	2x, transistor, PNP	
53800203	RSL410-L/CU408-M12	1	0 … 6.25 m	Connector, M12, 8-pin	2x, transistor, PNP	
53800204	RSL410-XL/CU408-M12	1	0 … 8.25 m	Connector, M12, 8-pin	2x, transistor, PNP	
53800205	RSL410-S/CU405-2M12	1	0 … 3 m	Connector, M12, 4-pin	2x, transistor, PNP	AIDA-compliant
53800206	RSL410-M/CU405-2M12	1	0 … 4.5 m	Connector, M12, 4-pin	2x, transistor, PNP	AIDA-compliant
53800207	RSL410-L/CU405-2M12	1	0 … 6.25 m	Connector, M12, 4-pin	2x, transistor, PNP	AIDA-compliant
53800208	RSL410-XL/CU405-2M12	1	0 … 8.25 m	Connector, M12, 4-pin	2x, transistor, PNP	AIDA-compliant
53800245	RSL410-S/CU411-RS4	1	0 … 3 m	Cable with Sub-D, 450 mm	2x, transistor, PNP	RS4 substitute
53800246	RSL410-M/CU411-RS4	1	0 … 4.5 m	Cable with Sub-D, 450 mm	2x, transistor, PNP	RS4 substitute
53800247	RSL410-L/CU411-RS4	1	0 … 6.25 m	Cable with Sub-D, 450 mm	2x, transistor, PNP	RS4 substitute

RSL 420

The RSL 420 safety laser scanners expand the monitoring function to include flexible safety requirements adapted to the automation process.

Benefits:

- Monitored changeover of 10 field pairs/quads
- Basic functions such as automatic start/restart, start/restart interlock (RES) and selectable contactor monitoring (EDM)
- Optimum handling by means of separate intelligent connection unit and large, plain-text display with integrated electronic spirit level
- Ethernet TCP/IP and Bluetooth interface for simple and convenient configuration and diagnosis
- 4 configurable signal outputs
- E-stop linkage

Part no.	Part description	Number of field pairs	Operating range	Connection	Safety-related switching outputs	Design
53800209	RSL420-S/CU416-5	10	0 … 3 m	Cable, 16-wire, 5,000 mm	2x, transistor, PNP	
53800213	RSL420-S/CU416-10	10	0 … 3 m	Cable, 16-wire, 10,000 mm	2x, transistor, PNP	
53800217	RSL420-S/CU416-25	10	0 … 3 m	Cable, 16-wire, 25,000 mm	2x, transistor, PNP	
53800251	RSL420-S/CU416-300-WPU	10	0 … 3 m	Cable with connector, 300 mm, M30	2x, transistor, PNP	
53800210	RSL420-M/CU416-5	10	0 … 4.5 m	Cable, 16-wire, 5,000 mm	2x, transistor, PNP	
53800214	RSL420-M/CU416-10	10	0 … 4.5 m	Cable, 16-wire, 10,000 mm	2x, transistor, PNP	
53800218	RSL420-M/CU416-25	10	0 … 4.5 m	Cable, 16-wire, 25,000 mm	2x, transistor, PNP	
53800252	RSL420-M/CU416-300-WPU	10	0 … 4.5 m	Cable with connector, 300 mm, M30	2x, transistor, PNP	
53800211	RSL420-L/CU416-5	10	0 … 6.25 m	Cable, 16-wire, 5,000 mm	2x, transistor, PNP	
53800215	RSL420-L/CU416-10	10	0 … 6.25 m	Cable, 16-wire, 10,000 mm	2x, transistor, PNP	
53800219	RSL420-L/CU416-25	10	0 … 6.25 m	Cable, 16-wire, 25,000 mm	2x, transistor, PNP	
53800253	RSL420-L/CU416-300-WPU	10	0 … 6.25 m	Cable with connector, 300 mm, M30	2x, transistor, PNP	
53800212	RSL420-XL/CU416-5	10	0 … 8.25 m	Cable, 16-wire, 5,000 mm	2x, transistor, PNP	
53800216	RSL420-XL/CU416-10	10	0 … 8.25 m	Cable, 16-wire, 10,000 mm	2x, transistor, PNP	
53800220	RSL420-XL/CU416-25	10	0 … 8.25 m	Cable, 16-wire, 25,000 mm	2x, transistor, PNP	
53800254	RSL420-XL/CU416-300-WPU	10	0 … 8.25 m	Cable with connector, 300 mm, M30	2x, transistor, PNP	
53800248	RSL420-S/CU411-RS4	10	0 … 3 m	Cable with Sub-D, 450 mm	2x, transistor, PNP	RS4 substitute
53800249	RSL420-M/CU411-RS4	10	0 … 4.5 m	Cable with Sub-D, 450 mm	2x, transistor, PNP	RS4 substitute
53800250	RSL420-L/CU411-RS4	10	0 … 6.25 m	Cable with Sub-D, 450 mm	2x, transistor, PNP	RS4 substitute

RSL 430

2 independent protective functions and OSSD pairs with individual response time make the RSL 430 safety laser scanner interesting for many area safeguarding and access guarding applications with separate machine parts.

Benefits:

- 2 independent protective functions and OSSD pairs with monitored changeover of 10 field pairs / quads each
- Optimum handling by means of separate intelligent connection unit and large, plain-text display with integrated electronic spirit level
- Ethernet TCP/IP and Bluetooth interface for simple and convenient configuration and diagnosis
- Automatic start/restart, start/restart interlock (RES) and selectable contactor monitoring (EDM)
- 9 configurable signal outputs
- E-stop linkage
- Safe, internal switch-off delay (Stop 1)
- Configurable data output with UDP

Part no.	Part description	Number of field pairs	Operating range	Connection	Safety-related switching outputs
53800221	RSL430-S/CU429-5	10 + 10	0 … 3 m	Cable, 29-wire, 5,000 mm	4x, transistor, PNP
53800225	RSL430-S/CU429-10	10 + 10	0 … 3 m	Cable, 29-wire, 10,000 mm	4x, transistor, PNP
53800229	RSL430-S/CU429-25	10 + 10	0 … 3 m	Cable, 29-wire, 25,000 mm	4x, transistor, PNP
53800255	RSL430-S/CU429-300-WPU	10 + 10	0 … 3 m	Cable with connector, 300 mm, M30	4x, transistor, PNP
53800222	RSL430-M/CU429-5	10 + 10	0 … 4.5 m	Cable, 29-wire, 5,000 mm	4x, transistor, PNP
53800226	RSL430-M/CU429-10	10 + 10	0 … 4.5 m	Cable, 29-wire, 10,000 mm	4x, transistor, PNP
53800230	RSL430-M/CU429-25	10 + 10	0 … 4.5 m	Cable, 29-wire, 25,000 mm	4x, transistor, PNP
53800256	RSL430-M/CU429-300-WPU	10 + 10	0 … 4.5 m	Cable with connector, 300 mm, M30	4x, transistor, PNP
53800223	RSL430-L/CU429-5	10 + 10	0 … 6.25 m	Cable, 29-wire, 5,000 mm	4x, transistor, PNP
53800227	RSL430-L/CU429-10	10 + 10	0 … 6.25 m	Cable, 29-wire, 10,000 mm	4x, transistor, PNP
53800231	RSL430-L/CU429-25	10 + 10	0 … 6.25 m	Cable, 29-wire, 25,000 mm	4x, transistor, PNP
53800257	RSL430-L/CU429-300-WPU	10 + 10	0 … 6.25 m	Cable with connector, 300 mm, M30	4x, transistor, PNP
53800224	RSL430-XL/CU429-5	10 + 10	0 … 8.25 m	Cable, 29-wire, 5,000 mm	4x, transistor, PNP
53800228	RSL430-XL/CU429-10	10 + 10	0 … 8.25 m	Cable, 29-wire, 10,000 mm	4x, transistor, PNP
53800232	RSL430-XL/CU429-25	10 + 10	0 … 8.25 m	Cable, 29-wire, 25,000 mm	4x, transistor, PNP
53800258	RSL430-XL/CU429-300-WPU	10 + 10	0 … 8.25 m	Cable with connector, 300 mm, M30	4x, transistor, PNP

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RSL 440

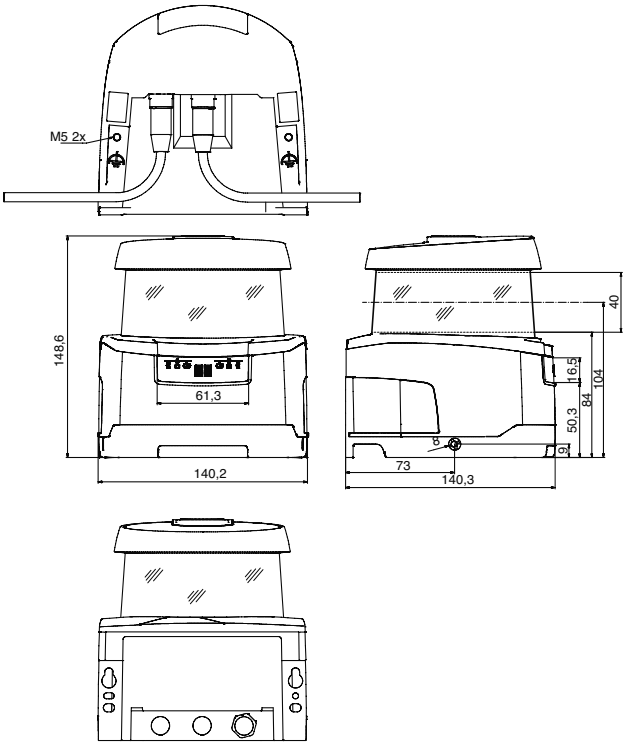
With 2 independent protective functions, up to 100 field pairs or 10 independent safety configurations, the RSL 440 safety laser scanners offer a solution for the most demanding safety tasks.

Benefits:

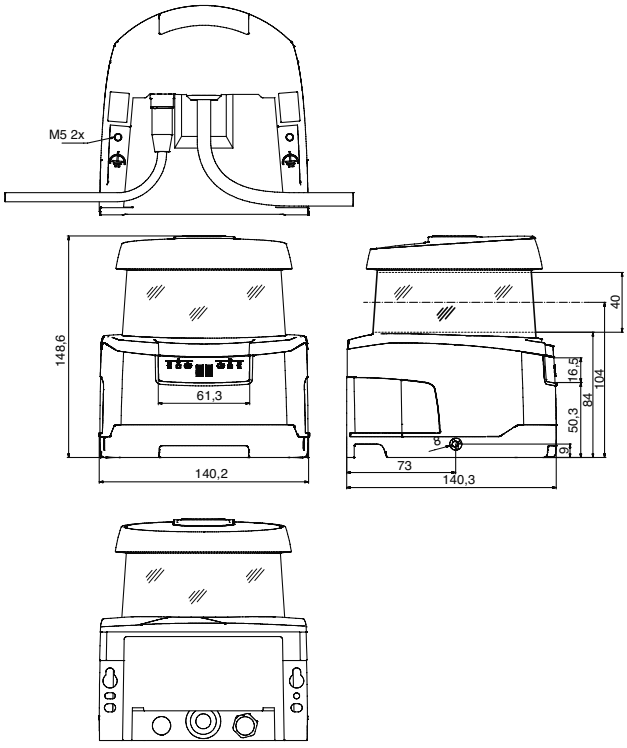
- 2 independent protective functions and OSSD pairs with monitored changeover of 100 field pairs / 50 quads
- 10 independent safety configurations for monitoring with different operating modes
- Optimum handling by means of separate intelligent connection unit and large, plain-text display with integrated electronic spirit level
- Ethernet TCP/IP and Bluetooth interface for simple and convenient configuration and diagnosis
- 9 configurable signal outputs
- E-stop linkage
- Safe, internal switch-off delay (Stop 1)
- Configurable data output with UDP

Part no.	Part description	Number of field pairs	Operating range	Connection	Safety-related switching outputs
53800233	RSL440-S/CU429-5	Up to 100	0 … 3 m	Cable, 29-wire, 5,000 mm	4x, transistor, PNP
53800237	RSL440-S/CU429-10	Up to 100	0 … 3 m	Cable, 29-wire, 10,000 mm	4x, transistor, PNP
53800241	RSL440-S/CU429-25	Up to 100	0 … 3 m	Cable, 29-wire, 25,000 mm	4x, transistor, PNP
53800259	RSL440-S/CU429-300-WPU	Up to 100	0 … 3 m	Cable with connector, 300 mm, M30	4x, transistor, PNP
53800234	RSL440-M/CU429-5	Up to 100	0 … 4.5 m	Cable, 29-wire, 5,000 mm	4x, transistor, PNP
53800238	RSL440-M/CU429-10	Up to 100	0 … 4.5 m	Cable, 29-wire, 10,000 mm	4x, transistor, PNP
53800242	RSL440-M/CU429-25	Up to 100	0 … 4.5 m	Cable, 29-wire, 25,000 mm	4x, transistor, PNP
53800260	RSL440-M/CU429-300-WPU	Up to 100	0 … 4.5 m	Cable with connector, 300 mm, M30	4x, transistor, PNP
53800235	RSL440-L/CU429-5	Up to 100	0 … 6.25 m	Cable, 29-wire, 5,000 mm	4x, transistor, PNP
53800239	RSL440-L/CU429-10	Up to 100	0 … 6.25 m	Cable, 29-wire, 10,000 mm	4x, transistor, PNP
53800243	RSL440-L/CU429-25	Up to 100	0 … 6.25 m	Cable, 29-wire, 25,000 mm	4x, transistor, PNP
53800261	RSL440-L/CU429-300-WPU	Up to 100	0 … 6.25 m	Cable with connector, 300 mm, M30	4x, transistor, PNP
53800236	RSL440-XL/CU429-5	Up to 100	0 … 8.25 m	Cable, 29-wire, 5,000 mm	4x, transistor, PNP
53800240	RSL440-XL/CU429-10	Up to 100	0 … 8.25 m	Cable, 29-wire, 10,000 mm	4x, transistor, PNP
53800244	RSL440-XL/CU429-25	Up to 100	0 … 8.25 m	Cable, 29-wire, 25,000 mm	4x, transistor, PNP
53800262	RSL440-XL/CU429-300-WPU	Up to 100	0 … 8.25 m	Cable with connector, 300 mm, M30	4x, transistor, PNP

Dimensioned drawings: RSL 400



RSL 410 safety laser scanner



RSL 420 / RSL 430 / RSL 440 safety laser scanner

ACCESSORIES: RSL 400

Connection technology

Connection cables for RSL 410

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130726	KD S-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130727	KD S-M12-4A-P1-100	Connector, M12, axial, female	4-pin	10,000 mm	PUR
50132434	KD S-M12-4A-P1-250	Connector, M12, axial, female	4-pin	25,000 mm	PUR
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR

Further connection cables can be found on our website

Connection cables for RSL 420/CU416-WPU, RSL 430/CU429-WPU, RSL 440/CU429-WPU

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50137263	KD S-M30-16A-V1-050	Connector, M30	16-pin	5 m	PVC
50137264	KD S-M30-16A-V1-100	Connector, M30	16-pin	10 m	PVC
50137265	KD S-M30-16A-V1-250	Connector, M30	16-pin	25 m	PVC
50137269	KD S-M30-30A-V1-050	Connector, M30	30-pin	5 m	PVC
50137270	KD S-M30-30A-V1-100	Connector, M30	30-pin	10 m	PVC
50137271	KD S-M30-30A-V1-250	Connector, M30	30-pin	25 m	PVC

Further connection cables can be found on our website

Ethernet interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Cable length	Interface	Sheathing material
50135080	KSS ET-M12-4A-RJ45-A-P7-020	Connector, M12, axial, male	4-pin	RJ45	2,000 mm	Ethernet	PUR
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45	5,000 mm	Ethernet	PUR
50135082	KSS ET-M12-4A-RJ45-A-P7-100	Connector, M12, axial, male	4-pin	RJ45	10,000 mm	Ethernet	PUR
50135083	KSS ET-M12-4A-RJ45-A-P7-150	Connector, M12, axial, male	4-pin	RJ45	15,000 mm	Ethernet	PUR
50135084	KSS ET-M12-4A-RJ45-A-P7-300	Connector, M12, axial, male	4-pin	RJ45	30,000 mm	Ethernet	PUR

Further interconnection cables can be found on our website

Adapter

Part no.	Part description
50134656	RSL400 M12 adapter

Mounting systems

Mounting bracket

Part no.	Part description	Models	Fastening at device	Fastening at system	Material
53800134	BT840M	Mounting on chamfered 90 ° corner	Screw type	Through-hole mounting	Metal
53800135	BT856M	Mounting on non-chamfered 90 ° corner	Screw type	Through-hole mounting	Metal
53800132	BTF815M	Floor assembly, 150 mm scanning height	Screw type	Through-hole mounting	Metal
53800133	BTF830M	Floor assembly, 300 mm scan level	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Other mounting systems

Part no.	Part description	Suitable for	Design	Fastening at device	Fastening at system	Material	Description
53800137	BT800MA	RSL 400 safety laser scanner, BTU804MA mounting plate	Adapter plate, RS4 BT800MA drilling template	Screw type	Through-hole mounting	Metal	
53800130	BTU800M	RSL 400 safety laser scanner	Mounting system	Screw type	Through-hole mounting	Metal	–10 … 10 °
53800136	BTU804MA	RSL 400 safety laser scanner	Mounting system, compatible with RS4 mounting system	Screw type	Through-hole mounting	Metal	

Further rod mounts can be found on our website

Mounting

Part no.	Part description	Suitable for	Design	Material
53800131	BTP800M	BTF830M mounting bracket, BTF815M mounting bracket	Loop guard	Metal

General

Part no.	Part description	Number of cleaning cloths	Content of cleaning fluid
430400	RS4-clean-Set1	40x	150 ml
430410	RS4-clean-Set2	120x	1,000 ml

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//PROTECTIVE SENSOR SETS

PLUG & PLAY FOR EFFICIENT ACCESS GUARDING

If you would like to more easily and more quickly implement access guarding with reduced logistical work, protective sensor sets are an attractive solution. Components that are electronically and mechanically optimized to one another and which are equipped with connectors ensure fast start-up of the Plug & Play complete solutions.

/// MLDSET

These are muting systems for access guarding with 2- and 3-beam MLD transceiver devices, pre-mounted in Leuze electronic Device Columns.

Benefits:

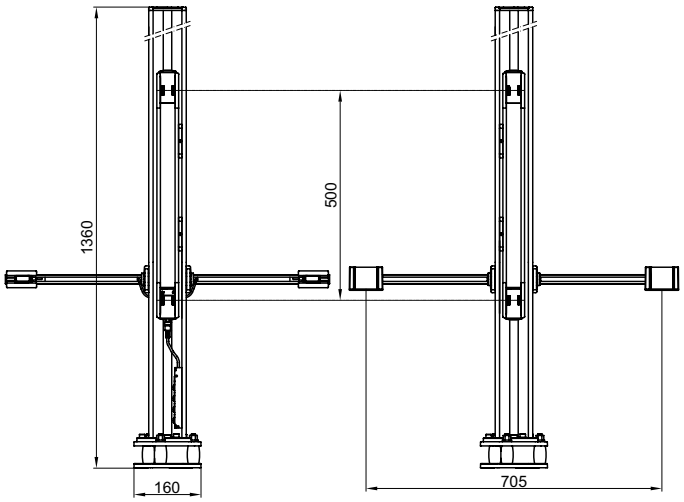
- Pre-mounted and aligned muting sensors with complete wiring
- Configuration without PC via wiring in the switch cabinet
- Various muting modes (parallel, sequential, partial)
- Also for low-temperature applications down to –30 °C

Direct access to the online product selector at **www.leuze.com/en/mldset**

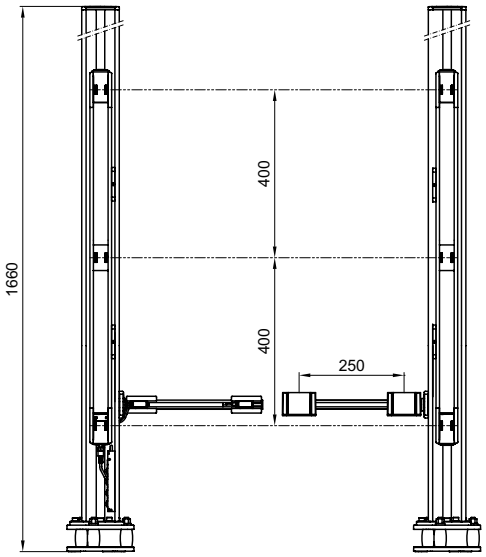
Part no.	Part description	Beam spacing	Number of beams	Operating range	Muting sensors	Column height without foot	Muting type	Design
66900022	MLDSET-M1-1300L	500 mm	2x	0 … 8 m	2x PRK 25B retro-reflective photoelectric sensors	1,300 mm	Sequence controlled 2-sensor muting	Integrated muting indicator
66900021	MLDSET-M1-1300T	500 mm	2x	0 … 8 m	2x PRK 25B retro-reflective photoelectric sensors	1,300 mm	Timing controlled 2-sensor muting	Integrated muting indicator
66900026	MLDSET-M2-1300L	400 mm	3x	0 … 6 m	2x PRK 25B retro-reflective photoelectric sensors	1,300 mm	Sequence controlled 2-sensor muting	Integrated muting indicator
66900025	MLDSET-M2-1300T	400 mm	3x	0 … 6 m	2x PRK 25B retro-reflective photoelectric sensors	1,300 mm	Timing controlled 2-sensor muting	Integrated muting indicator
66900024	MLDSET-M1-1600L	500 mm	2x	0 … 8 m	2x PRK 25B retro-reflective photoelectric sensors	1,600 mm	Sequence controlled 2-sensor muting	Integrated muting indicator
66900023	MLDSET-M1-1600T	500 mm	2x	0 … 8 m	2x PRK 25B retro-reflective photoelectric sensors	1,600 mm	Timing controlled 2-sensor muting	Integrated muting indicator
66900012	MLDSET-M1-1600T4	500 mm	2x	0 … 8 m	4x PRK 25B retro-reflective photoelectric sensors	1,600 mm	Timing controlled 4-sensor muting	Integrated muting indicator
66900028	MLDSET-M2-1600L	400 mm	3x	0 … 6 m	2x PRK 25B retro-reflective photoelectric sensors	1,600 mm	Sequence controlled 2-sensor muting	Integrated muting indicator
66900027	MLDSET-M2-1600T	400 mm	3x	0 … 6 m	2x PRK 25B retro-reflective photoelectric sensors	1,600 mm	Timing controlled 2-sensor muting	Integrated muting indicator
66900013	MLDSET-M2-1600T4	400 mm	3x	0.5 … 6 m	4x PRK 25B retro-reflective photoelectric sensors	1,600 mm	Timing controlled 4-sensor muting	Integrated muting indicator

Included in delivery: mounting kit for floor assembly.

Dimensioned drawings: MLDSET



MLDSET-M1-1300T protective sensor set



MLDSET-M2-1600L protective sensor set

/// MLD-UDC

MLD 500 transceiver or transmitter-receiver systems with different numbers of beams and ranges which are pre-mounted in device columns facilitate the installation of the most diverse constructional systems even in combination with deflecting mirror columns. They are suitable for single- and multiple-sided access guarding.

Benefits:

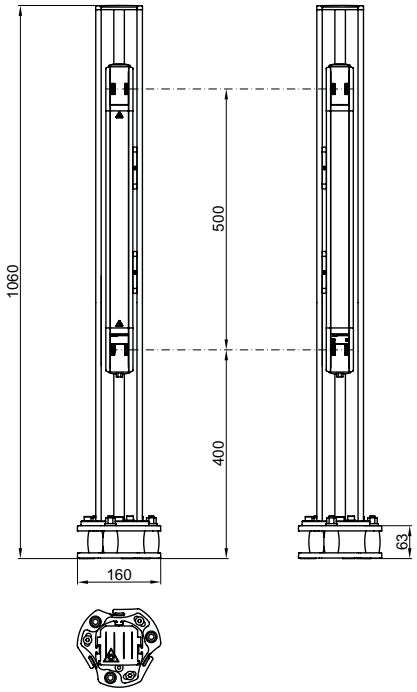
- Pre-mounted safety sensors in sturdy device columns
- Configuration without PC via wiring in the switch cabinet
- Extremely diverse access guarding systems with the addition of deflecting mirror columns
- All columns with automatic resetting after mechanical impacts
- Also for low-temperature applications down to –30 °C

Direct access to the online product selector at **www.leuze.com/en/mld-udc**

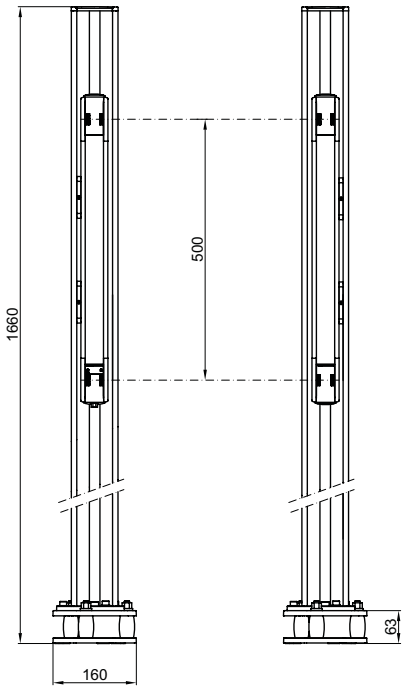
Part no.	Part description	Beam spacing	Number of beams	Operating range	Column height without foot	Design
426379	▶ MLD510-R2-UDC-1000-S2-P	500 mm	2x		1,000 mm	Protective screen
426345	◀ MLD500-T2-UDC-1000-S2-P	500 mm	2x	0.5 … 50 m	1,000 mm	Protective screen
426415	▶ MLD510-R2L-UDC-1000-S2	500 mm	2x		1,000 mm	Reflective element for laser alignment aid
426306	◀ MLD500-T2L-UDC-1000-S2	500 mm	2x	0.5 … 50 m	1,000 mm	Integrated laser alignment aid
426308	▶ MLD520-R2L-UDC-1000-S2	500 mm	2x		1,000 mm	Reflective element for laser alignment aid
426306	◀ MLD500-T2L-UDC-1000-S2	500 mm	2x	0.5 … 50 m	1,000 mm	Integrated laser alignment aid
426307	▶ MLD530-R2LM-UDC-1000-S2	500 mm	2x		1,000 mm	Integrated muting indicator, reflective element for laser alignment aid
426306	◀ MLD500-T2L-UDC-1000-S2	500 mm	2x	0.5 … 50 m	1,000 mm	Integrated laser alignment aid
426535	▶ MLD530-RT2M-UDC-1000-S2	500 mm	2x	0.5 … 8 m	1,000 mm	Integrated muting indicator
426305	◀ MLD-M002-UDC-1000-S2	500 mm	2x		1,000 mm	
426281	▶ MLD510-R3L-UDC-1300-S2	400 mm	3x		1,300 mm	Reflective element for laser alignment aid
426280	◀ MLD500-T3L-UDC-1300-S2	400 mm	3x	0.5 … 50 m	1,300 mm	Integrated laser alignment aid
426288	▶ MLD520-R3L-UDC-1300-S2	400 mm	3x		1,300 mm	Reflective element for laser alignment aid
426280	◀ MLD500-T3L-UDC-1300-S2	400 mm	3x	0.5 … 50 m	1,300 mm	Integrated laser alignment aid
426289	▶ MLD530-R3LM-UDC-1300-S2	400 mm	3x		1,300 mm	Integrated muting indicator, reflective element for laser alignment aid
426280	◀ MLD500-T3L-UDC-1300-S2	400 mm	3x	0.5 … 50 m	1,300 mm	Integrated laser alignment aid

Included in delivery: mounting kit for floor assembly.
Further products of this series can be found on our website or on request.

Dimensioned drawings: MLD-UDC



MLD500-T2L-UDC1000-S2 protective sensor set (transmitter) / MLD520R2L-UDC1000-S2 (receiver)



Protective sensor set MLD520-RT2-UDC1600-S2 (transceiver) / MLD-M002-UDC1600-S2 (deflecting mirror)

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/ SAFE LOCKING DEVICES, SWITCHES AND PROXIMITY SENSORS

FROM EXTREMELY ECONOMICAL TO EXTREMELY TOUGH

Safety switches and magnetically coded safety systems are used for monitoring moveable safety guards, such as safety doors, sliding grilles or flaps. Opening the protective devices triggers an E-Stop command. Safety locking devices keep the protective doors locked, thereby preventing the inadmissible access of people until the guarded machine no longer poses a danger.

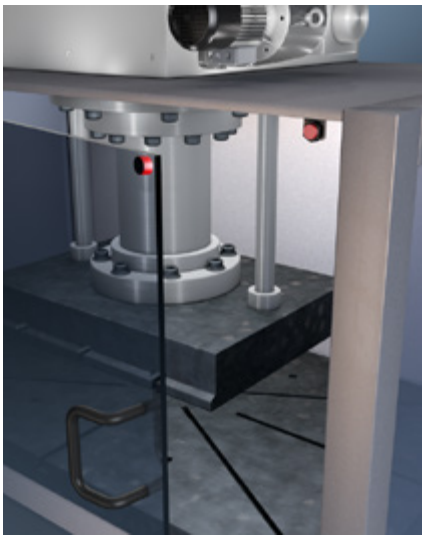
Safety switches Page 332

Safety locking devices Page 342

Safety command devices Page 350

Magnetically coded sensors Page 353

Safety transponders Page 356



//SAFETY SWITCHES

OPEN IS OFF

For doors, flaps and covers that must be closed during the operation of machines, safety switches for position monitoring and for the protection of personnel and systems are required. In addition to standard designs for universal use, Safety Hinge Switches and Safety Position Switches are available as alternatives to hinge switches on flaps.

Safety switches with separate actuator

Standard designs with separate actuators allow different approach directions and thereby facilitate universal use.

/// S20

The S20 is a Safety Switch without locking device that can be used, e.g., on machines and systems where the operator is protected from the point of operation by grid doors or sliding gates.

Benefits:

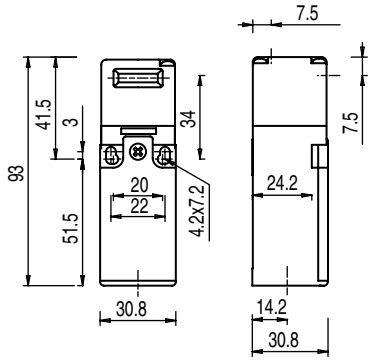
- Housing made of glass fiber reinforced plastic – degree of protection IP 67
- Suited for normal duty applications
- Easy mounting with standard construction
- Universal use with 5 actuator approach directions
- Self-centering through funnel-shaped insertion opening

Direct access to the online product selector at **www.leuze.com/en/s20**

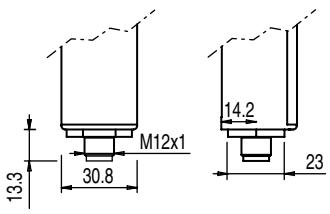
Part no.	Part description	Contact allocation	Housing material	Connection	Cable entry	Approach actuation directions	Actuation force (pull-out)
63000101	S20-P1C1-M20-FH	1NC + 1NO, slow-action contact	Plastic	Terminal, 4-pin	1x, M20 x 1.5	4 x side (90 °), 1 x top	10 N
63000102	S20-P1C3-M20-LH	1NC + 1NO, slow-action contact	Plastic	Terminal, 4-pin	3x, M20 x 1.5	4 x side (90 °), 1 x top	10 N
63000103	S20-P4C1-M20-FH	2NC + 1NO, slow-action contact	Plastic	Terminal, 6-pin	1x, M20 x 1.5	4 x side (90 °), 1 x top	10 N
63000105	S20-P4C1-M20-FH30	2NC + 1NO, slow-action contact	Plastic	Terminal, 6-pin	1x, M20 x 1.5	1 x top, 4 x side (90 °)	30 N
63000104	S20-P4C3-M20-LH	2NC + 1NO, slow-action contact	Plastic	Terminal, 6-pin	3x, M20 x 1.5	4 x side (90 °), 1 x top	10 N
63000106	S20-P4C1-M12-FH	2NC + 1NO, slow-action contact	Plastic	Connector, M12, 8-pin, plastic		1 x top, 4 x side (90 °)	10 N
63000100	S20-P3C1-M20-FH	2NC, slow-action contact	Plastic	Terminal, 4-pin	1x, M20 x 1.5	4 x side (90 °), 1 x top	10 N

Note: Actuators must be ordered separately!

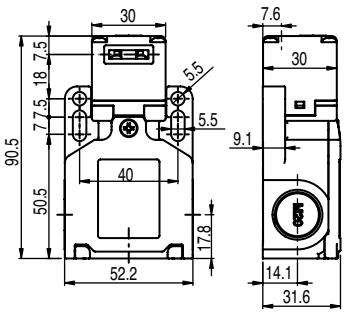
Dimensioned drawings: S20



S20-P3C1-M20-FH / S20-P1C1-M20-FH / S20-P4C1-M20-FH30 safety switches



S20-P4C1-M12-FH safety switch (dimensions of M12 connector)



S20-P1C3-M20-LH / S20-P4C3-M20-LH safety switches

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ACCESSORIES: S20

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR

Further connection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
63000844	AC-PLP-8	Connector, M12, axial, male	8-pin

Further connectors can be found on our website

Adapter

Part no.	Part description	Design
63000843	AC-A-M20-12NPT	M20 x 1.5 on 1/2 NPT

Actuators

Part no.	Part description	Design	Mounting bore holes	Material	Type of fastening	Description
63000706	AC-AN-F1J2	Straight	In key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 1 direction, adjustable, 2 directions
63000703	AC-AN-F2J2	Straight	90 ° to key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 2 directions, adjustable, 2 directions
63000702	AC-AN-F4	Straight	90 ° to key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 4 directions
63000700	AC-AN-S	Straight	90 ° to key direction	Stainless steel	Through-hole mounting	
63000704	AC-AN-SL	Straight	90 ° to key direction	Stainless steel	Through-hole mounting	
63000701	AC-AN-A	Angled	In key direction	Stainless steel	Through-hole mounting	
63000705	AC-AN-AL	Angled	In key direction	Stainless steel	Through-hole mounting	
63000707	AC-AN-ASH	Angled	In key direction	Stainless steel	Through-hole mounting	

/// S200

This safety switch is used, e. g., for heavy doors or rolling gates in rough environments, i.e., it is preferred for heavy duty applications.

Benefits:

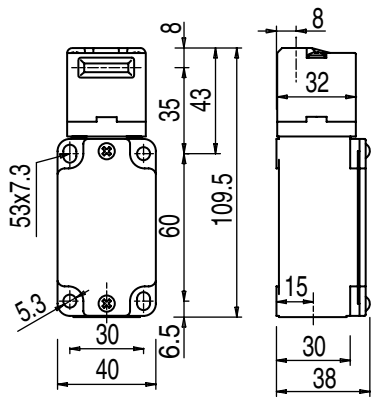
- Housing made of metal – degree of protection IP 67
- Suited for heavy duty applications
- Easy mounting with standard construction
- Universal use with 5 actuator approach directions
- Self-centering through funnel-shaped insertion opening

Direct access to the online product selector at **www.leuze.com/en/s200**

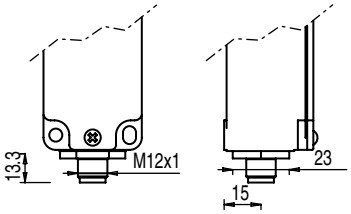
Part no.	Part description	Contact allocation	Housing material	Connection	Cable entry	Approach actuation directions	Actuation force (pull-out)
63000201	S200-M1C1-M20	1NC + 1NO, slow-action contact	Metal	Terminal, 4-pin	1x, M20 x 1.5	4 x side (90 °), 1 x top	10 N
63000202	S200-M4C1-M20	2NC + 1NO, slow-action contact	Metal	Terminal, 6-pin	1x, M20 x 1.5	4 x side (90 °), 1 x top	10 N
63000203	S200-M4C1-M12	2NC + 1NO, slow-action contact	Metal	Connector, M12, 8-pin, metal		4 x side (90 °), 1 x top	10 N
63000200	S200-M3C1-M20	2NC, slow-action contact	Metal	Terminal, 4-pin	1x, M20 x 1.5	4 x side (90 °), 1 x top	10 N

Note: Actuators must be ordered separately!

Dimensioned drawings: S200



S200-M1C1-M20 / S200-M3C1-M20 / S200-M4C1-M20 safety switches



S200-M4C1-M12 safety switch (dimensions of M12 connector)

ACCESSORIES: S200

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR

Further connection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
63000845	AC-PLM-8	Connector, M12, axial, male	8-pin

Further connectors can be found on our website

Adapter

Part no.	Part description	Design
63000843	AC-A-M20-12NPT	M20 x 1.5 on 1/2 NPT

Actuators

Part no.	Part description	Design	Mounting bore holes	Material	Type of fastening	Description
63000846	AC-KL-AH			Metal		Actuator interlock
63000724	AC-AH-F1J2	Straight	In key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 1 direction, adjustable, 2 directions
63000723	AC-AH-F2J2	Straight	90 ° to key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 2 directions, adjustable, 2 directions
63000722	AC-AH-F4	Straight	90 ° to key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 4 directions
63000725	AC-AH-F4J2-TK	Straight	In key direction, 90 ° to key direction	Stainless steel	Through-hole mounting	Functions: flexible, 4 directions, rotatable head, key, adjustable, 4 directions
63000720	AC-AH-S	Straight	90 ° to key direction	Stainless steel	Through-hole mounting	
63000721	AC-AH-A	Angled	In key direction	Stainless steel	Through-hole mounting	

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Safety position switches

Because of their construction design, these switches are used for the position monitoring of machines or as an alternative to hinge switches – always with the prerequisite that appropriate actuation tappets or notches can actuate the switch when friction closed.

/// S300

The S300 safety position switches have a metal housing in accordance with degree of protection IP 67. The models equipped with various contact sets enable integration in control circuits up to category 4 in accordance with EN ISO 13849. In addition, models are available with different actuators and supports and connection options.

Benefits:

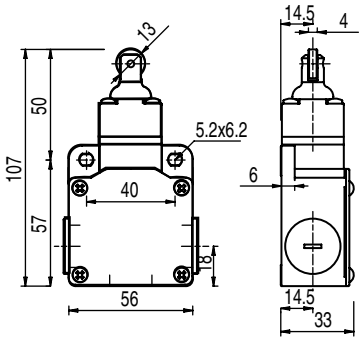
- Metal housing for heavy duty applications
- Switching direction selectable
- Universal use with individually set actuator approach directions and angles
- Stable lever fastening in 10 ° raster
- Models with plunger and roller actuator, extremely long-life and robust

Direct access to the online product selector at **www.leuze.com/en/s300**

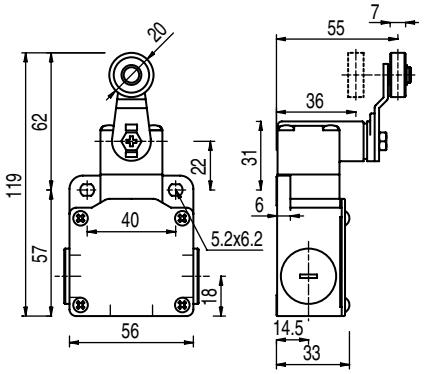
Part no.	Part description	Contact allocation	Housing material	Connection	Cable entry	Approach actuation directions	Switching direction
63000307	S300-P13C1-M12-CB	2NC + 1NO, slow-action contact	Plastic	Connector, M12, 8-pin, plastic		4 x side (90 °), 360 °	One side, both sides
63000309	S300-P13C1-M12-SB	2NC + 1NO, slow-action contact	Plastic	Connector, M12, 8-pin, plastic		4 x side (90 °), 360 °	One side, both sides
63000310	S300-P0C1-M20-CB	1NC + 1NO, snap-action contact	Plastic	Terminal, 4-pin	1x, M20 x 1.5	4 x side (90 °), 360 °	One side, both sides
63000300	S300-M0C3-M20-15	1NC + 1NO, snap-action contact	Metal	Terminal, 4-pin	3x, M20 x 1.5	4 x side (90 °), 1 x top	Both sides
63000302	S300-M0C3-M20-31	1NC + 1NO, snap-action contact	Metal	Terminal, 4-pin	3x, M20 x 1.5	4 x side (90 °), 360 °	Both sides, one side
63000306	S300-P13C1-M20-CB	2NC + 1NO, slow-action contact	Plastic	Terminal, 6-pin	1x, M20 x 1.5	4 x side (90 °), 360 °	One side, both sides
63000308	S300-P13C1-M20-SB	2NC + 1NO, slow-action contact	Plastic	Terminal, 6-pin	1x, M20 x 1.5	4 x side (90 °), 360 °	One side, both sides
63000301	S300-M13C3-M20-15	2NC + 1NO, slow-action contact	Metal	Terminal, 6-pin	3x, M20 x 1.5	4 x side (90 °), 1 x top	Both sides
63000303	S300-M13C3-M20-31	2NC + 1NO, slow-action contact	Metal	Terminal, 6-pin	3x, M20 x 1.5	4 x side (90 °), 360 °	Both sides, one side
63000304	S300-M13C3-M20-CB	2NC + 1NO, slow-action contact	Metal	Terminal, 6-pin	3x, M20 x 1.5	4 x side (90 °), 360 °	One side, both sides
63000305	S300-M13C3-M20-SB	2NC + 1NO, slow-action contact	Metal	Terminal, 6-pin	3x, M20 x 1.5	4 x side (90 °), 360 °	One side, both sides

Note: Actuators must be ordered separately!

Dimensioned drawings: S300

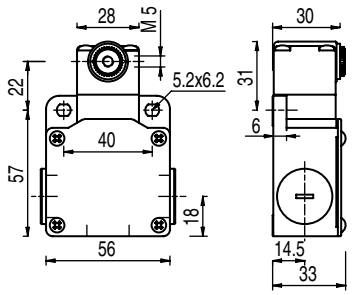


S300-M0C3-M20-15 / S300-M13C3-M20-15 safety position switches

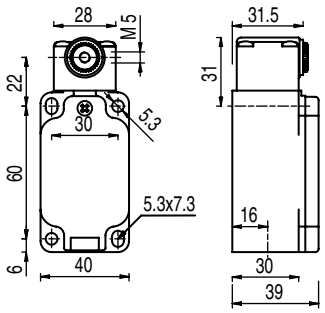


S300-M0C3-M20-31 and S300-M13C3-M20-31 safety position switches

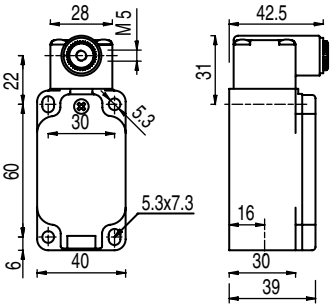
Dimensioned drawings: S300



S300-M13C3-M20-CB
safety position switch



S300-P13C1-M20-CB /
S300-P13C1-M12-CB
safety position switches



S300-P13C1-M20-SB /
S300-P13C1-M12-SB
safety position switches

ACCESSORIES: S300

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR

Further connection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
63000845	AC-PLM-8	Connector, M12, axial, male	8-pin

Further connectors can be found on our website

Adapter

Part no.	Part description	Design
63000843	AC-A-M20-12NPT	M20 x 1.5 on 1/2 NPT

Actuators

Part no.	Part description	Design	Mounting bore holes	Material	Type of fastening	Description
63000882	AC-LL-R	Straight	90 ° to key direction	Steel, galvanized, plastic	Through-hole mounting	Length: 34 mm … 93 mm: Functions: easy installation, quick vertical and axial alignment in just a few steps, linkage via roller
63000884	AC-LL-R40	Straight	90 ° to key direction	Steel, galvanized, rubber	Through-hole mounting	Length: 50 mm … 103 mm: Functions: easy installation, quick vertical and axial alignment in just a few steps, linkage via roller
63000883	AC-PL	Straight	90 ° to key direction	Steel, porcelain	Through-hole mounting	Functions: easy installation, quick vertical and axial alignment in just a few steps, linkage via sleeve
63000880	AC-SL-R	Straight	90 ° to key direction	Steel, galvanized, plastic	Through-hole mounting	Functions: easy installation, quick vertical and axial alignment in just a few steps, linkage via roller
63000881	AC-AL-R	Angled	90 ° to key direction	Steel, galvanized, plastic	Through-hole mounting	Functions: easy installation, quick vertical and axial alignment in just a few steps, linkage via roller

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Safety hinge switches

Safety hinge switches are used for the position monitoring of hard guards that can rotate (e. g. protective hoods) by means of a monitoring switch (without guard interlocking) integrated into the hinge.

/// S400

The S400 safety hinge switches unite the safety switch and door hinge functions in one component. Because external actuators are not required with this switch, it can also be used problem-free in environments with high dust concentration levels or with heavy particle loads (degree of protection IP 67). By means of a repeatable setting (switching angle alignment), fault-free function is ensured even with warped or misaligned doors.

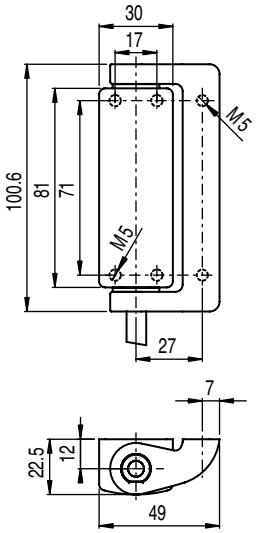
Benefits:

- 180 ° maximum opening angle of the protective device
- Repeatable setting (switching angle alignment) with skewed or misaligned doors
- Compact, rounded-off construction design in robust metal version, degree of protection IP 67
- Encapsulated, internal actuator guarantees proper functioning, even under difficult conditions
- Highly tamperproof due to covered screws
- Cable or M12 connection

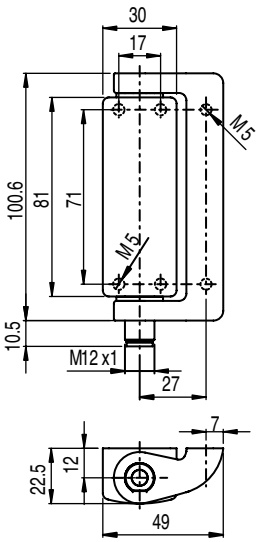
Direct access to the online product selector at **www.leuze.com/en/s400**

Part no.	Part description	Contact allocation	Housing material	Connection	Side of cable entry
63000411	S400-M4-CB2PUR-W	2NC + 1NO, slow-action contact	Metal	Cable, 7-wire, 2,000 mm, PUR	Wall side
63000402	S400-M4CB2-T	2NC + 1NO, slow-action contact	Metal	Cable, 7-wire, 2,000 mm, PVC	From above (with left installation)
63000400	S400-M4CB2-B	2NC + 1NO, slow-action contact	Metal	Cable, 7-wire, 2,000 mm, PVC	From below (with left installation)
63000406	S400-M4-CB02M12-W	2NC + 1NO, slow-action contact	Metal	Cable with connector, M12, 8-pin, metal, 200 mm, PVC	Wall side
63000403	S400-M4M12-T	2NC + 1NO, slow-action contact	Metal	Connector, M12, 8-pin, metal	From above (with left installation)
63000401	S400-M4M12-B	2NC + 1NO, slow-action contact	Metal	Connector, M12, 8-pin, metal	From below (with left installation)
63000407	S400-M1-CB02M12-W	2NC + 1NO, snap-action contact	Metal	Cable with connector, M12, 8-pin, metal, 200 mm, PVC	Wall side

Dimensioned drawings: S400

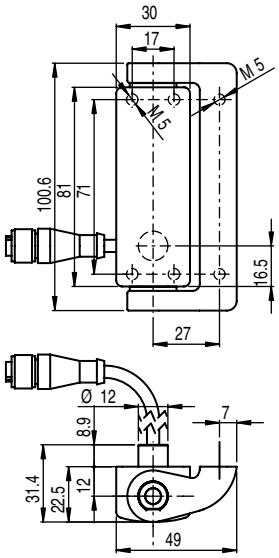


S400-M4CB2-B safety hinge switches

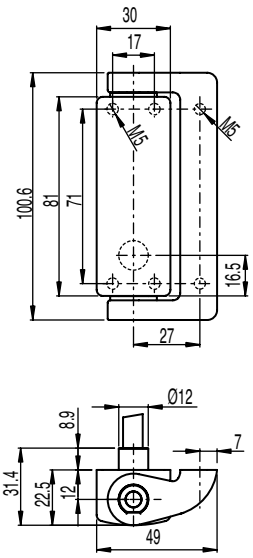


S400-M4M12-B safety hinge switches

Dimensioned drawings: S400



S400-Mx-CB02M12-W safety hinge switches



S400-M4-CB2PUR-W safety hinge switches

ACCESSORIES: S400

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR

Further connection cables can be found on our website

Mounting

Part no.	Part description	Description	Material	Design	Type of fastening	Dimensions
63000770	AC-H-S400	Additional hinge	Metal, ZAMAK		Mounting thread	49 mm x 22.5 mm x 100.6 mm
63000775	AC-H-S400-S	Additional hinge	Metal, ZAMAK		Mounting thread	44.5 mm x 22.5 mm x 65 mm
63000772	AC-MP1-S400	Mounting plate set	Metal	Mounting plate		
63000771	AC-MP3-S400	Mounting plate set	Metal	Mounting plate		
63000774	AC-SEPL-S4xx	Safety plug				

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/// S410

With its wider mounting fork, this Safety Hinge Switch is suitable above all for use with glass or plastic parts, as larger support surfaces are needed for stability in these cases.

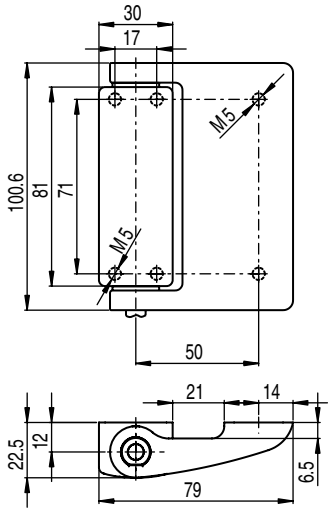
Benefits:

- Wide fork dimensions for stability on glass and plastic
- 180 ° maximum opening angle of the protective device
- Repeatable setting (switching angle alignment) with skewed or misaligned doors
- Degree of protection IP 67
- Compact, rounded-off construction design in robust metal version
- Encapsulated, internal actuator guarantees proper functioning, even under difficult conditions
- Highly tamperproof due to covered screws
- Cable or M12 connection

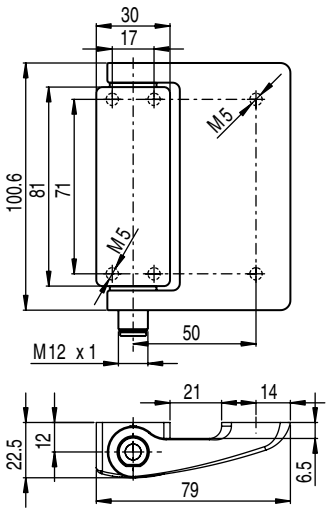
Direct access to the online product selector at **www.leuze.com/en/s410**

Part no.	Part description	Contact allocation	Housing material	Connection	Side of cable entry
63000412	S410-M4-CB2PUR-W	2NC + 1NO, slow-action contact	Metal	Cable, 7-wire, 2,000 mm, PVC	Wall side
63000410	S410-M4-CB02M12-W	2NC + 1NO, slow-action contact	Metal	Cable with connector, M12, 8-pin, metal, 200 mm, PVC	Wall side
63000408	S410-M1CB2-T	2NC + 1NO, snap-action contact	Metal	Cable, 7-wire, 2,000 mm, PVC	From above (with left installation)
63000404	S410-M1CB2-B	2NC + 1NO, snap-action contact	Metal	Cable, 7-wire, 2,000 mm, PVC	From below (with left installation)
63000409	S410-M1M12-T	2NC + 1NO, snap-action contact	Metal	Connector, M12, 8-pin, metal	From above (with left installation)
63000405	S410-M1M12-B	2NC + 1NO, snap-action contact	Metal	Connector, M12, 8-pin, metal	From below (with left installation)

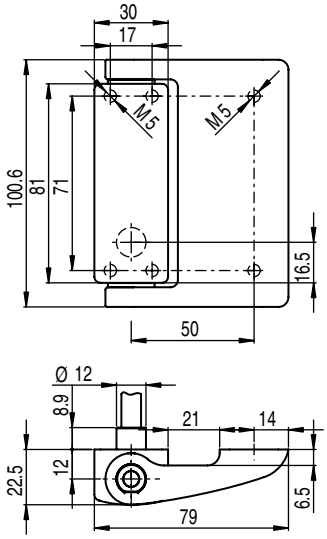
Dimensioned drawings: S410



S410-M1CB2-B
safety hinge switches



S410-M1M12-B
safety hinge switches



S410-M4-CB02M12-W /
S410-M4-CB2PUR-W
safety hinge switches

ACCESSORIES: S410

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR

Further connection cables can be found on our website

Mounting

Part no.	Part description	Description	Material	Type of fastening	Dimensions
63000773	AC-H-S410	Additional hinge	Metal, ZAMAK	Mounting thread	79 mm x 22.5 mm x 100.6 mm
63000774	AC-SEPL-S4xx	Safety plug			

/// S420

Owing to their highly tempered stainless steel housing and the degree of protection IP 69K, the series S420 safety hinge switches are particularly suited to tasks which have extremely high requirements with regard to hygiene. From a technical viewpoint, the unique switch impresses with its sensor-based OSSD, 4 multi-color LEDs for on-site diagnosis and its high safety level (SIL 3, PL e).

Benefits:

- Hinge switch in a conventional variant with contact allocation (S420-9x) or in a variant with on-site diagnosis and OSSDs (S420-OSx)
- Series connection of devices with SIL3 and PLe (S420-OSx) allows low-cost interconnection with an extremely high safety level
- Long mission time even with heavy doors or difficult materials (e.g. acrylic glass) owing to the robust housing and 6 screwed connections along its arm
- High-grade standard-compliant surfaces (< 0.8 µm) which can be cleaned easily even under hygienically difficult conditions
- Protection classes IP 67 and IP 69K ensure reliable operation even in the case of intensive cleaning and dust accumulation
- Optical information about the hinge status is provided on site by four multicolor LEDs
- Concealed screwed connections to protect against tampering and to enable easier cleaning
- Long-term identifiability owing to the robust laser print
- Reduced installation requirements and fast connection due to integrated cable or M12 connector with 0,2 m cable
- Additional signal output used to actuate signal lamps or for signaling status to control units
- High level of investment protection owing to simple and extensive adjustability to almost 0 ° e.g. in the case of door wear

Direct access to the online product selector at **www.leuze.com/en/s420**

Part no.	Part description	Contact allocation	Housing material	Connection	Side of cable entry
63000420	S420-9CB2-LW	2NC + 2NO, slow-action contact	Stainless steel	Cable, 8-wire, 2,000 mm, PVC	Wall side
50135657	S420-9CB5-LW	2NC + 2NO, slow-action contact	Stainless steel	Cable, 8-wire, 5,000 mm, PVC	Wall side
63000422	S420-9-CB02M12-LW	2NC + 2NO, slow-action contact	Stainless steel	Cable with connector, M12, 8-pin, metal, 200 mm, PVC	Wall side
63000421	S420-OS-CB2-LW	OSSD, slow-action contact	Stainless steel	Cable, 8-wire, 2,000 mm, PVC	Wall side
63000423	S420-OS-CB02M12-LW	OSSD, slow-action contact	Stainless steel	Cable with connector, M12, 8-pin, metal, 200 mm, PVC	Wall side

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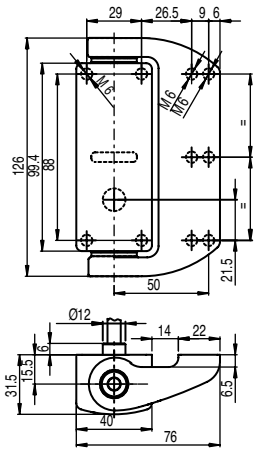
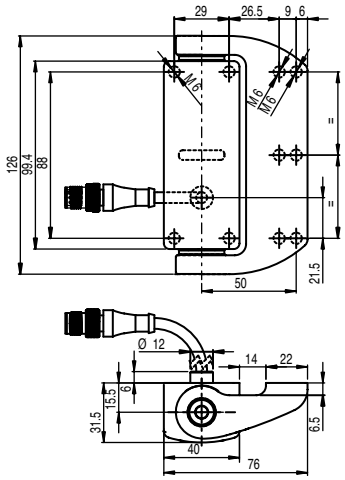
Dimensioned drawings: S420



S420-9CB2-LW / S420-OS-CB2-LW
safety hinge switches



S420-9-CB02M12-LW / S420-OS-CB02M12-LW
safety hinge switches

ACCESSORIES: S420

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR

Further connection cables can be found on our website

Mounting

Part no.	Part description	Description	Material	Type of fastening	Dimensions
63000778	AC-H-S420	Additional hinge	Stainless steel, AISI 316L	Mounting thread	76 mm x 31.5 mm x 126 mm
63000779	AC-S-S420	Seal set	Plastic		
63000774	AC-SEPL-S4xx	Safety plug			

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Markus Erdorf,
Safety Consultant and Trainer

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//SAFETY LOCKING DEVICES

THE DOOR STAYS CLOSED!

Safety locking devices keep protective doors securely locked and thereby prevent the inadmissible access of people until the guarded machine no longer poses a danger. Not until there is no longer a danger to the machine or to the workers is access released by an electric signal. With their robust design, all Leuze electronic Safety Switches and Locking Devices are designed for rough industrial applications.

/// L10

The compact and economical L10 Safety Locking Device reduces wiring through manual locking and releasing.

Benefits:

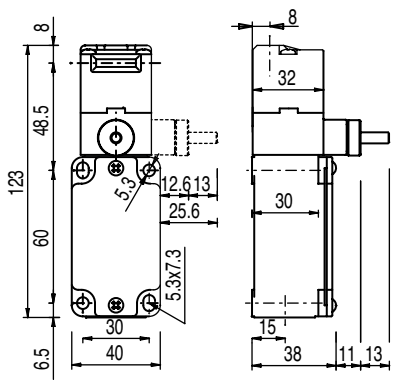
- Particularly economical locking solution for rarely-used maintenance doors and applications without electrical control signals
- Hardly any wiring and cabling costs due to manual locking and unlocking
- 6 different heavy duty actuators for the most diverse installation conditions

Direct access to the online product selector at **www.leuze.com/en/l10**

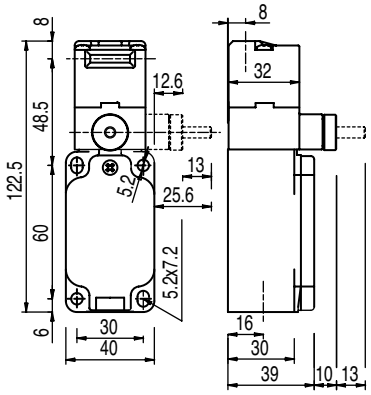
Part no.	Part description	Contact allocation	Housing material	Connection	Cable entry	Approach actuation directions	Locking actuation	Locking type
63000558	L10-P3C1-M20-K0	2NC + 1NO, slow-action contact	Plastic	Terminal, screw terminal, 6-pin	1x, M20 x 1.5	4 x side (90 °), 1 x top	Manual unlocking by means of key	Mechanical
63000554	L10-P3C1-M20-LB10	2NC + 1NO, slow-action contact	Plastic	Terminal, screw terminal, 6-pin	1x, M20 x 1.5	4 x side (90 °), 1 x top	Manual unlocking by means of knurled nut	Mechanical
63000555	L10-P3C1-M20-LB20	2NC + 1NO, slow-action contact	Plastic	Terminal, screw terminal, 6-pin	1x, M20 x 1.5	4 x side (90 °), 1 x top	Manual unlocking by means of knurled nut	Mechanical
63000552	L10-P3C1-M20-SB20	2NC + 1NO, slow-action contact	Plastic	Terminal, screw terminal, 6-pin	1x, M20 x 1.5	1 x top, 4 x side (90 °)	Manual unlocking by means of knurled nut	Mechanical
63000559	L10-M3C1-M20-K0	2NC + 1NO, slow-action contact	Metal	Terminal, screw terminal, 6-pin	1x, M20 x 1.5	4 x side (90 °), 1 x top	Manual unlocking by means of key	Mechanical
63000553	L10-M3C1-M20-SB20	2NC + 1NO, slow-action contact	Metal	Terminal, screw terminal, 6-pin	1x, M20 x 1.5	1 x top, 4 x side (90 °)	Manual unlocking by means of knurled nut	Mechanical
63000550	L10-P2C1-M20-SB20	2NC, slow-action contact	Plastic	Terminal, screw terminal, 4-pin	1x, M20 x 1.5	1 x top, 4 x side (90 °)	Manual unlocking by means of knurled nut	Mechanical
63000551	L10-M2C1-M20-SB20	2NC, slow-action contact	Metal	Terminal, screw terminal, 4-pin	1x, M20 x 1.5	1 x top, 4 x side (90 °)	Manual unlocking by means of knurled nut	Mechanical

Note: Actuators must be ordered separately!

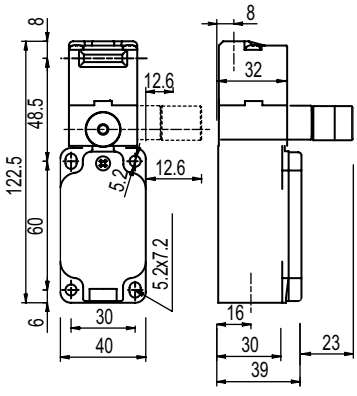
Dimensioned drawings: L10



L10-P2C1-M20-SB20 / L10-P3C1-M20-SB20 safety locking device



L10-M2C1-M20-SB20 / L10-M3C1-M20-SB20 safety locking device



L10-P3C1-M20-LB10 / L10-P3C1-M20-LB20 safety locking device

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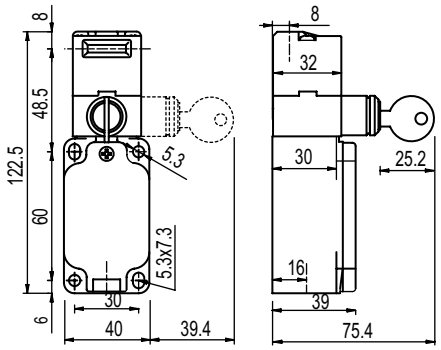
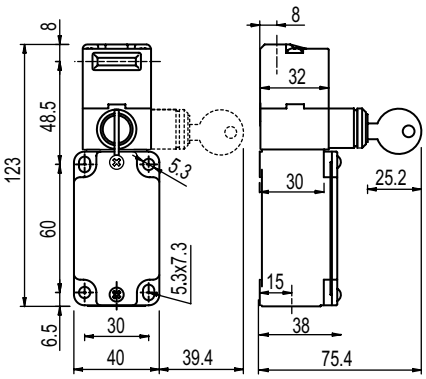
Dimensioned drawings: L10



L10-P3C1-M20-KO safety locking device



L10-M3C1-M20-KO safety locking device

ACCESSORIES: L10

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR

Further connection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
63000845	AC-PLM-8	Connector, M12, axial, male	8-pin
63000844	AC-PLP-8	Connector, M12, axial, male	8-pin

Further connectors can be found on our website

Adapter

Part no.	Part description	Design
63000843	AC-A-M20-12NPT	M20 x 1.5 on 1/2 NPT

Actuators

Part no.	Part description	Design	Mounting bore holes	Material	Type of fastening	Description
63000721	AC-AH-A	Angled	In key direction	Stainless steel	Through-hole mounting	
63000724	AC-AH-F1J2	Straight	In key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 1 direction, adjustable, 2 directions
63000723	AC-AH-F2J2	Straight	90 ° to key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 2 directions, adjustable, 2 directions
63000722	AC-AH-F4	Straight	90 ° to key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 4 directions
63000725	AC-AH-F4J2-TK	Straight	In key direction, 90 ° to key direction	Stainless steel	Through-hole mounting	Functions: flexible, 4 directions, rotatable head, key, adjustable, 4 directions
63000720	AC-AH-S	Straight	90 ° to key direction	Stainless steel	Through-hole mounting	
63000846	AC-KL-AH			Metal		Actuator interlock

/// L100

The versatile safety locking device is used both for personnel safety as well as for machine protection and is used to guard machines and systems that have stopping times.

Benefits:

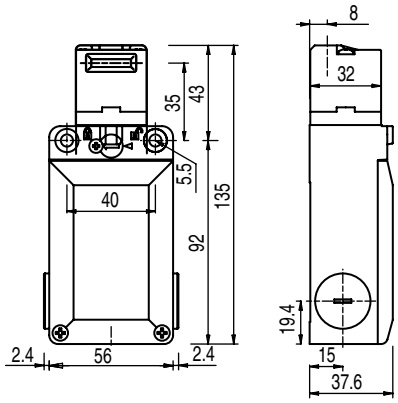
- 6 different heavy duty actuators for the most diverse installation conditions
- Standard construction in models with electromagnetic or spring force-actuated interlocking type and auxiliary release function

Direct access to the online product selector at **www.leuze.com/en/l100**

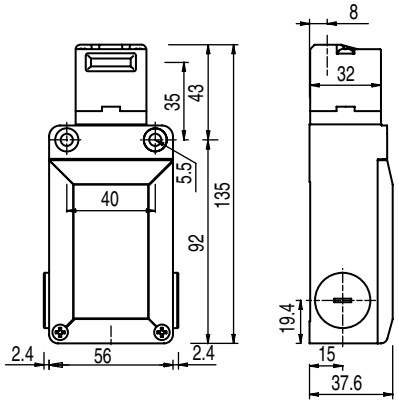
Part no.	Part description	Contact allocation	Housing material	Connection	Cable entry	Approach actuation directions	Locking actuation	Locking type
63000600	L100-P3C3-M20-SLM24	1NC, 1NC + 1NO, slow-action contact	Plastic	Terminal, screw terminal, 8-pin	3x, M20 x 1.5	1 x top, 4 x side (90 °)	Spring	Spring force
63000601	L100-P3C3-M20-MLM24	1NC, 1NC + 1NO, slow-action contact	Plastic	Terminal, screw terminal, 8-pin	3x, M20 x 1.5	1 x top, 4 x side (90 °)	Magnet	Electro-magnetic
63000602	L100-P4C3-M20-SLM24	1NC, 2NC, slow-action contact	Plastic	Terminal, screw terminal, 8-pin	3x, M20 x 1.5	1 x top, 4 x side (90 °)	Spring	Spring force

Note: Actuators must be ordered separately!

Dimensioned drawings: L100



L100-P3C3-M20-SLM24 /
L100-P4C3-M20-SLM24 safety locking device



L100-P3C3-M20-MLM24 safety locking device

ACCESSORIES: L100

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR

Further connection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins
63000844	AC-PLP-8	Connector, M12, axial, male	8-pin

Further connectors can be found on our website

Adapter

Part no.	Part description	Design
63000843	AC-A-M20-12NPT	M20 x 1.5 on 1/2 NPT

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Actuators

Part no.	Part description	Design	Mounting bore holes	Material	Type of fastening	Description
63000721	AC-AH-A	Angled	In key direction	Stainless steel	Through-hole mounting	
63000724	AC-AH-F1J2	Straight	In key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 1 direction, adjustable, 2 directions
63000723	AC-AH-F2J2	Straight	90 ° to key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 2 directions, adjustable, 2 directions
63000722	AC-AH-F4	Straight	90 ° to key direction	Plastic, stainless steel	Through-hole mounting	Functions: flexible, 4 directions
63000725	AC-AH-F4J2-TK	Straight	In key direction, 90 ° to key direction	Stainless steel	Through-hole mounting	Functions: flexible, 4 directions, rotatable head, key, adjustable, 4 directions
63000720	AC-AH-S	Straight	90 ° to key direction	Stainless steel	Through-hole mounting	
63000846	AC-KL-AH			Metal		Actuator interlock

/// L200

The L200 safety locking device designed for highly demanding applications is predestined for guarding large protective doors and sliding gates, in logistics operations, for example, or with very big machinery, and under harsh conditions.

Benefits:

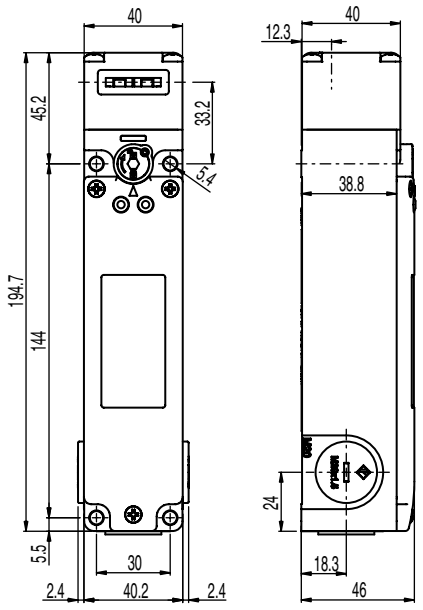
- Heavy duty access guarding on big machinery and systems in harsh ambient conditions
- Emergency unlock function (ergonomically optimized panic button) for manually opening the protective devices in the event of an emergency
- Suitable for extreme mechanical loads
- Auxiliary unlocking (for spring locking)
- LED status indicators

Direct access to the online product selector at **www.leuze.com/en/l200**

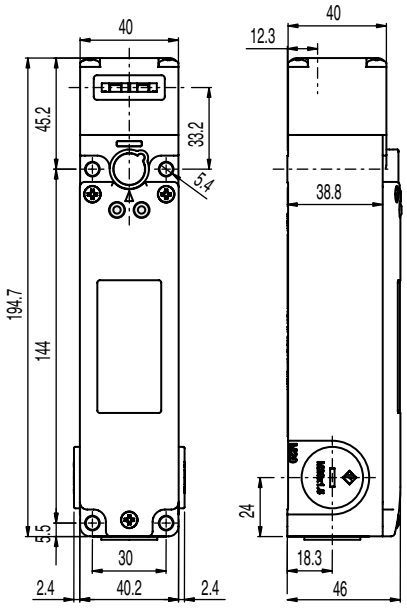
Part no.	Part description	Contact allocation	Housing material	Connection	Cable entry	Approach actuation directions	Locking actuation	Locking type
63000653	L200-M0C3-SLM24-L2G	1NC + 1NO, 1NC + 1NO, slow-action contact	Metal	Terminal, screw terminal, 10-pin	3x, M20 x 1.5	4 x side (90 °), 1 x top	Spring	Spring force
63000650	L200-M1C3-SLM24-L2G	1NC + 1NO, 2NC, slow-action contact	Metal	Terminal, screw terminal, 10-pin	3x, M20 x 1.5	1 x top, 4 x side (90 °)	Spring	Spring force
63000652	L200-M1C3-SLM24-PB-L2G	1NC + 1NO, 2NC, slow-action contact	Metal	Terminal, screw terminal, 10-pin	3x, M20 x 1.5	1 x top, 4 x side (90 °)	Spring	Spring force
63000651	L200-M1C3-MLM24-L2G	1NC + 1NO, 2NC, slow-action contact	Metal	Terminal, screw terminal, 10-pin	3x, M20 x 1.5	1 x top, 4 x side (90 °)	Magnet	Electromagnetic

Note: Actuators must be ordered separately!

Dimensioned drawings: L200

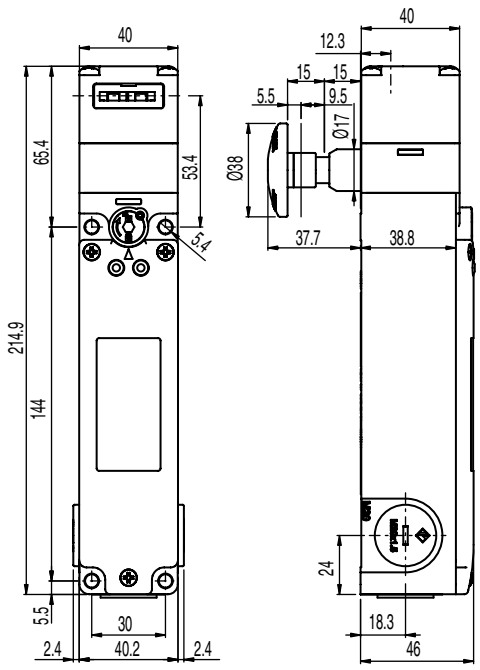


L200-M1C3-SLM24-L2G safety locking device



L200-M1C3-MLM24-L2G safety locking device

Dimensioned drawings: L200



L200-M1C3-SLM24-PB-L2G safety locking device

ACCESSORIES: L200

Connection technology

Adapter

Part no.	Part description	Design
63000843	AC-A-M20-12NPT	M20 x 1.5 on 1/2 NPT

Actuators

Part no.	Part description	Design	Mounting bore holes	Material	Type of fastening	Description
63000741	AC-AHL-A	Angled	In key direction	Stainless steel	Through-hole mounting	
63000743	AC-AHL-F4J2-TK	Straight	90 ° to key direction	Stainless steel	Through-hole mounting	Functions: flexible, 4 directions, rotatable head, key, adjustable, 4 directions
63000742	AC-AHL-RM	Straight	90 ° to key direction	Stainless steel	Through-hole mounting	Functions: rubber-mounted fastening
63000740	AC-AHL-S	Straight	90 ° to key direction	Stainless steel	Through-hole mounting	
63000847	AC-KL-AHL			Metal		Actuator interlock

Mounting

Part no.	Part description	Description	Dimension
63000749	AC-Exit-PB	Stick-on label; labeled: “PUSH TO EXIT”	300 mm
63000750	AC-PB15-L200	Extension	17 mm x 15 mm
63000751	AC-PB30-L200	Extension	17 mm x 30 mm
63000752	AC-PB40-L200	Extension	17 mm x 40 mm
63000753	AC-PB60-L200	Extension	17 mm x 60 mm
63000754	AC-PB500-L200	Extension; Length: 60 mm … 500 mm; Extension of the emergency release button	

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/// L300

The robust L300 safety locking devices for safety applications up to SIL 3 / PL e are used to guard large safety doors or sliding gates as well as very large machines that have stopping times. The actuator is detected electronically by means of RFID technology. Through millions of different encodings, the actuators achieve a high encoding level acc. to EN ISO 14119 and thereby reliably prevent possible attempts at tampering. The L300 series is designed for use under rough environmental conditions.

Benefits:

- RFID actuator for maximum protection against tampering
- Robust design with 7,500 N locking force and degree of protection IP 67 / IP 69K for use under rough environmental conditions and under extreme stress
- 5-LED display for simple status overview
- Emergency unlock function (ergonomically optimized panic button) for manually opening the protective devices in the event of an emergency

Direct access to the online product selector at **www.leuze.com/en/l300**

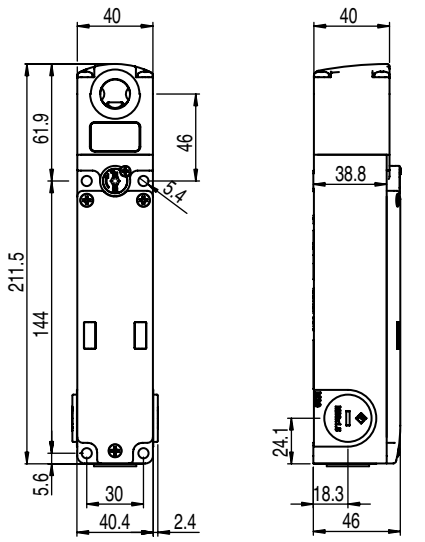
Part no.	Part description	Contact allocation	Housing material	Connection	Cable entry	Encoding level	Teach input for actuator	Release device
50132040	L300-M41C3-SLM24-UCA	OSSDs	Metal	Terminal, spring-cage terminal, 16-pin	3x, M20 x 1.5	High	Yes	
50132048	L300-M41C3-SLM24-KYPB-UCA	OSSDs	Metal	Terminal, spring-cage terminal, 16-pin	3x, M20 x 1.5	High	Yes	Auxiliary release with lock, escape release button
50132057	L300-M41C3-SLM24-PB-UCA	OSSDs	Metal	Terminal, spring-cage terminal, 16-pin	3x, M20 x 1.5	High	Yes	Escape release button
50137340	L300-M41M12B8-MLM24-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	High	Yes	
50132041	L300-M41M12B8-SLM24-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	High	Yes	
50132043	L300-M41M12L8-SLM24-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On left side	High	Yes	
50132042	L300-M41M12R8-SLM24-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On right side	High	Yes	
50135546	L300-M41M12B8-MLM24-PB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	High	Yes	Escape release button
50132049	L300-M41M12B8-SLM24-KYPB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	High	Yes	Auxiliary release with lock, escape release button
50132058	L300-M41M12B8-SLM24-PB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	High	Yes	Escape release button
50132051	L300-M41M12L8-SLM24-KYPB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On left side	High	Yes	Auxiliary release with lock, escape release button
50132060	L300-M41M12L8-SLM24-PB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On left side	High	Yes	Escape release button
50132050	L300-M41M12R8-SLM24-KYPB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On right side	High	Yes	Auxiliary release with lock, escape release button
50132059	L300-M41M12R8-SLM24-PB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On right side	High	Yes	Escape release button
50132201	L300-M31C3-SLM24-UCA	OSSDs	Metal	Terminal, spring-cage terminal, 16-pin	3x, M20 x 1.5	High	No	
50132210	L300-M31C3-SLM24-KYPB-UCA	OSSDs	Metal	Terminal, spring-cage terminal, 16-pin	3x, M20 x 1.5	High	No	Auxiliary release with lock, escape release button
50132216	L300-M31C3-SLM24-PB-UCA	OSSDs	Metal	Terminal, spring-cage terminal, 16-pin	3x, M20 x 1.5	High	No	Escape release button
50132202	L300-M31M12B8-SLM24-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	High	No	
50132204	L300-M31M12L8-SLM24-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On left side	High	No	
50132203	L300-M31M12R8-SLM24-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On right side	High	No	
50132213	L300-M31M12B8-SLM24-KYPB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	High	No	Auxiliary release with lock, escape release button
50132217	L300-M31M12B8-SLM24-PB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	High	No	Escape release button
50132215	L300-M31M12L8-SLM24-KYPB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On left side	High	No	Auxiliary release with lock, escape release button
50132219	L300-M31M12L8-SLM24-PB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On left side	High	No	Escape release button
50132214	L300-M31M12R8-SLM24-KYPB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On right side	High	No	Auxiliary release with lock, escape release button
50132218	L300-M31M12R8-SLM24-PB-UCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On right side	High	No	Escape release button
50132036	L300-M31C3-SLM24-SCA	OSSDs	Metal	Terminal, spring-cage terminal, 16-pin	3x, M20 x 1.5	Low	No	
50132044	L300-M31C3-SLM24-KYPB-SCA	OSSDs	Metal	Terminal, spring-cage terminal, 16-pin	3x, M20 x 1.5	Low	No	Auxiliary release with lock, escape release button
50132052	L300-M31C3-SLM24-PB-SCA	OSSDs	Metal	Terminal, spring-cage terminal, 16-pin	3x, M20 x 1.5	Low	No	Escape release button
50132037	L300-M31M12B8-SLM24-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	Low	No	
50133312	L300-M31M12B8Y-SLM24-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	Low	No	
50132039	L300-M31M12L8-SLM24-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On left side	Low	No	
50132038	L300-M31M12R8-SLM24-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On right side	Low	No	

Note: Actuators are included in delivery!

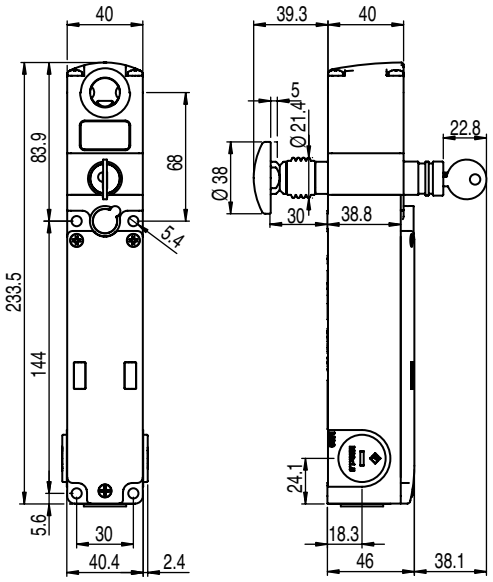
Part no.	Part description	Contact allocation	Housing material	Connection	Cable entry	Encoding level	Teach input for actuator	Release device
50133313	L300-M32M12B8-MLM24-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	Low	No	
50132045	L300-M31M12B8-SLM24-KYPB-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	Low	No	Auxiliary release with lock, escape release button
50132053	L300-M31M12B8-SLM24-PB-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	From below	Low	No	Escape release button
50132047	L300-M31M12L8-SLM24-KYPB-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On left side	Low	No	Auxiliary release with lock, escape release button
50132056	L300-M31M12L8-SLM24-PB-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On left side	Low	No	Escape release button
50132046	L300-M31M12R8-SLM24-KYPB-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On right side	Low	No	Auxiliary release with lock, escape release button
50132054	L300-M31M12R8-SLM24-PB-SCA	OSSDs	Metal	Connector, M12, 8-pin, metal	On right side	Low	No	Escape release button

Note: Actuators are included in delivery!

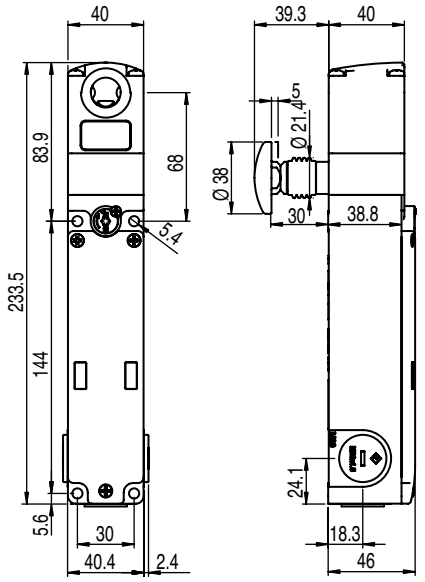
Dimensioned drawings: L300



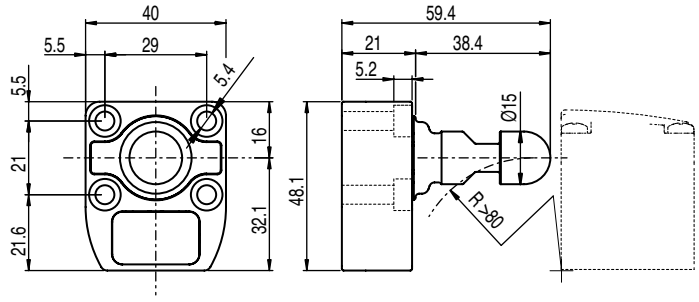
L300-MxxC3-xxxxx safety locking device



L300-MxxC3-xxxxx-KYPB safety locking device



L300-MxxC3-xxxxx-PB safety locking device



AC-L300-xCA actuator

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ACCESSORIES: L300

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR

Further connection cables can be found on our website

Actuators

Part no.	Part description	Type of fastening	Code type	Encoding level
50132061	AC-L300-SCA	Through-hole mounting	Standard code	Low
50132062	AC-L300-UCA	Through-hole mounting	Unique code	High

Mounting

Part no.	Part description	Description	Dimension
50132063	AC-L300-PB30	Extension	13 mm x 30 mm
50132064	AC-L300-PB40	Extension	13 mm x 40 mm
50132065	AC-L300-PB50	Extension	13 mm x 50 mm
50132066	AC-L300-PB60	Extension	13 mm x 60 mm
50133288	AC-L300-SH-LCK0-B3-P	Safety door handle; Mounting on the door post: short plate	
50133287	AC-L300-SH-LCK1-A3-P	Safety door handle; Mounting on the door post: long plate	

//SAFETY COMMAND DEVICES

AND OFF!

For stopping in emergencies, EN ISO 12100-1 stipulates protective devices and supplementary measures such as E-Stop buttons or emergency rope switches. Leuze electronic offers solutions that are optimized with respect to safety and ergonomics.

/// ERS200

The ERS200 E-Stop rope switch is a safety command device in accordance with EN ISO 13850 and EN 60947-5-5 and is used with preference with expansive points of operation. The rope-pull activation guarantees that it is easy to reach all along the point of operation.

Benefits:

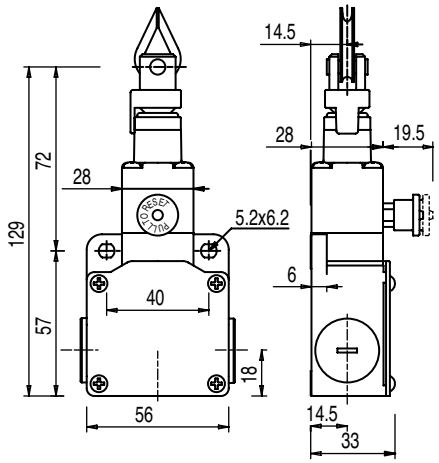
- Pulling the rope or rope fracture safely stops the machine
- Clicks in on both sides with friction-locking contacts
- Easy alignment with switching point indicator
- Easy integration with 3 cable approach directions
- Compact metal housing, degree of protection IP 67
- Reset button with status display
- Temperature compensation for longer rope lengths

Direct access to the online product selector at **www.leuze.com/en/ers200**

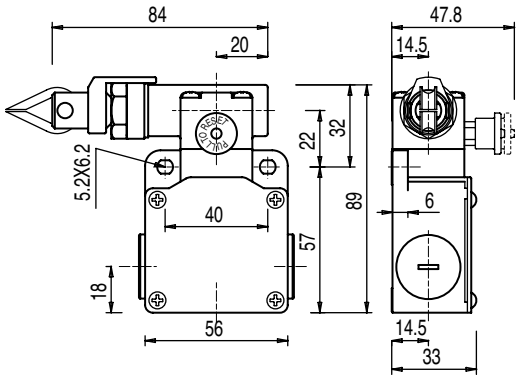
Part no.	Part description	Contact allocation	Housing material	Connection	Cable entry	Actuation directions	Actuation force (pull-out)	Actuating path with forced separation	Rope length, max.
63000500	ERS200-M0C3-M20-HLR	1NC + 1NO	Metal	Terminal, 4-pin	3x, M20 x 1.5	On longitudinal axis	83 N	8 mm	24 m
63000524	ERS200-M0C3-M20-HAL	1NC + 1NO	Metal	Terminal, 4-pin	3x, M20 x 1.5	To left	235 N	14 mm	70 m
63000522	ERS200-M0C3-M20-HAR	1NC + 1NO	Metal	Terminal, 4-pin	3x, M20 x 1.5	To right	235 N	14 mm	70 m
63000501	ERS200-M1C3-M20-HLR	2NC	Metal	Terminal, 4-pin	3x, M20 x 1.5	On longitudinal axis	83 N	8 mm	24 m
63000525	ERS200-M1C1-M20-HAL	2NC	Metal	Terminal, 4-pin	1x, M20 x 1.5	To left	235 N	14 mm	70 m
63000523	ERS200-M1C1-M20-HAR	2NC	Metal	Terminal, 4-pin	1x, M20 x 1.5	To right	235 N	14 mm	70 m
63000502	ERS200-M4C3-M20-HLR	2NC + 1NO	Metal	Terminal, 6-pin	3x, M20 x 1.5	On longitudinal axis	83 N	8 mm	24 m
63000503	ERS200-M4C1-M20-HLR	2NC + 1NO	Metal	Connector, 6-pin	1x, M20 x 1.5	On longitudinal axis	83 N	8 mm	24 m
63000504	ERS200-M4C1-M12-HLR	2NC + 1NO	Metal	Connector, 8-pin	1x, M20 x 1.5	On longitudinal axis	83 N	8 mm	24 m
63000521	ERS200-M4C3-M20-HAL	2NC + 1NO	Metal	Terminal, 6-pin	3x, M20 x 1.5	To left	235 N	14 mm	70 m
63000520	ERS200-M4C3-M20-HAR	2NC + 1NO	Metal	Terminal, 6-pin	3x, M20 x 1.5	To right	235 N	14 mm	70 m

Note: Steel rope, rope clamps and other accessories must be ordered separately

Dimensioned drawings: ERS200



ERS-MxC3x-HLR safety command device



Safety command device ERS200-MxC3x-HAR
(ERS200-MxC3x-HAL mirror-image)

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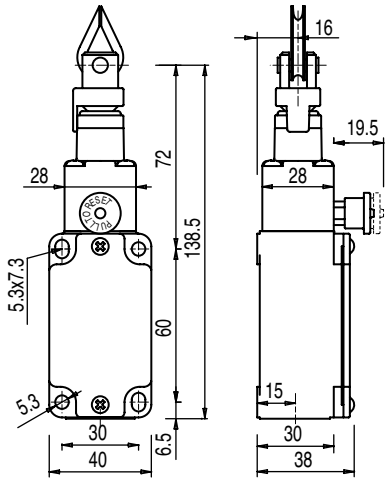
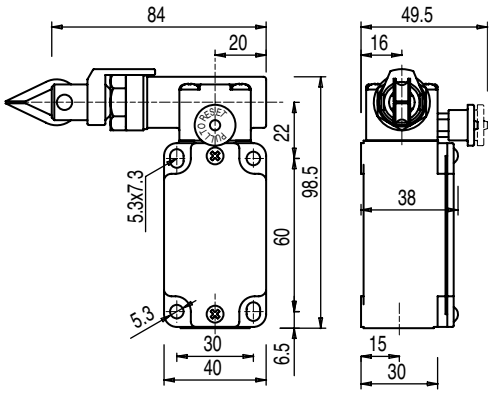
Dimensioned drawings: ERS200



ERS200-MxC1x-HLR safety command device



Safety command device ERS200-MxC1x-HAR
(ERS200-MxC1x-HAL mirror-image)

ACCESSORIES: ERS200

Mounting

Part no.	Part description	Consisting of	Diameter	Rope length	Material	Functions	Label
63000793	AC-AP-ERS		35 mm		Plastic, stainless steel		
63000798	AC-ENCLF-ERS		16 mm		Steel, galvanized, plastic	Rope quick fastener, red protective cap	
63000790	AC-KT10-ERS	Rope clamps, 10 m steel rope					
63000791	AC-KT20-ERS	Rope clamps, 20 m steel rope					
63000800	AC-P-ERS		35 mm		Stainless steel, plastic		
63000799	AC-SA-ERS				Stainless steel		
63000797	AC-SBO-ERS		16 mm		Steel, galvanized, plastic	Adjustable with lock nut, rope quick fastener, red protective cap	
63000792	AC-SL-ERS				Stainless steel		
63000794	AC-STOP-ERS		25 mm		Plastic		"Stop" with reference no.:5638 IEC 60417
63000795	AC-STRO-35-ERS		5 mm	35 m	Steel, zinc, plated, red plastic coated		
63000796	AC-STRO-100-ERS		5 mm	100 m	Steel, zinc, plated, red plastic coated		

SMART IS TO THINK **EASY**

Only with the proper accessories is your solution complete.

We place great value on flexible mounting solutions, simple integration through variable connection technology, alignment aids and innovative mounting systems. Pre-configured and pre-mounted systems also facilitate fast and simple commissioning of, e.g., muting systems for applications in safety at work.

Discover our extensive line of accessories on the web at: **www.leuze.com/en/accessories**

/// ESB200

E-Stop buttons of the ESB200 series are used at points of operation where it makes sense to be able to enter a stop command at a specific location. The diversity of the series allows the devices to be installed, for example, on profiles as well as in control panels, etc.

Benefits:

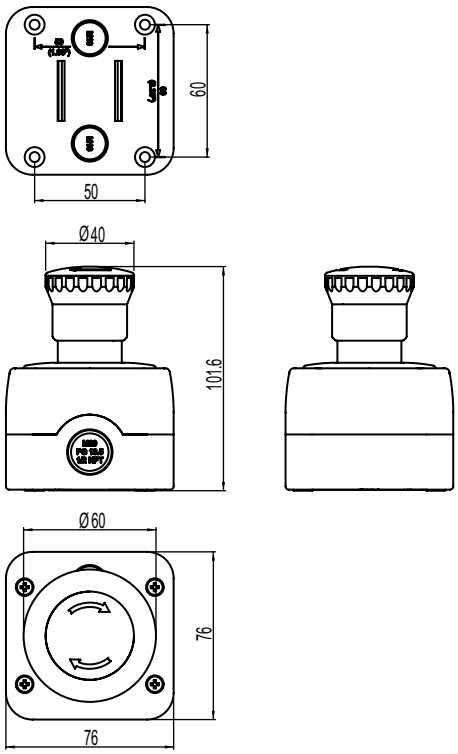
- Contact sets for integration up to cat. 4 in accordance with EN ISO 13849
- 2 safety circuits, 1 signal circuit
- Either screw terminals or M12 connection
- Ergonomically optimized
- Degree of protection IP 67 and IP 69K

Direct access to the online product selector at **www.leuze.com/en/esb200**

Part no.	Part description	Contact allocation	Housing material	Connection	Cable entry	Button actuation force	Release device
63000000	ESB200-4TR-C	2NC + 1NO	Plastic	Terminal, 6-pin	5x, M16 x 1.5	25 N	
63000002	ESB200-4KR-C	2NC + 1NO	Plastic	Terminal, 6-pin	5x, M16 x 1.5	25 N	Key
63000004	ESB200-4TR-M12p	2NC + 1NO	Plastic	Connector, 8-pin	M12	25 N	
63000006	ESB200-4KR-M12p	2NC + 1NO	Plastic	Connector, 8-pin	M12	25 N	Key

Included in delivery: mounting screws, 1 "STOP" ring, 2 keys (depending on variant)

Dimensioned drawings: ESB200



ESB200-4TR-M12p / ESB200-4KR-M12p E-Stop buttons

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//MAGNETICALLY CODED SENSORS

ACTIVE WITHOUT CONTACT

The magnetically coded safety system is predestined for use under critical environmental conditions, i.e. wherever stress due to dust and humidity is high. Easy start-up, compact housing and extremely low costs characterize this robust series.

/// MC3

The MC3x coded magnetic sensor contains specially combined reed contacts that are contactlessly activated by the coded magnetic field of the actuator. With their cast housing, the extremely tamperproof switches are suitable for demanding applications in dusty or humid environments.

Benefits:

- Monitoring of moving guards on machines with sufficiently short stopping times for demanding applications
- For dusty or humid environments
- High-strength plastic housing
- Highly tamperproof
- Designs for many different types of applications
- PVC or PUR cable, M8 plug

Direct access to the online product selector at **www.leuze.com/en/mc3**

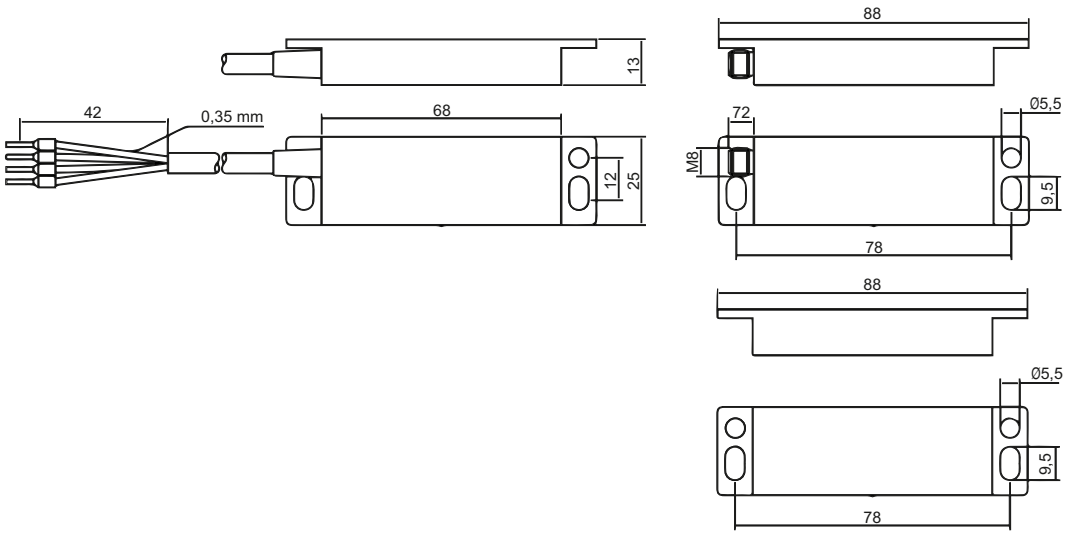
Part no.	Part description	Contact allocation	Connection	Sao, max.	Off, min.	Sar, min.	Dimensions
63001030	MC388-S2C2-AL	2NO + 1NO (signaling)	Cable with wire-end sleeves, 6-wire, 2,000 mm, PVC	9 mm	19 mm	22 mm	25 mm x 13 mm x 88 mm
63001031	MC388-S2C5-AL	2NO + 1NO (signaling)	Cable with wire-end sleeves, 6-wire, 5,000 mm, PVC	9 mm	19 mm	22 mm	25 mm x 13 mm x 88 mm
63001020	MC388-S2C2-A	2NO	Cable with wire-end sleeves, 4-wire, 2,000 mm, PVC	9 mm	19 mm	22 mm	25 mm x 13 mm x 88 mm
63001021	MC388-S2C5-A	2NO	Cable with wire-end sleeves, 4-wire, 5,000 mm, PVC	9 mm	19 mm	22 mm	25 mm x 13 mm x 88 mm
63001041	MC388-S2C5-AL-F	2NO + 1NO (signaling)	Cable with wire-end sleeves, 6-wire, 5,000 mm, PVC	9 mm	19 mm	22 mm	25 mm x 13 mm x 88 mm
63001025	MC388-S2R10-A	2NO	Cable with wire-end sleeves, 4-wire, 10,000 mm, PUR	9 mm	19 mm	22 mm	25 mm x 13 mm x 88 mm
63001027	MC388-S2-C02M12-A	2NO	Cable with connector, M12, 4-pin, metal, 200 mm, PVC	9 mm	19 mm	22 mm	25 mm x 13 mm x 88 mm
63001026	MC388-S2M8-A	2NO	Connector, M8, 4-pin, metal	9 mm	19 mm	22 mm	25 mm x 13 mm x 88 mm
63001003	MC388-S1R2-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 2,000 mm, PUR	6 mm	13 mm	30 mm	25 mm x 13 mm x 88 mm
63001000	MC388-S1C2-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 2,000 mm, PVC	6 mm	13 mm	30 mm	25 mm x 13 mm x 88 mm
63001004	MC388-S1R5-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 5,000 mm, PUR	6 mm	13 mm	30 mm	25 mm x 13 mm x 88 mm
63001001	MC388-S1C5-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 5,000 mm, PVC	6 mm	13 mm	30 mm	25 mm x 13 mm x 88 mm
63001005	MC388-S1R10-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 10,000 mm, PUR	6 mm	13 mm	30 mm	25 mm x 13 mm x 88 mm
63001002	MC388-S1C10-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 10,000 mm, PVC	6 mm	13 mm	30 mm	25 mm x 13 mm x 88 mm
63001007	MC388-S1-C02M12-A	1NC + 1NO	Cable with connector, M12, 4-pin, metal, 200 mm, PVC	6 mm	13 mm	30 mm	25 mm x 13 mm x 88 mm
63001006	MC388-S1M8-A	1NC + 1NO	Connector, M8, 4-pin, metal	6 mm	13 mm	30 mm	25 mm x 13 mm x 88 mm
63001070	MC336-S2C2-A	2NO	Cable with wire-end sleeves, 4-wire, 2,000 mm, PVC	7 mm	17 mm	20 mm	26.2 mm x 13 mm x 36 mm
63001071	MC336-S2C5-A	2NO	Cable with wire-end sleeves, 4-wire, 5,000 mm, PVC	7 mm	17 mm	20 mm	26.2 mm x 13 mm x 36 mm
63001077	MC336-S2-C02M12-A	2NO	Cable with connector, M12, 4-pin, metal, 200 mm, PVC	7 mm	17 mm	20 mm	26.2 mm x 13 mm x 36 mm
63001076	MC336-S2M8-A	2NO	Connector, M8, 4-pin, metal	7 mm	17 mm	20 mm	26.2 mm x 13 mm x 36 mm
63001053	MC336-S1R2-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 2,000 mm, PUR	3 mm	8 mm	11 mm	26.2 mm x 13 mm x 36 mm
63001050	MC336-S1C2-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 2,000 mm, PVC	3 mm	8 mm	11 mm	26.2 mm x 13 mm x 36 mm
63001054	MC336-S1R5-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 5,000 mm, PUR	3 mm	8 mm	11 mm	26.2 mm x 13 mm x 36 mm
63001051	MC336-S1C5-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 5,000 mm, PVC	3 mm	8 mm	11 mm	26.2 mm x 13 mm x 36 mm
63001055	MC336-S1R10-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 10,000 mm, PUR	3 mm	8 mm	11 mm	26.2 mm x 13 mm x 36 mm
63001052	MC336-S1C10-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 10,000 mm, PVC	3 mm	8 mm	11 mm	26.2 mm x 13 mm x 36 mm
63001057	MC336-S1-C02M12-A	1NC + 1NO	Cable with connector, M12, 4-pin, metal, 200 mm, PVC	3 mm	8 mm	11 mm	26.2 mm x 13 mm x 36 mm
63001056	MC336-S1M8-A	1NC + 1NO	Connector, M8, 4-pin, metal	3 mm	8 mm	11 mm	26.2 mm x 13 mm x 36 mm
63001120	MC330-S2C2-A	2NO	Cable with wire-end sleeves, 4-wire, 2,000 mm, PVC	6 mm	15 mm	18 mm	M30 x 36 mm
63001121	MC330-S2C5-A	2NO	Cable with wire-end sleeves, 4-wire, 5,000 mm, PVC	6 mm	15 mm	18 mm	M30 x 36 mm
63001127	MC330-S2-C02M12-A	2NO	Cable with connector, M12, 4-pin, metal, 200 mm, PVC	6 mm	15 mm	18 mm	M30 x 36 mm
63001126	MC330-S2M8-A	2NO	Connector, M8, 4-pin, metal	6 mm	15 mm	18 mm	M30 x 36 mm
63001103	MC330-S1R2-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 2,000 mm, PUR	6 mm	12 mm	14 mm	M30 x 36 mm
63001100	MC330-S1C2-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 2,000 mm, PVC	6 mm	12 mm	14 mm	M30 x 36 mm
63001104	MC330-S1R5-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 5,000 mm, PUR	6 mm	12 mm	14 mm	M30 x 36 mm
63001101	MC330-S1C5-A	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 5,000 mm, PVC	6 mm	12 mm	14 mm	M30 x 36 mm

Included in delivery: 1 actuator, mounting material
Notice: An MSI-MC3x safety relay is required for certified application! This must be ordered separately.

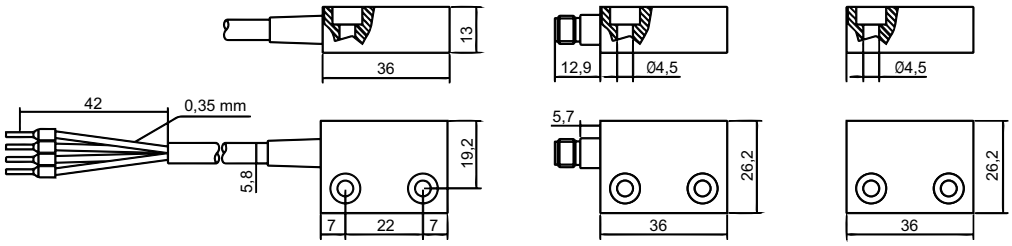
Part no.	Part description	Contact allocation	Connection	Sao, max.	Off, min.	Sar, min.	Dimensions
63001105	**MC330-S1R10-A**	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 10,000 mm, PUR	6 mm	12 mm	14 mm	M30 x 36 mm
63001102	**MC330-S1C10-A**	1NC + 1NO	Cable with wire-end sleeves, 4-wire, 10,000 mm, PVC	6 mm	12 mm	14 mm	M30 x 36 mm
63001107	**MC330-S1-C02M12-A**	1NC + 1NO	Cable with connector, M12, 4-pin, metal, 200 mm, PVC	6 mm	12 mm	14 mm	M30 x 36 mm
63001106	**MC330-S1M8-A**	1NC + 1NO	Connector, M8, 4-pin, metal	6 mm	12 mm	14 mm	M30 x 36 mm

Included in delivery: 1 actuator, mounting material
Notice: An MSI-MC3x safety relay is required for certified application! This must be ordered separately.

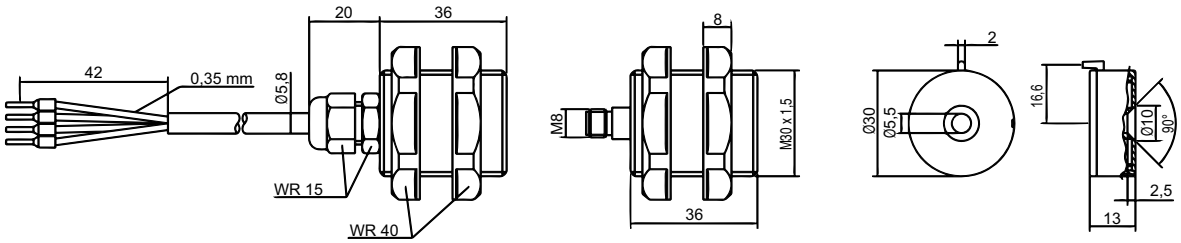
Dimensioned drawings: MC3



MC388x magnetically coded sensor with actuator



MC336x magnetically coded sensor with actuator



MC330x magnetically coded sensor with actuator

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ACCESSORIES: MC3

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130857	KD U-M8-4A-P1-100	Connector, M8, axial, female	4-pin	10,000 mm	PUR

Further connection cables can be found on our website

Actuators

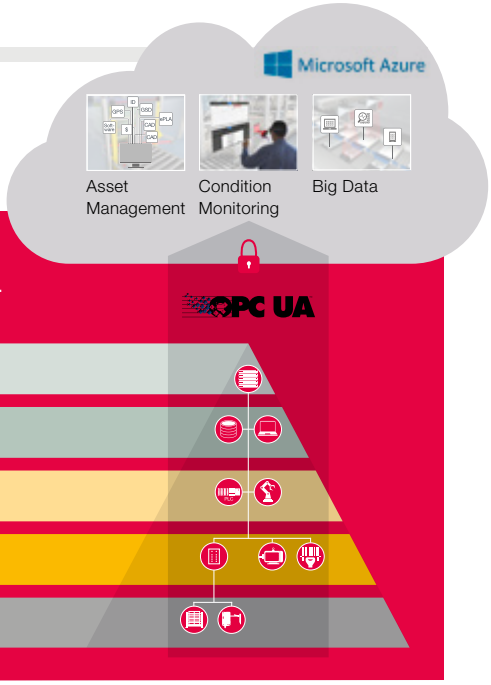
Part no.	Part description	Dimensions	Housing design
63001152	MC330-S1-A	30 mm x 13 mm	Cylindrical
63001157	MC330-S2-A	30 mm x 13 mm	Cylindrical
63001151	MC336-S1-A	26 mm x 13 mm x 36 mm	Cubic
63001156	MC336-S2-A	26 mm x 13 mm x 36 mm	Cubic
63001150	MC388-S1-A	25 mm x 13 mm x 88 mm	Cubic
63001155	MC388-S2-A	25 mm x 13 mm x 88 mm	Cubic

Mounting

Part no.	Part description	Description	Suitable for	Dimensions
63001154	MC336-SP-8	Spacer	MC336 housing	26 mm x 8 mm x 36 mm
63001153	MC388-SP-8	Spacer	MC388 housing	25 mm x 8 mm x 88 mm

SMART IS
TO CREATE THE **FUTURE**

Intelligent sensors provide the foundation for Industry 4.0 / IIoT. We have a very clear idea of what the future will look like, and we develop innovative sensor concepts for it.



We are creating the future: **www.smart-sensor-business.com**

//SAFETY TRANSPONDERS

PURE FLEXIBILITY!

Safety transponders are well-suited for applications in which a very high level of safety and the highest protection against manipulation are necessary. Their high-strength plastic housings offer reliable protection against contamination and humidity in rough environmental conditions.

/// RD800

No matter if you require the RD800-S for single connections or the RD800-M for multiple applications – depending on the degree of risk, you can select ready-configured systems with standard or unique code detection (S- or U-variants). Teachable P-variants are a good choice if, for example, increased flexibility on-site is necessary.

Benefits:

- Standard code, unique code or flexibly programmable code
- M12 connection on the left or right for the most possible freedom during assembly
- Three-sided actuator mounting for quick and easy attachment
- Four multicolored LEDs for detailed diagnostics and effective installation and testing routines
- Degree of protection IP 67 and IP 69K with smooth, stable plastic housing for easy cleaning
- Permanent laser print for the long-term readability of product data

Direct access to the online product selector at **www.leuze.com/en/rd800**

Part no.	Part description	Application	Code type	Connection	Plug outlet	Sao, max.	Sar, min.
63002052	RD800-SSCA-CB2-L	Individual use	Standard code	Cable		10 mm	16 mm
63002050	RD800-SSCA-CB2-R	Individual use	Standard code	Cable		10 mm	16 mm
63002002	RD800-SSCA-M12L	Individual use	Standard code	Connector, M12, 5-pin, metal	On left side	10 mm	16 mm
63002000	RD800-SSCA-M12R	Individual use	Standard code	Connector, M12, 5-pin, metal	On right side	10 mm	16 mm
63002053	RD800-SUCA-CB2-L	Individual use	Unique code	Cable		10 mm	16 mm
63002051	RD800-SUCA-CB2-R	Individual use	Unique code	Cable		10 mm	16 mm
63002003	RD800-SUCA-M12L	Individual use	Unique code	Connector, M12, 5-pin, metal	On left side	10 mm	16 mm
63002001	RD800-SUCA-M12R	Individual use	Unique code	Connector, M12, 5-pin, metal	On right side	10 mm	16 mm
63002062	RD800-MSCA-CB2-L	Individual use, series use	Standard code	Cable		10 mm	16 mm
63002060	RD800-MSCA-CB2-R	Individual use, series use	Standard code	Cable		10 mm	16 mm
63002012	RD800-MSCA-M12L	Individual use, series use	Standard code	Connector, M12, 8-pin, metal	On left side	10 mm	16 mm
63002010	RD800-MSCA-M12R	Individual use, series use	Standard code	Connector, M12, 8-pin, metal	On right side	10 mm	16 mm
63002063	RD800-MUCA-CB2-L	Individual use, series use	Unique code	Cable		10 mm	16 mm
63002061	RD800-MUCA-CB2-R	Individual use, series use	Unique code	Cable		10 mm	16 mm
63002013	RD800-MUCA-M12L	Individual use, series use	Unique code	Connector, M12, 8-pin, metal	On left side	10 mm	16 mm
63002011	RD800-MUCA-M12R	Individual use, series use	Unique code	Connector, M12, 8-pin, metal	On right side	10 mm	16 mm
63002021	RD800-MP-M12L	Individual use, series use	Flexible programming	Connector, M12, 8-pin, metal	On left side	10 mm	16 mm
63002020	RD800-MP-M12R	Individual use, series use	Flexible programming	Connector, M12, 8-pin, metal	On right side	10 mm	16 mm

Included in delivery: 1 actuator, washers (stainless steel), caps

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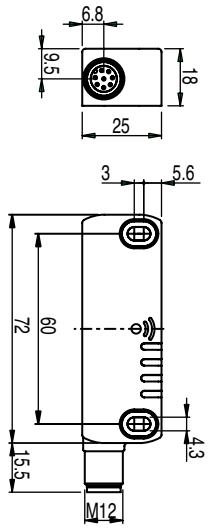
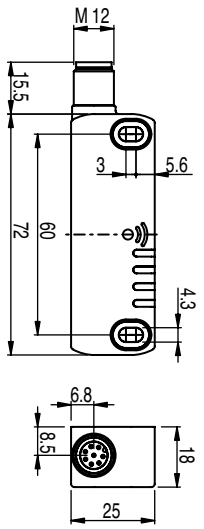
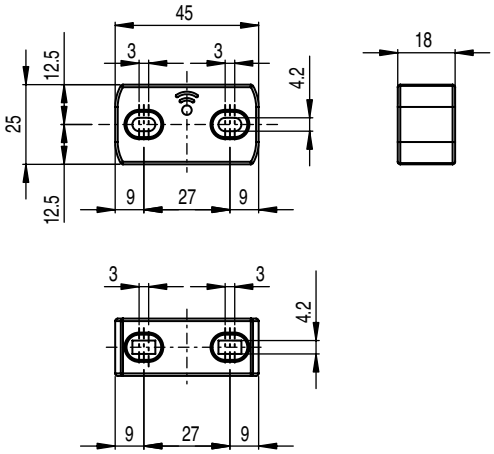
Dimensioned drawings: RD800



Safety transponders
RD800-…-M12L



Safety transponders
RD800-…-M12R



Actuator for RD800

ACCESSORIES: RD800

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50133860	KD S-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50133861	KD S-M12-5A-P1-100	Connector, M12, axial, female	5-pin	10,000 mm	PUR
678057	CB-M12-15000E-5GF	Connector, M12, axial, female	5-pin	15,000 mm	PUR
678059	CB-M12-50000E-5GF	Connector, M12, axial, female	5-pin	50,000 mm	PUR
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR
678064	CB-M12-50000E-8GF	Connector, M12, axial, female	8-pin	50,000 mm	PUR

Further connection cables can be found on our website

Actuators

Part no.	Part description	Application	Code type
63002100	RD800-x-SCA	Individual use, series use	Standard code
63002101	RD800-x-UCA	Individual use, series use	Unique code

/ SAFE CONTROL COMPONENTS

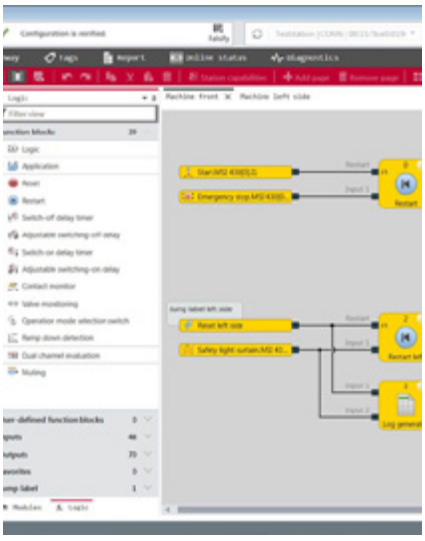
EFFICIENTLY INTEGRATE SAFETY SENSORS

It is the efficient and reliable integration of safety sensors in the machine safety circuit that allow safety at work solutions to achieve the best-possible protection without interfering in the processes. Our safety relays, safety PLCs and AS-interface solutions open all possibilities to you here.

Safety relays Page 359

Programmable safety controls Page 376

AS-Interface Safety at Work Page 382



//SAFETY RELAYS

THE OPTIMUM RELAY FOR EVERY SENSOR

For the fast integration of individual safety sensors in the safety circuit of machines and systems, the compact and reliable safety relays offer the right solution. The models are tailor-made for specific applications or can be used universally. Devices with time delay, for rotational speed/standstill monitoring and contact extensions are also available. The screw or spring-cage terminals are changeable.

Evaluation units

For safety switches, sensors and command devices, both custom as well as universal evaluation units with 2 or 3 release contacts are available.

/// MSI-SR-ES20

Evaluation unit for E-Stop and safety switches, up to SIL 2 / SILCL 2 and cat. 3 / PL d, automatic and manual reset, 2 release contacts.

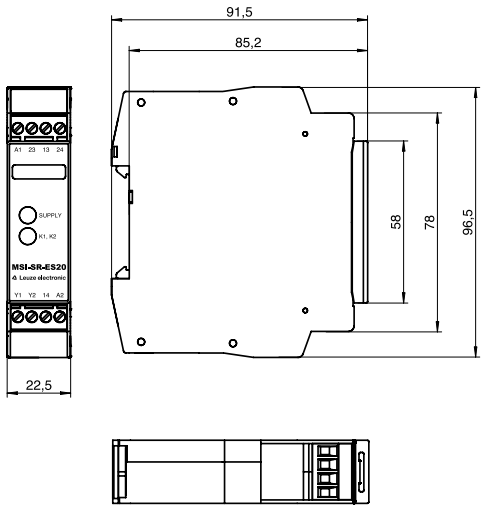
Benefits:

- Designed for E-Stop command devices and safety switches with relay contacts
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

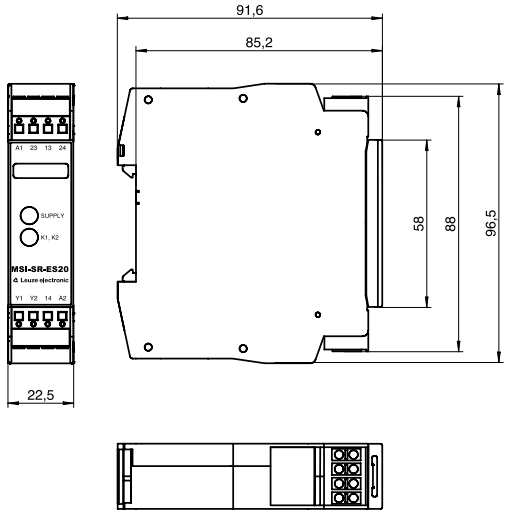
Direct access to the online product selector at **www.leuze.com/en/msi-sr-es20**

Part no.	Part description	Application	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category
50133024	MSI-SR-ES20-01	Base device for E-Stop applications	Automatic, manual	2 NO contacts / –	Screw terminal	d	3
50133025	MSI-SR-ES20-03	Base device for E-Stop applications	Automatic, manual	2 NO contacts / –	Spring-cage terminal	d	3

Dimensioned drawings: MSI-SR-ES20



MSI-SR-ES20-01 safety relay, screw terminal



MSI-SR-ES20-03 safety relay, spring-cage terminal

/// MSI-SR-ES31

Evaluation unit for emergency stop and safety switches, up to SIL 3 / SILCL 3 and cat. 4 / PL e, automatic and manual reset, 3 release contacts, 1 signal contact.

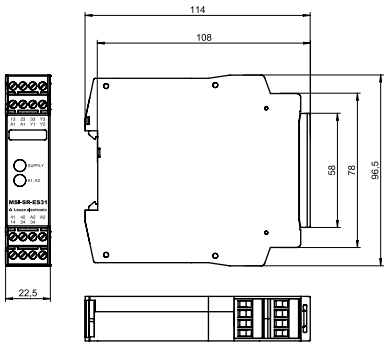
Benefits:

- Designed for E-Stop command devices and safety switches with relay contacts
- Third release contact for controlling an additional safety function
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

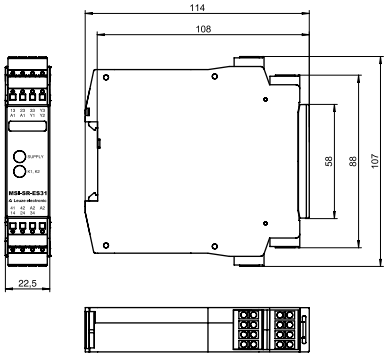
Direct access to the online product selector at **www.leuze.com/en/msi-sr-es31**

Part no.	Part description	Application	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category
50133022	MSI-SR-ES31-01	Base device for E-Stop applications	Automatic, manual	3 NO contacts / 1 NC contact	Screw terminal	e	4
50133023	MSI-SR-ES31-03	Base device for E-Stop applications	Automatic, manual	3 NO contacts / 1 NC contact	Spring-cage terminal	e	4

Dimensioned drawings: MSI-SR-ES31



MSI-SR-ES31-01 safety relay, screw terminal



MSI-SR-ES31-03 safety relay, spring-cage terminal

/// MSI-SR-2H21

Evaluation unit for two-hand control devices of type III C / EN 574, up to SIL 3 / SILCL 3 and cat. 4 / PL e, start through synchronous actuation, 2 release contacts, 1 signal contact.

Benefits:

- Designed for two-hand control devices of type III C, EN 574
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

Direct access to the online product selector at **www.leuze.com/en/msi-sr-2h21**

Part no.	Part description	Application	Contacts (NO contact/NC contact)	Connection	PL	Category
50133016	MSI-SR-2H21-01	Evaluation unit for two-hand control devices	2 NO contacts / 1 NC contact	Screw terminal	e	4
50133017	MSI-SR-2H21-03	Evaluation unit for two-hand control devices	2 NO contacts / 1 NC contact	Spring-cage terminal	e	4

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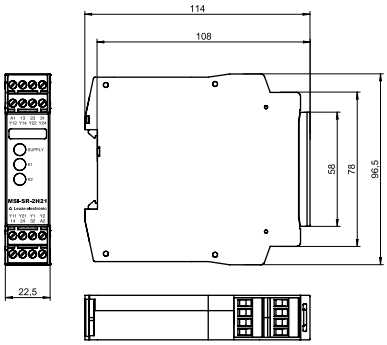
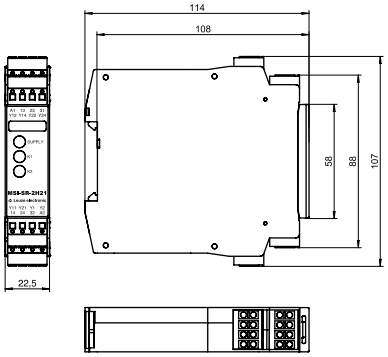
Dimensioned drawings: MSI-SR-2H21



MSI-SR-2H21-01 safety relay, screw terminal



MSI-SR-2H21-03 safety relay, spring-cage terminal

/// MSI-SR-2H1

Evaluation unit for two-hand control devices of type III A / EN 574, up to SIL 1 / SILCL 1 and cat. 1 / PL c, start through synchronous actuation, 1 change-over contact for release and signaling.

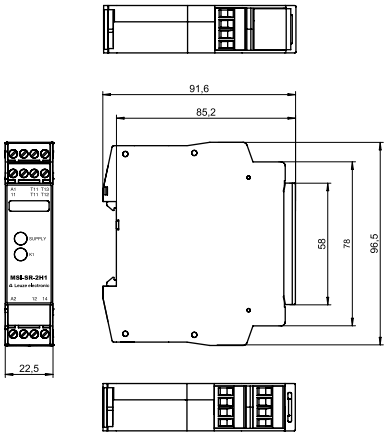
Benefits:

- Designed for two-hand control devices of type III A, EN 574
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

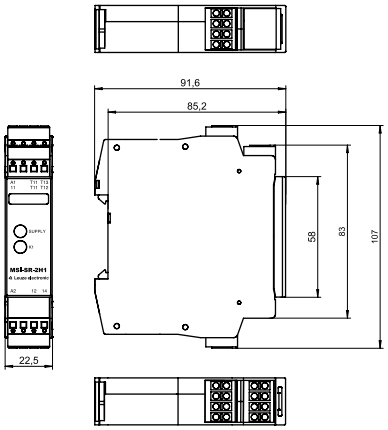
Direct access to the online product selector at **www.leuze.com/en/msi-sr-2h1**

Part no.	Part description	Application	Contacts (NO contact/NC contact)	Connection	PL	Category
50133018	MSI-SR-2H1-01	Evaluation unit for two-hand control devices	1 NO contact / 1 NC contact	Screw terminal	c	1
50133019	MSI-SR-2H1-03	Evaluation unit for two-hand control devices	1 NO contact / 1 NC contact	Spring-cage terminal	c	1

Dimensioned drawings: MSI-SR-2H1



MSI-SR-2H1-01 safety relay, screw terminal



MSI-SR-2H1-03 safety relay, spring-cage terminal

/// MSI-MC3x

Evaluation unit for safety solenoid switches, up to cat. 4 / PL e, automatic and manual reset, 2 release contacts, 1 signal contact (MC310), models for actuation through sensors with 1 NC contact / 1 NO contact or 2 NC contacts.

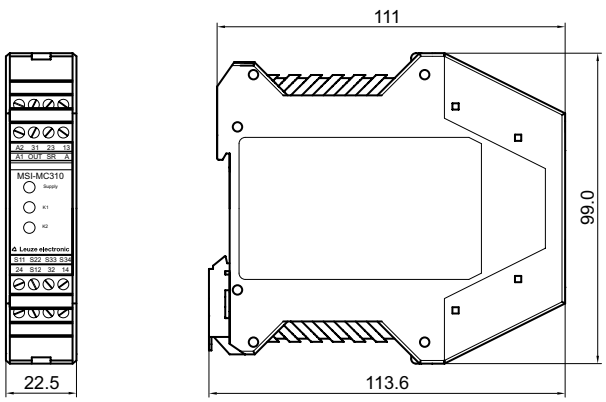
Benefits:

- Designed for safety solenoid switches

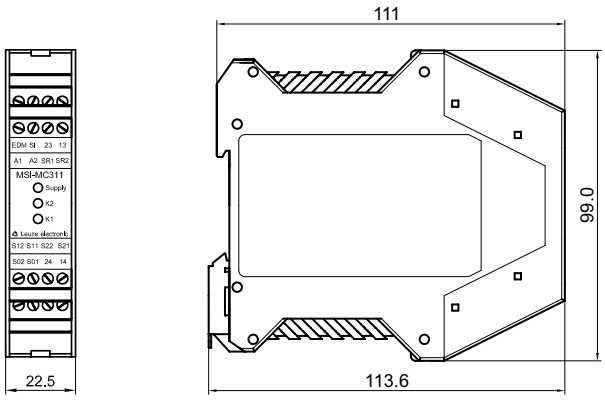
Direct access to the online product selector at **www.leuze.com/en/msi-mc3x**

Part no.	Part description	Restart	Contacts (NO contact/ NC contact)	Connection	PL	Category	STOP category	Number of safety-related switching outputs (OSSDs)	Switching element	Number of digital switching outputs	Pickup delay, automatic start	Pickup delay, manual start
549941	MSI-MC310	Auto-matic, manual	1 NO contact / 1 NC contact	Screw terminal	Up to and including e	Up to and including 4: 1 sensor connected	0	2x	Relay, make-contact	1x	400 ms	600 ms
549942	MSI-MC311	Auto-matic, manual	2 NO contacts / –	Screw terminal	Up to and including e	Up to and including 4: 1 sensor connected	0	2x	Relay, make-contact	1x	30 ms	150 ms

Dimensioned drawings: MSI-MC3x



MSI-MC310 safety relay, screw terminal



MSI-MC311 safety relay, screw terminal

/// MSI-SR-LC21

Evaluation unit for E-Stop, safety switches with relay or Reed contacts and with OSSD outputs, safety light barriers and safety laser scanners, up to SIL 3 / SILCL 3 and cat. 4 / PL e, automatic and manual reset, 2 release contacts, 1 signal contact.

Benefits:

- Can be used universally for sensors with relay contacts and sensors with OSSD outputs
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

Direct access to the online product selector at **www.leuze.com/en/msi-sr-lc21**

Part no.	Part description	Application	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category
50133008	MSI-SR-LC21-01	Base device for E-Stop and safety door applications	Automatic, manual	2 NO contacts / 1 NC contact	Screw terminal	e	4
50133009	MSI-SR-LC21-03	Base device for E-Stop and safety door applications	Automatic, manual	2 NO contacts / 1 NC contact	Spring-cage terminal	e	4

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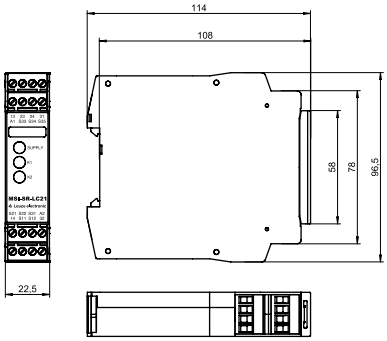
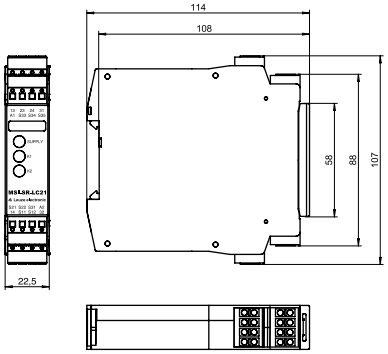
Dimensioned drawings: MSI-SR-LC21



MSI-SR-LC21-01 safety relay, screw terminal



MSI-SR-LC21-03 safety relay, spring-cage terminal

/// MSI-SR-LC21M

Evaluation unit for E-Stop, safety switches with relay or Reed contacts and with OSSD outputs, safety light barriers, safety laser scanners and safety mats in 4-conductor technology, up to SIL 3 / SILCL 3 and cat. 4 / PL e, automatic or manual reset, 2 release contacts, 1 signal contact.

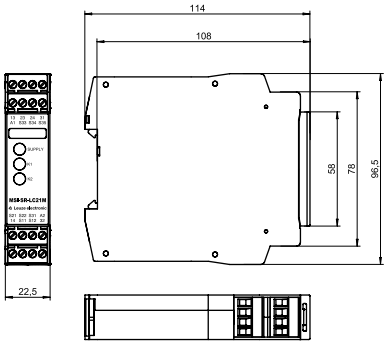
Benefits:

- Can be used universally for sensors with relay contacts and sensors with OSSD outputs
- Suitable for safety mats in 4-conductor technology
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

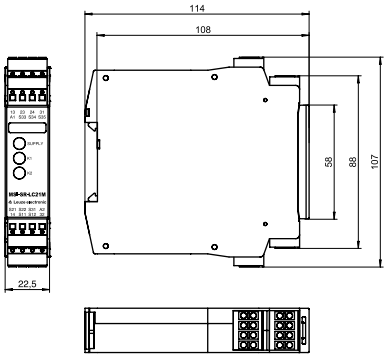
Direct access to the online product selector at **www.leuze.com/en/msi-sr-lc21m**

Part no.	Part description	Application	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category
50133010	MSI-SR-LC21M-01	Base device for E-Stop and safety door applications	Automatic, manual	2 NO contacts / 1 NC contact	Screw terminal	e	4
50133011	MSI-SR-LC21M-03	Base device for E-Stop and safety door applications	Automatic, manual	2 NO contacts / 1 NC contact	Spring-cage terminal	e	4

Dimensioned drawings: MSI-SR-LC21M



MSI-SR-LC21M-01 safety relay, screw terminal



MSI-SR-LC21M-03 safety relay, spring-cage terminal

/// MSI-SR-LC31

Evaluation unit for E-Stop, safety switches with relay or Reed contacts and with OSSD outputs, safety light barriers and safety laser scanners, up to SIL 3 / SILCL 3 and cat. 4 / PL e, models with automatic or manual reset, 3 release contacts, 1 signal contact.

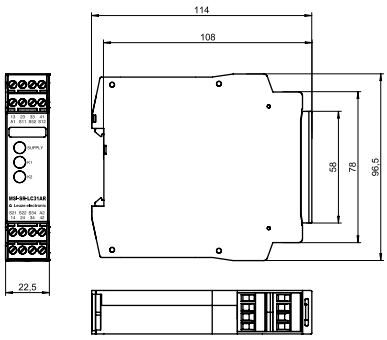
Benefits:

- Can be used universally for sensors with relay contacts and sensors with OSSD outputs
- Short reaction time of 10 ms
- Third release contact for controlling an additional safety function
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

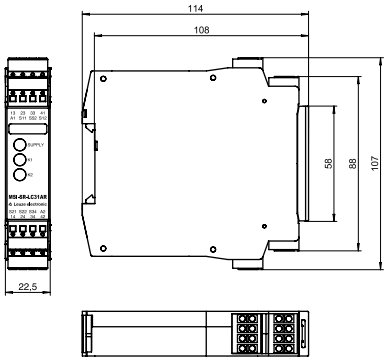
Direct access to the online product selector at **www.leuze.com/en/msi-sr-lc31**

Part no.	Part description	Application	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category
50133004	MSI-SR-LC31AR-01	Base device for E-Stop and safety door applications	Automatic	3 NO contacts / 1 NC contact	Screw terminal	e	4
50133006	MSI-SR-LC31MR-01	Base device for E-Stop and safety door applications	Manual	3 NO contacts / 1 NC contact	Screw terminal	e	4
50133005	MSI-SR-LC31AR-03	Base device for E-Stop and safety door applications	Automatic	3 NO contacts / 1 NC contact	Spring-cage terminal	e	4
50133007	MSI-SR-LC31MR-03	Base device for E-Stop and safety door applications	Manual	3 NO contacts / 1 NC contact	Spring-cage terminal	e	4

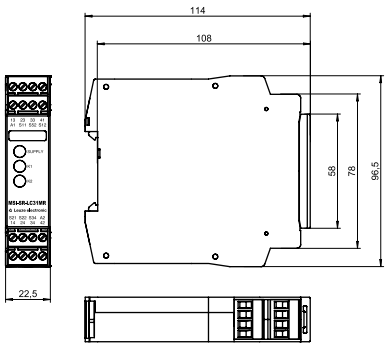
Dimensioned drawings: MSI-SR-LC31



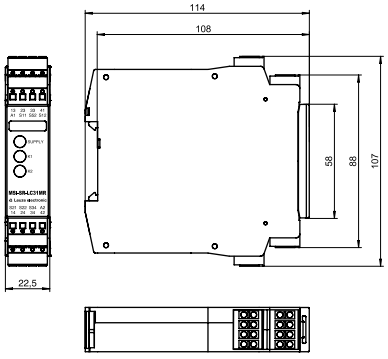
MSI-SR-LC31AR-01 safety relay, screw terminal



MSI-SR-LC31AR-03 safety relay, spring-cage terminal



MSI-SR-LC31MR-01 safety relay, screw terminal



MSI-SR-LC31MR-03 safety relay, spring-cage terminal

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/// MSI-SR4

Evaluation unit for E-Stop, safety switches with relay or Reed contacts and with OSSD outputs, safety light barriers and safety laser scanners, up to SIL 3 / SILCL 3 and cat. 4 / PL e, automatic and manual reset, 3 release contacts, 1 signal contact.

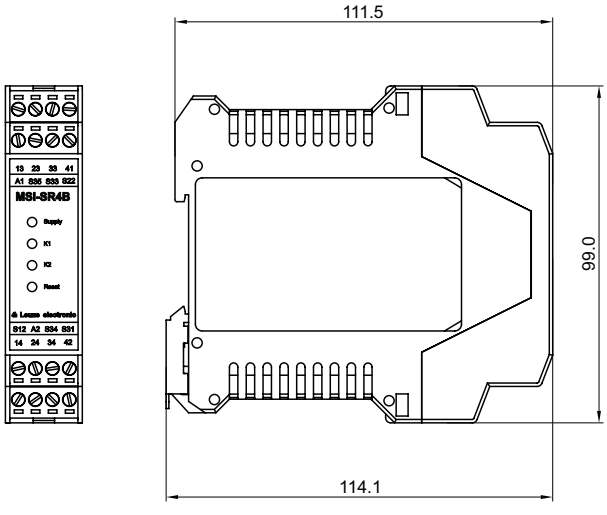
Benefits:

- Can be used universally for sensors with relay contacts and sensors with OSSD outputs
- Short reaction time of 10 ms
- Third release contact for controlling an additional safety function
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

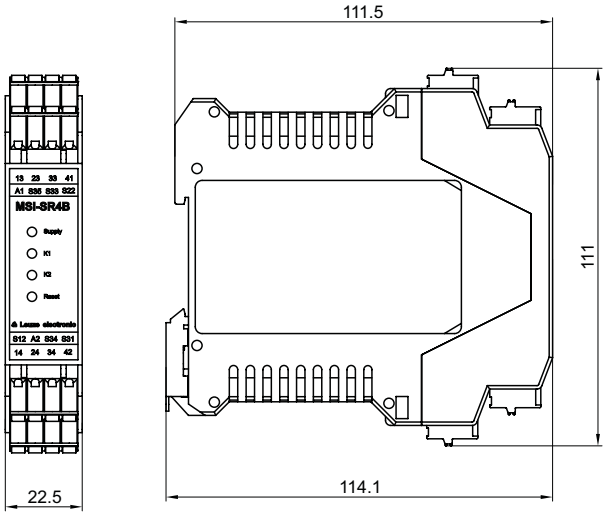
Direct access to the online product selector at **www.leuze.com/en/msi-sr4**

Part no.	Part description	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category	STOP category	Number of safety-related switching outputs (OSSDs)	Switching element
547950	MSI-SR4B-01	Automatic, manual	3 NO contacts / 1 NC contact	Screw terminal	e	4	0	3x	Relay, make-contact
547951	MSI-SR4B-02	Automatic, manual	3 NO contacts / 1 NC contact	Spring-cage terminal	e	4	0	3x	Relay, make-contact

Dimensioned drawings: MSI-SR4



MSI-SR4B-01 safety relay, screw terminal



MSI-SR4B-02 safety relay, spring-cage terminal

/// MSI-SR5

Evaluation unit for E-Stop, safety switches with relay contacts and with OSSD outputs, safety light barriers and safety laser scanners, parallel evaluation of 2 sensors, up to SIL 3 / SILCL 3 and cat. 4 / PL e, automatic and manual reset, 2 release contacts.

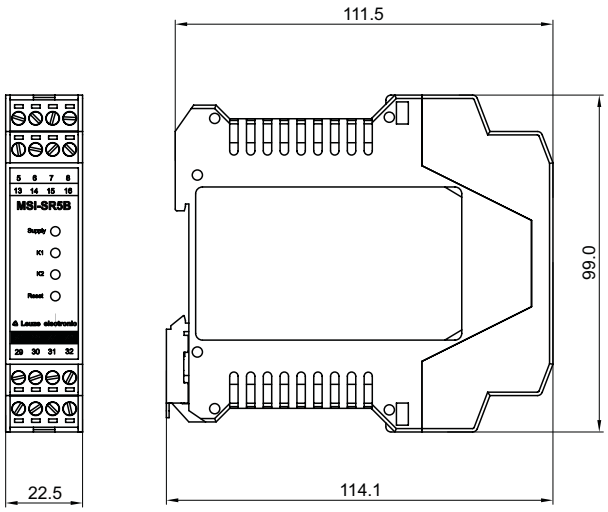
Benefits:

- Can be used universally for sensors with relay contacts and sensors with OSSD outputs
- Cost benefit through parallel evaluation of 2 sensors in the input circuit
- Short reaction time of 10 ms
- Third release contact for controlling an additional safety function
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

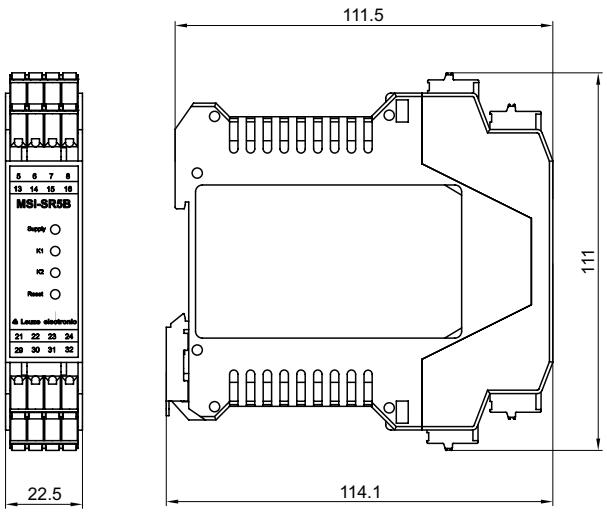
Direct access to the online product selector at **www.leuze.com/en/msi-sr5**

Part no.	Part description	Restart	Contacts (NO contact/ NC contact)	Connection	PL	Category	STOP category	Number of safety-related switching outputs (OSSDs)	Switching element
547952	MSI-SR5B-01	Automatic, manual	2 NO contacts / –	Screw terminal	e	4	0	2x	Relay, make-contact
547953	MSI-SR5B-02	Automatic, manual	2 NO contacts / –	Spring-cage terminal	e	4	0	2x	Relay, make-contact

Dimensioned drawings: MSI-SR5



MSI-SR5B-01 safety relay, screw terminal



MSI-SR5B-02 safety relay, spring-cage terminal

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/// MSI-TRM

Evaluation unit for the periodic testing of one-channel testable optoelectronic protective devices of type 4 acc. to EN IEC 61496, up to SIL 3 / SILCL 3 and cat. 4 / PL e, up to 6 sensors can be connected, 2 release contacts, 2 signal contacts (semiconductor).

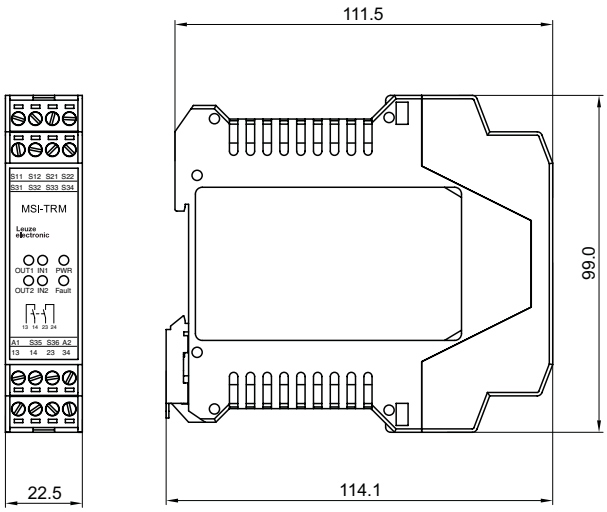
Benefits:

- Evaluation of up to 6 type 4 sensors
- E-stop switch connectable
- Low space requirements
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

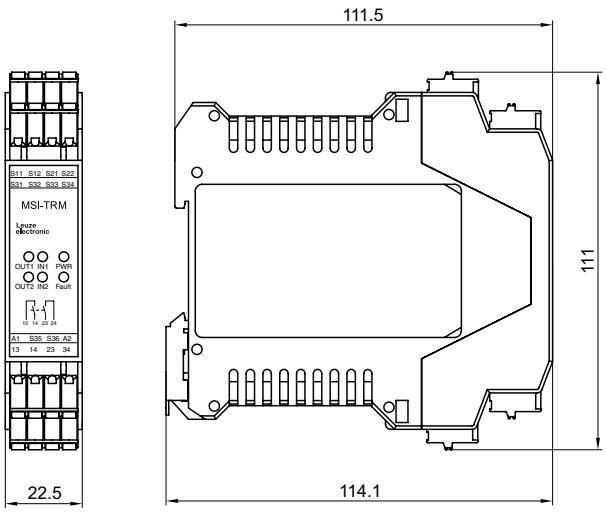
Direct access to the online product selector at **www.leuze.com/en/msi-trm**

Part no.	Part description	Restart	Contacts (NO contact/ NC contact)	Connection	PL	Category	Number of safety-related switching outputs (OSSDs)	Switching element	Number of safety-related switching inputs	Number of digital switching outputs	Number of digital switching inputs
547931	MSI-TRMB-01	Automatic, manual	2 NO contacts / 2 NC contacts	Screw terminal	Up to and including e	4	2x	Relay, make-contact	2x	3x	2x
547932	MSI-TRMB-02	Automatic, manual	2 NO contacts / 2 NC contacts	Spring-cage terminal	Up to and including e	4	2x	Relay, make-contact	2x	3x	2x

Dimensioned drawings: MSI-TRM



MSI-TRMB-01 safety relay, screw terminal



MSI-TRMB-02 safety relay, spring-cage terminal

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/// MSI-T

Evaluation unit for the periodic testing of one-channel testable optoelectronic protective devices of type 2 acc. to EN IEC 61496, up to SIL 1 / SILCL 1 and cat. 2 / PL c, up to 6 sensors can be connected, 2 release contacts, 2 signal contacts (semiconductor).

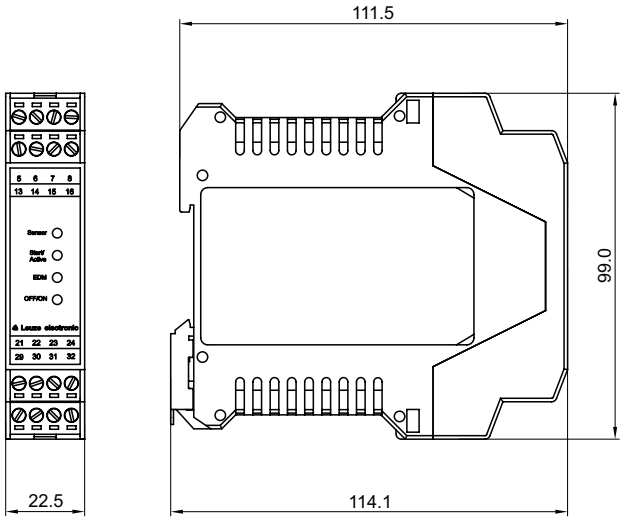
Benefits:

- Evaluation of up to 6 type 2 sensors
- MSI-T1: filter time 130 ms
- MSI-TS: delay of 600 ms for STOP 1 function
- Low space requirements
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

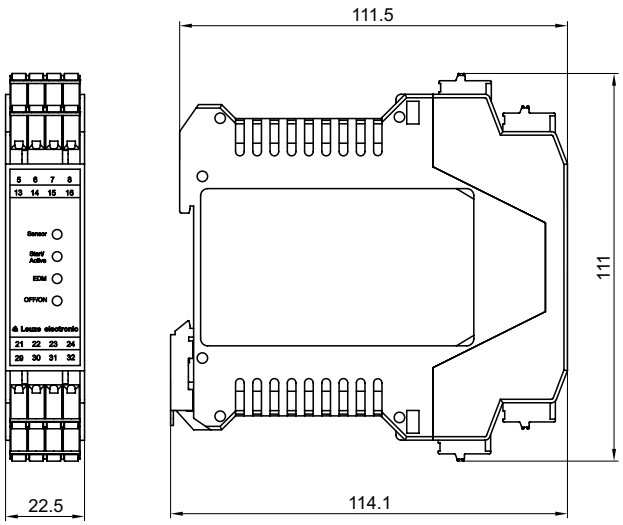
Direct access to the online product selector at **www.leuze.com/en/msi-t**

Part no.	Part description	Restart	Contacts (NO contact/ NC contact)	Connection	PL	Category	Number of safety-related switching outputs (OSSDs)	Switching element	Number of digital switching outputs	Number of digital switching inputs	Filter time	Time delay
547958	MSI-TR1B-01	Automatic, manual	2 NO contacts / 2 NC contacts	Screw terminal	Up to c	2	2x	Relay, make-contact	3x	4x		
547960	MSI-TR2B-01	Automatic, manual	2 NO contacts / 2 NC contacts	Screw terminal	Up to c	2	2x	Relay, make-contact	3x	4x	130 ms	
547962	MSI-TSB-01	Automatic, manual	2 NO contacts / 2 NC contacts	Screw terminal	Up to c	2	2x	Relay, make-contact	3x	4x		600 ms
547959	MSI-TR1B-02	Automatic, manual	2 NO contacts / 2 NC contacts	Spring-cage terminal	Up to c	2	2x	Relay, make-contact	3x	4x		
547961	MSI-TR2B-02	Automatic, manual	2 NO contacts / 2 NC contacts	Spring-cage terminal	Up to c	2	2x	Relay, make-contact	3x	4x	130 ms	
547963	MSI-TSB-02	Automatic, manual	2 NO contacts / 2 NC contacts	Spring-cage terminal	Up to c	2	2x	Relay, make-contact	3x	4x		600 ms

Dimensioned drawings: MSI-T



MSI-T...B-01 safety relay, screw terminal



MSI-T...B-02 safety relay, spring-cage terminal

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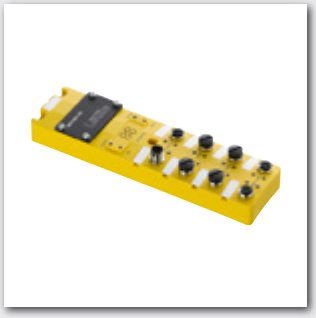
/// MSI-MD-FB (for local mounting)



If low safety distances are necessary, the MSI-MD-FB muting controller together with the MLC safety light curtains offer a flexible muting solution. It is installed close to the protective device and combines all the necessary connections for sensors, muting indicators and reset buttons. 3 muting operating modes and other detailed functions ensure optimal adaptation to the application. The muting controller works in combination with both MLC safety light curtains and MLD multiple light beam safety devices.

Benefits:

- Full muting functions in combination with the standard variants of the MLC/MLD series
- 3 muting operating modes: 2 timing controlled sensors, 2 and 4 sequence controlled sensors
- Degree of protection IP 67 and durable laser inscription allows for use under harsh ambient conditions
- Simple configuration via DIP switch, no PC required
- Only one cable to the switch cabinet with a maximum length of 50 m is necessary

Direct access to the online product selector at **www.leuze.com/en/msi-field**

Part no.	Part description	Restart	Contacts (NO contact/ NC contact)	PL	Category	Number of safety-related switching outputs (OSSDs)	Switching element	Number of safety-related switching inputs	Number of digital switching outputs	Number of digital switching inputs
549992	MSI-MD-FB	Automatic, manual	OSSDs	e	4	2x	Transistor	2x	3x	8x

Evaluation units with time delay

These relays control, e. g., the safe stopping of movements for applications with stop category 1. The delay times can be set in the range of up to 3 seconds or up to 30 seconds.

/// MSI-SR-LC21DT03/30

Evaluation unit with adjustable time delay for E-STOP, safety switches with relay contacts and with OSSD outputs, safety light barriers and safety laser scanners, up to SIL 3 / SILCL 3 and cat. 4 / PL e, automatic or manual reset, 2 release contacts, 1 delayed release contact up to cat. 3 / PL d, models with delay of up to 3 or up to 30 seconds.

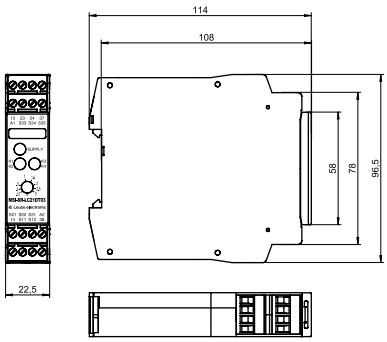
Benefits:

- Can be used universally for sensors with relay contacts and sensors with OSSD outputs
- Adjustable delay from 0.15 to 3 seconds or from 1.5 to 30 seconds for applications with stop category 1
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

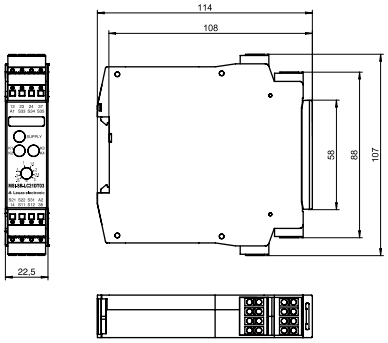
Direct access to the online product selector at **www.leuze.com/en/msi-sr-lc21dt03_30**

Part no.	Part description	Application	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category
50133000	MSI-SR-LC21DT03-01	Base device for E-Stop and safety door applications	Automatic, manual	2 NO contacts / –	Screw terminal	e	4
50133020	MSI-SR-LC21DT30-01	Base device for E-Stop and safety door applications	Automatic, manual	2 NO contacts / –	Screw terminal	e	4
50133001	MSI-SR-LC21DT03-03	Base device for E-Stop and safety door applications	Automatic, manual	2 NO contacts / –	Spring-cage terminal	e	4
50133021	MSI-SR-LC21DT30-03	Base device for E-Stop and safety door applications	Automatic, manual	2 NO contacts / –	Spring-cage terminal	e	4

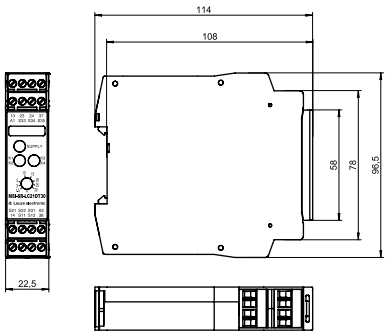
Dimensioned drawings: MSI-SR-LC21DT03/30



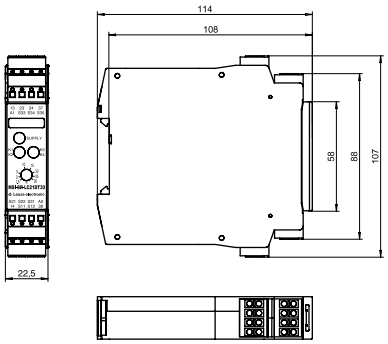
MSI-SR-LC21DT03-01 safety relay, screw terminal



MSI-SR-LC21DT03-03 safety relay, spring-cage terminal



MSI-SR-LC21DT30-01 safety relay, screw terminal



MSI-SR-LC21DT30-03 safety relay, spring-cage terminal

/// MSI-DT30

Evaluation unit with adjustable time delay for E-Stop, safety switches with relay contacts and with OSSD outputs, safety light barriers and safety laser scanners, up to SIL 3 / SILCL 3 and cat. 4 / PL e, automatic or manual reset, 2 release contacts, 2 delayed release contacts, delay of up to 30 seconds.

Benefits:

- Can be used universally for sensors with relay contacts and sensors with OSSD outputs
- Adjustable delay from 0.1 to 3 seconds for applications with stop category 1
- 2 delayed contacts up to cat. 4 / PL e
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

Direct access to the online product selector at **www.leuze.com/en/msi-dt30**

Part no.	Part description	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category	STOP category
547935	MSI-DT30B-01	Automatic, manual	2 NO contacts / –	Screw terminal	e	4	0
547936	MSI-DT30B-02	Automatic, manual	2 NO contacts / –	Spring-cage terminal	e	4	0

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Contact extensions

The various models of the contact extension relays are suitable for use as simple output extension for OSSDs or for contact multiplication together with evaluation units or safety PLCs.

/// MSI-RM2

Output extension for OSSD outputs of safety light barriers, safety laser scanners and safety switches with OSSD outputs, up to SIL 3 / SILCL 3 and cat. 4 / PL e,
2 release contacts (changeover),
1 feedback contact.

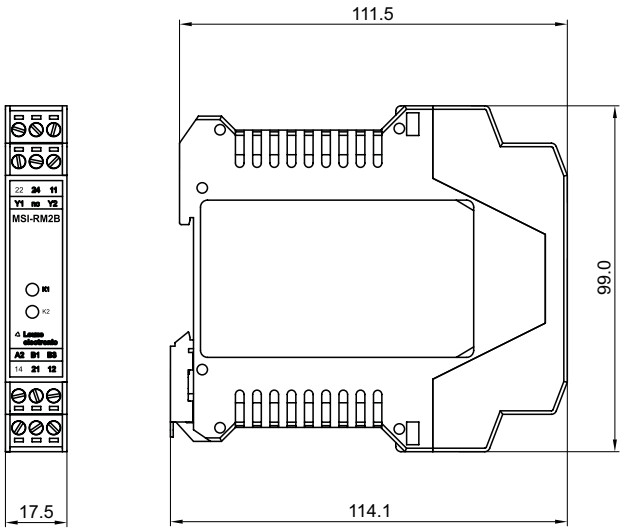
Benefits:

- Economical conversion of electronic switch-off signals from safety sensors to potential-free, contact-based signals
- Short reaction time of 10 ms
- With a width of just 17.5 mm, saves space
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

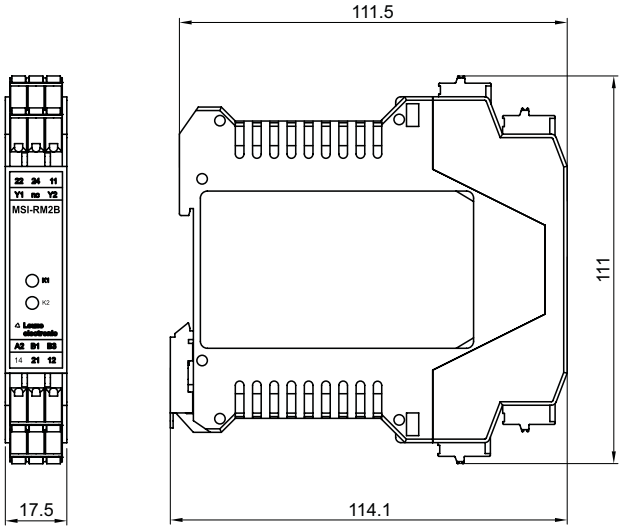
Direct access to the online product selector at **www.leuze.com/en/msi-rm2**

Part no.	Part description	Restart	Contacts (NO contact/NC contact)	Connection	Category	Number of safety-related switching outputs (OSSDs)	Switching element
547954	MSI-RM2B-01	Automatic	2 NO contacts / 1 NC contact	Screw terminal	Up to 4 (depending on the category of the upstream protective device)	2x	Relay, make-contact
547955	MSI-RM2B-02	Automatic	2 NO contacts / 1 NC contact	Spring-cage terminal	Up to 4 (depending on the category of the upstream protective device)	2x	Relay, make-contact

Dimensioned drawings: MSI-RM2



MSI-RM2B-01 safety relay, screw terminal



MSI-RM2B-02 safety relay, spring-cage terminal

/// MSI-SR-CM32

Output extension for OSSD outputs of safety light barriers, safety laser scanners and safety switches with OSSD outputs, up to SIL 3 / SILCL 3 and cat. 4 / PL e, 3 release contacts, 1 feedback contact, 1 signal contact.

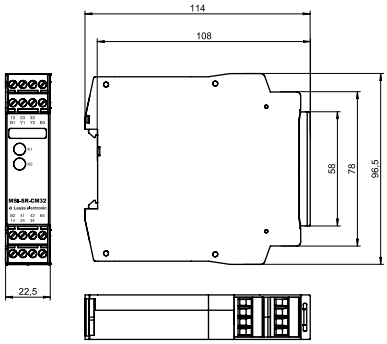
Benefits:

- Economical conversion of electronic switch-off signals from safety sensors to potential-free, contact-based signals
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

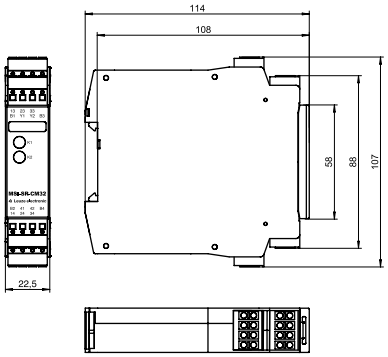
Direct access to the online product selector at **www.leuze.com/en/msi-sr-cm32**

Part no.	Part description	Application	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category
50133012	MSI-SR-CM32-01	Extension unit for base devices in safety applications	Automatic	3 NO contacts / 2 NC contacts	Screw terminal	e	4
50133013	MSI-SR-CM32-03	Extension unit for base devices in safety applications	Automatic	3 NO contacts / 2 NC contacts	Spring-cage terminal	e	4

Dimensioned drawings: MSI-SR-CM32



MSI-SR-CM32-01 safety relay, screw terminal



MSI-SR-CM32-03 safety relay, spring-cage terminal

/// MSI-SR-CM42

Contact extension for safety relays and safety PLCs, up to SIL 3 / SILCL 3 and cat. 4 / PL e, 2 independent extensions each with 2 release contacts and 1 feedback contact in one device.

Benefits:

- Cost benefit through 2 independent extensions in one device
- Extension of semiconductor outputs from safety PLCs to relay outputs
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

Direct access to the online product selector at **www.leuze.com/en/msi-sr-cm42**

Part no.	Part description	Application	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category
50133014	MSI-SR-CM42R-01	Extension unit for base devices in safety applications	Automatic	2 x (2 NO contacts / 1 NC contact)	Screw terminal	e	4
50133015	MSI-SR-CM42R-03	Extension unit for base devices in safety applications	Automatic	2 x (2 NO contacts / 1 NC contact)	Spring-cage terminal	e	4

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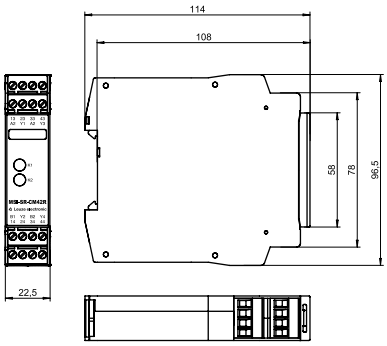
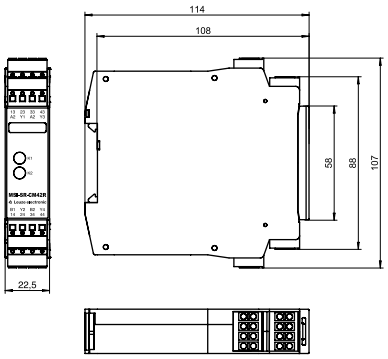
Dimensioned drawings: MSI-SR-CM42



MSI-SR-CM42R-01 safety relay, screw terminal



MSI-SR-CM42R-03 safety relay, spring-cage terminal

/// MSI-SR-CM43

Contact extension for safety relays and safety PLCs, up to SIL 2 / SILCL 2 and cat. 3 / PL d, 4 release contacts, 1 feedback contact, 2 signal contacts, model with fixed time delay of 3 seconds for all contacts.

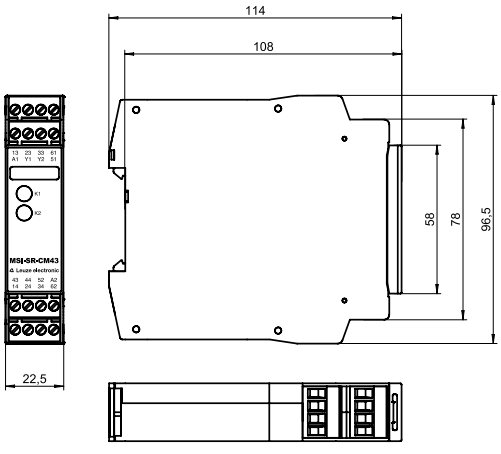
Benefits:

- Time delay of 3 seconds for applications with stop category 1
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

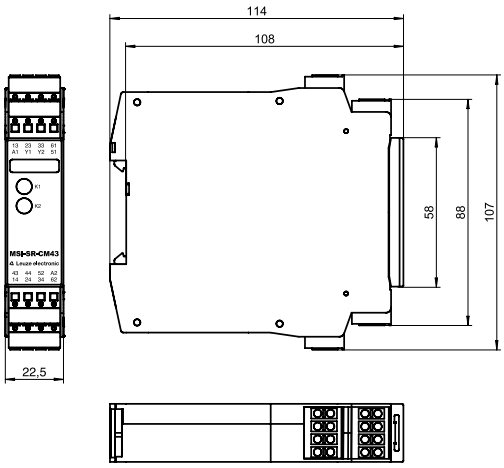
Direct access to the online product selector at **www.leuze.com/en/msi-sr-cm43**

Part no.	Part description	Application	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category
50133026	MSI-SR-CM43-01	Extension unit for safety relays	Automatic	4 NO contacts / 3 NC contacts	Screw terminal	d	3
50133028	MSI-SR-CM43DT03-01	Extension unit for safety relays	Automatic	4 NO contacts / 3 NC contacts	Screw terminal	d	3
50133027	MSI-SR-CM43-03	Extension unit for safety relays	Automatic	4 NO contacts / 3 NC contacts	Spring-cage terminal	d	3
50133029	MSI-SR-CM43DT03-03	Extension unit for safety relays	Automatic	4 NO contacts / 3 NC contacts	Spring-cage terminal	d	3

Dimensioned drawings: MSI-SR-CM43

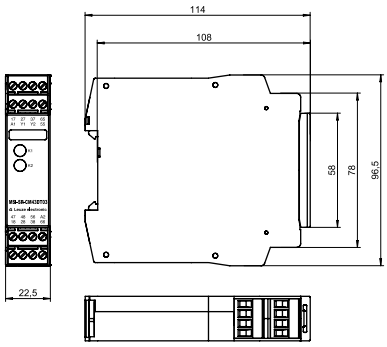


MSI-SR-CM43-01 safety relay, screw terminal

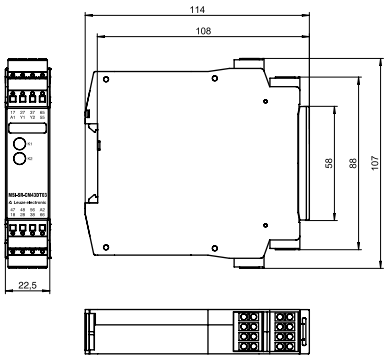


MSI-SR-CM43-03 safety relay, spring-cage terminal

Dimensioned drawings: MSI-SR-CM43



MSI-SR-CM43DT03-01 safety relay, screw terminal



MSI-SR-CM43DT03-03 safety relay, spring-cage terminal

/// MSI-CM52

Contact extension for safety relays and safety PLCs, up to SIL 3 / SILCL 3 and cat. 4 / PL e, 5 release contacts, 1 feedback contact, 1 signal contact.

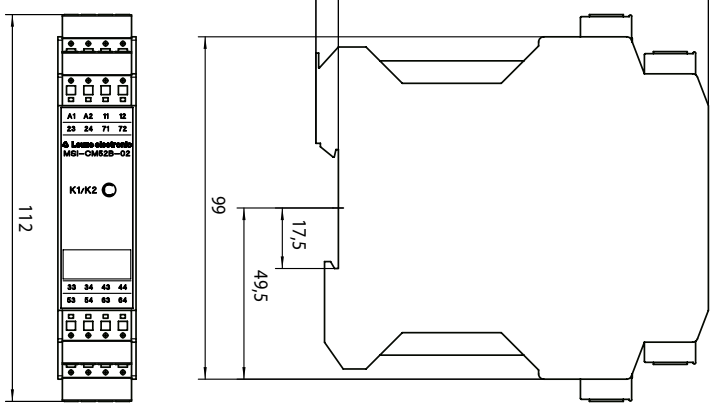
Benefits:

- 5 release contacts, 1 feedback contact and 1 signal contact in one device
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

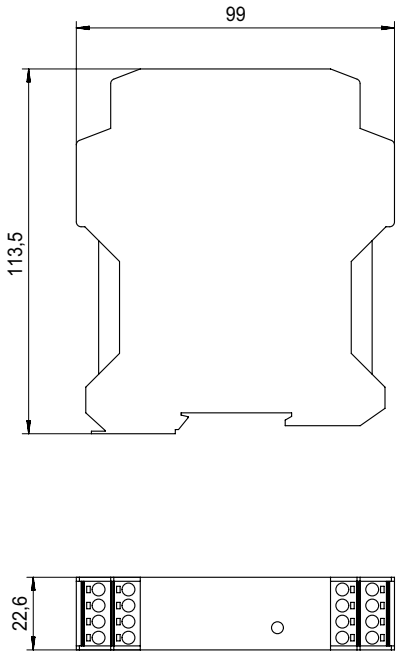
Direct access to the online product selector at **www.leuze.com/en/msi-cm52**

Part no.	Part description	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category	STOP category
547933	**MSI-CM52B-01**	Automatic	5 NO contacts / 2 NC contacts	Screw terminal	e	4	0
547934	**MSI-CM52B-02**	Automatic	5 NO contacts / 2 NC contacts	Spring-cage terminal	e	4	0

Dimensioned drawings: MSI-CM52



MSI-CM52B-02 safety relay, spring-cage terminal



MSI-CM52B-01 safety relay, screw terminal

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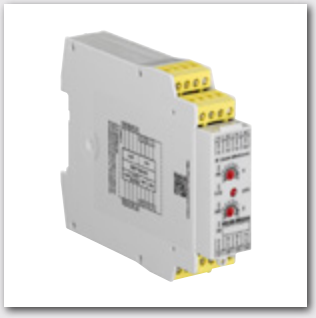
Standstill monitoring

The safe monitoring of standstill or low speed is performed by evaluating the pulses from incremental transmitters or proximity switches. It is used, e.g., to release guard interlocks or to monitor during setup mode.

/// MSI-SR-SM42OS



For monitoring of standstill and low speed, up to SIL 3 / SILCL 3 and cat. 4 / PL e, inputs for proximity switches and HTL-A/B incremental transmitters, adjustable speed limit/monitoring frequency of 0.1 to 99 Hz, automatic or manual reset, 2 release contacts (semiconductor), 2 signal contacts (semiconductor).

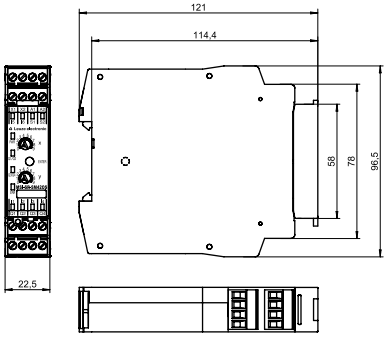
Benefits:

- Safe monitoring of dynamic input signals
- Adjustable monitoring frequency from 0.1 to 99 Hz for monitoring low speeds in setup mode
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

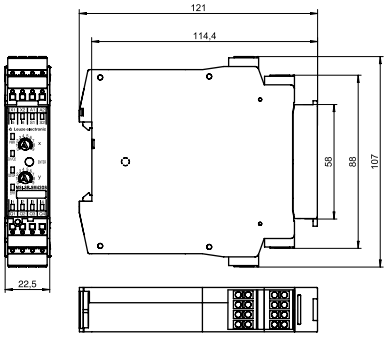
Direct access to the online product selector at **www.leuze.com/en/msi-sr-sm42os**

Part no.	Part description	Application	Restart	Contacts (NO contact/NC contact)	Connection	PL	Category
50133030	MSI-SR-SM42OS-01	Zero-speed relays	Automatic, manual	2 NO contacts / 2 NC contacts	Screw terminal	e	4
50133031	MSI-SR-SM42OS-03	Zero-speed relays	Automatic, manual	2 NO contacts / 2 NC contacts	Spring-cage terminal	e	4

Dimensioned drawings: MSI-SR-SM42OS



MSI-SR-SM42OS-01 safety relay, screw terminal



MSI-SR-SM42OS-03 safety relay, spring-cage terminal

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Positioning

Sensor technology for quick positioning accurate down to the millimeter

Measurement

Reliable systems for 2D- and 3D-measurement of distances and objects

Safeguarding

Economical solutions in all areas of safety at work

Identification

Innovative code readers and RFID systems

Other applications – field-proven: **www.leuze.com/en/praxis**

//PROGRAMMABLE SAFETY CONTROLS

PROGRAMMED FOR SAFETY

The programmable safety PLCs offer efficient solutions for integrating multiple safety sensors in machines and systems. The compact design saves space in the switch cabinet. On request, even industrial Ethernet interfaces are already integrated in the base module. In addition, the optional extension modules allow you to adapt the number of inputs and outputs flexibly to current and future requirements.

MSI 400

The safety PLCs of the MSI 400 series provide efficient solutions for integrating safety sensors in machines and systems. Though just 45 mm wide, they are available with 24 safe inputs/outputs as well as an optional Ethernet interface with industrial Ethernet protocols. Additional extension modules and gateways adapt the control flexibly to current and future requirements. Configuration is simple and fast with the licence-free programming software MSI.designer. A number of integrated comfort functions make work easier.

/// Base modules

With a width of just 45 mm, even the MSI 410, 420 and 430 basic modules offer 24 safe inputs and outputs. USB and Ethernet interfaces ensure simple connection during configuration and diagnosis. In the MSI 430 model, even the industrial Ethernet protocols for PROFINET, Ethernet/IP and Modbus are integrated.

Benefits:

- MSI 410: USB interface, 20 inputs, 4 outputs
- MSI 420: USB and Ethernet interface, 16 inputs, 4 outputs, 4 configurable I/Os
- MSI 430: Industrial Ethernet protocols, USB and Ethernet interface, 16 inputs, 4 outputs, 4 configurable I/Os
- F50 models with additional function blocks for controlling presses and for standstill monitoring

Direct access to the online product selector at **www.leuze.com/en/msi400-bm**

Part no.	Part description	Connection	Number of inputs	Number of outputs	Interface
50132984	MSI 410-01	Screw terminal	20x	4x	Internal bus (SBUS+), USB
50132985	MSI 410-03	Spring-cage terminal	20x	4x	Internal bus (SBUS+), USB
50134311	MSI 410.F50-01	Screw terminal	20x	4x	Internal bus (SBUS+), USB
50134312	MSI 410.F50-03	Spring-cage terminal	20x	4x	Internal bus (SBUS+), USB
50132986	MSI 420-01	Screw terminal	16x	8x	Internal bus (SBUS+), Ethernet, USB
50132987	MSI 420-03	Spring-cage terminal	16x	8x	Internal bus (SBUS+), Ethernet, USB
50134313	MSI 420.F50-01	Screw terminal	16x	8x	Internal bus (SBUS+), Ethernet, USB
50134314	MSI 420.F50-03	Spring-cage terminal	16x	8x	Internal bus (SBUS+), Ethernet, USB
50132988	MSI 430-01	Screw terminal	16x	8x	Internal bus (SBUS+), Ethernet, USB, PROFINET, EtherNet IP, Modbus TCP
50132989	MSI 430-03	Spring-cage terminal	16x	8x	Internal bus (SBUS+), Ethernet, USB, PROFINET, EtherNet IP, Modbus TCP
50134315	MSI 430.F50-01	Screw terminal	16x	8x	Internal bus (SBUS+), Ethernet, USB, PROFINET, EtherNet IP, Modbus TCP
50134316	MSI 430.F50-03	Spring-cage terminal	16x	8x	Internal bus (SBUS+), Ethernet, USB, PROFINET, EtherNet IP, Modbus TCP

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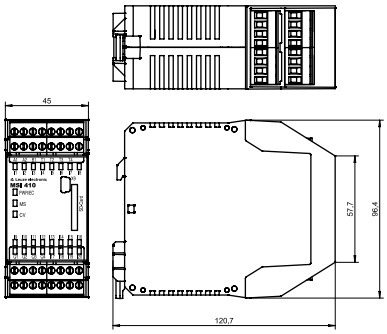
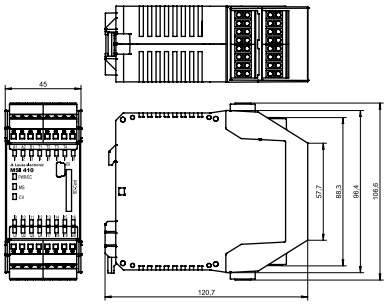
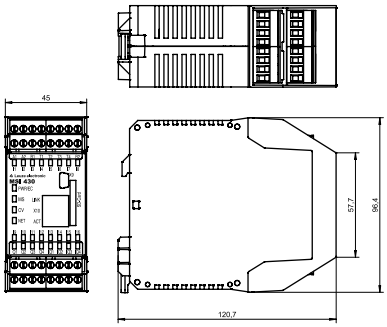
Dimensioned drawings: Base modules



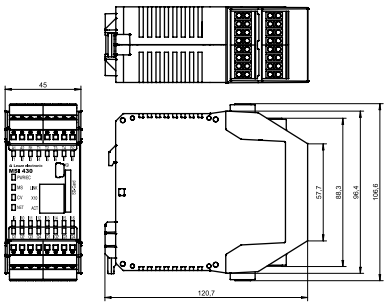
MSI 410-01 programmable safety control



MSI 410-03 programmable safety control



MSI 420-01, MSI 430-01 programmable safety control



MSI 420-03, MSI 430-03 programmable safety control

/// Gateways

In addition to the industrial Ethernet protocols for PROFINET, Ethernet/IP and Modbus integrated in the basic modules, the MSI 400 can easily be integrated in fieldbus systems with the Profibus, EtherCAT and CANopen gateway modules.

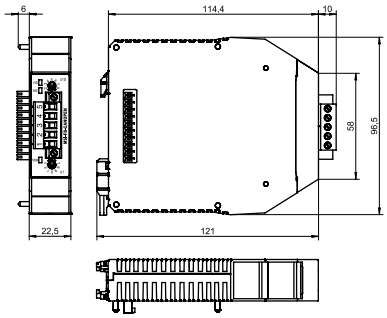
Benefits:

- Up to 2 gateway modules can be connected to each MSI 400 basic module
- All fieldbus protocols are easy to use through comfortable configuration in MSI.designer

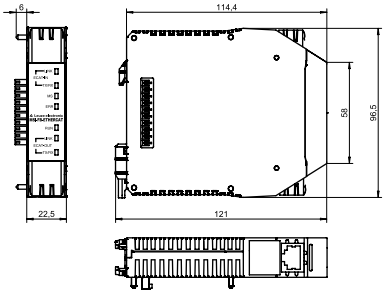
Direct access to the online product selector at **www.leuze.com/en/msi400-gw**

Part no.	Part description	Connection	Interface
50132994	MSI-FB-CANOPEN	Screw terminal	CANopen
50132999	MSI-FB-ETHERCAT		Internal bus (SBUS+), EtherCAT
50132995	MSI-FB-PROFIBUS		Internal bus (SBUS+), PROFIBUS DP

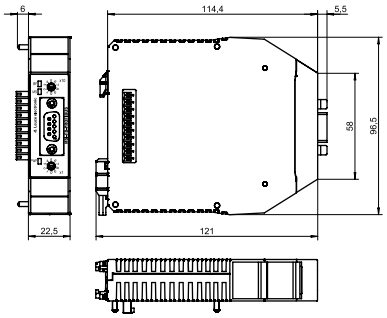
Dimensioned drawings: Gateways



MSI-FB-CANOPEN gateway

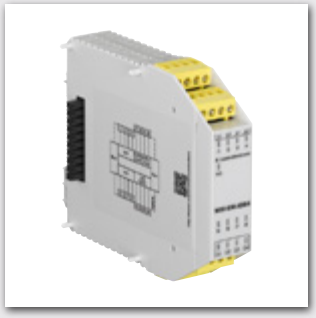


MSI-FB-ETHERCAT gateway



MSI-FB-PROFIBUS gateway

/// I/O extension modules



3 extension modules allow the number of inputs and outputs to be flexibly adapted to your needs. In addition to the safe extension modules, an economical model with non-safe inputs and outputs is also available.

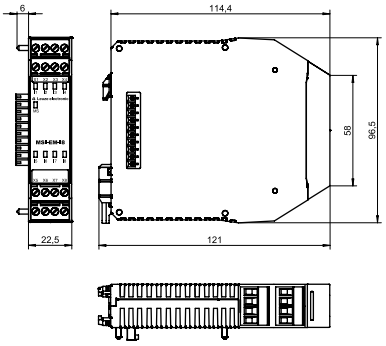
Benefits:

- Up to 12 connectable extension modules for modular expansion to up to 116 inputs and 56 outputs
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

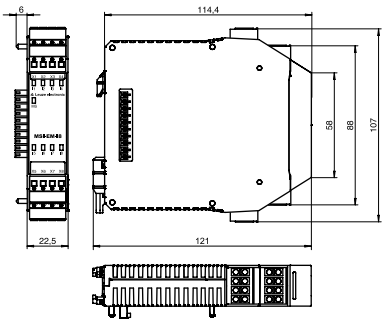
Direct access to the online product selector at **www.leuze.com/en/msi400-exten**

Part no.	Part description	Connection	Number of inputs	Number of outputs
50132992	MSI-EM-I8-01	Screw terminal	8x	
50132993	MSI-EM-I8-03	Spring-cage terminal	8x	
50132990	MSI-EM-I084-01	Screw terminal	8x	4x
50132991	MSI-EM-I084-03	Spring-cage terminal	8x	4x
50132997	MSI-EM-I084NP-01	Screw terminal	8x	4x
50132998	MSI-EM-I084NP-03	Spring-cage terminal	8x	4x

Dimensioned drawings: I/O extension modules



MSI-EM-…-01 extension module



MSI-EM-…-03 extension module

ACCESSORIES: MSI 400

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 2	Cable length
50117011	KB USB A - USB miniB	USB 2.0 Standard-A	USB 2.0 Mini-B	1,500 mm

General

Part no.	Part description	Description
50132996	MSI-SD-CARD	Necessary accessories for MSI 400 base modules
50133002	MSI-SD-COVER	10x MSI-SD-COVER

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MSI 100/200

The safety PLCs of the MSI 100/200 series provide flexible integration of safety sensors in machines and systems. With an overall width of 67.5 mm, the device makes available 20 safe inputs, 4 safe outputs and 4 signal outputs for diagnostics. The MSI 200 model can be expanded with extension modules to up to 140 safe inputs or 100 inputs and 44 safe outputs. For the integration in a Profibus system, a gateway module is available.

/// Base modules

With an overall width of 67.5 mm, the MSI 100 and MSI 200 basic modules offer 20 safe inputs, 4 safe outputs and 4 signal outputs for diagnostics. The MSI 200 model can be expanded with extension modules to up to 140 safe inputs or 100 inputs and 44 safe outputs.

Benefits:

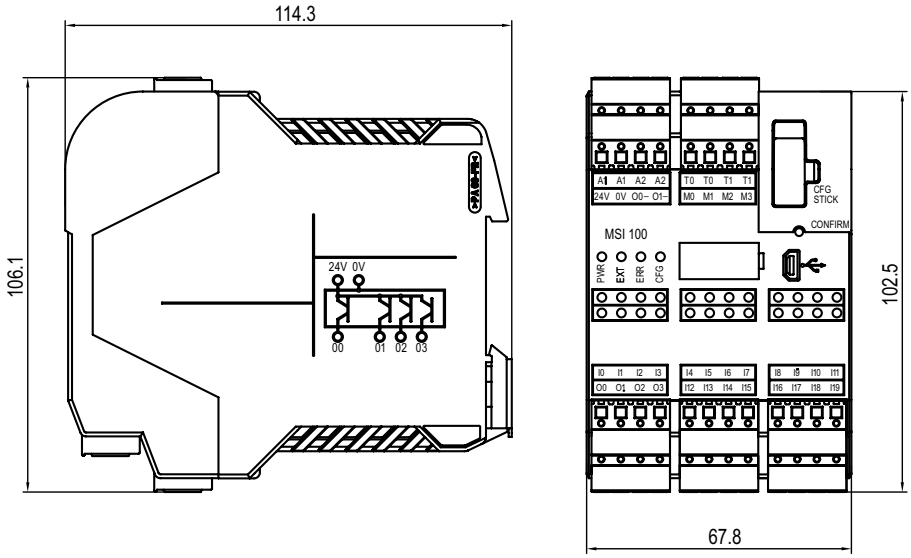
- MSI 100: 20 safe inputs, 4 safe outputs and 4 signal outputs
- MSI 200: additionally up to 10 connectable extension modules for modular extension to up to 140 inputs or 100 inputs and 44 outputs
- Pluggable screw or spring-cage terminals for simple installation and simple device exchange

Direct access to the online product selector at **www.leuze.com/en/msi100-hm**

Part no.	Part description	Connection	Number of possible safe extension modules	Number of inputs	Number of outputs	Number of ground-switching outputs	Number of signal outputs	Number of cycle outputs
547802	MSI101	Screw terminal		20x (up to SIL 3 / IEC 62061)	4x	2x	4x	2x
547812	MSI102	Spring-cage terminal		20x (up to SIL 3 / IEC 62061)	4x	2x	4x	2x
547803	MSI201	Screw terminal	10x	20x (up to SIL 3 / IEC 62061)	4x	2x	4x	2x
547813	MSI202	Spring-cage terminal	10x	20x (up to SIL 3 / IEC 62061)	4x	2x	4x	2x

Included in delivery: 1 terminal set, 1 data memory module, 1 TBUS safety connection plug
Note: Commissioning set must be ordered separately

Dimensioned drawings: Base modules



MSI 102, MSI 202 programmable safety control

/// Gateway

The fieldbus module connects the MSI 100 and MSI 200 safety PLCs to Profibus systems.

Benefits:

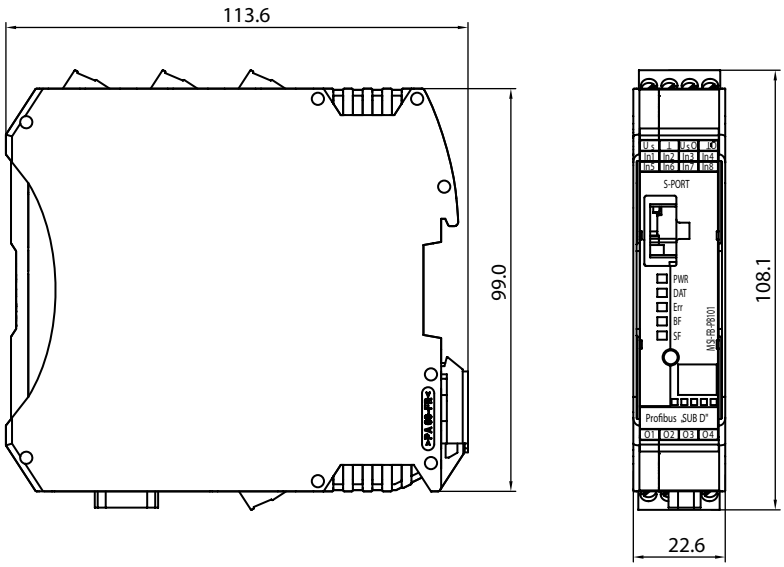
- Transfers diagnostic data (not safety-oriented)
- 4 additional inputs and 4 additional outputs for communication of the PLC with field devices (sensor /actuator systems)

Direct access to the online product selector at **www.leuze.com/en/msi100-gw**

Part no.	Part description	Connection	Interface
547806	MSI-FB-PB101	Screw terminal	PROFIBUS DP

Included in delivery: 1 TBUS safety connection plug

Dimensioned drawings: Gateway



MSI-FB-PB101 gateway

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International sales locations – Always close to you.

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/// I/O extension modules

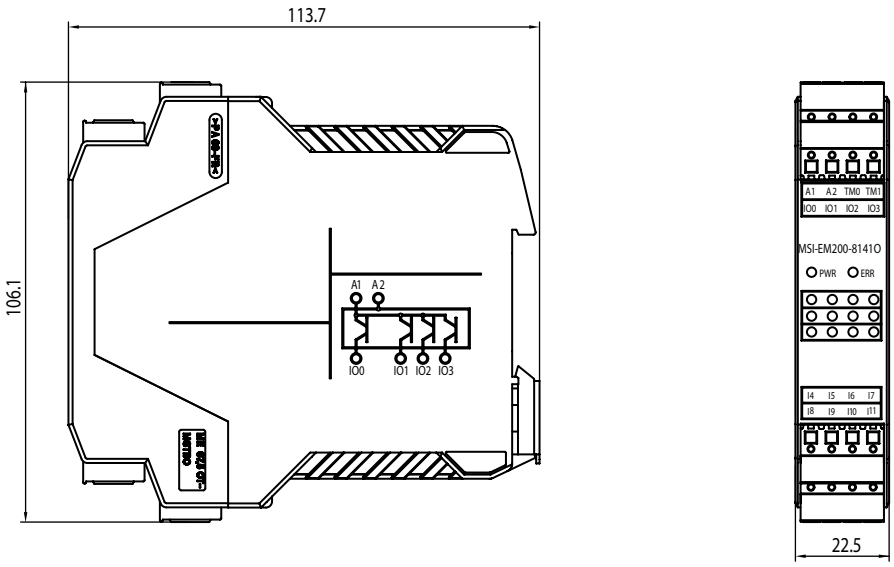
The MSI-EM extension module expands the MSI 200 programmable safety controller with 8 safe inputs and 4 freely configurable channels. These may be either safe inputs or outputs (OSSDs).

Direct access to the online product selector at **www.leuze.com/en/msi100-exten**

Part no.	Part description	Connection	Number of inputs	Number of outputs	Number of signal outputs	Number of clock/ signal outputs
547805	MSI-EM201-4R0	Screw terminal			4x	
547804	MSI-EM201-8I4I0	Screw terminal	12x (up to SIL 3 / IEC 62061)	4x		2x
547815	MSI-EM202-4R0	Spring-cage terminal			4x	
547814	MSI-EM202-8I4I0	Spring-cage terminal	12x (up to SIL 3 / IEC 62061) of which 4 are configurable as input or output	4x		2x

Included in delivery: 1 TBUS safety connection plug

Dimensioned drawings: I/O extension modules



MSI-EM202-... extension module

ACCESSORIES: MSI 100, MSI 200

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 2	Cable length
547822	AC-MSI-USB	USB 2.0 Standard-A	USB 2.0 Mini-A	3,000 mm

General

Part no.	Part description	Description
547820	AC-MSI-CFG1	10x plug-in data memory module
547823	AC-MSI-TC	10x MSI TBUS standard connection plug (for fieldbus gateways)
547821	AC-MSI-TCS	10x MSI TBUS safety connection plug
547825	MSI-SWC1	Configuration software MSIsafesoft, USB cable, quick start guide

//AS-INTERFACE SAFETY AT WORK

LEADER FOR A GOOD REASON

Compared to conventional point-to-point wiring, AS-Interface (AS-i) excels with its low installation, wiring and connection costs. The very simple retrofitability of the safety technology with larger AS-i systems can further greatly reduce installation costs.

Safety monitor

The ASM1 AS-i safety monitor is the core component of the AS-Interface safety at work system. Using configuration software, it monitors the safety-related network devices that are assigned to it, e. g., command devices, multiple light beam safety devices and safety switches.

/// ASM1

The ASM1 AS-i safety monitor is the core component of the AS-Interface safety at work system. Using configuration software, it monitors the safety-related network devices that are assigned to it, e. g., command devices, multiple light beam safety devices and safety switches.

Benefits:

- 45 mm housing width
- Height/installation depth: 102/120 mm
- Degree of protection IP 20
- Performance Level PL e and category 4 acc. to EN ISO 13849-1, SIL 3 acc. to IEC 61508 as well as SILCL 3 acc. to EN IEC 62061
- Up to 31 safe AS-i slaves can be connected
- 48 system components can be configured (e. g. E-Stop monitoring devices , OR, AND, turn on/off delays)
- RS 232 interface for PC-supported system configuration and system diagnostics as well as configuration data transfer to replacement device
- SERVICE button for automatic system integration (teach-in) of AS-i sensors on sensor exchange
- Immediate switch-off STOP 0 and delayed switch-off STOP 1 of the release circuits can be configured

Direct access to the online product selector at **www.leuze.com/en/asm1**

Part no.	Part description	Number of safety-related switching outputs (OSSDs)	Number of configurable function modules	Number of OR and AND inputs	Muting function
580020	ASM1/1	1x	32x	2x	No
580055	ASM1E-m/1	1x	48x	6x	Yes
580024	ASM1E/1	1x	48x	6x	No
580021	ASM1/2	2x	32x	2x	No
580056	ASM1E-m/2	2x	48x	6x	Yes
580025	ASM1E/2	2x	48x	6x	No

Included in delivery: device front cover for protection and sealing

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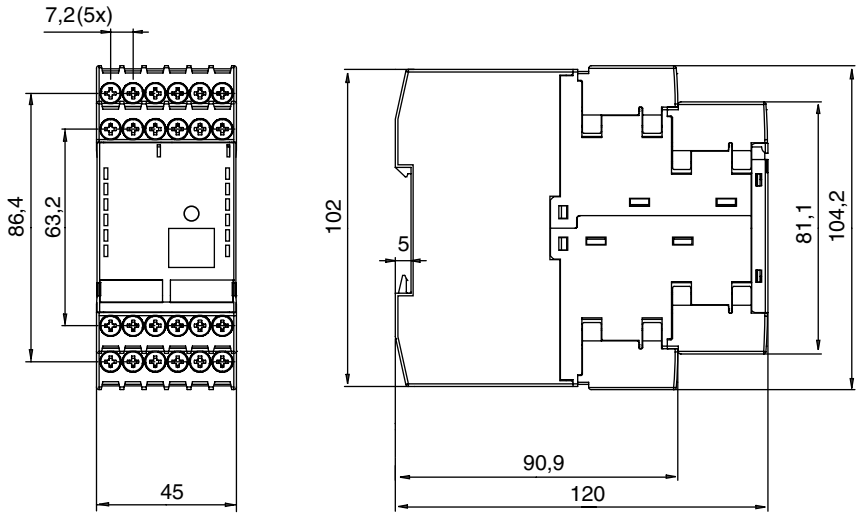
Dimensioned drawings: ASM1



AS-i safety monitor ASM1 / ASM1E

/// ASM2

In addition to the functions of the ASM 1, this safety Monitor offers higher-level start and E-Stop functions through safe coupling of adjacent AS-i networks. Moreover, safe activation of decentrally distributed AS-i actuators with the same AS-i address is possible.

Benefits:

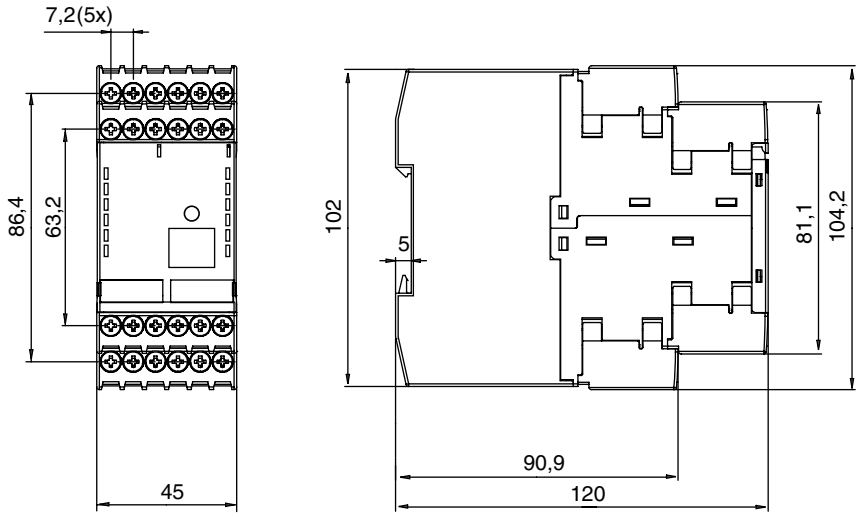
- 45 mm housing width
- Height/installation depth: 102/120 mm
- Degree of protection IP 20
- Performance Level PL e and category 4 acc. to EN ISO 13849-1, SIL 3 acc. to IEC 61508 as well as SILCL 3 acc. to EN IEC 62061
- Up to 31 safe AS-i slaves can be connected
- 48 system components can be configured (e. g. E-Stop monitoring devices , OR, AND, turn on/off delays)
- RS 232 interface for PC-supported system configuration and system diagnostics as well as configuration data transfer to replacement device
- SERVICE button for automatic system integration (teach-in) of AS-i sensors on sensor exchange
- Immediate switch-off STOP 0 and delayed switch-off STOP 1 of the release circuits can be configured

Direct access to the online product selector at **www.leuze.com/en/asm2**

Part no.	Part description	Number of safety-related switching outputs (OSSDs)	Number of configurable function modules	Number of OR and AND inputs	Muting function
580057	ASM2E-m/1	1x	48x	6x	Yes
580028	ASM2E/1	1x	48x	6x	No
580058	ASM2E-m/2	2x	48x	6x	Yes
580029	ASM2E/2	2x	48x	6x	No

Included in delivery: device front cover for protection and sealing

Dimensioned drawings: ASM2



AS-i safety monitor ASM2E

ACCESSORIES: ASM1, ASM2

Start-up/diagnosis

Part no.	Part description	Connection 1	Connection 2	Cable length	Contains
580032	ASM-SWC				Configuration and diagnostic software asimon, connecting and operating instructions (PDF file on CD-ROM), user's guide, software (PDF file on CD-ROM), programming cable, device exchange data line
50104078	CB-ASM-PK1	Sub-D, 9-pin, axial, female	RJ45	2,500 mm	

SMART IS TO SHARE **EXPERIENCE**

Our many years of experience – Your extensive knowledge about safety at work

– Safety seminars
– Standards workshops
– Product training courses

"In our seminars you will acquire compact knowledge about safety at work. A day that is well worth your while!"

Markus Erdorf,
Safety Consultant and Trainer

Register here: **www.leuze.com/en/seminars**

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/ MACHINE SAFETY SERVICES

SYSTEM SAFETY IS PLANNING AND MAINTENANCE

Sustainable safety at work begins with professional planning and doesn't end with the start-up of the corresponding systems. With our engineering tools, you can efficiently plan safety at work right from the start. During operation, periodic inspections and trainings are then necessary and prescribed in order to ensure proper function and operation of the systems. We offer you an extensive and convenient package of all of these services for all of your safety at work measures.

Safety inspections Page 386

Stopping time measurement Page 386

Safety consulting Page 387

Seminars and workshops Page 387

/// Safety inspections

Safety at work is a management issue – this applies in principle around the world. In Germany, periodic testing of the machine is required by law. Safety inspections ensure compliance with safety and quality standards and serve as preventive maintenance measures.

Benefits:

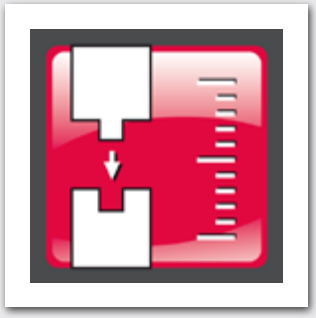
- EU conformity and legal certainty with proof of safety and quality standards
- Solution proposals for the rapid removal of safety deficiencies
- Comprehensible and well-documented test results in accordance with DIN ISO 9001:2000
- Standards-specific test protocol
- Accident risk and machine downtime minimization
- High availability of the machine due to regular inspections

Direct access to the online product selector at **www.leuze.com/en/inspections**

Part no.	Part description	Description
S991005	CS-SCP/FR	Start-up support for a simple device from Leuze electronic without using PC.
S991040	CS-SI05/FR	Initial safety inspections of safety switches, safety locking devices and safety sensors
S991041	CS-SI06/FR	Follow-up safety inspections of safety switches, safety locking devices and safety sensors
S991042	CS-SI07/FR	Initial safety inspection for emergency stop evaluation units and parts connected to the emergency stop chain such as E-stop buttons, rope E-stop buttons, switches for agreement functions and two-handed operating consoles
S991043	CS-SI08/FR	Follow-up safety inspection for emergency stop evaluation units and parts connected to the emergency stop chain such as E-stop buttons, rope E-stop buttons, switches for agreement functions and two-handed operating consoles
S991016	CS-SIF/FR	Initial safety inspection for a third-party device
S991015	CS-SIL/FR	Initial safety inspection for a Leuze device
S991004	CS-SIN/FR	Follow-up safety inspection for a Leuze device
S991019	CS-SIO/FR	Follow-up safety inspection for a third-party device
S991002	CS-SRS/FR	Start-up support for a programmable device from Leuze electronic.
S991017	CS-SSF/FR	Start-up support / service deployment for components from Leuze electronic, full-day flat-rate per person.
S991018	CS-SSH/FR	Start-up support / service deployment for components from Leuze electronic, half-day flat-rate per person.

For work abroad: travel costs and accommodation extra, according to expenditure

/// Stopping time measurement



Only with a sufficiently dimensioned safety distance that corresponds with the stopping time of the machine can it be guaranteed that the dangerous movement will stop before the person reaches the point of operation. Stopping time measurements are therefore an important part of a properly carried out safety inspection.

Benefits:

- Standards-compliant performance of 10 measurements per dangerous movement
- Graphic evaluation of the brake behavior on request
- Stop activation with "Autohand" without electrical intervention in the machine control system
- Use of appropriate measurement transducers for the respective machine type: Rotary encoder for rotation movements (e.g. rotary indexing table) and rope length transmitter for linear movements
- State-of-the-art calibrated measurement devices; documented test results in accordance with DIN ISO 9001:2000

Direct access to the online product selector at **www.leuze.com/en/nlzm**

Part no.	Part description	Description
S991007	CS-SMS/FR	“Standard” stopping time measurement on an ESPE unit
S991008	CS-SMX/FR	“Extended” stopping time measurement on an ESPE unit
S991009	CS-WT1/FR	Hour flat-rate for waiting times per person

For work abroad: travel costs and accommodation extra, according to expenditure

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/// Safety consulting

Our experts are always up-to-date on the latest technology and standards. You can therefore be certain that our safety consulting offers you legal security. Pass the responsibility on to us – we find safety risks in good time and provide you with qualified assistance in initiating the necessary measures.

Benefits:

- Safety consulting helps prevent safety-related errors and also saves time and money while improving machine safety and giving the system operator legal certainty
- Responsibility is transferred to our experts for risk assessment as well as SISTEMA calculations and tests
- All Machinery Directive and CE requirements are upheld and all documents are also checked for completeness and fulfillment of legal requirements
- Our experts are independent, experienced and always up-to-date concerning standards and directives; they work effectively because they know systems both within and across sectors as well as their associated hazards and methods of resolution

Direct access to the online product selector at **www.leuze.com/en/consulting**

Part no.	Part description	Description
S991022	CS-SC1/FR	Safety-related consulting
S991023	CS-SC2/FR	Risk assessment of existing machines (small)
S991024	CS-SC3/FR	Risk assessment of existing machines (large)
S991025	CS-SC4/FR	Additional day for consulting
S991026	CS-SC5/FR	Conformity assessment of table machine
S991027	CS-SC6/FR	Conformity assessment of machine on vehicle
S991028	CS-SC7/FR	Conformity assessment of industrial machine
S991020	CS-SCF/FR	Inhouse consulting, full-day flat-rate per person
S991021	CS-SCH/FR	Inhouse consulting, full-day flat-rate per person

For work abroad: travel costs and accommodation extra, according to expenditure

/// Seminars and workshops

In addition to product training courses, our training program also includes seminars on the basics of machinery directives, CE certification and practical safety technology. We will also gladly provide instruction on-site at your facilities or in English.

Benefits:

- Compact knowledge of everything to do with safety at work
- Safety seminars cover all key points concerning retrofitting and operation of machines
- After standards workshops, the participant is always up-to-date when it comes to the current standards situation
- Product trainings guarantee optimal knowledge of a product, meaning you can detect application problems and prevent production downtimes
- Direct dialog between our specialists and participants for exchanges of experiences, application tips and problem-solving
- A certificate confirms participation in our seminars

Direct access to the online product selector at **www.leuze.com/en/seminars**

Part no.	Part description	Description
S991030	CS-KRS/AS	"Leuze product" product training, full-day flat-rate per person
S991031	CS-KRS/NM	Machine safety workshop
S991033	CS-KRS/PS	Product training
S991038	CS-KRS/SE	"Machine safety" training, full-day flat-rate per person
S991032	CS-KRS/SS	Safety seminar
S991034	CS-TR01/FR	Training of competent persons for inspecting optoelectronic protective devices. Price per participant.
S991035	CS-TR02/FR	Training of competent persons for inspecting optoelectronic protective devices. Flat-rate for in-house training at customer sites.
S991036	CS-TR03/FR	Training of competent persons for inspecting optoelectronic protective devices. Day training.

For work abroad: travel costs and accommodation extra, according to expenditure

ALWAYS THE **RIGHT SERVICE** FOR YOUR PROCESS

Legal security and efficient safety at work are successfully combined quickly and easily with our range of services.

For many people, complex planning or engineering tasks or the management of functional safety make the set of issues related to safety at work a closed book. In the area of legal security in particular, information gaps often exist. With our extensive, qualified offer on safety at work, you are on the safe side legally and can fulfill all legal guidelines easily.

We support your service department and, in the event of limited resources, make available the appropriately qualified team. We work with our experts to ensure the safety of your machines and systems. Your production and service team is free to perform its actual tasks. Our product range is accompanied by an extensive range of training courses tailored to your needs.

Our service offerings include

Status check Safety technology (MSSC)

Status check CE (MCSC)

Risk analysis / assessment (MRAS)

Conformity assessment of machines (MCMS)

Development support for machine safety (MSEN)

Safety inspection (MSIN)

Functionality of protective devices (MSPT)

Validation and verification of safety functions (MSVV)

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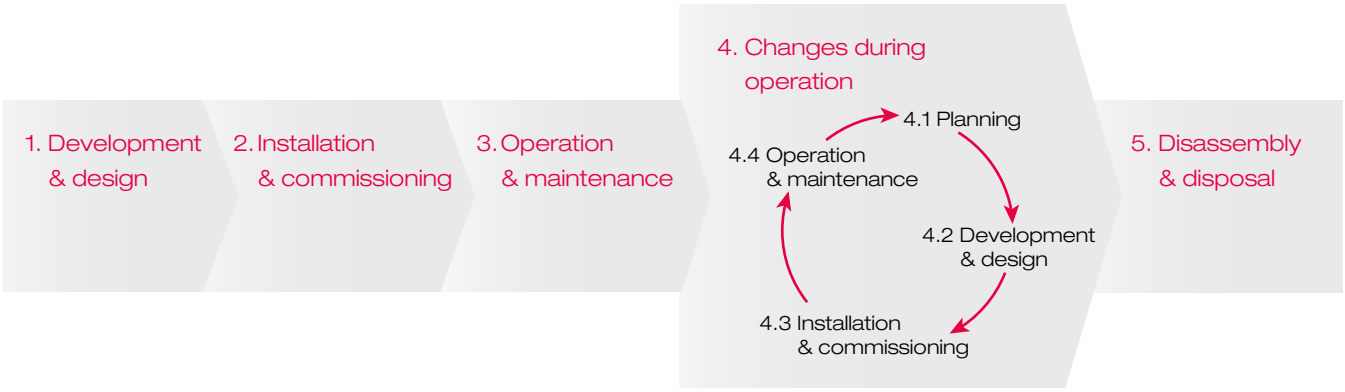
Stages of a machine life cycle



The right services at a glance

Services	1. Development & design	2. Installation & commissioning	3. Operation & maintenance	4.1 Planning	4.2 Development & design	4.3 Installation & commissioning	4.4 Operation & maintenance	5. Disassembly & disposal
Status check Safety technology		●	●				●	
Status check CE	●		●		●	●	●	
Risk analysis / assessment	●		●	●	●		●	●
Conformity assessment of machines	●			●	●			
Development support Machine safety	●				●			
Safety inspections		●	●			●	●	
Functionality of protective devices		●	●			●	●	●
Validation and verification of safety functions		●				●		

IDENTIFICATION

CODES SIMPLIFY COMMUNICATION IN AUTOMATION

The identification of bar codes, 2D-codes and RFID transponders is among our core competencies. Our broad product spectrum of IDENT technologies opens up maximum flexibility to our customers. These products ensure absolute reliability and maximum system availability. Discover our world of IDENT products.

"Identification in automation means not only detecting certain code information but also reliably detecting even the smallest deviations. We therefore equip our sensors with a multitude of technical solutions in order to provide the largest possible function reserves."

Sven-Philipp Abraham,
Product Management –
Product Center Ident + Vision

/ Bar code identification Page 392

/ 2D-code identification Page 429

/ RF identification Page 443

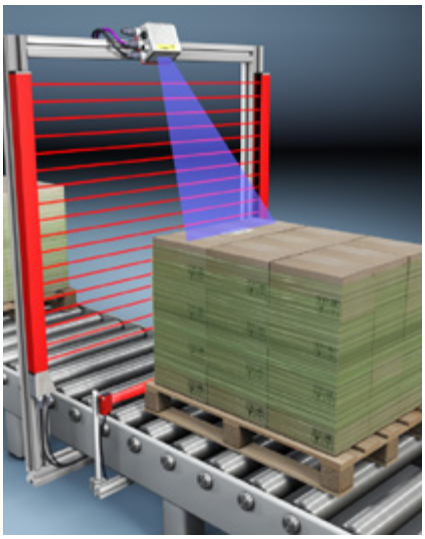
/ BAR CODE IDENTIFICATION

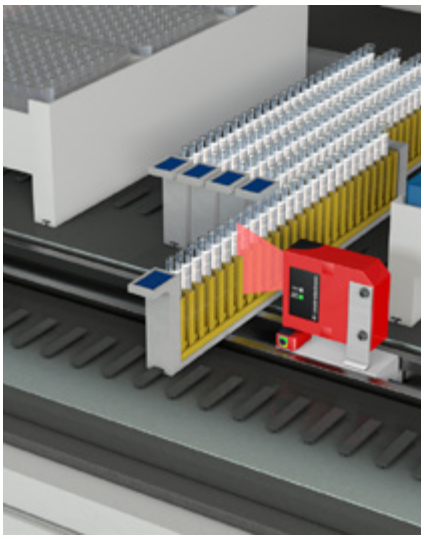
BAR CODE READING MADE EASY

In production and logistics, the identification of goods and materials through universally usable bar codes controls many processes. The area of application of readers is correspondingly broad – from mobile hand-held operation to high-speed scanners for industrial applications.

Stationary bar code readers Page 393

Mobile bar code readers Page 426





//STATIONARY BAR CODE READERS

FAST AND EXACT SOLUTIONS

Select the right line and raster scanner from various sizes, designs and performance levels. Scanning rates of up to 1,000 scans/s, the smallest installation dimensions, robust housings and integrated heating for use in deep-freeze areas meet the individual requirements of your application.

/// BCL 8

The BCL 8 bar code reader is a bar code reader with integrated decoder for all common bar codes including Pharmacode. Available as a robust industrial version in a metal housing.

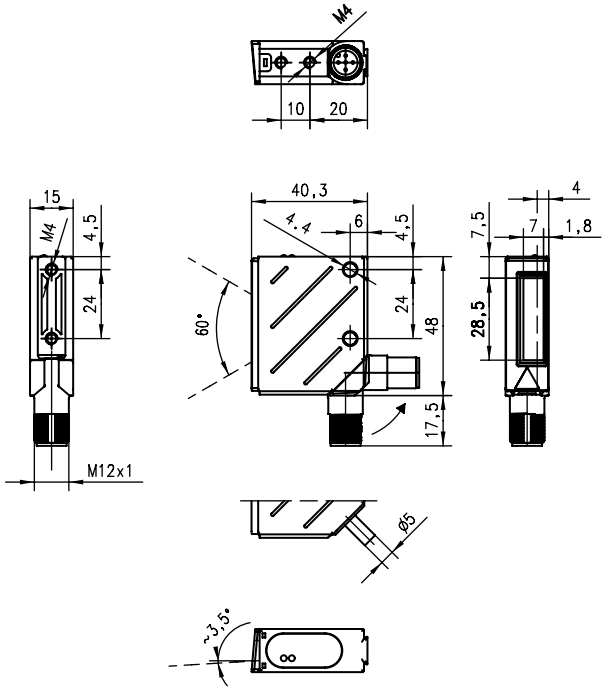
Benefits:

- Compact construction for confined space conditions, e. g. in printers or packaging systems
- Large reading field with great depth of field for variable modulus sizes
- autoConfig automatically detects the code type that is to be read
- autoReflAct enables automatic triggering without additional photoelectric sensor
- M12 connection technology and ready-made cables
- Numerous connection units from the MA 8/MA 200i series for all well-known bus systems (PROFIBUS, PROFINET, DeviceNet, EtherNet TCP/IP, EtherNet/IP, Ethercat or CANopen).
- RS 232 interface (with option of changing to the integrated daisy chain)

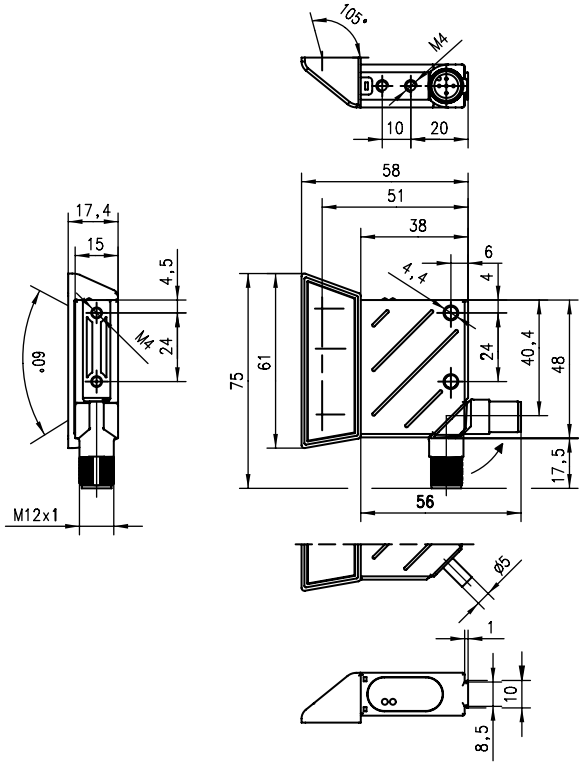
Direct access to the online product selector at **www.leuze.com/en/bcl8**

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50105417	BCL 8 SN 100	Line scanner Lateral with deflecting mirror	RS 232	35 … 95 mm	0.12 … 0.4 mm	500 scans/s	LED
50105419	BCL 8 SN 550	Line scanner Lateral with deflecting mirror	RS 232	35 … 95 mm	0.12 … 0.4 mm	500 scans/s	LED
50105418	BCL 8 SN 102	Line scanner Front	RS 232	50 … 110 mm	0.12 … 0.4 mm	500 scans/s	LED
50105420	BCL 8 SN 552	Line scanner Front	RS 232	50 … 110 mm	0.12 … 0.4 mm	500 scans/s	LED
50040229	BCL 8 SM 100	Line scanner Lateral with deflecting mirror	RS 232	25 … 145 mm	0.15 … 0.5 mm	600 scans/s	LED
50040230	BCL 8 SM 550	Line scanner Lateral with deflecting mirror	RS 232	25 … 145 mm	0.15 … 0.5 mm	600 scans/s	LED
50038949	BCL 8 SM 102	Line scanner Front	RS 232	40 … 160 mm	0.15 … 0.5 mm	600 scans/s	LED
50038948	BCL 8 SM 552	Line scanner Front	RS 232	40 … 160 mm	0.15 … 0.5 mm	600 scans/s	LED

Dimensioned drawings: BCL 8



Bar code reader BCL 8



BCL 8 bar code readers with deflecting mirror

ACCESSORIES: BCL 8

Connection technology

Connection unit

Part no.	Part description	Suitable for	Interface	Supply voltage	Degree of protection
50104790	MA 8-01	BCL 8 series bar code readers, BPS 8 series bar code positioning system	RS 485	10 … 30 V, DC	IP 67
50101699	MA 8.1	BCL 8 series bar code reader	RS 232	10 … 30 V, DC	IP 67

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50101941	KB-008-3000 A-S	Connector, M12, axial, male	5-pin	3,000 mm	PUR
50102971	KB 008-10000 A-S	Connector, M12, axial, male	5-pin	10,000 mm	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Sheathing material
50133891	KDS S-M12-5A-M12-5A-P1-030	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	3,000 mm	PUR
50133884	KDS S-M12-5A-M12-5W-P1-030	Connector, M12, axial, female	5-pin	Connector, M12, angled, male	5-pin	3,000 mm	PUR

Further interconnection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins	Interface
50040097	KD 01-5-BA	Connector, M12, axial, female	5-pin	
50038538	KD 02-5-BA	Connector, M12, axial, female	5-pin	PROFIBUS DP, multiNet Plus

Further connectors can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50127177	BTU 008M-D10	Mounting system	Screw type	Sheet-metal mounting, for 10 mm rod	Metal

Further rod mounts can be found on our website

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/// BCL 21/22

These stationary high-speed scanners offer a space-saving solution for industrial environments and are equipped with a fail-safe parameter memory.

Benefits:

- Various optics models for optimum use of the installation space
- Depending on the code alignment, single-line or raster scanners offer optimized reading capacity
- Large depth of field and wide opening angle
- autoConfig automatically detects the code type that is to be read
- The BCL Config Tool simplifies all configuration tasks

Direct access to the online product selector at **www.leuze.com/en/bcl21_22**

PART NUMBER CODES – BCL 21/22 stationary bar code readers

B C L 2 1 S N 2 1 0

Type

BCL	Bar code reader

Host interface

21	RS 485
22	RS 232

Reading characteristics

S	Single line scanner
R1	Raster scanner

Resolution / operating range

N	High Density up to 95 mm
B	Medium Density up to 220 mm
M	Medium Density up to 260 mm
F	Low Density up to 450 mm

Connector

2	LP (circuit board connector for MA 2/MA 4...)
3	SUB-D 15-pin

Connection cable length

0	0.8 m
1	3.0 m

Beam exit

0	Perpendicular
2	At the front

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
RS 485							
50030987	BCL 21 S N 202	Line scanner Front	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032030	BCL 21 S N 212	Line scanner Front	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50031072	BCL 21 S N 302	Line scanner Front	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032034	BCL 21 S N 312	Line scanner Front	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50117070	BCL 21 S B 202	Line scanner Front	RS 485	50 ... 220 mm	0.165 ... 0.5 mm	800 scans/s	LED
50114707	BCL 21 S B 302	Line scanner Front	RS 485	50 ... 220 mm	0.165 ... 0.5 mm	800 scans/s	LED
50030989	BCL 21 S M 202	Line scanner Front	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50031720	BCL 21 S M 212	Line scanner Front	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50031078	BCL 21 S M 302	Line scanner Front	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032049	BCL 21 S M 312	Line scanner Front	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50031082	BCL 21 S F 202	Line scanner Front	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032061	BCL 21 S F 212	Line scanner Front	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50031086	BCL 21 S F 302	Line scanner Front	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032065	BCL 21 S F 312	Line scanner Front	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50030986	BCL 21 S N 200	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032028	BCL 21 S N 210	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50031070	BCL 21 S N 300	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032032	BCL 21 S N 310	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50117069	BCL 21 S B 200	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 220 mm	0.165 ... 0.5 mm	800 scans/s	LED
50114706	BCL 21 S B 300	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 220 mm	0.165 ... 0.5 mm	800 scans/s	LED
50030988	BCL 21 S M 200	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032044	BCL 21 S M 210	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50031076	BCL 21 S M 300	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032047	BCL 21 S M 310	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50031080	BCL 21 S F 200	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032059	BCL 21 S F 210	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50031084	BCL 21 S F 300	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032063	BCL 21 S F 310	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50061283	BCL 21 R1 N 202	Raster scanner Front	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032038	BCL 21 R1 N 212	Raster scanner Front	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50061287	BCL 21 R1 N 302	Raster scanner Front	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032042	BCL 21 R1 N 312	Raster scanner Front	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50061291	BCL 21 R1 M 202	Raster scanner Front	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032053	BCL 21 R1 M 212	Raster scanner Front	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50061295	BCL 21 R1 M 302	Raster scanner Front	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032057	BCL 21 R1 M 312	Raster scanner Front	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50061299	BCL 21 R1 F 202	Raster scanner Front	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032069	BCL 21 R1 F 212	Raster scanner Front	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50061303	BCL 21 R1 F 302	Raster scanner Front	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032073	BCL 21 R1 F 312	Raster scanner Front	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50061281	BCL 21 R1 N 200	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032036	BCL 21 R1 N 210	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50061285	BCL 21 R1 N 300	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032040	BCL 21 R1 N 310	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50061289	BCL 21 R1 M 200	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032051	BCL 21 R1 M 210	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50061293	BCL 21 R1 M 300	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032055	BCL 21 R1 M 310	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50061297	BCL 21 R1 F 200	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032067	BCL 21 R1 F 210	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50061301	BCL 21 R1 F 300	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032071	BCL 21 R1 F 310	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 485	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED

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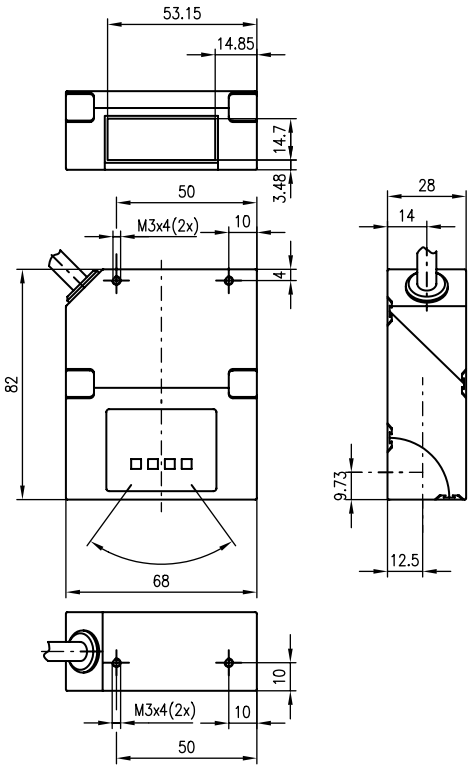
Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
RS 232							
50031090	BCL 22 S N 202	Line scanner Front	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50061451	BCL 22 S N 212	Line scanner Front	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50030991	BCL 22 S N 302	Line scanner Front	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032080	BCL 22 S N 312	Line scanner Front	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50117072	BCL 22 S B 202	Line scanner Front	RS 232	50 ... 220 mm	0.165 ... 0.5 mm	800 scans/s	LED
50114715	BCL 22 S B 302	Line scanner Front	RS 232	50 ... 220 mm	0.165 ... 0.5 mm	800 scans/s	LED
50031096	BCL 22 S M 202	Line scanner Front	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032093	BCL 22 S M 212	Line scanner Front	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50030993	BCL 22 S M 302	Line scanner Front	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032097	BCL 22 S M 312	Line scanner Front	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50031102	BCL 22 S F 202	Line scanner Front	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032108	BCL 22 S F 212	Line scanner Front	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50031106	BCL 22 S F 302	Line scanner Front	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032112	BCL 22 S F 312	Line scanner Front	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50031088	BCL 22 S N 200	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032075	BCL 22 S N 210	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50030990	BCL 22 S N 300	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032078	BCL 22 S N 310	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50117071	BCL 22 S B 200	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 220 mm	0.165 ... 0.5 mm	800 scans/s	LED
50114714	BCL 22 S B 300	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 220 mm	0.165 ... 0.5 mm	800 scans/s	LED
50031094	BCL 22 S M 200	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032091	BCL 22 S M 210	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50030992	BCL 22 S M 300	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032095	BCL 22 S M 310	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50031100	BCL 22 S F 200	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032106	BCL 22 S F 210	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50031104	BCL 22 S F 300	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032110	BCL 22 S F 310	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50061307	BCL 22 R1 N 202	Raster scanner Front	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032084	BCL 22 R1 N 212	Raster scanner Front	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50061311	BCL 22 R1 N 302	Raster scanner Front	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032089	BCL 22 R1 N 312	Raster scanner Front	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50061315	BCL 22 R1 M 202	Raster scanner Front	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032101	BCL 22 R1 M 212	Raster scanner Front	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50061319	BCL 22 R1 M 302	Raster scanner Front	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032104	BCL 22 R1 M 312	Raster scanner Front	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50061323	BCL 22 R1 F 202	Raster scanner Front	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032116	BCL 22 R1 F 212	Raster scanner Front	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50061327	BCL 22 R1 F 302	Raster scanner Front	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032120	BCL 22 R1 F 312	Raster scanner Front	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50061305	BCL 22 R1 N 200	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032082	BCL 22 R1 N 210	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50061309	BCL 22 R1 N 300	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50032087	BCL 22 R1 N 310	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 95 mm	0.15 ... 0.5 mm	800 scans/s	LED
50061313	BCL 22 R1 M 200	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50032099	BCL 22 R1 M 210	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50061317	BCL 22 R1 M 300	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50031704	BCL 22 R1 M 310	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	50 ... 260 mm	0.2 ... 0.8 mm	1,000 scans/s	LED
50061321	BCL 22 R1 F 200	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032114	BCL 22 R1 F 210	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50061325	BCL 22 R1 F 300	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED
50032118	BCL 22 R1 F 310	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232	80 ... 450 mm	0.5 ... 1 mm	800 scans/s	LED

Dimensioned drawings: BCL 21/22



BCL 21 / BCL 22 bar code readers

ACCESSORIES: BCL 21/22

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50111391	BT 20-D10	Mounting system	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50060503	BT 20-D12	Mounting system	Screw type	For 12 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

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/// BCL 300i

These modular, stationary bar code readers feature code fragment technology and numerous equipment features.
Also unique is the modular connection technology.

Benefits:

- Integrated fieldbus connectivity (PROFIBUS, PROFINET, EtherNet, EtherNet/IP, EtherCAT, TCP/IP, multiNet, RS 232/422/485) with Ethernet switch function (for linear topology)
- Full CRT (code reconstruction technology) also detects heavily damaged or soiled codes
- webConfig – an operating-system independent, browser-based configuration tool
- High-quality optics with great depth of field and large opening angle
- Compact housing design for problem-free placement directly at the conveyor line
- Modular connector hood, terminal hood and terminal box and graphical display
- All optics models are also available with optional heating

Direct access to the online product selector at **www.leuze.com/en/bcl300i**

PART NUMBER CODES – BCL 300i stationary bar code readers

B C L 3 0 0 i S N 1 0 0 H

Type	
BCL	Bar code reader
Interface (integrated fieldbus technology)	
300i	RS 232 / RS 422 (stand-alone)
301i	RS 485 (multiNet slave)
304i	PROFIBUS DP
308i	EtherNet TCP/IP, UDP
338i	EtherCAT
348i	PROFINET RT
358i	EtherNet/IP
Scanning principle	
S	Line scanner (single line)
R1	Line scanner (raster)
O	Oscillating-mirror scanner
Optics	
N	High Density (close)
M	Medium Density (medium distance)
F	Low Density (far)
L	Long Range
J	Ink-jet (depends on application)
Beam exit	
100	Lateral
102	At the front
Option	
D	With display
H	With heating
DH	With display and heating

RS 232, RS 422

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50116224	BCL 300i SN 102 D H	Line scanner Front	RS 232, RS 422	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116226	BCL 300i SN 102	Line scanner Front	RS 232, RS 422	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116225	BCL 300i SN 102 D	Line scanner Front	RS 232, RS 422	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116218	BCL 300i SM 102 D H	Line scanner Front	RS 232, RS 422	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116220	BCL 300i SM 102	Line scanner Front	RS 232, RS 422	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116219	BCL 300i SM 102 D	Line scanner Front	RS 232, RS 422	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116206	BCL 300i SF 102 D H	Line scanner Front	RS 232, RS 422	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116208	BCL 300i SF 102	Line scanner Front	RS 232, RS 422	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116207	BCL 300i SF 102 D	Line scanner Front	RS 232, RS 422	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116212	BCL 300i SL 102 D H	Line scanner Front	RS 232, RS 422	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116214	BCL 300i SL 102	Line scanner Front	RS 232, RS 422	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116213	BCL 300i SL 102 D	Line scanner Front	RS 232, RS 422	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116221	BCL 300i SN 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116223	BCL 300i SN 100	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116222	BCL 300i SN 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116215	BCL 300i SM 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116217	BCL 300i SM 100	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116216	BCL 300i SM 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116203	BCL 300i SF 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116205	BCL 300i SF 100	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116204	BCL 300i SF 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116209	BCL 300i SL 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116211	BCL 300i SL 100	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116210	BCL 300i SL 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116202	BCL 300i R1 N 102	Raster scanner Front	RS 232, RS 422	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116201	BCL 300i R1 N 102 D	Raster scanner Front	RS 232, RS 422	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116198	BCL 300i R1 M 102	Raster scanner Front	RS 232, RS 422	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116197	BCL 300i R1 M 102 D	Raster scanner Front	RS 232, RS 422	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116194	BCL 300i R1 F 102	Raster scanner Front	RS 232, RS 422	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116193	BCL 300i R1 F 102 D	Raster scanner Front	RS 232, RS 422	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116200	BCL 300i R1 N 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116199	BCL 300i R1 N 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116196	BCL 300i R1 M 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116195	BCL 300i R1 M 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116192	BCL 300i R1 F 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	70 … 440 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116191	BCL 300i R1 F 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	70 … 440 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50123508	BCL 300i R1 J 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	RS 232, RS 422	100 … 600 mm	0.5 … 0.8 mm	1,000 scans/s	LED
50116187	BCL 300i OM 100 D H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232, RS 422	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels

Necessary accessories: A modular connector hood and terminal hood are required for operation!

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Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50116185	BCL 300i OM 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	RS 232, RS 422	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116186	BCL 300i OM 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	RS 232, RS 422	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116181	BCL 300i OF 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	RS 232, RS 422	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116179	BCL 300i OF 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	RS 232, RS 422	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116180	BCL 300i OF 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	RS 232, RS 422	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116184	BCL 300i OL 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	RS 232, RS 422	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116182	BCL 300i OL 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	RS 232, RS 422	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116183	BCL 300i OL 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	RS 232, RS 422	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels

PROFINET

50116460	BCL 348i SN 102 D H	Line scanner Front	PROFINET	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116462	BCL 348i SN 102	Line scanner Front	PROFINET	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116461	BCL 348i SN 102 D	Line scanner Front	PROFINET	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116454	BCL 348i SM 102 D H	Line scanner Front	PROFINET	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116456	BCL 348i SM 102	Line scanner Front	PROFINET	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116455	BCL 348i SM 102 D	Line scanner Front	PROFINET	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116442	BCL 348i SF 102 D H	Line scanner Front	PROFINET	100 … 475 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116444	BCL 348i SF 102	Line scanner Front	PROFINET	100 … 475 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116443	BCL 348i SF 102 D	Line scanner Front	PROFINET	100 … 475 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116448	BCL 348i SL 102 D H	Line scanner Front	PROFINET	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116450	BCL 348i SL 102	Line scanner Front	PROFINET	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116449	BCL 348i SL 102 D	Line scanner Front	PROFINET	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116457	BCL 348i SN 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116459	BCL 348i SN 100	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116458	BCL 348i SN 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116452	BCL 348i SM 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116451	BCL 348i SM 100	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116453	BCL 348i SM 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116439	BCL 348i SF 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116441	BCL 348i SF 100	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116440	BCL 348i SF 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116445	BCL 348i SL 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116447	BCL 348i SL 100	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116446	BCL 348i S L 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116438	BCL 348i R1 N 102	Raster scanner Front	PROFINET	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116437	BCL 348i R1 N 102 D	Raster scanner Front	PROFINET	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116434	BCL 348i R1 M 102	Raster scanner Front	PROFINET	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116433	BCL 348i R1 M 102 D	Raster scanner Front	PROFINET	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116430	BCL 348i R1 F 102	Raster scanner Front	PROFINET	100 … 475 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116429	BCL 348i R1 F 102 D	Raster scanner Front	PROFINET	100 … 475 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116436	BCL 348i R1 N 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED

Necessary accessories: A modular connector hood and terminal hood are required for operation!

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50116435	BCL 348i R1 N 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116432	BCL 348i R1 M 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116431	BCL 348i R1 M 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116428	BCL 348i R1 F 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116427	BCL 348i R1 F 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50123504	BCL 348i R1 J 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFINET	100 … 600 mm	0.5 … 0.8 mm	1,000 scans/s	LED
50116423	BCL 348i OM 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFINET	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116421	BCL 348i OM 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFINET	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116422	BCL 348i OM 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFINET	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116417	BCL 348i OF 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFINET	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116415	BCL 348i OF 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFINET	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116416	BCL 348i OF 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFINET	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116420	BCL 348i OL 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFINET	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116418	BCL 348i OL 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFINET	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116419	BCL 348i OL 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFINET	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels

PROFIBUS DP

50116365	BCL 304i SN 102 D H	Line scanner Front	PROFIBUS DP	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116367	BCL 304i SN 102	Line scanner Front	PROFIBUS DP	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116366	BCL 304i SN 102 D	Line scanner Front	PROFIBUS DP	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116359	BCL 304i SM 102 D H	Line scanner Front	PROFIBUS DP	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116361	BCL 304i SM 102	Line scanner Front	PROFIBUS DP	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116360	BCL 304i SM 102 D	Line scanner Front	PROFIBUS DP	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116347	BCL 304i SF 102 D H	Line scanner Front	PROFIBUS DP	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116349	BCL 304i SF 102	Line scanner Front	PROFIBUS DP	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116348	BCL 304i SF 102 D	Line scanner Front	PROFIBUS DP	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116353	BCL 304i SL 102 D H	Line scanner Front	PROFIBUS DP	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116355	BCL 304i SL 102	Line scanner Front	PROFIBUS DP	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116354	BCL 304i SL 102 D	Line scanner Front	PROFIBUS DP	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116362	BCL 304i SN 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116364	BCL 304i SN 100	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116363	BCL 304i SN 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116356	BCL 304i SM 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116358	BCL 304i SM 100	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116357	BCL 304i SM 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116344	BCL 304i SF 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116346	BCL 304i SF 100	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116345	BCL 304i SF 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116350	BCL 304i SL 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116352	BCL 304i SL 100	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	LED

Necessary accessories: A modular connector hood and terminal hood are required for operation!

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Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50116351	BCL 304i SL 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116343	BCL 304i R1 N 102	Raster scanner Front	PROFIBUS DP	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116342	BCL 304i R1 N 102 D	Raster scanner Front	PROFIBUS DP	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116339	BCL 304i R1 M 102	Raster scanner Front	PROFIBUS DP	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116338	BCL 304i R1 M 102 D	Raster scanner Front	PROFIBUS DP	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116335	BCL 304i R1 F 102	Raster scanner Front	PROFIBUS DP	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116334	BCL 304i R1 F 102 D	Raster scanner Front	PROFIBUS DP	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116341	BCL 304i R1 N 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116340	BCL 304i R1 N 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116337	BCL 304i R1 M 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116336	BCL 304i R1 M 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116333	BCL 304i R1 F 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	70 … 440 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116332	BCL 304i R1 F 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	70 … 440 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50123506	BCL 304i R1 J 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	PROFIBUS DP	100 … 600 mm	0.5 … 0.8 mm	1,000 scans/s	LED
50116328	BCL 304i OM 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFIBUS DP	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116326	BCL 304i OM 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFIBUS DP	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116327	BCL 304i OM 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFIBUS DP	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116322	BCL 304i OF 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFIBUS DP	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116320	BCL 304i OF 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFIBUS DP	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116321	BCL 304i OF 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFIBUS DP	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116325	BCL 304i OL 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFIBUS DP	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116323	BCL 304i OL 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116324	BCL 304i OL 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	PROFIBUS DP	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels

MultiNet Plus, RS 485

50116317	BCL 301i SN 102 D H	Line scanner Front	MultiNet Plus, RS 485	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116319	BCL 301i SN 102	Line scanner Front	MultiNet Plus, RS 485	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116318	BCL 301i SN 102 D	Line scanner Front	MultiNet Plus, RS 485	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116311	BCL 301i SM 102 D H	Line scanner Front	MultiNet Plus, RS 485	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116313	BCL 301i SM 102	Line scanner Front	MultiNet Plus, RS 485	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116312	BCL 301i SM 102 D	Line scanner Front	MultiNet Plus, RS 485	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116299	BCL 301i SF 102 D H	Line scanner Front	MultiNet Plus, RS 485	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116301	BCL 301i SF 102	Line scanner Front	MultiNet Plus, RS 485	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116300	BCL 301i SF 102 D	Line scanner Front	MultiNet Plus, RS 485	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116305	BCL 301i SL 102 D H	Line scanner Front	MultiNet Plus, RS 485	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116307	BCL 301i SL 102	Line scanner Front	MultiNet Plus, RS 485	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116306	BCL 301i SL 102 D	Line scanner Front	MultiNet Plus, RS 485	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116314	BCL 301i SN 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116316	BCL 301i SN 100	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116315	BCL 301i SN 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116309	BCL 301i SM 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels

Necessary accessories: A modular connector hood and terminal hood are required for operation!

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50116308	BCL 301i SM 100	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116310	BCL 301i SM 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116296	BCL 301i SF 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116298	BCL 301i SF 100	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116297	BCL 301i SF 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116302	BCL 301i SL 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116304	BCL 301i SL 100	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116303	BCL 301i SL 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116295	BCL 301i R1 N 102	Raster scanner Front	MultiNet Plus, RS 485	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116294	BCL 301i R1 N 102 D	Raster scanner Front	MultiNet Plus, RS 485	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116291	BCL 301i R1 M 102	Raster scanner Front	MultiNet Plus, RS 485	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116290	BCL 301i R1 M 102 D	Raster scanner Front	MultiNet Plus, RS 485	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116287	BCL 301i R1 F 102	Raster scanner Front	MultiNet Plus, RS 485	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116286	BCL 301i R1 F 102 D	Raster scanner Front	MultiNet Plus, RS 485	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116293	BCL 301i R1 N 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116292	BCL 301i R1 N 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116289	BCL 301i R1 M 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116288	BCL 301i R1 M 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116285	BCL 301i R1 F 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	40 … 440 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116284	BCL 301i R1 F 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	70 … 440 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50123507	BCL 301i R1 J 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	MultiNet Plus, RS 485	100 … 600 mm	0.5 … 0.8 mm	1,000 scans/s	LED
50116280	BCL 301i OM 100 D H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	MultiNet Plus, RS 485	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116278	BCL 301i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	MultiNet Plus, RS 485	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116279	BCL 301i OM 100 D	Oscillating-mirror scanner Zero position at side at angle less than 90 °	MultiNet Plus, RS 485	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116274	BCL 301i OF 100 D H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	MultiNet Plus, RS 485	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116272	BCL 301i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	MultiNet Plus, RS 485	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50116273	BCL 301i OF 100 D	Oscillating-mirror scanner Zero position at side at angle less than 90 °	MultiNet Plus, RS 485	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116277	BCL 301i OL 100 D H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	MultiNet Plus, RS 485	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116275	BCL 301i OL 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	MultiNet Plus, RS 485	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50116276	BCL 301i OL 100 D	Oscillating-mirror scanner Zero position at side at angle less than 90 °	MultiNet Plus, RS 485	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels

Ethernet

50116412	BCL 308i SN 102 D H	Line scanner Front	Ethernet	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116414	BCL 308i SN 102	Line scanner Front	Ethernet	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50116413	BCL 308i SN 102 D	Line scanner Front	Ethernet	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116406	BCL 308i SM 102 D H	Line scanner Front	Ethernet	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116408	BCL 308i SM 102	Line scanner Front	Ethernet	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50116407	BCL 308i SM 102 D	Line scanner Front	Ethernet	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116395	BCL 308i SF 102 D H	Line scanner Front	Ethernet	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels

Necessary accessories: A modular connector hood and terminal hood are required for operation!

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Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50116396	BCL 308i SF 102	Line scanner Front	Ethernet	100 ... 470 mm	0.3 ... 0.5 mm	1,000 scans/s	LED
50114822	BCL 308i SF 102 D	Line scanner Front	Ethernet	100 ... 470 mm	0.3 ... 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116400	BCL 308i SL 102 D H	Line scanner Front	Ethernet	100 ... 700 mm	0.35 ... 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116402	BCL 308i SL 102	Line scanner Front	Ethernet	100 ... 700 mm	0.35 ... 0.8 mm	1,000 scans/s	LED
50116401	BCL 308i SL 102 D	Line scanner Front	Ethernet	100 ... 700 mm	0.35 ... 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116409	BCL 308i SN 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	20 ... 130 mm	0.127 ... 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116411	BCL 308i SN 100	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	20 ... 130 mm	0.127 ... 0.2 mm	1,000 scans/s	LED
50116410	BCL 308i SN 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	20 ... 130 mm	0.127 ... 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116403	BCL 308i SM 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	30 ... 290 mm	0.2 ... 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116405	BCL 308i SM 100	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	30 ... 290 mm	0.2 ... 0.5 mm	1,000 scans/s	LED
50116404	BCL 308i SM 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	30 ... 290 mm	0.2 ... 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116392	BCL 308i SF 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	70 ... 445 mm	0.3 ... 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116394	BCL 308i SF 100	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	70 ... 445 mm	0.3 ... 0.5 mm	1,000 scans/s	LED
50116393	BCL 308i SF 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	70 ... 445 mm	0.3 ... 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116397	BCL 308i SL 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	70 ... 670 mm	0.35 ... 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116399	BCL 308i SL 100	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	70 ... 670 mm	0.35 ... 0.8 mm	1,000 scans/s	LED
50116398	BCL 308i SL 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	70 ... 670 mm	0.35 ... 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116391	BCL 308i R1 N 102	Raster scanner Front	Ethernet	50 ... 160 mm	0.127 ... 0.2 mm	1,000 scans/s	LED
50116390	BCL 308i R1 N 102 D	Raster scanner Front	Ethernet	50 ... 160 mm	0.127 ... 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116387	BCL 308i R1 M 102	Raster scanner Front	Ethernet	60 ... 320 mm	0.2 ... 0.5 mm	1,000 scans/s	LED
50116386	BCL 308i R1 M 102 D	Raster scanner Front	Ethernet	60 ... 320 mm	0.2 ... 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116383	BCL 308i R1 F 102	Raster scanner Front	Ethernet	100 ... 470 mm	0.3 ... 0.5 mm	1,000 scans/s	LED
50116382	BCL 308i R1 F 102 D	Raster scanner Front	Ethernet	100 ... 470 mm	0.3 ... 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116389	BCL 308i R1 N 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	20 ... 130 mm	0.127 ... 0.2 mm	1,000 scans/s	LED
50116388	BCL 308i R1 N 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	20 ... 130 mm	0.127 ... 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116385	BCL 308i R1 M 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	30 ... 290 mm	0.2 ... 0.5 mm	1,000 scans/s	LED
50116384	BCL 308i R1 M 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	30 ... 290 mm	0.2 ... 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116381	BCL 308i R1 F 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	70 ... 440 mm	0.3 ... 0.5 mm	1,000 scans/s	LED
50116380	BCL 308i R1 F 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	70 ... 440 mm	0.3 ... 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50123505	BCL 308i R1 J 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	Ethernet	100 ... 600 mm	0.5 ... 0.8 mm	1,000 scans/s	LED
50116376	BCL 308i OM 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	Ethernet	40 ... 300 mm	0.2 ... 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116374	BCL 308i OM 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	Ethernet	40 ... 300 mm	0.2 ... 0.5 mm	1,000 scans/s	LED
50116375	BCL 308i OM 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	Ethernet	40 ... 300 mm	0.2 ... 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116370	BCL 308i OF 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	Ethernet	80 ... 455 mm	0.3 ... 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116368	BCL 308i OF 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	Ethernet	80 ... 455 mm	0.3 ... 0.5 mm	1,000 scans/s	LED
50116369	BCL 308i OF 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	Ethernet	80 ... 455 mm	0.3 ... 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50116373	BCL 308i OL 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	Ethernet	80 ... 680 mm	0.35 ... 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50116371	BCL 308i OL 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	Ethernet	80 ... 680 mm	0.35 ... 0.8 mm	1,000 scans/s	LED
50116372	BCL 308i OL 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	Ethernet	80 ... 680 mm	0.35 ... 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels

Necessary accessories: A modular connector hood and terminal hood are required for operation!

EtherNet IP

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50120795	BCL 358i SN 102 D H	Line scanner Front	EtherNet IP	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50120793	BCL 358i SN 102	Line scanner Front	EtherNet IP	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50120794	BCL 358i SN 102 D	Line scanner Front	EtherNet IP	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120789	BCL 358i SM 102 D H	Line scanner Front	EtherNet IP	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50120787	BCL 358i SM 102	Line scanner Front	EtherNet IP	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50120788	BCL 358i SM 102 D	Line scanner Front	EtherNet IP	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120777	BCL 358i SF 102 D H	Line scanner Front	EtherNet IP	100 … 475 mm	0.3 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50120775	BCL 358i SF 102	Line scanner Front	EtherNet IP	100 … 475 mm	0.3 … 0.8 mm	1,000 scans/s	LED
50120776	BCL 358i SF 102 D	Line scanner Front	EtherNet IP	100 … 475 mm	0.3 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120783	BCL 358i SL 102 D H	Line scanner Front	EtherNet IP	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50120781	BCL 358i SL 102	Line scanner Front	EtherNet IP	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50120782	BCL 358i SL 102 D	Line scanner Front	EtherNet IP	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120792	BCL 358i SN 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50120790	BCL 358i SN 100	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50120791	BCL 358i SN 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120786	BCL 358i SM 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50120784	BCL 358i SM 100	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50120785	BCL 358i SM 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120774	BCL 358i SF 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	70 … 445 mm	0.3 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50120772	BCL 358i SF 100	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	70 … 445 mm	0.3 … 0.8 mm	1,000 scans/s	LED
50120773	BCL 358i SF 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	70 … 445 mm	0.3 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120780	BCL 358i SL 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50120778	BCL 358i SL 100	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50120779	BCL 358i SL 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120770	BCL 358i R1 N 102	Raster scanner Front	EtherNet IP	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50120771	BCL 358i R1 N 102 D	Raster scanner Front	EtherNet IP	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120766	BCL 358i R1 M 102	Raster scanner Front	EtherNet IP	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50120767	BCL 358i R1 M 102 D	Raster scanner Front	EtherNet IP	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120762	BCL 358i R1 F 102	Raster scanner Front	EtherNet IP	100 … 475 mm	0.3 … 0.8 mm	1,000 scans/s	LED
50120763	BCL 358i R1 F 102 D	Raster scanner Front	EtherNet IP	100 … 475 mm	0.3 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120768	BCL 358i R1 N 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50120769	BCL 358i R1 N 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120764	BCL 358i R1 M 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50120765	BCL 358i R1 M 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120760	BCL 358i R1 F 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	70 … 445 mm	0.3 … 0.8 mm	1,000 scans/s	LED
50120761	BCL 358i R1 F 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	70 … 445 mm	0.3 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50123503	BCL 358i R1 J 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherNet IP	100 … 600 mm	0.5 … 0.8 mm	1,000 scans/s	LED
50120756	BCL 358i OM 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherNet IP	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels

Necessary accessories: A modular connector hood and terminal hood are required for operation!

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Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50120754	BCL 358i OM 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherNet IP	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50120755	BCL 358i OM 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherNet IP	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120750	BCL 358i OF 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherNet IP	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50120748	BCL 358i OF 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherNet IP	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50120749	BCL 358i OF 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherNet IP	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50120753	BCL 358i OL 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherNet IP	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50120751	BCL 358i OL 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherNet IP	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	LED
50120752	BCL 358i OL 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherNet IP	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels

EtherCAT

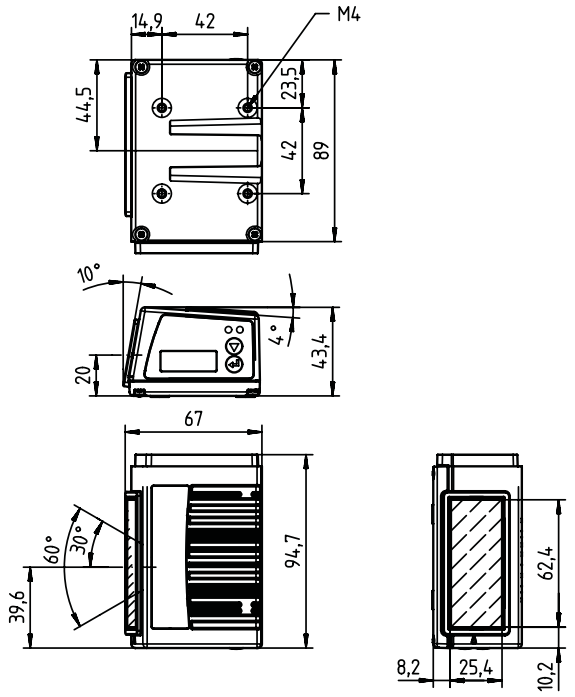
50135022	BCL 338i SN 102	Line scanner Front	EtherCAT	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED
50135026	BCL 338i SN 102 D	Line scanner Front	EtherCAT	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	Heating, monochromatic graphical display, 128 x 32 pixels LED
50135030	BCL 338i SN 102 D H	Line scanner Front	EtherCAT	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	Heating, monochromatic graphical display, 128 x 32 pixels LED
50135023	BCL 338i SM 102	Line scanner Front	EtherCAT	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED
50135027	BCL 338i SM 102 D	Line scanner Front	EtherCAT	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	Heating, monochromatic graphical display, 128 x 32 pixels LED
50135031	BCL 338i SM 102 D H	Line scanner Front	EtherCAT	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135024	BCL 338i SF 102	Line scanner Front	EtherCAT	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED
50135028	BCL 338i SF 102 D	Line scanner Front	EtherCAT	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	Heating, monochromatic graphical display, 128 x 32 pixels LED
50135032	BCL 338i SF 102 D H	Line scanner Front	EtherCAT	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	Heating, monochromatic graphical display, 128 x 32 pixels LED
50135025	BCL 338i SL 102	Line scanner Front	EtherCAT	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED
50135029	BCL 338i SL 102 D	Line scanner Front	EtherCAT	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135033	BCL 338i SL 102 D H	Line scanner Front	EtherCAT	100 … 700 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135040	BCL 338i S N 100	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED
50135044	BCL 338i S N 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	Heating, monochromatic graphical display, 128 x 32 pixels LED
50135048	BCL 338i S N 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135041	BCL 338i S M 100	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED
50135045	BCL 338i S M 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	Heating, monochromatic graphical display, 128 x 32 pixels LED
50135049	BCL 338i S M 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135042	BCL 338i S F 100	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED
50135046	BCL 338i S F 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135050	BCL 338i S F 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	70 … 445 mm	0.3 … 0.5 mm	1,000 scans/s	Heating, monochromatic graphical display, 128 x 32 pixels LED
50135043	BCL 338i S L 100	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED
50135047	BCL 338i S L 100 D	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135051	BCL 338i S L 100 D H	Line scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	70 … 670 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135034	BCL 338i R1 N 102	Raster scanner Front	EtherCAT	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50135037	BCL 338i R1 N 102 D	Raster scanner Front	EtherCAT	50 … 160 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50135035	BCL 338i R1 M 102	Raster scanner Front	EtherCAT	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED

Necessary accessories: A modular connector hood and terminal hood are required for operation!

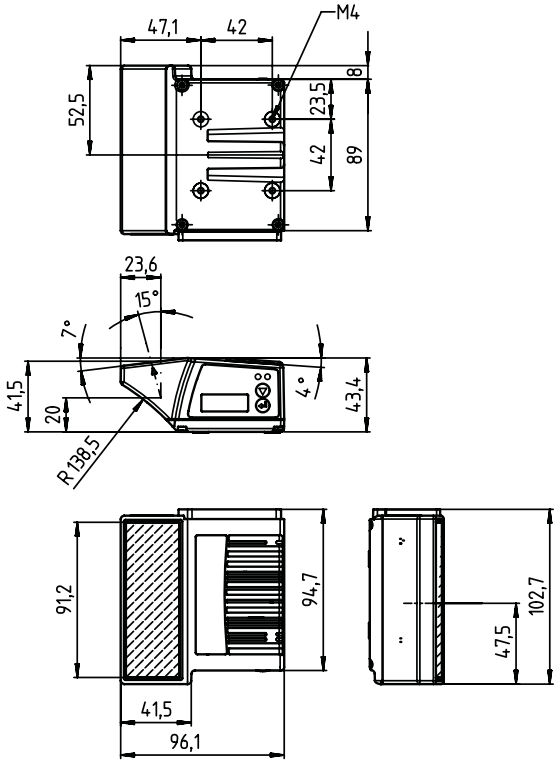
Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50135038	BCL 338i R1 M 102 D	Raster scanner Front	EtherCAT	60 … 320 mm	0.2 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50135036	BCL 338i R1 F 102	Raster scanner Front	EtherCAT	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50135039	BCL 338i R1 F 102 D	Raster scanner Front	EtherCAT	100 … 470 mm	0.3 … 0.5 mm	1,000 scans/s	Monochromatic graphical display, 128 x 32 pixels, LED
50135052	BCL 338i R1 N 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED
50135056	BCL 338i R1 N 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	20 … 130 mm	0.127 … 0.2 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50135053	BCL 338i R1 M 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	LED
50135057	BCL 338i R1 M 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	30 … 290 mm	0.2 … 0.5 mm	1,000 scans/s	Monochromatic graphical display, 128 x 32 pixels, LED
50135054	BCL 338i R1 F 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	70 … 440 mm	0.3 … 0.5 mm	1,000 scans/s	LED
50135058	BCL 338i R1 F 100 D	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	70 … 440 mm	0.3 … 0.5 mm	1,000 scans/s	LED monochromatic graphical display, 128 x 32 pixels
50135055	BCL 338i R1 J 100	Raster scanner with deflecting mirror Lateral with deflecting mirror	EtherCAT	100 … 600 mm	0.5 … 0.8 mm	1,000 scans/s	LED
50135059	BCL 338i O M 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherCAT	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED
50135062	BCL 338i O M 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherCAT	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135065	BCL 338i O M 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherCAT	40 … 300 mm	0.2 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135060	BCL 338i O F 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherCAT	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED
50135063	BCL 338i O F 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherCAT	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135066	BCL 338i O F 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherCAT	80 … 455 mm	0.3 … 0.5 mm	1,000 scans/s	Heating LED monochromatic graphical display, 128 x 32 pixels
50135061	BCL 338i O L 100	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherCAT	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED
50135064	BCL 338i O L 100 D	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherCAT	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	Heating, monochromatic graphical display, 128 x 32 pixels LED
50135067	BCL 338i O L 100 D H	Oscillating-mirror scanner. Zero position at side at angle less than 90 °	EtherCAT	80 … 680 mm	0.35 … 0.8 mm	1,000 scans/s	Heating, monochromatic graphical display, 128 x 32 pixels LED

Necessary accessories: A modular connector hood and terminal hood are required for operation!

Dimensioned drawings: BCL 300i



BCL 300i bar code readers with front beam exit



BCL 300i bar code readers with deflecting mirror

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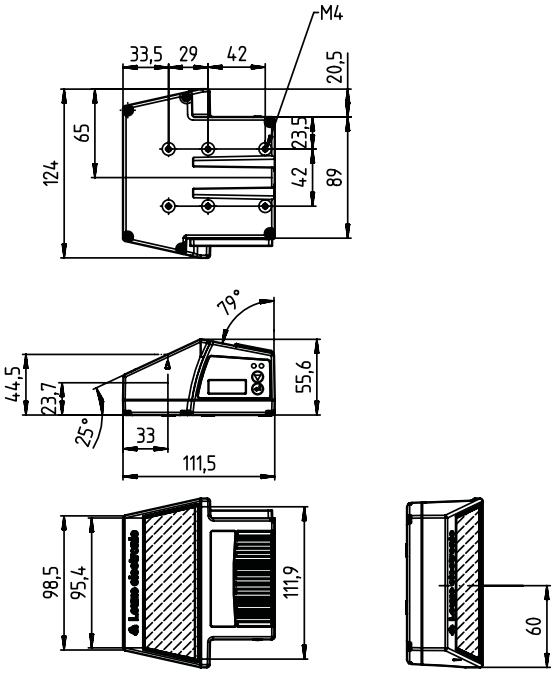
Dimensioned drawings: BCL 300i



BCL 300i bar code readers with oscillating mirror

ACCESSORIES: BCL 300i

Connection technology

Terminal boxes

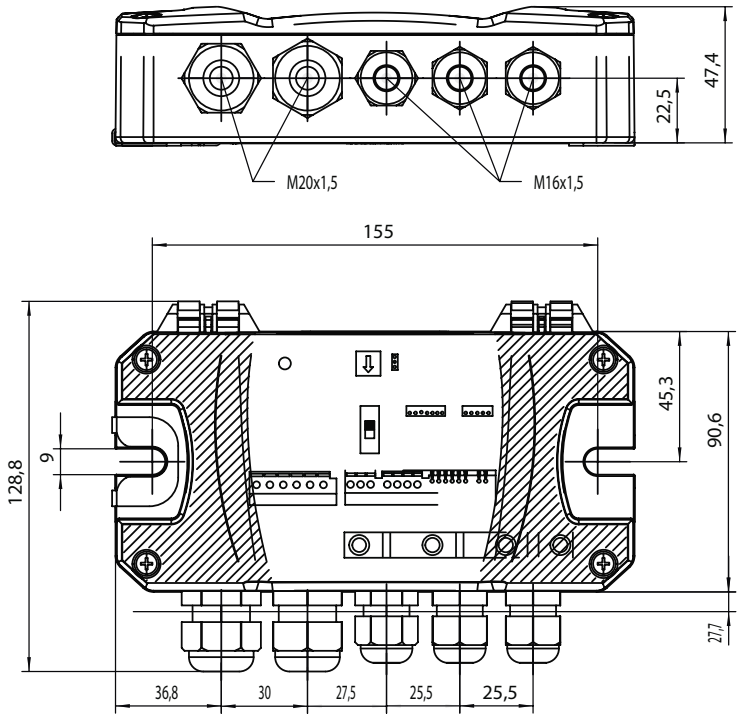
Part no.	Part description	Connections	Connection	Suitable for interface
50131255	ME 308 103	4x	Cable with connector, M12	Ethernet
50131254	ME 308 104	5x	Cable with connector, M12	Ethernet
50134929	ME 338 103	4x	Cable with connector, M12	EtherCAT
50134927	ME 338 104	5x	Cable with connector, M12	EtherCAT
50134928	ME 338 214	5x	Cable with connector, M12	EtherCAT
50131256	ME 348 103	4x	Cable with connector, M12	PROFINET
50131259	ME 348 104	5x	Cable with connector, M12	PROFINET
50131258	ME 348 214	5x	Cable with connector, M12	PROFINET
50116463	MK 300	3x	Terminal, M16	RS 232
50116464	MK 301	4x	Terminal, M16	MultiNet Plus
50116465	MK 304	4x	Terminal, M16	PROFIBUS DP
50116466	MK 308	4x	Terminal, M16	Ethernet
50134931	MK 338	4x	Terminal, M16	EtherCAT
50116467	MK 348	4x	Terminal, M16	PROFINET
50120796	MK 358	4x	Terminal, M16	EtherNet IP
50116468	MS 300	3x	Connector, M12	RS 232
50116469	MS 301	5x	Connector, M12	MultiNet Plus
50116470	MS 304	4x	Connector, M12	PROFIBUS DP
50114823	MS 308	4x	Connector, M12	Ethernet
50134930	MS 338	4x	Connector, M12	EtherCAT
50116471	MS 348	4x	Connector, M12	PROFINET
50120797	MS 358	4x	Connector, M12	EtherNet IP

Further terminal boxes can be found on our website

Connection units

Part no.	Part description	Suitable for	Interface	Degree of protection
50114369	MA 100	BCL 300i, BCL 301i	RS 232, RS 485	IP 54

Dimensioned drawings: Connection units



MA 100 modular connection unit

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm		PVC
50104171	KB SSI/IBS-5000-BA	Connector, M12, axial, female	5-pin	5,000 mm	SSI, Interbus-S	PUR
50135248	KS PB-M12-4A-P3-050	Connector, M12, axial, male	5-pin	5,000 mm	PROFIBUS DP	PUR
50135243	KD PB-M12-4A-P3-050	Connector, M12, axial, female	5-pin	5,000 mm	PROFIBUS DP	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50130631	KSS ET-M12-4A-M12-4A-P7-010	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	Ethernet	PUR
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR
50137077	KSS ET-M12-4A-M12-4A-P7-020	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50137078	KSS ET-M12-4A-M12-4A-P7-050	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45		5,000 mm	Ethernet	PUR
50137079	KSS ET-M12-4A-M12-4A-P7-100	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50137080	KSS ET-M12-4A-M12-4A-P7-150	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR
50135254	KDS PB-M12-4A-M12-4A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	5,000 mm	PROFIBUS DP	PUR
50114571	KB 301-3000	Socket connector		JST ZHR		3,000 mm	RS 232	PVC

Further interconnection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins	Interface
50108991	D-ET1	RJ45		Ethernet
50112155	S-M12A-ET	Connector, M12, axial, male	4-pin	Ethernet
50038538	KD 02-5-BA	Connector, M12, axial, female	5-pin	PROFIBUS DP, multiNet Plus
50038537	KD 02-5-SA	Connector, M12, axial, male	5-pin	PROFIBUS DP, multiNet Plus
50020501	KD 095-5A	Connector, M12, axial, female	5-pin	

Further connectors can be found on our website

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Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50121433	BT 300 W	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50027375	BT 56	Mounting system	Clampable	For 16 mm rod, for 18 mm rod, 20 mm rod	Metal
50121435	BT 56 - 1	Mounting system	Clampable	For 12 mm rod, for 14 mm rod, 16 mm rod	Metal
50121434	BT 300 - 1	Mounting system	Screw type	For 12 mm rod, for 14 mm rod, 16 mm rod	Metal

Further rod mounts can be found on our website

/// BCL 500i

Integrated fieldbus networking is one of the key features of this series of trendsetting bar code readers. Configuration is performed via a web technology-based graphic user interface.

Benefits:

- Integrated fieldbus and Industrial Ethernet connectivity (PROFIBUS, PROFINET, EtherNet, EtherNet/IP and MULTINET)
- Full CRT (code reconstruction technology) also detects heavily damaged or soiled codes
- High-quality optics with great depth of field and large opening angle, also with heating for use at temperatures down to –35 °C
- Simple commissioning and connection using M12-Ultra-LockTM connection technology and intelligent fastening concept
- Intuitive, multi-language display with menu navigation
- webConfig – an operating-system independent, browser-based configuration tool

Direct access to the online product selector at **www.leuze.com/en/bcl500i**

PART NUMBER CODES – BCL 500i stationary bar code readers

BCL 500i S N 100 H

Type

BCL	Bar code reader

Interface (integrated fieldbus technology)

500i	RS 232 / RS 422 / RS 485 (multiNet master)
501i	RS 485 (multiNet slave)
504i	PROFIBUS DP
508i	EtherNet TCP/IP, UDP
548i	PROFINET RT
558i	EtherNet/IP

Scanning principle

S	Line scanner (single line)
O	Oscillating-mirror scanner

Optics

N	High Density (close)
M	Medium Density (medium distance)
F	Low Density (far)
L	Long Range

Beam exit

100	Lateral
102	At the front

Heating

H	With heating

RS 485

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50105475	BCL 501i SN 102 H	Line scanner Front	RS 485	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105472	BCL 501i SN 102	Line scanner Front	RS 485	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105481	BCL 501i SM 102 H	Line scanner Front	RS 485	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105478	BCL 501i SM 102	Line scanner Front	RS 485	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105487	BCL 501i SF 102 H	Line scanner Front	RS 485	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105484	BCL 501i SF 102	Line scanner Front	RS 485	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109893	BCL 501i SL 102 H	Line scanner Front	RS 485	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109890	BCL 501i SL 102	Line scanner Front	RS 485	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105476	BCL 501i ON 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105473	BCL 501i ON 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105482	BCL 501i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105479	BCL 501i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105488	BCL 501i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105485	BCL 501i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109894	BCL 501i OL 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109891	BCL 501i OL 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

RS 232, RS 422, RS 485

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50105457	BCL 500i SN 102 H	Line scanner Front	RS 232 RS 422 RS 485	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105454	BCL 500i SN 102	Line scanner Front	RS 232 RS 422 RS 485	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105463	BCL 500i SM 102 H	Line scanner Front	RS 232 RS 422 RS 485	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105460	BCL 500i SM 102	Line scanner Front	RS 232 RS 422 RS 485	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105469	BCL 500i SF 102 H	Line scanner Front	RS 232 RS 422 RS 485	500 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105466	BCL 500i SF 102	Line scanner Front	RS 232 RS 422 RS 485	500 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109914	BCL 500i SL 102 H	Line scanner Front	RS 232 RS 422 RS 485	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109911	BCL 500i SL 102	Line scanner Front	RS 232 RS 422 RS 485	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105458	BCL 500i ON 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105455	BCL 500i ON 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

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Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50105464	BCL 500i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105461	BCL 500i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105470	BCL 500i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	500 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105467	BCL 500i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	500 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109915	BCL 500i OL 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109912	BCL 500i OL 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

PROFINET

50113184	BCL 548i SN 102 H	Line scanner Front	PROFINET	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113183	BCL 548i SN 102	Line scanner Front	PROFINET	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113188	BCL 548i SM 102 H	Line scanner Front	PROFINET	300 … 1,000 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113187	BCL 548i SM 102	Line scanner Front	PROFINET	300 … 1,000 mm	0.35 … 0.8 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113196	BCL 548i SF 102 H	Line scanner Front	PROFINET	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113195	BCL 548i SF 102	Line scanner Front	PROFINET	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113192	BCL 548i SL 102 H	Line scanner Front	PROFINET	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113191	BCL 548i SL 102	Line scanner Front	PROFINET	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113200	BCL 548i ON 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113199	BCL 548i ON 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113202	BCL 548i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	300 … 1,000 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113201	BCL 548i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	300 … 1,000 mm	0.35 … 0.8 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113206	BCL 548i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113205	BCL 548i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113204	BCL 548i OL 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50113203	BCL 548i OL 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

PROFIBUS DP

50105493	BCL 504i SN 102 H	Line scanner Front	PROFIBUS DP	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105490	BCL 504i SN 102	Line scanner Front	PROFIBUS DP	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105499	BCL 504i SM 102 H	Line scanner Front	PROFIBUS DP	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105496	BCL 504i SM 102	Line scanner Front	PROFIBUS DP	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50105505	BCL 504i SF 102 H	Line scanner Front	PROFIBUS DP	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105502	BCL 504i SF 102	Line scanner Front	PROFIBUS DP	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109899	BCL 504i SL 102 H	Line scanner Front	PROFIBUS DP	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109896	BCL 504i SL 102	Line scanner Front	PROFIBUS DP	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105494	BCL 504i ON 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105491	BCL 504i ON 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105500	BCL 504i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105497	BCL 504i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105506	BCL 504i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105503	BCL 504i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109900	BCL 504i OL 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109897	BCL 504i OL 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

Ethernet

50105511	BCL 508i SN 102 H	Line scanner Front	Ethernet	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105508	BCL 508i SN 102	Line scanner Front	Ethernet	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105517	BCL 508i SM 102 H	Line scanner Front	Ethernet	300 … 1,000 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105514	BCL 508i SM 102	Line scanner Front	Ethernet	300 … 1,000 mm	0.35 … 0.8 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105523	BCL 508i SF 102 H	Line scanner Front	Ethernet	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105520	BCL 508i SF 102	Line scanner Front	Ethernet	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109908	BCL 508i SL 102 H	Line scanner Front	Ethernet	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109905	BCL 508i SL 102	Line scanner Front	Ethernet	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105512	BCL 508i ON 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105509	BCL 508i ON 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105518	BCL 508i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	300 … 1,000 mm	0.35 … 0.8 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105515	BCL 508i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	300 … 1,000 mm	0.35 … 0.8 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105524	BCL 508i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50105521	BCL 508i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

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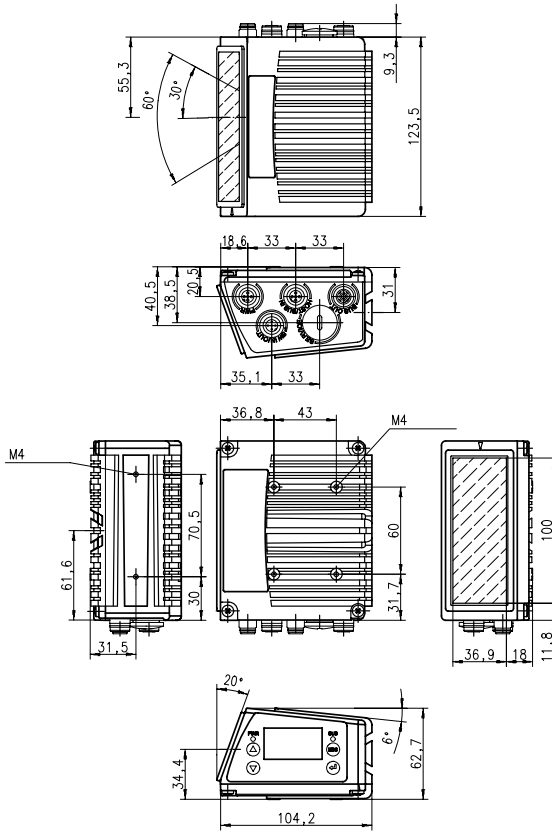
Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50109909	BCL 508i OL 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50109906	BCL 508i OL 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

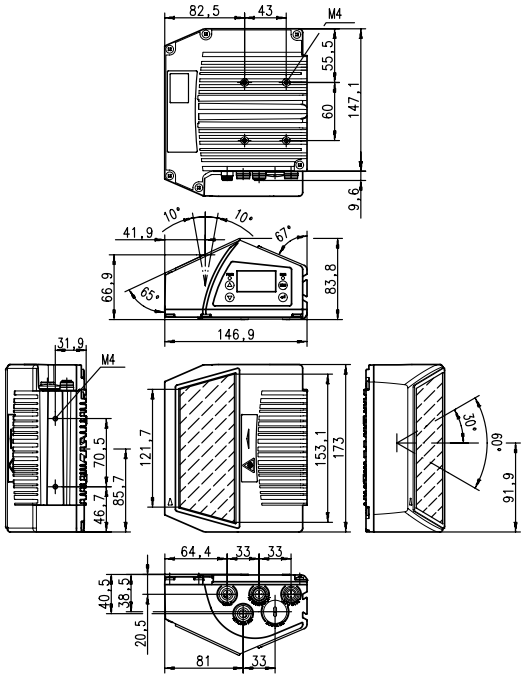
EtherNet IP

50122788	BCL 558i SN 102 H	Line scanner Front	EtherNet IP	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122787	BCL 558i SN 102	Line scanner Front	EtherNet IP	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122786	BCL 558i SM 102 H	Line scanner Front	EtherNet IP	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122785	BCL 558i SM 102	Line scanner Front	EtherNet IP	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122782	BCL 558i SF 102 H	Line scanner Front	EtherNet IP	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122781	BCL 558i SF 102	Line scanner Front	EtherNet IP	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122784	BCL 558i SL 102 H	Line scanner Front	EtherNet IP	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122783	BCL 558i SL 102	Line scanner Front	EtherNet IP	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122780	BCL 558i ON 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	EtherNet IP	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122776	BCL 558i ON 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	EtherNet IP	200 … 650 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122775	BCL 558i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	EtherNet IP	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122773	BCL 558i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	EtherNet IP	300 … 1,000 mm	0.35 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122770	BCL 558i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	EtherNet IP	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122769	BCL 558i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	EtherNet IP	400 … 1,600 mm	0.5 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122772	BCL 558i OL 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	EtherNet IP	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50122771	BCL 558i OL 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	EtherNet IP	1,000 … 2,400 mm	0.7 … 1 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

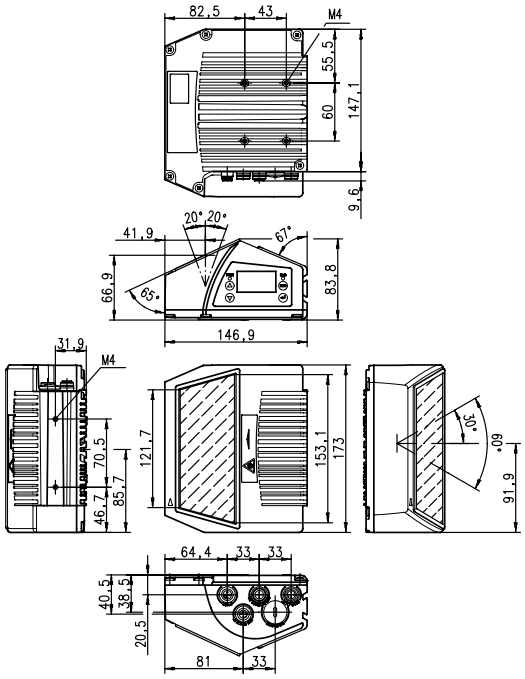
Dimensioned drawings: BCL 500i



BCL 500i bar code readers with front beam exit



BCL 500i bar code readers with deflecting mirror



BCL 500i bar code readers with oscillating mirror

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ACCESSORIES: BCL 500i

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50135248	KS PB-M12-4A-P3-050	Connector, M12, axial, male	5-pin	5,000 mm	PROFIBUS DP	PUR
50135243	KD PB-M12-4A-P3-050	Connector, M12, axial, female	5-pin	5,000 mm	PROFIBUS DP	PUR
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm		PVC

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50130631	KSS ET-M12-4A-M12-4A-P7-010	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	Ethernet	PUR
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR
50137077	KSS ET-M12-4A-M12-4A-P7-020	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50137078	KSS ET-M12-4A-M12-4A-P7-050	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45		5,000 mm	Ethernet	PUR
50137079	KSS ET-M12-4A-M12-4A-P7-100	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50137080	KSS ET-M12-4A-M12-4A-P7-150	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR
50135254	KDS PB-M12-4A-M12-4A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	5,000 mm	PROFIBUS DP	PUR

Further interconnection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins	Interface
50108991	D-ET1	RJ45		Ethernet
50040155	KS 095-4A	Connector, M12, axial, male	4-pin	
50112155	S-M12A-ET	Connector, M12, axial, male	4-pin	Ethernet
50038538	KD 02-5-BA	Connector, M12, axial, female	5-pin	PROFIBUS DP, multiNet Plus
50038537	KD 02-5-SA	Connector, M12, axial, male	5-pin	PROFIBUS DP, multiNet Plus
50020501	KD 095-5A	Connector, M12, axial, female	5-pin	

Further connectors can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50027375	BT 56	Mounting system	Clampable	For 16 mm rod, for 18 mm rod, 20 mm rod	Metal
50111224	BT 59		Clampable	Groove mounting	Metal

Further rod mounts can be found on our website

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/// BCL 600i

The new BCL 600i device family operates with blue laser light and thereby attains a depth of field up to 50 % greater with small modulus widths and eliminates the need for expensive focus adjustment. Furthermore, the integrated fieldbus technology simplifies integration in the control.

Benefits:

- Large reading field with small modulus widths
- No focus adjustment necessary
- Integrated fieldbus connectivity (PROFIBUS, PROFINET, EtherNet TCP/IP, RS 232/422/485 multiNet)
- Configure via GSDML file or WebConfig
- multiScan over PROFINET or Ethernet TCP/IP

Direct access to the online product selector at **www.leuze.com/en/bcl600i**

RS 485

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50132852	BCL 601i SM 102 H	Line scanner Front	RS 485	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50112759	BCL 601i SM 102	Line scanner Front	RS 485	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132854	BCL 601i SF 102	Line scanner Front	RS 485	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50132856	BCL 601i SF 102 H	Line scanner Front	RS 485	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50132853	BCL 601i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50132851	BCL 601i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132857	BCL 601i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50132855	BCL 601i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 485	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

RS 232, RS 422, RS 485

50112757	BCL 600i SM 102	Line scanner Front	RS 232 RS 422 RS 485	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50132845	BCL 600i SM 102 H	Line scanner Front	RS 232 RS 422 RS 485	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50132847	BCL 600i SF 102	Line scanner Front	RS 232 RS 422 RS 485	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50132849	BCL 600i SF 102 H	Line scanner Front	RS 232 RS 422 RS 485	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132844	BCL 600i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50132846	BCL 600i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132848	BCL 600i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50132850	BCL 600i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	RS 232 RS 422 RS 485	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

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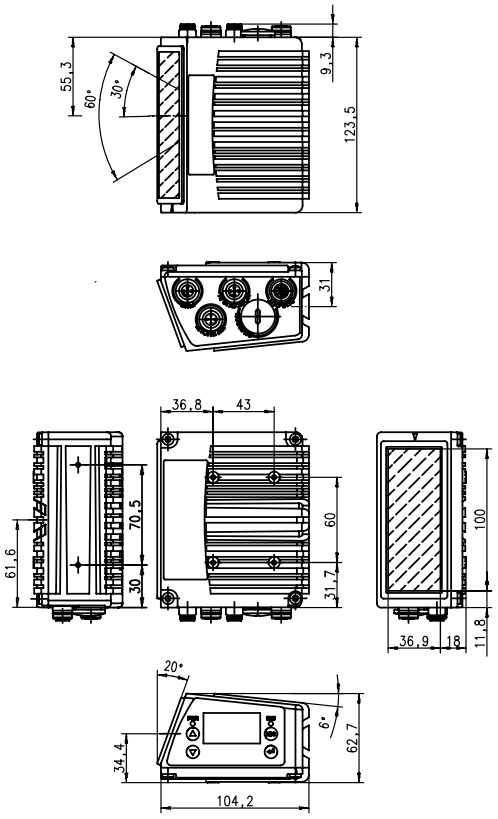
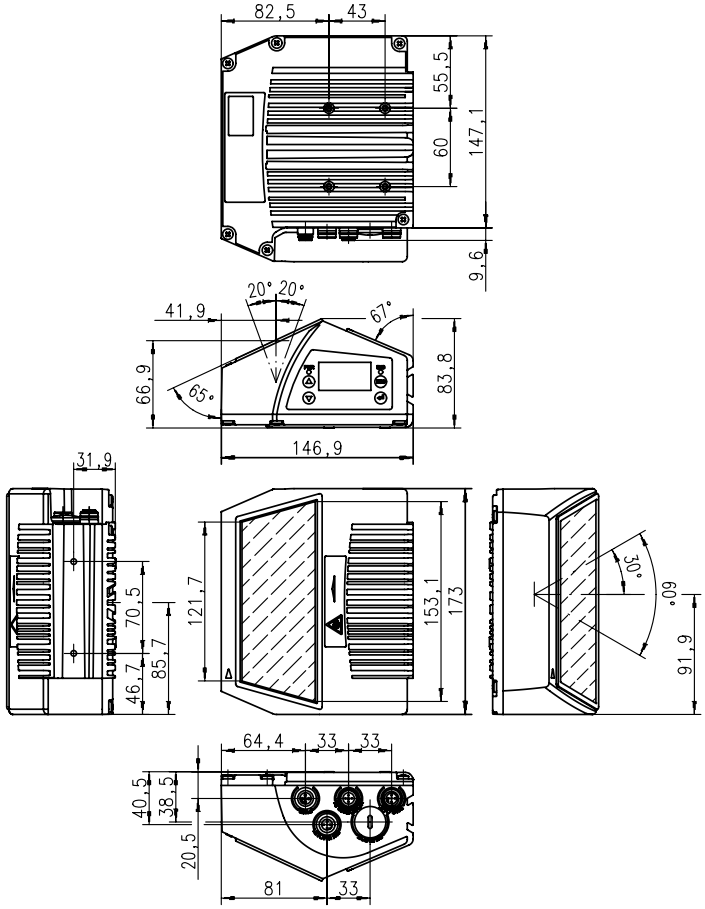
Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
PROFINET							
50126973	BCL 648i SM 102	Line scanner Front	PROFINET	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50134070	BCL 648i SM 102 H	Line scanner Front	PROFINET	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50126975	BCL 648i SF 102	Line scanner Front	PROFINET	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50134069	BCL 648i SF 102 H	Line scanner Front	PROFINET	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50131499	BCL 648i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	Heating Monochromatic graphical display, 128x64 pixel, with background lighting LED
50126974	BCL 648i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50131498	BCL 648i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	Heating LED Monochromatic graphical display, 128x64 pixel, with background lighting
50126976	BCL 648i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFINET	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
PROFIBUS DP							
50129093	BCL 604i SM 102	Line scanner Front	PROFIBUS DP	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132826	BCL 604i SM 102 H	Line scanner Front	PROFIBUS DP	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50129095	BCL 604i SF 102	Line scanner Front	PROFIBUS DP	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132828	BCL 604i SF 102 H	Line scanner Front	PROFIBUS DP	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50129094	BCL 604i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132827	BCL 604i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132829	BCL 604i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50129096	BCL 604i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	PROFIBUS DP	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
Ethernet							
50126969	BCL 608i SM 102	Line scanner Front	Ethernet	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132830	BCL 608i SM 102 H	Line scanner Front	Ethernet	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132832	BCL 608i SF 102 H	Line scanner Front	Ethernet	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50126971	BCL 608i SF 102	Line scanner Front	Ethernet	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132831	BCL 608i OM 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50126970	BCL 608i OM 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	300 … 1,150 mm	0.25 … 0.5 mm	1,000 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting
50132833	BCL 608i OF 100 H	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	Monochromatic graphical display, 128x64 pixels, with background lighting, LED
50126972	BCL 608i OF 100	Oscillating-mirror scanner Zero position at side at angle less than 90 °	Ethernet	450 … 1,450 mm	0.3 … 0.5 mm	800 scans/s	LED Monochromatic graphical display, 128x64 pixel, with background lighting

Dimensioned drawings: BCL 600i



BCL 600i bar code readers with front beam exit



BCL 600i bar code readers with oscillating mirror

ACCESSORIES: BCL 600i

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm		PVC
50135248	KS PB-M12-4A-P3-050	Connector, M12, axial, male	5-pin	5,000 mm	PROFIBUS DP	PUR
50135243	KD PB-M12-4A-P3-050	Connector, M12, axial, female	5-pin	5,000 mm	PROFIBUS DP	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50130631	KSS ET-M12-4A-M12-4A-P7-010	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	Ethernet	PUR
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR
50137077	KSS ET-M12-4A-M12-4A-P7-020	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50137078	KSS ET-M12-4A-M12-4A-P7-050	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45		5,000 mm	Ethernet	PUR
50137079	KSS ET-M12-4A-M12-4A-P7-100	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50137080	KSS ET-M12-4A-M12-4A-P7-150	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR
50135254	KDS PB-M12-4A-M12-4A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	5,000 mm	PROFIBUS DP	PUR

Further interconnection cables can be found on our website

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User-configurable connectors

Part no.	Part description	Connection	No. of pins	Interface
50108991	D-ET1	RJ45		Ethernet
50112155	S-M12A-ET	Connector, M12, axial, male	4-pin	Ethernet
50038538	KD 02-5-BA	Connector, M12, axial, female	5-pin	PROFIBUS DP, multiNet Plus
50038537	KD 02-5-SA	Connector, M12, axial, male	5-pin	PROFIBUS DP, multiNet Plus
50020501	KD 095-5A	Connector, M12, axial, female	5-pin	

Further connectors can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50027375	BT 56	Mounting system	Clampable	For 16 mm rod, for 18 mm rod, 20 mm rod	Metal
50111224	BT 59		Clampable	Groove mounting	Metal

Further rod mounts can be found on our website

/// BCL 900i

High-end bar code readers with 1,000 scans/s, an opening angle of 60 ° and a max. reading range of 1,700 mm for reading 1D-codes with small modulus widths.

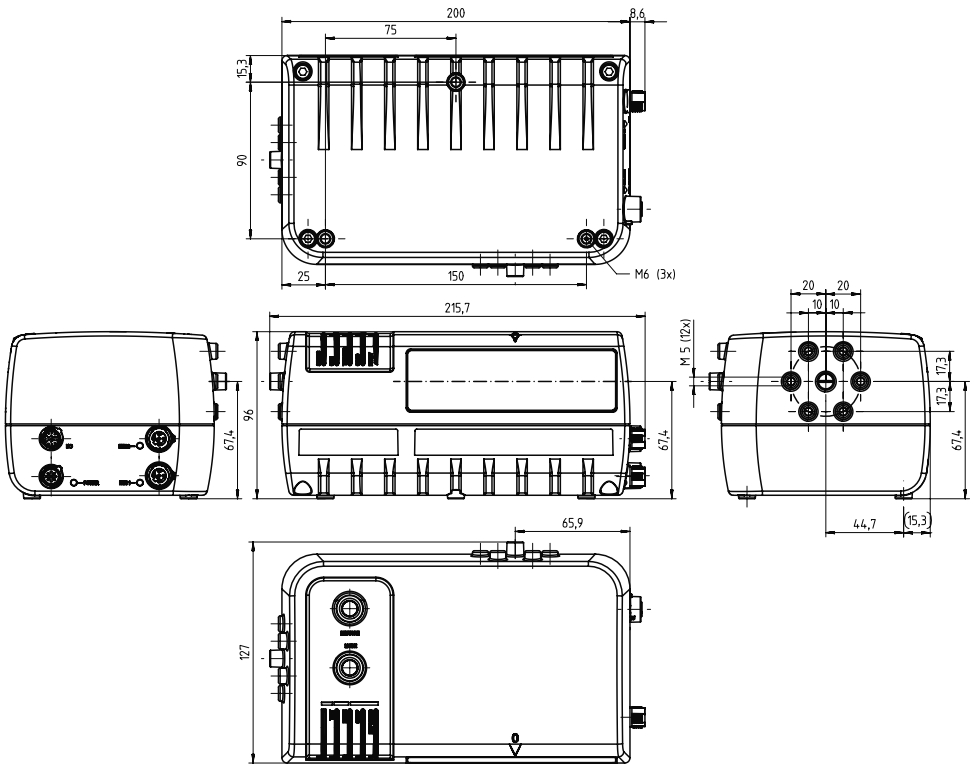
Benefits:

- Integrated interfaces: Ethernet IP, Ethernet TCP/IP, RS 232, RS 422
- No focus switchover
- Configuration and diagnostics via WebConfig
- Integrated switch
- Simple teaching-in of codes using a button

Direct access to the online product selector at **www.leuze.com/en/bcl900i**

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50129661	BCL 900i SN 102	Line scanner, front	EtherNet IP, Ethernet, RS 232, RS 422	525 … 1,500 mm	0.25 … 0.38 mm	1,000 scans/s	LED
50129662	BCL 900i SM 102	Line scanner, front	EtherNet IP, Ethernet, RS 232, RS 422	450 … 1,700 mm	0.33 … 0.5 mm	1,000 scans/s	LED

Dimensioned drawings: BCL 900i



BCL 900i bar code readers

ACCESSORIES: BCL 900i

Connection technology

Connection units

Part no.	Part description	Connection	Interface
50129663	**MA 900**	Sub-D, 25-pin, female	RS 232, RS 422

Further connection units can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length
50135340	**KB 900-500-MA 921-MA200i**	Sub-D, female, axial	25-pin	JST ZHR		500 mm
50131531	**KB 900-1000**	Connector, M12, axial, female	17-pin	Sub-HD, male, axial	25-pin	1,000 mm
50131529	**KB 900-3000**	Connector, M12, axial, female	17-pin	Sub-HD, male, axial	25-pin	3,000 mm
50131532	**KB 900-5000**	Connector, M12, axial, female	17-pin	Sub-HD, male, axial	25-pin	5,000 mm

Further interconnection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50131534	**BT 900**	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

/// CR50 / CR55

As a module for integration or in light aluminum housing. The scanner is very easily configured by means of PC software.

Benefits:

- Available as a module for direct integration or in aluminum housing with a small and light construction
- Ready to read all common codes
- RS 232 and/or USB interface
- Simple configuration with the Sensor Studio PC software tool

Direct access to the online product selector at **www.leuze.com/en/cr50_cr55**

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50126081	**CR50-Starterkit**	Line scanner, front	USB, RS 232	40 … 250 mm	0.1 … 0.5 mm	330 scans/s	Scan engine module, buzzer
50126082	**CR50M2/R2-S5**	Line scanner, front	USB, RS 232	40 … 250 mm	0.1 … 0.5 mm	330 scans/s	Scan engine module, buzzer
50127723	**CR55M2/UB-1800-S6**	Line scanner, front	USB	40 … 250 mm	0.1 … 0.5 mm	330 scans/s	LED
50126080	**CR55M2/R2**	Line scanner, front	RS 232	40 … 250 mm	0.1 … 0.5 mm	330 scans/s	LED
50131582	**CR55M2/R2-150-M12.8**	Line scanner, front	RS 232	40 … 250 mm	0.1 … 0.5 mm	330 scans/s	Scan engine module, LED

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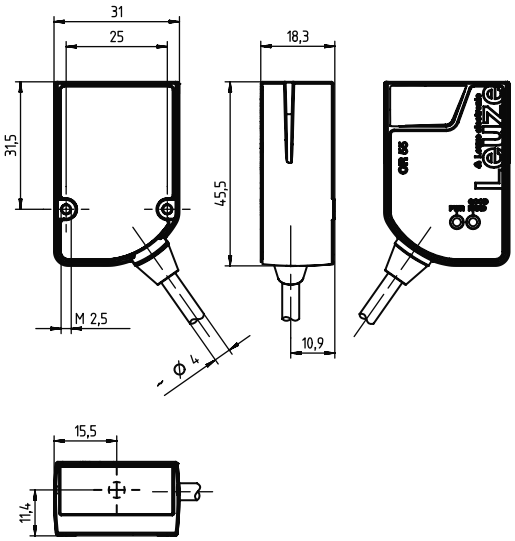
Dimensioned drawings: CR50 / CR55



CR55 bar code reader

/// CR100

With a reading field height of 80 mm and more at short distances, the CR 100 is predestined for readings in analysis automation.

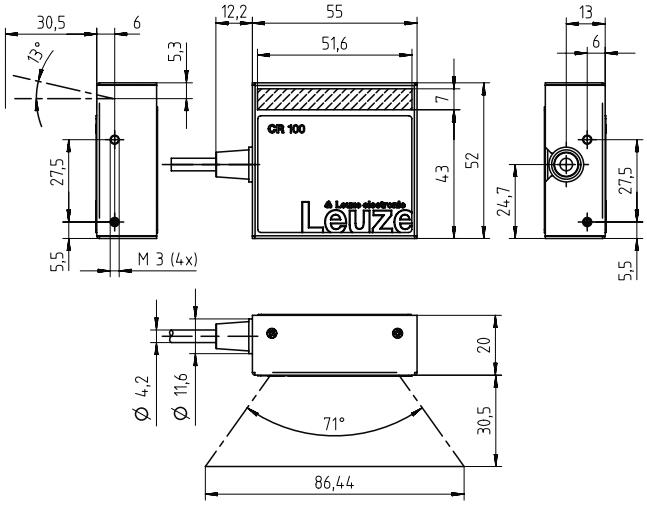
Benefits:

- High-performance CCD scanner with front or lateral beam exit
- Compact design for simple integration, even in constrained spaces
- Scanning rate of 700 scans/s facilitates reliable reading, even while in motion
- Reading of all common codes of modulus sizes 150 … 500 µm at a reading field height of ≥ 80 mm
- Robust metal housing with cable connection
- RS 232 interface, 1 input, 1 switching output
- Desired configuration can be easily configured via online commands

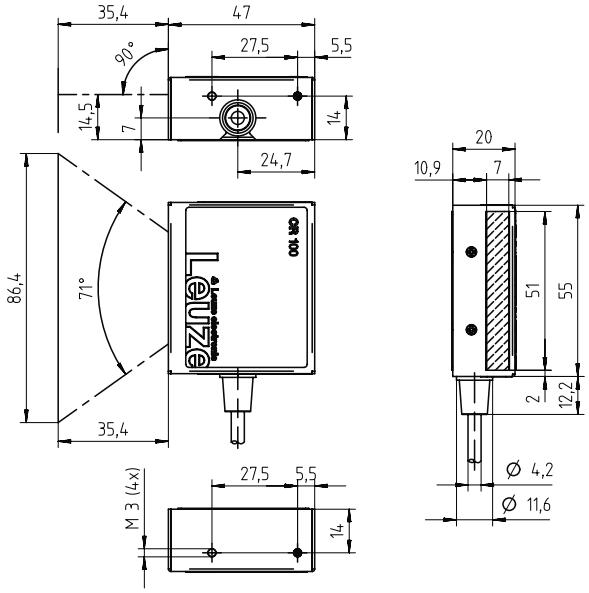
Direct access to the online product selector at **www.leuze.com/en/cr100**

Part no.	Part description	Reading method Light beam exit	Interface	Reading distance	Module size	Scanning rate	Special design Type of display
50127450	CR100M2/R2	Line scanner Front	RS 232	20 … 72 mm	0.15 … 0.5 mm	700 scans/s	LED
50127451	CR100M0/R2	Line scanner with deflecting mirror Lateral	RS 232	15 … 67 mm	0.15 … 0.5 mm	700 scans/s	LED

Dimensioned drawings: CR100



CR100 bar code reader with lateral beam exit



CR100 bar code reader with front beam exit

/// MSPi systems

Reading unaligned bar code labels generally requires two or more bar code scanners that are aligned with respect to one another. The new MSP systems from Leuze electronic are modularly structured and mechanically premounted scanner portals that can read codes omnidirectionally.

Benefits:

- Modular scanner portal for the integration of up to 32 bar code readers of models BCL 500i and BCL 501i for omnidirectional reading
- Object tracking capability based on the BCL 900i
- Full CRT (code reconstruction technology) also detects heavily damaged or soiled codes
- webConfig is an operating-system independent, browser-based configuration tool
- Fast and simple RS 232, RS 422, PROFINET and Ethernet interface connection to the primary host system
- High-quality optics with great depth of field and opening angle, also with heating for use at temperatures down to –35 °C
- Set parameters are stored fail-safe
- Simple commissioning and connection through M12-Ultra-LockTM connection technology

Direct access to the online product selector at **www.leuze.com/en/mspi**

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Part no.	Part description	Interface	Number of bar code readers	Type of bar code reader	Other components
50111412	MSP 290i - 511 F 00	RS 232, RS 422	2x	BCL 500i S F 102, BCL 500i O F 100	
50112415	MSP 290i - 511 L 00	RS 232, RS 422	2x	BCL 500i S L 102, BCL 500i O L 100	
50112416	MSP 290i - 511 M 00	RS 232, RS 422	2x	BCL 500i S M 102, BCL 500i O M 100	
50112417	MSP 290i - 511 N 00	RS 232, RS 422	2x	BCL 500i S N 102, BCL 500i O N 100	
50111413	MSP 290i - 520 F 00	RS 232, RS 422	2x	BCL 500i S F 102	
50132724	MSP 290i - 520 F 88	Ethernet	2x	BCL 508i S F 102	
50132725	MSP 290i - 520 F 4848	PROFINET	2x	BCL 548i S F 102	
50112418	MSP 290i - 520 L 00	RS 232, RS 422	2x	BCL 500i S L 102	
50112419	MSP 290i - 520 M 00	RS 232, RS 422	2x	BCL 500i S M 102	
50130024	MSP 290i - 520 M 88	Ethernet	2x	BCL 508i S M 102	
50112420	MSP 290i - 520 N 00	RS 232, RS 422	2x	BCL 500i S N 102	
50130232	MSP 290i - 620 F 88	Ethernet	2x	BCL 608i S F 102	
50132726	MSP 290i - 620 F 4848	PROFINET	2x	BCL 648i S F 102	
50130821	MSP 290i - 620 M 88	Ethernet	2x	BCL 608i S M 102	
50132799	MSP 290i - 920 M 88	Ethernet, EtherNet IP, PROFIBUS DP, PROFINET, RS 232, RS 422	2x	BCL 900i S M 102	
50132900	MSP 290i - 920 M 88 MSC	Ethernet, EtherNet IP, PROFIBUS DP, PROFINET, RS 232, RS 422	2x	BCL 900i S M 102	1x MSC 900 – 1000 (connection unit)
50132800	MSP 290i - 920 N 88	Ethernet, EtherNet IP, PROFIBUS DP, PROFINET, RS 232, RS 422	2x	BCL 900i S N 102	
50132899	MSP 290i - 920 N 88 MSC	Ethernet, EtherNet IP, PROFIBUS DP, PROFINET, RS 232, RS 422	2x	BCL 900i S N 102	1x MSC 900 – 1000 (connection unit)
50121388	MSP 360i - 530 F 01	RS 232, RS 422	3x	BCL 500i S F 102, BCL 501i S F 102	
50121387	MSP 490i - 540 M 01	RS 232, RS 422	4x	BCL 500i S M 102, BCL 501i S M 102	

Including all mechanical components and interconnection cables, integrated decoder

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Martina Weil,
Customer Care Center

Smart is finding the right product for every application: **www.leuze.com**

//MOBILE BAR CODE READERS

YOU HAVE IT IN YOUR HANDS

Mobile bar code readers can read all common bar codes at various positions in warehousing and logistics omnidirectionally. Depending on the area of application, models with wireless transmission or even combi devices, which can handle 2D-codes as well as RFID, can be chosen.

/// General applications

Mobile bar code readers can read all common bar codes at various positions in warehousing and logistics omnidirectionally. Versions with RF transmission and different reading technologies can be selected according to the specific area of application.

CE

Benefits:

- Various optics models for optimum reading range
- Cable-connected or with Bluetooth for RS 232 or USB interface
- Devices for universal use
- Degree of protection up to IP 42
- Temperature range from 0 to +50 °C

Direct access to the online product selector at **www.leuze.com/en/bar-code-reader_aa**

Part no.	Part description	Reading distance	Bluetooth	Interface	Drop height	Degree of protection	Connection	Ambient temperature, operation
50116864	IT 1300g-2	10 … 460 mm		USB, RS 232	1.5 m	IP 41	RJ41	0 … 50 °C
50130504	IT 1450g 1D-2	37 … 370 mm		USB, RS 232	1.5 m	IP 40	RJ41	0 … 40 °C
50130501	IT 1452g 1D-2	37 … 360 mm	Class 2	PS/2, USB, RS 232	1.5 m	IP 42	Bluetooth	0 … 50 °C
50118358	Z-3110 + KB-USB	0 … 20 mm		PS/2, USB, RS 232		IP 20	USB	0 … 50 °C

ACCESSORIES: IT 1300G

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 2	Cable length	Interface	Sheathing material
50113397	KB JST-HS-300	JST ZHR	Sub-D, male, axial	300 mm	RS 232	PUR
50114521	KB USB-1 IT190x	USB	RJ41	3,000 mm	USB	PVC
50114523	KB USB-2 IT190x	USB	RJ41	5,000 mm	USB	PVC

Further interconnection cables can be found on our website

Power supply units

Part no.	Part description	Type of power supply unit	Output
50114525	NT f. IT 1900+Base-EU	Plug-in power supply unit	5 V DC, 1 A

Further power supply units can be found on our website

Mounting systems

Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50109534	BT Cover IT1300g	Protection hood	Insertable	Suspended (rope)	Plastic
50115358	BT Desktop IT1300g	Table foot	Insertable	Self-supporting	Plastic
50107039	BT Flex Neck IT1300g	Table foot	Insertable	Self-supporting	Plastic
50120444	BT Wallholder HS65x8	Wall mounting	Insertable	Through-hole mounting	Plastic

Further holders can be found on our website

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ACCESSORIES: IT 145XG

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 2	Cable length	Interface	Sheathing material
50113397	KB JST-HS-300	JST ZHR	Sub-D, male, axial	300 mm	RS 232	PUR
50114521	KB USB-1 IT190x	USB	RJ41	3,000 mm	USB	PVC
50114523	KB USB-2 IT190x	USB	RJ41	5,000 mm	USB	PVC

Further interconnection cables can be found on our website

Base stations

Part no.	Part description	Interface	Connection 1	Connection 2	Connection 3
50130499	Base IT 1452g	PS/2, RS 232, USB	RJ41	Jack socket	Bluetooth

Further base stations can be found on our website

Power supply units

Part no.	Part description	Type of power supply unit	Output
50114525	NT f. IT 1900+Base-EU	Plug-in power supply unit	5 V DC, 1 A

Further power supply units can be found on our website

Mounting systems

Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50120444	BT Wallholder HS65x8	Wall mounting	Insertable	Through-hole mounting	Plastic

Further holders can be found on our website

ACCESSORIES: Z SERIES

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 2	Cable length	Interface	Sheathing material
50113397	KB JST-HS-300	JST ZHR	Sub-D, male, axial	300 mm	RS 232	PUR

Further interconnection cables can be found on our website

/// Industrial applications

In the case of devices from this series which read 1D-codes, special attention is paid to the sturdy housing design. Depending on the desired application, you select the suitable range and equipment e.g. RF transmission and battery operation.

Benefits:

- Various optics models for optimum reading range
- Cable-connected or with Bluetooth for RS 232 or USB interface
- Devices for robust or rough areas of application
- Degree of protection up to IP 65
- Temperature range from –30 to +50 °C

Direct access to the online product selector at **www.leuze.com/en/bar-code-reader_ia**

Part no.	Part description	Reading distance	Bluetooth	Interface	Drop height	Degree of protection	Connection	Ambient temperature, operation
50127898	IT 1280i FR-3	100 … 4,460 mm		PS/2, USB, RS 232	2 m	IP 65	RJ41	–30 … 50 °C
50106238	IT 3800 i SR030E	17 … 2,080 mm		RS 232	2 m	IP 54	RJ41	–30 … 50 °C
50106240	IT 3800 i SR050E	17 … 2,080 mm		PS/2, USB, RS 232	2 m	IP 54	RJ41	–30 … 50 °C
50106242	IT 3820 SR0C0BE	25 … 914 mm	Class 2	PS/2, USB, RS 232	1.8 m	IP 41	Bluetooth	0 … 50 °C
50110471	IT 3820i SRE	25 … 914 mm	Class 2	PS/2, USB, RS 232	2 m	IP 54	Bluetooth	–10 … 50 °C

ACCESSORIES: IT 128XI

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 2	Cable length	Interface	Sheathing material
50114521	KB USB-1 IT190x	USB	RJ41	3,000 mm	USB	PVC
50114523	KB USB-2 IT190x	USB	RJ41	5,000 mm	USB	PVC

Further interconnection cables can be found on our website

Power supply units

Part no.	Part description	Type of power supply unit	Output
50114525	NT f. IT 1900+Base-EU	Plug-in power supply unit	5 V DC, 1 A

Further power supply units can be found on our website

Mounting systems

Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50107034	BT Rope IT		Insertable	Suspended (rope)	Plastic
50120444	BT Wallholder HS65x8	Wall mounting	Insertable	Through-hole mounting	Plastic

Further holders can be found on our website

ACCESSORIES: IT 38XX

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Cable length	Interface	Sheathing material
50103412	KB RS232/PIN9 IT4xxx	Sub-D, female, axial	9-pin	RJ41	2,300 mm	RS 232	PVC
50113397	KB JST-HS-300	JST ZHR		Sub-D, male, axial	300 mm	RS 232	PUR
50104586	KB TTL-RS232/PIN9 IT4xxx	Sub-D, female, axial	9-pin	RJ41	2,300 mm	RS 232, TTL	PVC
50103404	KB USB IT4xxx	USB		RJ41	2,600 mm	USB	PVC

Further interconnection cables can be found on our website

Base stations

Part no.	Part description	Interface	Connection 1	Connection 2	Connection 3	Drop height
50115738	Access Point f. IT	PS/2, USB, RS 232	Bluetooth	RJ41		
50110663	ST 2020-5BE	RS 232, USB, PS/2	Jack socket	RJ41	Bluetooth	1 m

Further base stations can be found on our website

Power supply units

Part no.	Part description	Type of power supply unit	Output
50103989	NT IT4x2x/ST2020	Desktop power supply unit	9 V DC, 2 A
50103403	NT ITxx0x	Desktop power supply unit	5 V DC, 1 A

Further power supply units can be found on our website

Mounting systems

Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50103402	BT Flex Neck IT 4xxx	Table foot	Insertable	Self-supporting	Plastic
50120444	BT Wallholder HS65x8	Wall mounting	Insertable	Through-hole mounting	Plastic

Further holders can be found on our website

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/ 2D-CODE IDENTIFICATION

RELIABLE SOLUTIONS FOR READING CODES

Two-dimensional codes mostly consist of square-shaped groups of data cells (matrix) with a typical orientation symbol from which the code type can be recognized. Thus, 2D-identification is ideally suited for additional applications, such as parts tracking, in which codes are directly affixed to the work piece.

Stationary 2D-code readers Page 430

Mobile 2D-code readers Page 439

//STATIONARY 2D-CODE READERS

FOR STATIONARY USE – BUT STILL HIGHLY DYNAMIC READERS

Our code readers capture 1D- and 2D-codes without fail; depending on the type, printed to directly marked, omnidirectional, static or in fast motion, inverse or mirrored codes. You also benefit from the reference code comparison. Whether small, robust, IP 67/69K, extremely fast or high-end functions, you'll find the optimum solution with us.

/// DCR 200i

The DCR 200i is a small, camera-based 1D and 2D code reader. Thanks to its simple and intuitive operation and configuration, the product can be integrated in different applications extremely quickly. It can be configured either via a web-based software tool with simple installation wizard and menu selection or directly on the device. Additionally, configuration via configuration codes can be carried out via smartphone app. Optics models are available for larger operating ranges or miniature codes. For fieldbus integration, standard interfaces such as PROFINET or Ethernet TCP/IP are provided. The stainless steel housing model with degree of protection IP 67/IP 69K meets the highest requirements regarding resistance against cleaning agents.

Benefits:

- Setup wizard intuitively guides you through the basic settings to speed up commissioning and avoid errors
- Stainless steel model with IP 67/IP 69K
- Configuration via a smartphone app
- Integrated Ethernet, PROFINET, RS 232/422 interfaces
- High reading performance through powerful LED illumination
- Three optics models cover reading distances from approx. 40 … 360 mm
- With its modular design, the DCR 200i can be flexibly adapted to the respective requirements

Direct access to the online product selector at **www.leuze.com/en/dcr200i**

Part no.	Part description	Reading distance	Resolution, horizontal Resolution, vertical	Module size	Optics cover	Light source	Interface	Degree of protection	Special design Type of display
50128784	DCR 202i FIX-F1-102-R3	70 … 360 mm	1,280 px 960 px	0.19 … 0.5 mm	Plastic	LED, red	Ethernet, RS 232, RS 422	IP 65	LED
50128787	DCR 202i FIX-F1-102-R3-G	70 … 360 mm	1,280 px 960 px	0.19 … 0.5 mm	Glass	LED, red	Ethernet, RS 232, RS 422	IP 65	LED
50134101	DCR 202i FIX-F1-102-R3-G-V	70 … 360 mm	1,280 px 960 px	0.19 … 0.5 mm	Glass	LED, red	Ethernet, RS 232, RS 422	IP 67, IP 69K	LED
50128790	DCR 202i FIX-F1-102-R3-P	70 … 360 mm	1,280 px 960 px	0.19 … 0.5 mm	Glass with polarization filter	LED, red	Ethernet, RS 232, RS 422	IP 65	Polarization filter LED
50134098	DCR 202i FIX-F1-102-R3-V	70 … 360 mm	1,280 px 960 px	0.19 … 0.5 mm	Plastic	LED, red	Ethernet, RS 232, RS 422	IP 67, IP 69K	LED
50137570	DCR 202i FIX-L1-102-R3	50 … 800 mm	1,280 px 960 px	0.35 … 1 mm	Plastic	LED, red	Ethernet, RS 232, RS 422	IP 65	LED
50137571	DCR 202i FIX-L1-102-R3-G	50 … 800 mm	1,280 px 960 px	0.35 … 1 mm	Glass	LED, red	Ethernet, RS 232, RS 422	IP 65	LED
50128783	DCR 202i FIX-M1-102-R3	50 … 220 mm	1,280 px 960 px	0.19 … 0.5 mm	Plastic	LED, red	Ethernet, RS 232, RS 422	IP 65	LED
50128786	DCR 202i FIX-M1-102-R3-G	50 … 220 mm	1,280 px 960 px	0.19 … 0.5 mm	Glass	LED, red	Ethernet, RS 232, RS 422	IP 65	LED
50134100	DCR 202i FIX-M1-102-R3-G-V	50 … 220 mm	1,280 px 960 px	0.19 … 0.5 mm	Glass	LED, red	Ethernet, RS 232, RS 422	IP 67, IP 69K	LED
50128789	DCR 202i FIX-M1-102-R3-P	50 … 220 mm	1,280 px 960 px	0.19 … 0.5 mm	Glass with polarization filter	LED, red	Ethernet, RS 232, RS 422	IP 65	Polarization filter LED
50134097	DCR 202i FIX-M1-102-R3-V	50 … 220 mm	1,280 px 960 px	0.19 … 0.5 mm	Plastic	LED, red	Ethernet, RS 232, RS 422	IP 67, IP 69K	LED
50128782	DCR 202i FIX-N1-102-R3	40 … 120 mm	1,280 px 960 px	0.127 … 0.5 mm	Plastic	LED, red	Ethernet, RS 232, RS 422	IP 65	LED
50128785	DCR 202i FIX-N1-102-R3-G	40 … 120 mm	1,280 px 960 px	0.127 … 0.5 mm	Glass	LED, red	Ethernet, RS 232, RS 422	IP 65	LED
50134099	DCR 202i FIX-N1-102-R3-G-V	40 … 120 mm	1,280 px 960 px	0.127 … 0.5 mm	Glass	LED, red	Ethernet, RS 232, RS 422	IP 67, IP 69K	LED
50128788	DCR 202i FIX-N1-102-R3-P	40 … 120 mm	1,280 px 960 px	0.127 … 0.5 mm	Glass with polarization filter	LED, red	Ethernet, RS 232, RS 422	IP 65	Polarization filter LED
50134096	DCR 202i FIX-N1-102-R3-V	40 … 120 mm	1,280 px 960 px	0.127 … 0.5 mm	Plastic	LED, red	Ethernet, RS 232, RS 422	IP 67, IP 69K	LED
50137574	DCR 202i FIX-U2-102-R3	40 … 75 mm	1,280 px 960 px	0.1 … 0.25 mm	Plastic	LED, red	Ethernet, RS 232, RS 422	IP 65	LED

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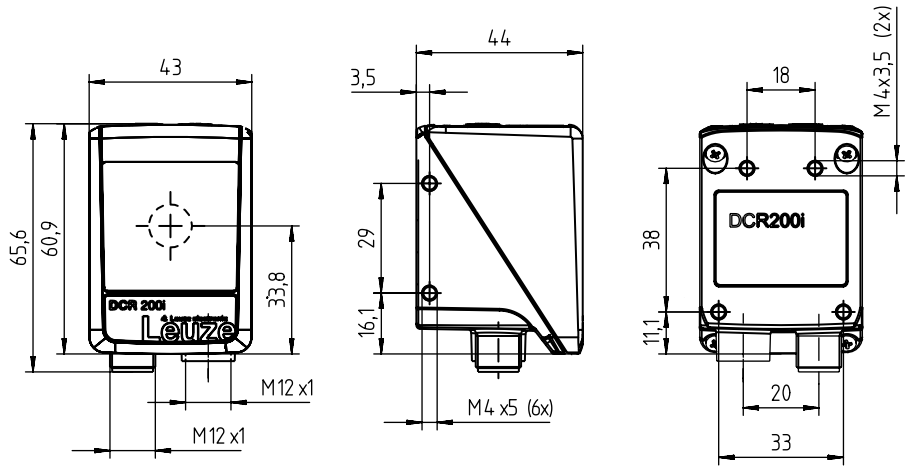
Part no.	Part description	Reading distance	Resolution, horizontal Resolution, vertical	Module size	Optics cover	Light source	Interface	Degree of protection	Special design Type of display
50134528	DCR 248i FIX-F2-102-R3	70 ... 360 mm	1,280 px 960 px	0.19 ... 0.5 mm	Plastic	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	LED
50134531	DCR 248i FIX-F2-102-R3-G	70 ... 360 mm	1,280 px 960 px	0.19 ... 0.5 mm	Glass	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	LED
50134535	DCR 248i FIX-F2-102-R3-P	70 ... 360 mm	1,280 px 960 px	0.19 ... 0.5 mm	Glass with polarization filter	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	Polarization filter LED
50137572	DCR 248i FIX-L1-102-R3	50 ... 800 mm	1,280 px 960 px	0.35 ... 1 mm	Plastic	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	LED
50137573	DCR 248i FIX-L1-102-R3-G	50 ... 800 mm	1,280 px 960 px	0.35 ... 1 mm	Glass	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	LED
50134527	DCR 248i FIX-M1-102-R3	50 ... 220 mm	1,280 px 960 px	0.19 ... 0.5 mm	Plastic	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	LED
50134530	DCR 248i FIX-M1-102-R3-G	50 ... 220 mm	1,280 px 960 px	0.19 ... 0.5 mm	Glass	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	LED
50134534	DCR 248i FIX-M1-102-R3-P	50 ... 220 mm	1,280 px 960 px	0.19 ... 0.5 mm	Glass with polarization filter	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	Polarization filter LED
50134526	DCR 248i FIX-N1-102-R3	40 ... 120 mm	1,280 px 960 px	0.127 ... 0.5 mm	Plastic	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	LED
50134529	DCR 248i FIX-N1-102-R3-G	40 ... 120 mm	1,280 px 960 px	0.127 ... 0.5 mm	Glass	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	LED
50134533	DCR 248i FIX-N1-102-R3-P	40 ... 120 mm	1,280 px 960 px	0.127 ... 0.5 mm	Glass with polarization filter	LED, red	Ethernet, PROFINET, RS 232, RS 422	IP 65	Polarization filter LED

Dimensioned drawings: DCR 200i



DCR 202i stationary 2D-code reader

ACCESSORIES: DCR 200i

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50134943	KD S-M12-CW-P1-050	Connector, M12, angled, female	12-pin	5,000 mm	PUR
50130281	KD S-M12-CA-P1-020	Connector, M12, axial, female	12-pin	2,000 mm	PUR
50130282	KD S-M12-CA-P1-050	Connector, M12, axial, female	12-pin	5,000 mm	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Sheathing material
50130284	KDS S-M12-CA-M12-CA-P1-020	Connector, M12, axial, female	12-pin	Connector, M12, axial, male	12-pin	2,000 mm	PUR
50130285	KDS S-M12-CA-M12-CA-P1-050	Connector, M12, axial, female	12-pin	Connector, M12, axial, male	12-pin	5,000 mm	PUR

Further interconnection cables can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50132150	BTU 320M-D12	Mounting system	Screw type	For 12 mm rod	Metal

Further rod mounts can be found on our website

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50132151	BT 320M	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

/// LSIS 220

The LSIS 220, with its optimized optics and resolution, offers large function reserves for reliable code reading, even while in motion. It quickly and reliably detects bar codes, stacked codes and 2D-codes.

Benefits:

- Improved optics for larger read field and in-focus detection all the way to the edge areas, optimized resolution of 844x640 pixels for fast code reading
- Detection of 2D-codes, stacked codes and bar codes
- RS 232 or USB interface
- Switching input (trigger)
- Trigger button for manual activation and configuration
- Construction without mechanically moved parts, robust metal housing with glass window and degree of protection IP 65 make the devices very well suited for industrial use
- Extremely small construction size, also for installation under difficult conditions

Direct access to the online product selector at **www.leuze.com/en/lsis220**

Part no.	Part description	Reading distance	Resolution, horizontal Resolution, vertical	Module size	Optics cover	Interface	Degree of protection	Special design Type of display
50117536	LSIS 222 M5M-R1	50 … 330 mm	844 px 640 px	0.127 … 1 mm	Glass	RS 232	IP 65	LED
50117534	LSIS 223 M5M-R1	50 … 330 mm	844 px 640 px	0.127 … 1 mm	Glass	USB	IP 65	LED

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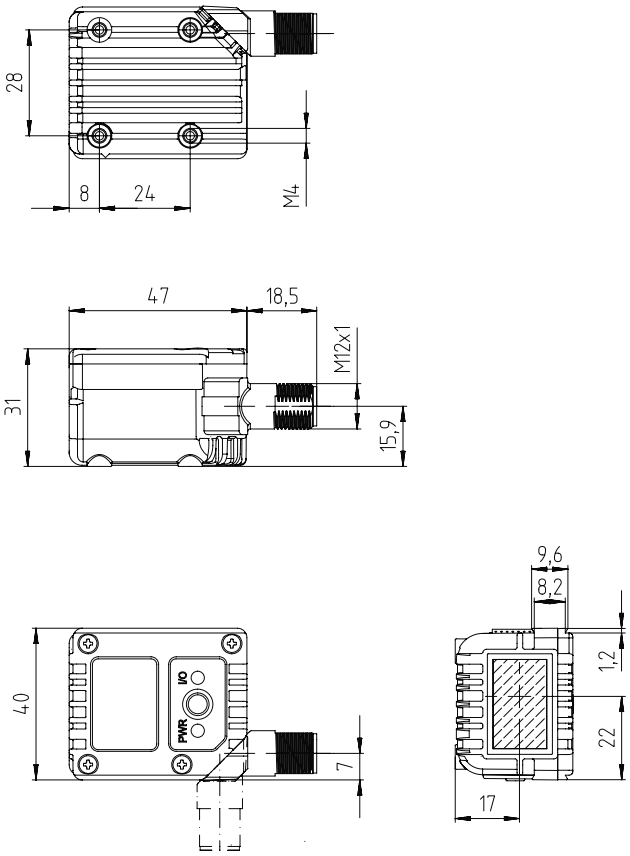
Dimensioned drawings: LSIS 220



LSIS 22x stationary 2D-code reader

ACCESSORIES: LSIS 22X

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50135145	KDS S-M12-8A-M12-8A-P1-020	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	8-pin	2,000 mm		PUR
50111225	KB JST-M12A-8P-3000	Connector, M12, axial, female	8-pin	JST ZHR		3,000 mm	RS 232	PUR
50111227	KB M12A-8P-USB-3000	Connector, M12, axial, female	8-pin	USB		3,000 mm	USB	PUR

Further interconnection cables can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117253	BTU 300M-D10	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117252	BTU 300M-D12	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117251	BTU 300M-D14	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

/// LSIS 422

This device combines innovative camera technology and decades of know-how from 1D-code reading. It functions omnidirectionally, with fast motion and even with low contrast.

Benefits:

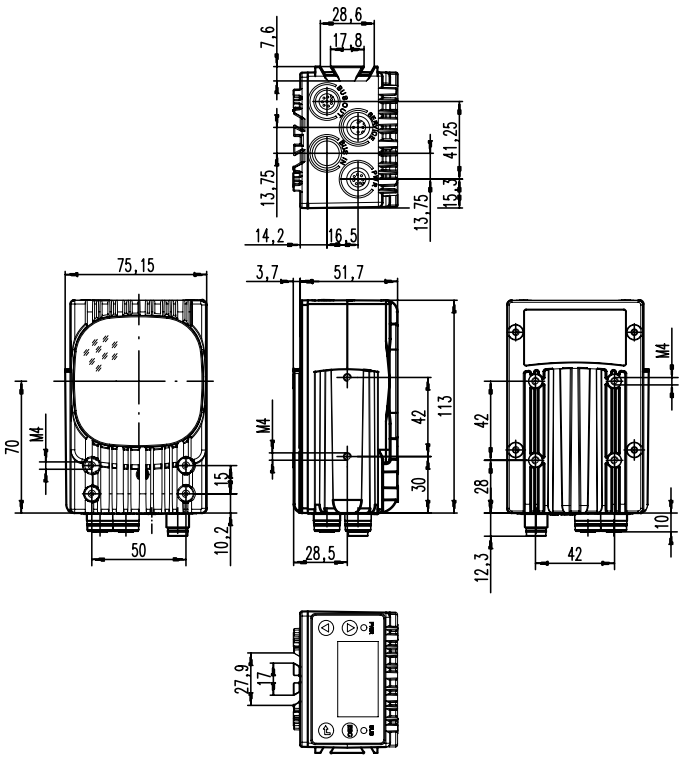
- Optimized camera resolution of 752x480 pixels for fast identification, even of low-contrast codes
- CMOS code reader for 1D- and 2D-codes with high resolution
- External triggering
- Multiple code reading
- Omnidirectional reading
- Motor-driven focus adjustment
- Construction with integrated illumination for industrial use
- Indicator for completed read operations

Direct access to the online product selector at **www.leuze.com/en/lsis422i**

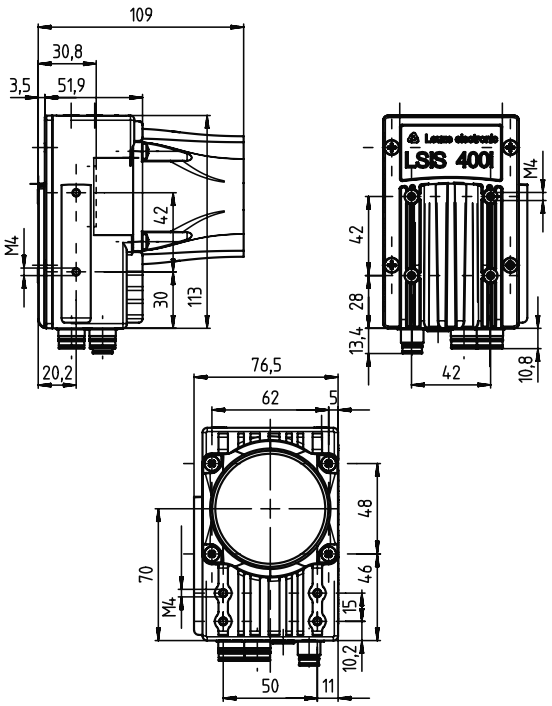
Part no.	Part description	Focal length	Resolution, horizontal Resolution, vertical	Optics cover	Light source	Interface	Degree of protection	Special design Type of display
50116978	LSIS 422i M43-I1	8 mm	752 px, 480 px	Glass	LED, infrared	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50116977	LSIS 422i M43-I1-01	8 mm	752 px, 480 px	Plastic	LED, infrared	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50116980	LSIS 422i M43-M1	8 mm	752 px, 480 px	Glass	LED, RGB	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50116979	LSIS 422i M43-M1-01	8 mm	752 px, 480 px	Plastic	LED, RGB	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50108178	LSIS 422i M43-W1	8 mm	752 px, 480 px	Glass	LED, white	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50113055	LSIS 422i M43-W1-01	8 mm	752 px, 480 px	Plastic	LED, white	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50116982	LSIS 422i M45-I1	16 mm	752 px, 480 px	Glass	LED, infrared	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50116981	LSIS 422i M45-I1-01	16 mm	752 px, 480 px	Plastic	LED, infrared	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50116984	LSIS 422i M45-M1	16 mm	752 px, 480 px	Glass	LED, RGB	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50116983	LSIS 422i M45-M1-01	16 mm	752 px, 480 px	Plastic	LED, RGB	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50109829	LSIS 422i M45-W1	16 mm	752 px, 480 px	Glass	LED, white	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50113054	LSIS 422i M45-W1-01	16 mm	752 px, 480 px	Plastic	LED, white	Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel
50117093	LSIS 422i M49-X9		752 px, 480 px	Glass		Ethernet, RS 232	IP 65, IP 67	LED, monochromatic graphical display, 128x64 pixel

With the LSIS 4xxi...X9, the focal length depends on the used lens
Detailed information can be found online on www.leuze.com/en/lsis422i

Dimensioned drawings: LSIS 422i



LSIS 422 stationary 2D-code reader



LSIS 422 stationary 2D-code reader, C-Mount

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ACCESSORIES: LSIS 422i

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50135139	KS S-M12-8A-P1-050	Connector, M12, axial, male	8-pin	5,000 mm	PUR
50135122	KD U-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50130631	KSS ET-M12-4A-M12-4A-P7-010	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	Ethernet	PUR
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR
50137077	KSS ET-M12-4A-M12-4A-P7-020	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50137078	KSS ET-M12-4A-M12-4A-P7-050	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50137079	KSS ET-M12-4A-M12-4A-P7-100	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50137080	KSS ET-M12-4A-M12-4A-P7-150	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR

Further interconnection cables can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50027375	BT 56	Mounting system	Clampable	For 16 mm rod, for 18 mm rod, 20 mm rod	Metal

Further rod mounts can be found on our website

/// DCR 40

Very small and light scan engine with integrated decoder for all common 1D and 2D codes. Data transmission via a configurable RS 232 interface.

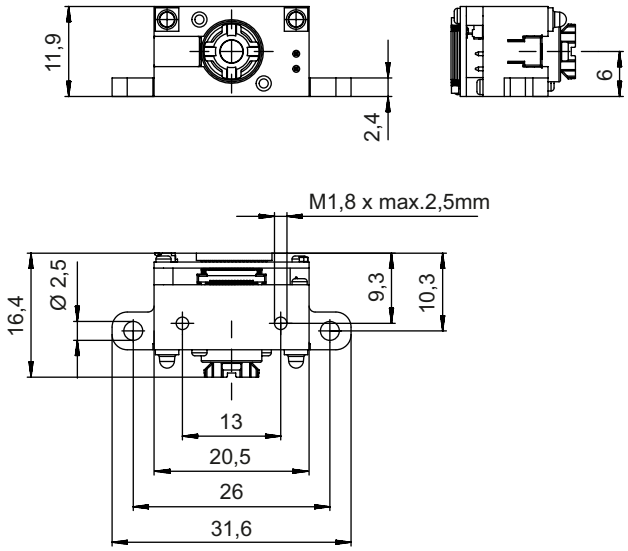
Benefits:

- CMOS Imager Scan Engine for all common 1D and 2D codes
- Excellent reading and decoding characteristics
- Very small construction that can be integrated
- Integrated decoder
- RS 232 interface
- Operating temperature from 0 °C to +50 °C

Direct access to the online product selector at **www.leuze.com/en/dcr40**

Part no.	Part description	Reading distance	Resolution, horizontal Resolution, vertical	Module size	Interface	Special design Type of display
50134999	DCR40M2/R2	30 … 425 mm	1,280 px 960 px	0.127 … 0.528 mm	RS 232	Scan engine module buzzer LED
50136738	DCR40M2/R2-MTX	30 … 425 mm	1,280 px 960 px	0.127 … 0.528 mm	RS 232	Scan engine module buzzer LED

Dimensioned drawings: DCR 40



DCR 40 stationary 2D-code reader

ACCESSORIES: DCR 40

Connection technology

Adapter

Part no.	Part description	Description	Connection 1	Connection 2
50136748	DCR40-IFK	Interface kit for operating the DCR 40 on the MA-CR	Molex connector	Molex connector

Further connection cables can be found on our website

Commissioning

Start-up/diagnosis

Part no.	Part description	Description
50128204	MA-CR	Adapter circuit board for laboratory and test purposes

Further rod mounts can be found on our website

/// DCR 50

Compact code reader as module or in aluminum housing. CMOS imager and integrated decoder for all commonly used 1D and 2D codes. RS 232 or USB interface, one trigger input, one switching output, degree of protection IP 54.

Benefits:

- Very small construction
- Ready to read all common codes
- RS 232 or USB interface
- Simple configuration with the Sensor Studio PC software

Direct access to the online product selector at **www.leuze.com/en/dcr50**

Part no.	Part description	Reading distance	Resolution, horizontal Resolution, vertical	Module size	Interface	Special design Type of display
50135000	DCR50M2/R2	30 … 425 mm	1,280 px 960 px	0.127 … 0.528 mm	RS 232	Scan engine module buzzer LED

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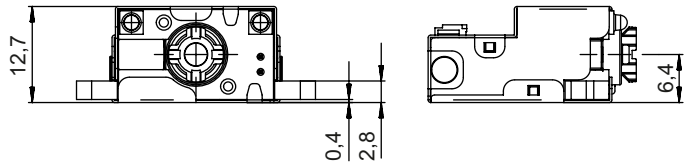
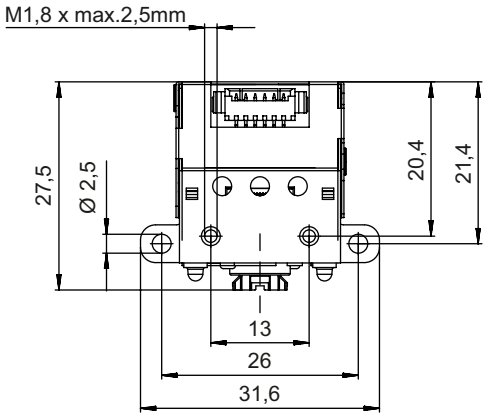
Dimensioned drawings: DCR 50





DCR 50 stationary 2D-code reader

ACCESSORIES: DCR 50

Commissioning

Start-up/diagnosis

Part no.	Part description	Description
50128204	MA-CR	Adapter circuit board for laboratory and test purposes

Further rod mounts can be found on our website

/// DCR 80 / DCR 85

Available as a module or in light aluminum housing. Data transmission via a configurable RS 232 interface.

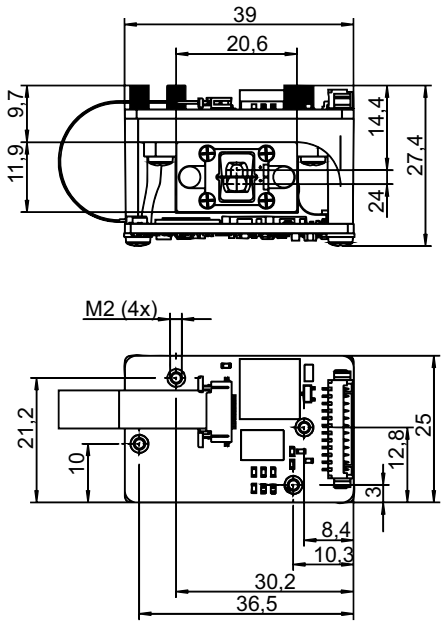
Benefits:

- Very small construction
- Ready to read all common codes
- RS 232 interface
- Simple configuration with the Sensor Studio PC software

Direct access to the online product selector at **www.leuze.com/en/dcr80_dcr85**

Part no.	Part description	Reading distance	Resolution, horizontal Resolution, vertical	Module size	Optics cover	Interface	Special design Type of display
50129208	DCR80M2/R2-S5	20 ... 300 mm	1,280 px 960 px	0.076 ... 0.5 mm		RS 232	Scan engine module buzzer LED
50131458	DCR85M2/R2	20 ... 300 mm	1,280 px 960 px	0.076 ... 0.5 mm	Plastic	RS 232	LED
50131581	DCR85M2/R2-150-M12.8	20 ... 300 mm	1,280 px 960 px	0.076 ... 0.5 mm	Plastic	RS 232	LED

Dimensioned drawings: DCR 80 / DCR 85



DCR 80 stationary 2D-code reader

ACCESSORIES: DCR 80 / DCR 85

Commissioning

Start-up/diagnosis

Part no.	Part description	Description
50128204	MA-CR	Adapter circuit board for laboratory and test purposes

Further rod mounts can be found on our website

SMART IS TO THINK **EASY**

Easy handling, mounting and alignment, uncomplicated integration in fieldbus systems and fast configuration.

Discover our product innovations!

Direct access to our product innovations: **www.leuze.com/en/innovations**

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//MOBILE 2D-CODE READERS

FLEXIBLE AND PRECISE WITH ONE HAND

In addition to 2D-codes, all mobile code readers from Leuze electronic also read bar codes and can, thus, be used very flexibly. Even with low contrast and on surfaces such as metal or plastic, the high-quality reading technology functions absolutely reliably. Available as interfaces are RS 232, PS2, USB and Bluetooth.

/// General applications

In addition to 2D-codes, all mobile code readers from Leuze electronic also read bar codes (1D-codes) and are therefore extremely flexible and versatile. Typical interfaces are RS 232 or USB, and Bluetooth as the wireless interface.

Benefits:

- Various optics models for optimum reading range
- Cable-connected or with Bluetooth for RS 232 or USB interface
- Devices for universal use
- Degree of protection up to IP 41
- Temperature range from 0 to +50 °C

Direct access to the online product selector at **www.leuze.com/en/2D-code-reader_aa**

Part no.	Part description	Reading distance	Bluetooth	Interface	Drop height	Degree of protection	Connection	Ambient temperature, operation
50114504	IT 1900g ER-2	25 … 596 mm		PS/2, USB, RS 232	1.8 m	IP 41	RJ41	0 … 50 °C
50114507	IT 1900g HD-2	0 … 233 mm		PS/2, USB, RS 232	1.8 m	IP 41	RJ41	0 … 50 °C
50114509	IT 1900g SR-2	10 … 584 mm		PS/2, USB, RS 232	1.8 m	IP 41	RJ41	0 … 50 °C
50114511	IT 1902g ER-2	25 … 596 mm	Class 2	PS/2, USB, RS 232	1.8 m	IP 41	Bluetooth	0 … 50 °C
50114513	IT 1902g HD-2	0 … 233 mm	Class 2	PS/2, USB, RS 232	1.8 m	IP 41	Bluetooth	0 … 50 °C
50114515	IT 1902g SR-2	10 … 584 mm	Class 2	PS/2, USB, RS 232	1.8 m	IP 41	Bluetooth	0 … 50 °C

ACCESSORIES: IT 190X

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 2	Cable length	Interface	Sheathing material
50113397	KB JST-HS-300	JST ZHR	Sub-D, male, axial	300 mm	RS 232	PUR
50114521	KB USB-1 IT190x	USB	RJ41	3,000 mm	USB	PVC
50114523	KB USB-2 IT190x	USB	RJ41	5,000 mm	USB	PVC

Further interconnection cables can be found on our website

Base station for IT 1902

Part no.	Part description	Connection 1	Connection 2	Connection 3
50115738	Access Point f. IT	Bluetooth	RJ41	
50114492	Base f. IT 1902	RJ41	Jack socket	Bluetooth

Further base stations can be found on our website

Power supply units

Part no.	Part description	Type of power supply unit	Output
50114525	NT f. IT 1900+Base-EU	Plug-in power supply unit	5 V DC, 1 A

Further power supply units can be found on our website

Mounting systems

Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50114498	BT Holder IT 190x	Table foot	Insertable	Self-supporting	Plastic
50115739	BT Wallholder IT190x	Wall mounting	Insertable	Mounting thread	Plastic

Further holders can be found on our website

/// Industrial applications

Even with low contrast and on surfaces such as metal or plastic, the high-quality reading technology functions absolutely reliably. Due to their enormous depth of field, the autofocus versions in particular provide an extremely high degree of flexibility with regard to their application.

Benefits:

- Various optics models for optimum reading range
- Cable-connected or with Bluetooth for RS 232 or USB interface
- Devices for robust or rough areas of application
- Degree of protection up to IP 65
- Temperature range from –30 to +50 °C

Direct access to the online product selector at **www.leuze.com/en/2D-code-reader_ia**

Part no.	Part description	Reading distance	Bluetooth	Interface	Drop height	Degree of protection	Connection	Ambient temperature, operation
50122436	IT 1910i ER-3	25 … 596 mm		PS/2, USB, RS 232	2 m	IP 65	RJ41	–30 … 50 °C
50122434	IT 1911i ER-3	25 … 596 mm	Class 1	PS/2, USB, RS 232	2 m	IP 65	Bluetooth	–20 … 50 °C
50130497	IT 1980i FR-3	10 … 16,000 mm		PS/2, USB, RS 232	2 m	IP 65	RJ41	–30 … 50 °C
50130495	IT 1981i FR-3	100 … 16,000 mm	Class 1	PS/2, USB, RS 232	2 m	IP 65	Bluetooth	–20 … 50 °C

ACCESSORIES: IT 19XX

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 2	Cable length	Interface	Sheathing material
50113397	KB JST-HS-300	JST ZHR	Sub-D, male, axial	300 mm	RS 232	PUR
50114521	KB USB-1 IT190x	USB	RJ41	3,000 mm	USB	PVC
50114523	KB USB-2 IT190x	USB	RJ41	5,000 mm	USB	PVC

Further interconnection cables can be found on our website

Base station for IT 19x1

Part no.	Part description	Connection 1	Connection 2	Connection 3	Drop height
50115738	Access Point f. IT	Bluetooth	RJ41		
50122431	Base f. IT 1911	RJ41	Jack socket	Bluetooth	1.2 m

Further base stations can be found on our website

Power supply units

Part no.	Part description	Type of power supply unit	Output
50123862	NT Base IT1911-EU	Plug-in power supply unit	5 V DC, 1 A
50114525	NT f. IT 1900+Base-EU	Plug-in power supply unit	5 V DC, 1 A

Further power supply units can be found on our website

Mounting systems

Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50107034	BT Rope IT		Insertable	Suspended (rope)	Plastic
50120444	BT Wallholder HS65x8	Wall mounting	Insertable	Through-hole mounting	Plastic

Further holders can be found on our website

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/// Directly marked codes (DPM)

Codes that are engraved, dot-peened or lasered directly on the object pose a real challenge because such codes usually have only a low contrast. The special industrial hand-held scanners in this category are able to perform even the most difficult of detection tasks.

Benefits:

- Various types of optics and illumination for optimum read results
- Cable-connected or with Bluetooth for RS 232 or USB interface
- Devices for robust or rough areas of application also available
- Degree of protection up to IP 65
- Temperature range from –30 to +50 °C

Direct access to the online product selector at **www.leuze.com/en/2D-code-reader_dpm**

Part no.	Part description	Reading distance	Bluetooth	Interface	Drop height	Degree of protection	Connection	Ambient temperature, operation
50138136	IT 1920i DPM	0 … 162 mm		USB, RS 232	2.0 m	IP 65	RJ41	0 … 50 °C
50130487	HCR 6200 DPM	0 … 200 mm		USB, RS 232	1.8 m	IP 54	RJ41	-20 … 55 °C
50138140	HS 6608 DPM	0 … 150 mm		USB, RS 232	2.4 m	IP 67	RJ41	-20 … 50 °C
50138138	HS 6678 DPM	0 … 150 mm	Class 1	USB, RS 232	2.4 m	IP 67	Bluetooth	-20 … 50 °C

ACCESSORIES: IT 1920i

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50115069	KB 232-1 f. FIS 6170	Sub-D, female, axial	9-pin	Connector, pluggable, axial, male	8-pin	2,000 mm	RS 232	PVC
50113397	KB JST-HS-300	JST ZHR		Sub-D, male, axial		300 mm	RS 232	PUR

Further interconnection cables can be found on our website

Mounting systems

Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50120444	BT Wallholder HS65x8	Wall mounting	Insertable	Through-hole mounting	Plastic

Further holders can be found on our website

ACCESSORIES: HCR 6200

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 2	Cable length	Interface	Sheathing material
50130489	KSS CR-USB-AA-RJ41-A-T0-018	USB	RJ41	1,800 mm	USB	PVC

Further interconnection cables can be found on our website

Power supply units

Part no.	Part description	Type of power supply unit	Output
50130490	NT HCR 6200	Plug-in power supply unit	5 V DC, 1 A

Further power supply units can be found on our website

Mounting systems

Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50130491	BT Holder HCR 6200	Table foot	Insertable	Self-supporting	Plastic

Further holders can be found on our website

ACCESSORIES: HS 66X8

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Cable length	Interface	Sheathing material
50138353	KDS HS-SUB-9A-RJ41-AA-T1-020	Sub-D, female, axial	9-pin	RJ 41	2,000 mm	RS 232	TPE
50138360	KSS HS-USB-4A-RJ41-AA-T1-020	USB	4-pin	RJ 41	2,000 mm	USB	TPE

Further interconnection cables can be found on our website

Power supply units

Part no.	Part description	Type of power supply unit	Output
50138350	NT HS66x8-Schuko	Desktop power supply unit	12 V DC, 1 A

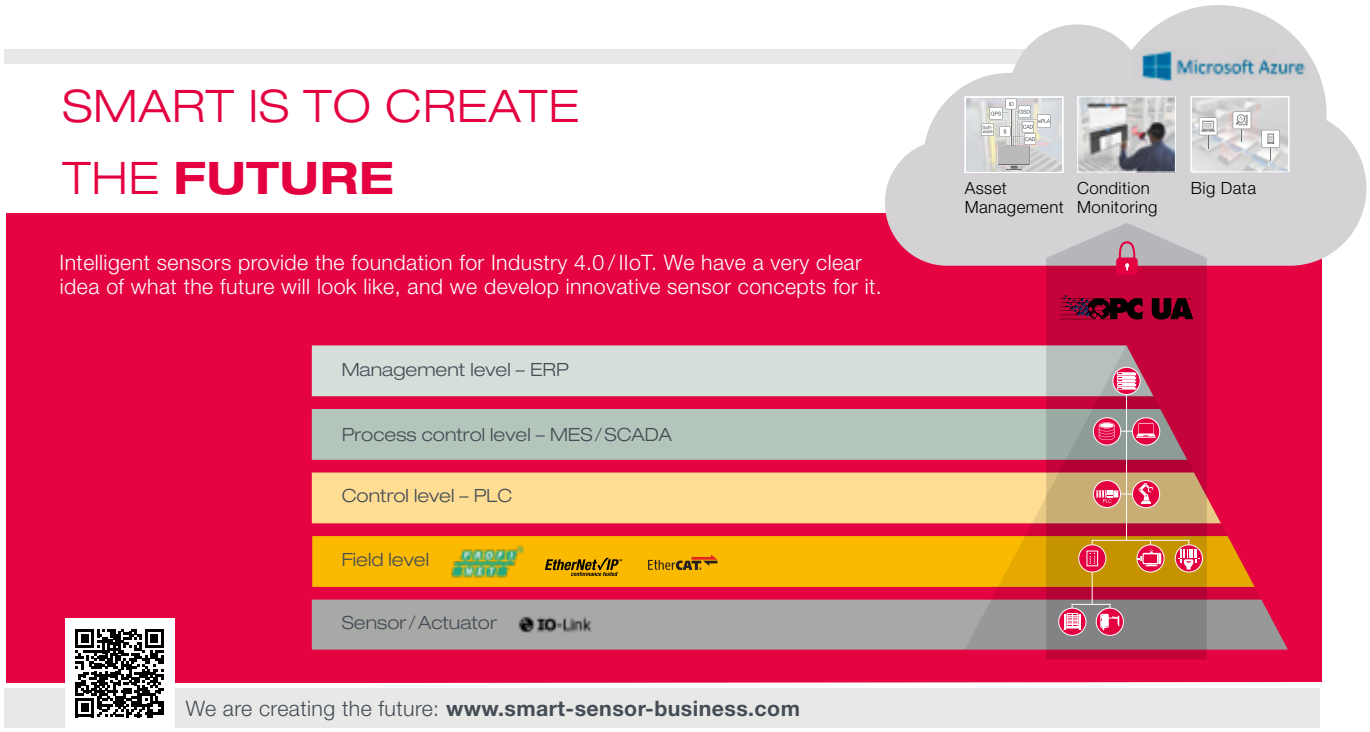
Further power supply units can be found on our website

Mounting systems

Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50120444	BT Wallholder HS65x8	Wall mounting	Insertable	Through-hole mounting	Plastic

Further holders can be found on our website



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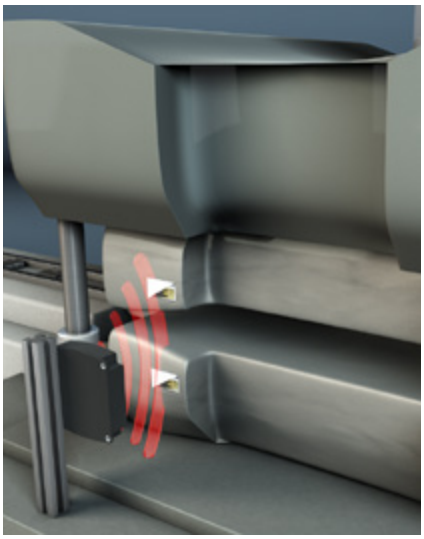
/ RF IDENTIFICATION

EVERYTHING CLEAR EVEN WITH POOR VISIBILITY

With RFID, no direct “visual contact” between the read-write unit and transponder is necessary. Information from the transponder is received by means of electromagnetic waves. As a result, these systems can be used practically and reliably under even the most adverse conditions.

Stationary RFID read/write systems Page 444

Transponders Page 446



//STATIONARY RFID READ/WRITE SYSTEMS

NEARLY INVISIBLE INTEGRATION

With stationary systems, proximity to the reader suffices for the detection of objects. As a result, readers can be integrated at nearly any location in the system. Our RFID solutions offer various operating ranges and simplify integration in existing systems through maximum connectivity.

/// RFI 32

This stationary reader for fixcode transponders can be used for universal reading tasks, even at high ambient temperatures.

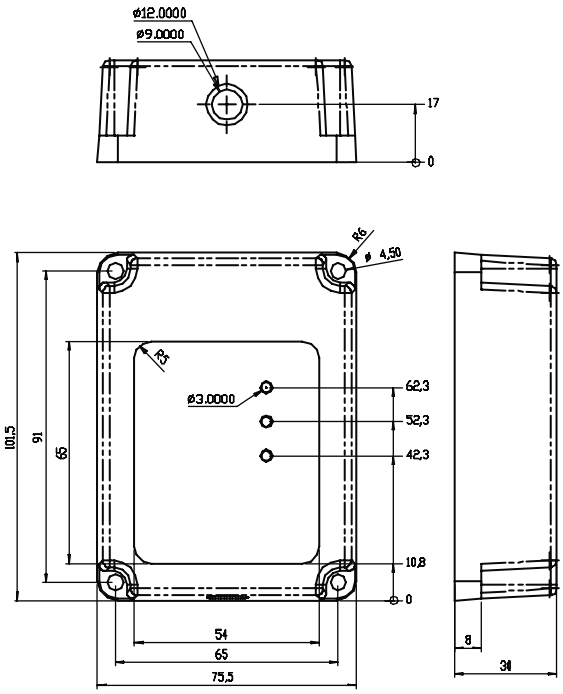
Benefits:

- Max. reading speed up to 0.6 m/s
- Reliable detection in adverse environments to 200 °C
- Max. reading distance to 80 mm
- Highly visible status LEDs, PCB connectors
- Industrial transponder selection
- RS 232 with trigger input and switching output

Direct access to the online product selector at **www.leuze.com/en/rfi32**

Part no.	Part description	Design	Reading distance	Working frequency	Interface	Connection	Functions
50040500	RFI 32 L 120	Cubic	80 mm	0.125 MHz	RS 232	Cable with socket connector, 1,000 mm	I/O reading-gate control, LED indicators, configurable operating modes

Dimensioned drawings: RFI 32



RFID read device RFI 32

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/// RFM 12 / 32 / 62

For ISO15693 transponders, Leuze electronic offers three read/write devices that offer the right range for typical applications. One of the devices is also available in Ex-design.

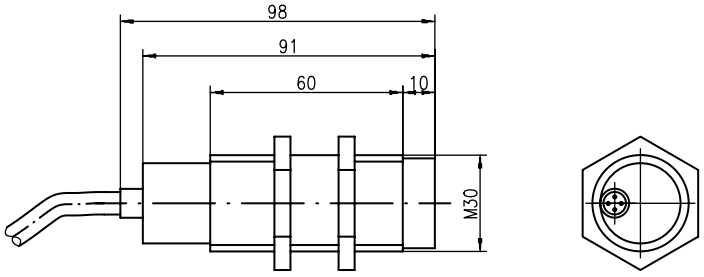
Benefits:

- Max. reading speed of 2.0 … 6.0 m/s
- Max. reading distance 50 … 500 mm
- Reliable detection with database updating in adverse environments to 220 °C
- Highly visible status LEDs, PCB connectors
- Large selection of industrial transponders with up to 1024 bytes
- RS 232 with trigger input and switching output
- Configuration via Leuze RF Config

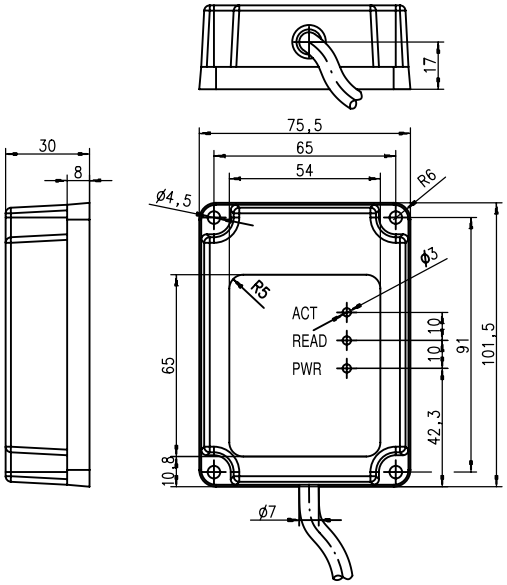
Direct access to the online product selector at **www.leuze.com/en/rfm12_32_62**

Part no.	Part description	Design	Reading/writing distance	Working frequency	Interface	Ex device group	Connection	Functions
50040497	RFM 12 SL 200	Cylindrical, M30	45 mm	13.56 MHz	RS 232		Cable with socket connector, 1,000 mm	Configurable operating modes, reading gate control, I/O
50040498	RFM 32 SL 200	Cubic	110 mm	13.56 MHz	RS 232		Cable with socket connector, 1,000 mm	I/O, configurable operating modes, reading gate control, LED indicators, multiple read / multiScan
50103087	RFM 32 SL 200 Ex-n	Cubic	110 mm	13.56 MHz	RS 232	II	Cable with socket connector, 10,000 mm	LED indicators, reading gate control, I/O, configurable operating modes, multiple read / multiScan
50040499	RFM 62 SL 200	Cubic	400 mm	13.56 MHz	RS 232		Cable with socket connector, 1,000 mm	I/O, LED indicators, reading gate control, configurable operating modes, multiple read / multiScan

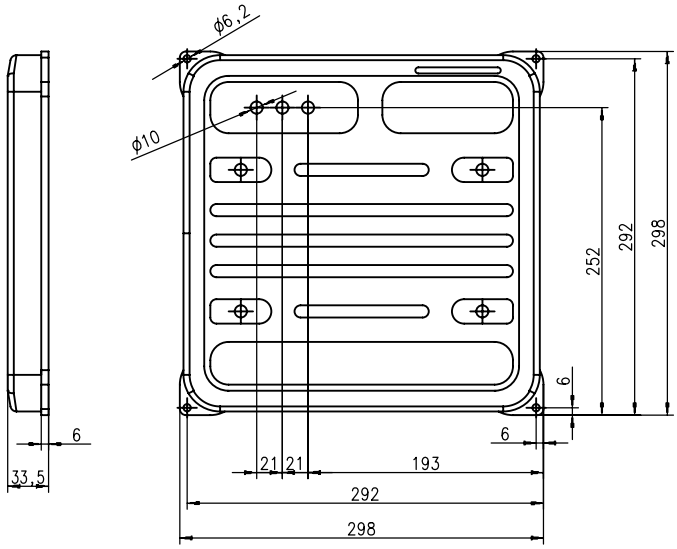
Dimensioned drawings: RFM 12 / 32 / 62



RFID read device RFM 12



RFID read device RFM 32



RFID read device RFM 62

//TRANSPONDERS

FROM FLAT TO ROBUST, EVERYTHING IS POSSIBLE

The areas of application for RFID are as broad as the requirements placed on transponders. Leuze electronic offers an extensive and high-quality product segment for all conceivable applications. It includes transponders for fault-free use on metal, high-temperature transponders, self-adhesive SmartLabels or chip cards.

/// TFI

This transponder with EM4002 chip is suitable for readers of the RFI series.

Benefits:

- Fixcode transponder with EM4002 chip (8 bytes), suitable for write/read units of the RFI series
- Industry transponder for temperatures up to 200 °C available as disk

Direct access to the online product selector at **www.leuze.com/en/tfi**

Part no.	Part description	Design	Dimensions	Working frequency	Memory size	Degree of protection	Ambient temperature, operation
50032396	**TFI 03 1101.120**	Disc	30 mm x 2.1 mm	0.125 MHz	8 B	IP 65	-20 … 70 °C
50039070	**TFI 03 1601.120**	Disc	30 mm x 2.5 mm	0.125 MHz	8 B	IP 67	-20 … 85 °C
50032395	**TFI 05 1101.120**	Disc	50 mm x 2.1 mm	0.125 MHz	8 B	IP 65	-20 … 70 °C
50039069	**TFI 05 1601.120**	Disc	50 mm x 2.5 mm	0.125 MHz	8 B	IP 67	-20 … 85 °C

Dimensional tolerances for all specified dimensions: ± 0.5 mm

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/// TFM

The HF transponder with various memory sizes is suitable for the RFM / HFM readers as a self-adhesive/disc / card or high-temperature transponder, with Ex certification if necessary.

Benefits:

- ISO15693 transponder with 112 to 1024 bytes (I-CodeSLI / HFI or MyD) suitable for write/read units of the RFM… /HFM… series
- Industry transponder for temperatures up to 220 °C, available as disk, stickers and cards
- Special transponders on request

Direct access to the online product selector at **www.leuze.com/en/tfm**

Part no.	Part description	Design	Dimensions	Working frequency	Memory size	Degree of protection	Ex device group	Ambient temperature, operation
50107790	**TFM 02 2210.210**	Label	18 mm x 0.3 mm x 36 mm	13.56 MHz	112 B	IP 54		–20 … 50 °C
50109232	**TFM 05 2210.210**	Label	50 mm x 0.3 mm x 50 mm	13.56 MHz	112 B	IP 54		–20 … 50 °C
50102956	**TFM 03 5125.220**	Card	28 mm x 1 mm x 50 mm	13.56 MHz	256 B	IP 54		–20 … 70 °C
50109233	**TFM 08 2125.220**	Card	54 mm x 1 mm x 86 mm	13.56 MHz	256 B	IP 68		–20 … 70 °C
50102915	**TFM 02 1125.220**	Disc	22 mm x 3 mm	13.56 MHz	256 B	IP 68		–25 … 85 °C
50102917	**TFM 03 1110.210**	Disc	30 mm x 2.5 mm	13.56 MHz	112 B	IP 66		–20 … 70 °C
50106412	**TFM 03 1510.210**	Disc	30 mm x 2.5 mm	13.56 MHz	112 B	IP 68		–25 … 85 °C
50108290	**TFM 04 1190.230**	Disc	40 mm x 2.5 mm	13.56 MHz	1,024 B	IP 66		–20 … 70 °C
50102916	**TFM 05 1110.210**	Disc	50 mm x 2.5 mm	13.56 MHz	112 B	IP 66		–20 … 85 °C
50108070	**TFM 05 1110.Ex**	Disc	54 mm x 15 mm	13.56 MHz	112 B	IP 67	II	–25 … 60 °C
50106413	**TFM 05 1510.210**	Disc	50 mm x 2.5 mm	13.56 MHz	112 B	IP 68		–25 … 85 °C
50127101	**TFM 06 1110.210**	Disc	56 mm x 10 mm	13.56 MHz	112 B	IP 65, IP 67		–25 … 70 °C
50117412	**TFM 08 1110.210**	Disc	85 mm x 3 mm	13.56 MHz	112 B	IP 67, IP 65		–20 … 70 °C
50114962	**TFM 08 1610.210**	Disc	85 mm x 13.5 mm	13.56 MHz	112 B	IP 68		–25 … 100 °C

Dimensional tolerances for all specified dimensions: ± 0.5 mm

DATA TRANSMISSION / CONTROL COMPONENTS

ACCESS DATA QUICKLY AND SIMPLY

In addition to the actual device technology, the transfer of data and the connection of devices in a wide range of fieldbus environments are also given high priority and decisively influence the user friendliness and flexibility of your system. Discover innovative connection concepts and universal configuration solutions that also reveal unexpected efficiency potentials.

"Accepting technological challenges and integrating these in our optical sensors in dialog with our customers such that a recognizable benefit is gained – that is the focus of our product developments again and again."

Martin Tippmann,
Product Management –
Product Center Measuring Sensors

/ Modular connection units Page 450

/ Data transmission Page 460

/ Power supply Page 470

/ MODULAR CONNECTION UNITS

PUTTING IT ALL TOGETHER

All peripheral devices – such as sensors, protective switches and cameras – are not worth much without networking to the fieldbus or a control unit. Depending on device type and area of application, our modular connection units offer variable interfaces that enable simple connection of the identification devices directly to the fieldbus and thus ensure simple integration of new devices in the system.

/// MA 200i

Fieldbus gateways for field use for connecting bar code readers and identification systems.

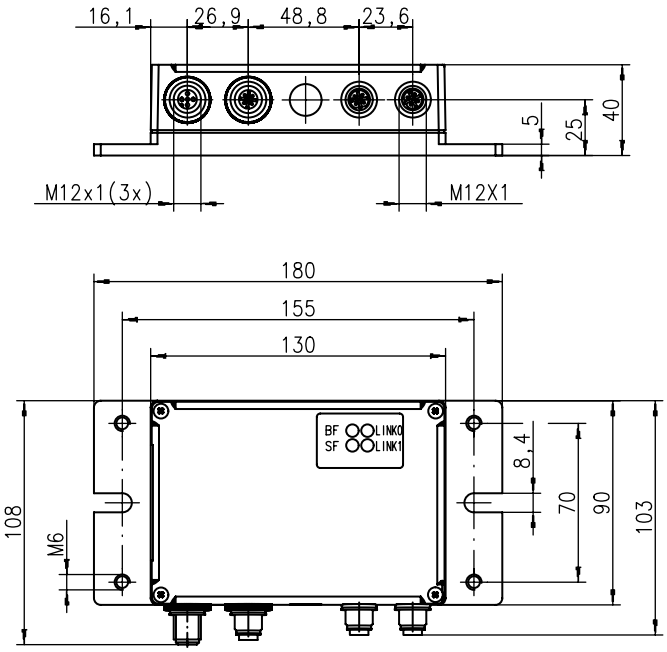
Benefits:

- Fieldbus gateway for RS 232 devices with pre-configuration for Leuze electronic Ident devices and sensors
- With service interface, 9 pin SubD
- Degree of protection IP 65

Direct access to the online product selector at **www.leuze.com/en/ma200i**

Part no.	Part description	Suitable for	Interface	Supply voltage	Degree of protection
50112893	MA 204i Profibus gateway	BCL 2x series bar code readers, BCL 8 series bar code readers, BPS 8 series bar code positioning system, HFxx series mobile RFID read/write systems, RFM 12 / 32 / 62, RFI 32, IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers, IT 1910 series mobile 2D-code readers, IT 1911 series mobile 2D-code readers, FIS series mobile 2D-code readers, HS 65x8, LSIS 222 series stationary 2D-code readers DCR 200i series stationary 2D-code readers	PROFIBUS DP, RS 232	18 … 30 V, DC	IP 65
50112892	MA 208i Ethernet gateway	BCL 2x series bar code readers, BCL 8 series bar code readers, BPS 8 series bar code positioning system, HFxx series mobile RFID read/write systems, RFM 12 / 32 / 62, RFI 32, IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers, IT 1910 series mobile 2D-code readers, IT 1911 series mobile 2D-code readers, FIS series mobile 2D-code readers, HS 65x8, LSIS 222 series stationary 2D-code readers	Ethernet, RS 232, TCP/IP, UDP	18 … 30 V, DC	IP 65
50114154	MA 235i CANopen gateway	BCL 2x series bar code readers, BCL 8 series bar code readers, BPS 8 series bar code positioning system, HFxx series mobile RFID read/write systems, RFI 32, RFM 12 / 32 / 62, IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers, IT 1910 series mobile 2D-code readers, IT 1911 series mobile 2D-code readers, FIS series mobile 2D-code readers, HS 65x8, LSIS 222 series stationary 2D-code readers, DCR 200i series stationary 2D-code readers	CANopen, RS 232	18 … 30 V, DC	IP 65
50114155	MA 238i EtherCAT gateway	BCL 2x series bar code readers, BCL 8 series bar code readers, BPS 8 series bar code positioning system, HFxx series mobile RFID read/write systems, RFI 32, RFM 12 / 32 / 62, IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers, IT 1910 series mobile 2D-code readers, IT 1911 series mobile 2D-code readers, FIS series mobile 2D-code readers, HS 65x8, LSIS 222 series stationary 2D-code readers, DCR 200i series stationary 2D-code readers	EtherCAT, RS 232	18 … 30 V, DC	IP 65
50112891	MA 248i PROFINET gateway	BCL 2x series bar code readers, BCL 8 series bar code readers, HFxx series mobile RFID read/write systems, BPS 8 series bar code positioning system, RFM 12 / 32 / 62, RFI 32, IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers, IT 1910 series mobile 2D-code readers, IT 1911 series mobile 2D-code readers, FIS series mobile 2D-code readers, HS 65x8, LSIS 222 series stationary 2D-code readers, DCR 200i series stationary 2D-code readers, LSIS 4xxi series stationary 2D-code readers	PROFINET, RS 232	18 … 30 V, DC	IP 65
50114156	MA 255i DeviceNet gateway	BCL 2x series bar code reader, BCL 8 series bar code readers, BPS 8 series bar code positioning system, HFxx series mobile RFID read/write systems, RFM 12 / 32 / 62, RFI 32, Optical distance sensors (ODS/L with RS232), IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers, IT 1910 series mobile 2D-code readers, IT 1911 series mobile 2D-code readers, FIS series mobile 2D-code readers, HS 65x8, LSIS 222 series stationary 2D-code readers, DCR 200i series stationary 2D-code readers	RS 232, DeviceNet	18 … 30 V, DC	IP 67
50114157	MA 258i EtherNet/IP gateway	BCL 2x series bar code readers, BCL 8 series bar code readers, BPS 8 series bar code positioning system, HFxx series mobile RFID read/write systems, RFM 12 / 32 / 62, RFI 32, IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers, IT 1910 series mobile 2D-code readers, IT 1911 series mobile 2D-code readers, FIS series mobile 2D-code readers, HS 65x8, LSIS 222 series stationary 2D-code readers DCR 200i series stationary 2D-code readers	EtherNet IP, RS 232	18 … 30 V, DC	IP 65

Dimensioned drawings: MA 200i



MA 2xxi modular connection unit

ACCESSORIES: MA 200i

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50132079	**KD U-M12-5A-V1-050**	Connector, M12, axial, female	5-pin	5,000 mm		PVC
50114696	**KB DN/CAN-5000 BA**	Connector, M12, axial, female	5-pin	5,000 mm	DeviceNet, CANopen	PUR
50114697	**KB DN/CAN-5000 SA**	Connector, M12, axial, male	5-pin	5,000 mm	CANopen, DeviceNet	PUR
50135248	**KS PB-M12-4A-P3-050**	Connector, M12, axial, male	5-pin	5,000 mm	PROFIBUS DP	PUR
50135243	**KD PB-M12-4A-P3-050**	Connector, M12, axial, female	5-pin	5,000 mm	PROFIBUS DP	PUR
50115044	**KB JST-3000**	JST ZHR		3,000 mm	RS 232	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50115049	**K-DS M12A-MA-5P-3m-S-PUR**	Connector, M12, axial, female	5-pin	JST ZHR		3,000 mm		PUR
50115050	**K-DS M12A-MA-8P-3m-S-PUR**	Connector, M12, axial, female	8-pin	JST ZHR		3,000 mm		PUR
50114698	**KB DN/CAN-5000 SBA**	Connector, M12, axial, male	5-pin	Connector, M12, axial, female	5-pin	5,000 mm	DeviceNet, CANopen	PUR
50130631	**KSS ET-M12-4A-M12-4A-P7-010**	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	Ethernet	PUR
50130632	**KSS ET-M12-4A-RJ45-A-P7-010**	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR
50137077	**KSS ET-M12-4A-M12-4A-P7-020**	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50137078	**KSS ET-M12-4A-M12-4A-P7-050**	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135081	**KSS ET-M12-4A-RJ45-A-P7-050**	Connector, M12, axial, male	4-pin	RJ45		5,000 mm	Ethernet	PUR
50137079	**KSS ET-M12-4A-M12-4A-P7-100**	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50137080	**KSS ET-M12-4A-M12-4A-P7-150**	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR
50135254	**KDS PB-M12-4A-M12-4A-P3-050**	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	5,000 mm	PROFIBUS DP	PUR
50113468	**KB JST-M12A-8P-Y-3000**	Connector, M12, axial, male	8-pin	JST ZHR		3,000 mm	RS 232	PUR
50113467	**KB JST-M12A-5P-3000**	Connector, M12, axial, female	5-pin	JST ZHR		3,000 mm	RS 232	PUR
50113397	**KB JST-HS-300**	JST ZHR		Sub-D, male, axial		300 mm	RS 232	PUR

Further interconnection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins	Interface
50038538	**KD 02-5-BA**	Connector, M12, axial, female	5-pin	PROFIBUS DP, multiNet Plus
50038537	**KD 02-5-SA**	Connector, M12, axial, male	5-pin	PROFIBUS DP, multiNet Plus

Further connectors can be found on our website

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/// MD 700i / MD 200i

Industrial Ethernet switches and IO-Link masters for connecting up to 4 sensors for integration in the fieldbus, such as PROFINET or Ethernet IP, integrated webConfig for configuration.

Benefits:

- Degree of protection IP 20 or IP 67
- Standardized RJ45 or M12 connection technology
- 4 / 8x Ethernet or IO-Link sensor ports
- Integrated webConfig for configuration and diagnosis of the IO-Link masters
- Power IN and Power OUT as well as switch for setting up a linear topology of the IO-Link masters

Direct access to the online product selector at **www.leuze.com/en/md700i_md200i**

Part no.	Part description	Suitable for	Interface	Supply voltage	Degree of protection
50131483	MD 248i-12-8K/L4-2R2K	IO-Link sensors	PROFINET	18 … 30 V, DC	IP 67
50131485	MD 258i-12-8K/L4-2R2K	IO-Link sensors	EtherNet IP, Modbus TCP	18 … 30 V, DC	IP 67
50135196	MD 708-21-42/D4-12	Ethernet	Ethernet	18 … 30 V, DC	IP 67
50135197	MD 708-21-82/D4-12	Ethernet	Ethernet	18 … 30 V, DC	IP 67
50131482	MD 748i-11-42/L5-2222	IO-Link sensors	PROFINET	18 … 30 V, DC	IP 67
50131484	MD 758i-11-42/L5-2222	IO-Link sensors	EtherNet IP, Modbus TCP	18 … 30 V, DC	IP 67

/// MA 100

Terminal box for BCL 300i/301i with KB301.

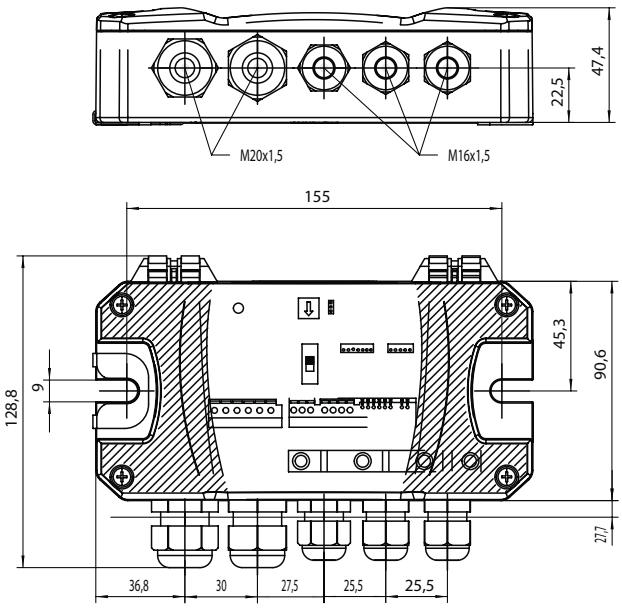
Benefits:

- External terminal box for BCL 300/301i with cable hood and address switch

Direct access to the online product selector at **www.leuze.com/en/ma100**

Part no.	Part description	Suitable for	Interface	Degree of protection
50114369	MA 100	BCL 300i, BCL 301i	RS 232, RS 485	IP 54

Dimensioned drawings: MA 100



MA 100 modular connection unit

/// MA 2

Connection unit with separate RS 232 service interface for BCL 21/22, RFID systems, RFI and RFM.

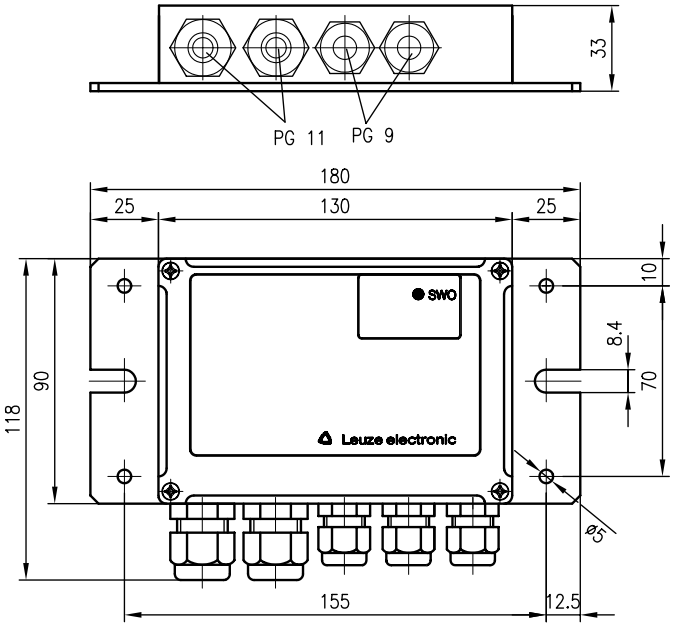
Benefits:

- Robust terminal box for connection of the devices with JST (RS 232 or RS 485)
- Rotary switch for addressing
- Double terminals enable wiring through (PWR, RS 485)
- With PG screw fittings on mounting plate
- Degree of protection IP 65

Direct access to the online product selector at **www.leuze.com/en/ma2**

Part no.	Part description	Suitable for	Interface	Degree of protection
50031256	MA 2	BCL 2x series bar code readers, LSIS 222 series stationary 2D-code readers	RS 232, RS 485	IP 54

Dimensioned drawings: MA 2



MA 2 modular connection unit

/// MA 21

The MA 21 modular connection unit is used to connect Leuze electronic identification systems (IDS) to an RS 232 interface.

Benefits:

- Universal interface and protocol converter for RS 232 / RS 485 devices with clamp connection
- With separate service interface, 9 pin SubD
- PG screw fittings on mounting plate
- Degree of protection IP 65

Direct access to the online product selector at **www.leuze.com/en/ma21**

Part no.	Part description	Suitable for	Interface	Supply voltage	Degree of protection
50030481	MA 21 100	BCL 8 series bar code readers, BCL 2x series bar code readers, HFxx series mobile RFID read/write systems, IT 1900 series mobile 2D-code readers	RS 232, RS 485	18 … 36 V, DC	IP 65
50103125	MA 21 100.2	BCL 2x series bar code readers, BCL 8 series bar code readers, RFM 12 / 32 / 62, HFxx series mobile RFID read/write systems, RFI 32, LSIS 222 series stationary 2D-code readers	RS 232, RS 485	18 … 36 V, DC	IP 65

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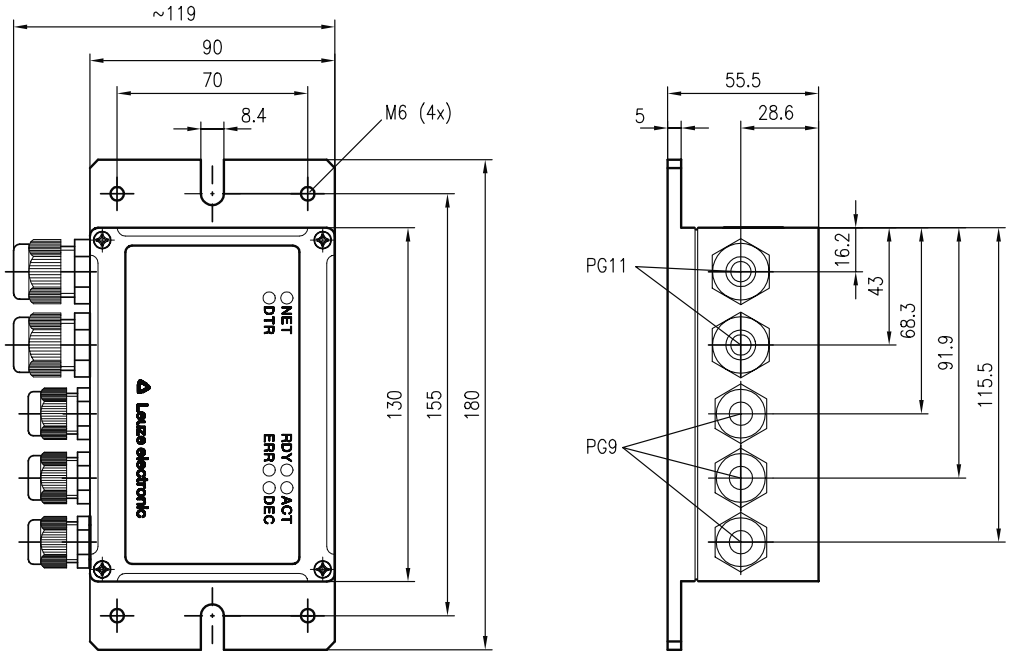
Dimensioned drawings: MA 21



MA 21 modular connection unit

/// MA 31

Network master for
Leuze electronic multiNet plus.

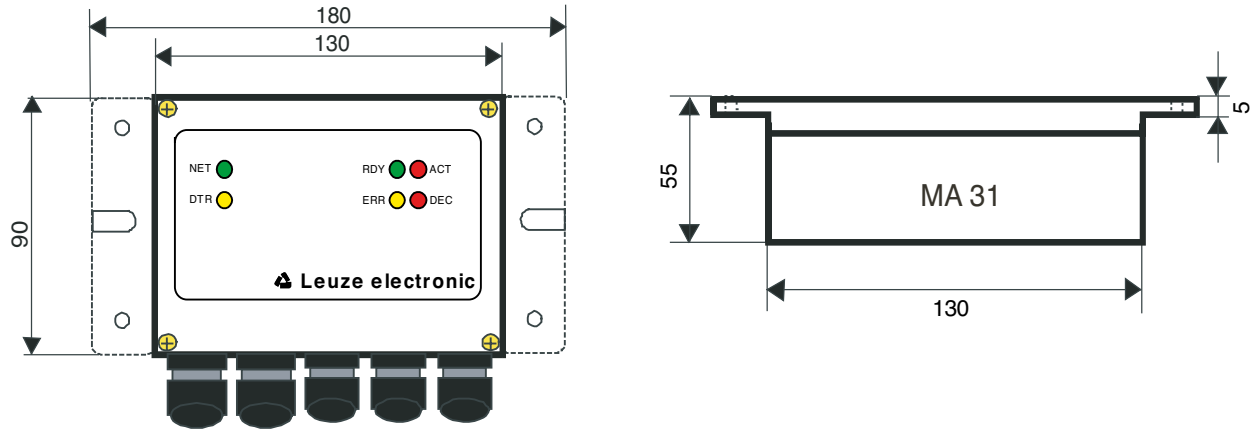
Benefits:

- Networking of multiple BCL 301i and BCL 501i devices via RS 485 in multiNet plus
- Address setting using rotary and slide switches
- Separate connection for switching inputs and switching outputs
- Degree of protection IP 65

Direct access to the online product selector at **www.leuze.com/en/ma31**

Part no.	Part description	Interface	Supply voltage	Degree of protection
50030835	MA 31 100	RS 485	18 … 36 V, DC	IP 65
50030836	MA 31 110	RS 232, RS 485	18 … 36 V, DC	IP 65
50030838	MA 31 130	RS 422, RS 485	18 … 36 V, DC	IP 65

Dimensioned drawings: MA 31



MA 31 modular connection unit

/// MA 4

Connection unit with clamp connections for BCL 21/22 and BCL 32 with parameter memory.

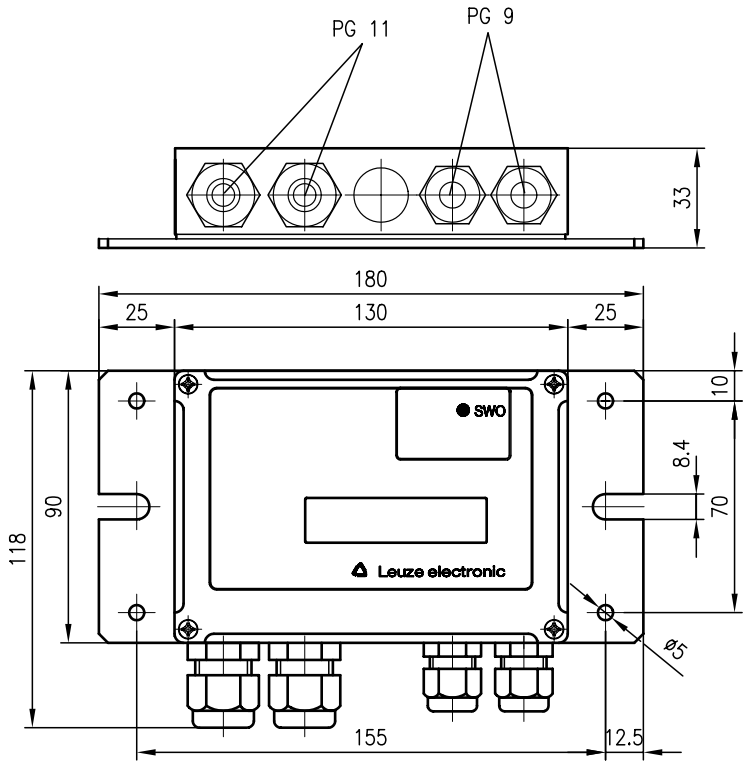
Benefits:

- Parameters of the BCL 21/22 are saved in a fail-safe manner on an EEPROM
- Rotary switch for setting the address for networking via Leuze multiNet plus
- Additional RS 232 service interface (9-pin sub-D connector)
- Integrated two-line display with 16 characters each (MA 4D only)
- PG screw fittings on mounting plate
- Terminals for connecting the switching inputs/outputs, the voltage supply and the communication interface

Direct access to the online product selector at **www.leuze.com/en/ma4**

Part no.	Part description	Suitable for	Interface	Supply voltage	Degree of protection
50031537	**MA 4**	BCL 2x series bar code reader, BCL 3x series bar code reader	RS 232, RS 485	10 … 30 V, DC	IP 54

Dimensioned drawings: MA 4



MA 4 modular connection unit

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/// MA 4.7

Connection unit with clamp connections for BPS 37.

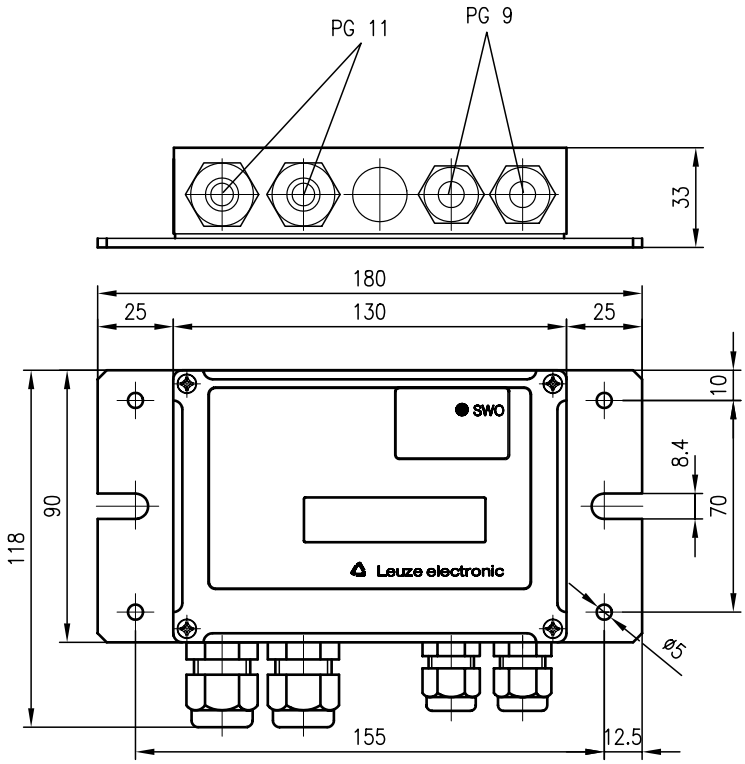
Benefits:

- Parameters of the BPS 37 are saved in a fail-safe manner on an EEPROM
- Rotary switch for adjusting the resolution/ speed and jumper for Gray/binary selection
- Additional RS 232 service interface (9-pin sub-D connector)
- PG screw fittings on mounting plate
- Integrated two-line display with 16 characters each (MA 4D.7 only)
- Terminals for connecting the switching inputs/outputs, the voltage supply and the communication interface

Direct access to the online product selector at **www.leuze.com/en/ma4_7**

Part no.	Part description	Suitable for	Supply voltage	Degree of protection
50037325	MA 4 D.7	BPS 3x series bar code positioning system	10 … 30 V, DC	IP 54
50037324	MA 4.7	BPS 3x series bar code positioning system	10 … 30 V, DC	IP 54

Dimensioned drawings: MA 4.7



MA 4.7 modular connection unit

/// MA 8

Connection unit for simple connection of the BCL 8 or BPS 8.

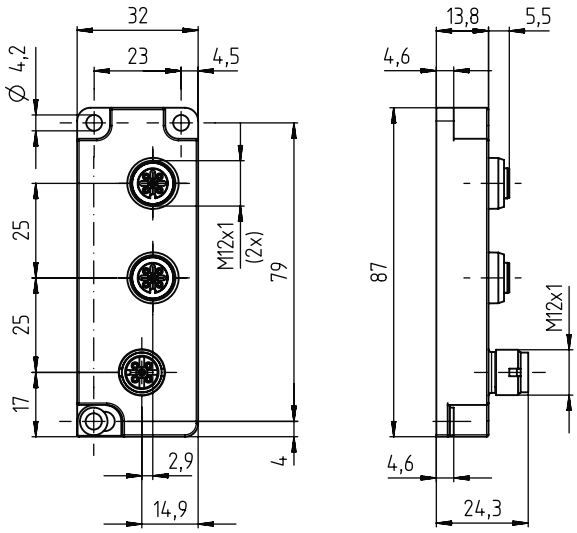
Benefits:

- Connection unit for BCL 8 / BPS 8 with RS 232 or RS 485
- M12 connection
- Degree of protection IP 65

Direct access to the online product selector at **www.leuze.com/en/ma8**

Part no.	Part description	Suitable for	Interface	Supply voltage	Degree of protection
50104790	MA 8-01	BCL 8 series bar code readers, BPS 8 series bar code positioning system	RS 485	10 … 30 V, DC	IP 67
50104789	MA 8-02	BCL 8 series bar code readers, BPS 8 series bar code positioning system	RS 485	10 … 30 V, DC	IP 67
50101699	MA 8.1	BCL 8 series bar code reader	RS 232	10 … 30 V, DC	IP 67

Dimensioned drawings: MA 8



MA 8 modular connection unit

/// MA 900

Connection unit with clamp connection for BCL 900i.

Benefits:

- Easy wiring and configuration
- RS 232 service interface
- Voltage supply terminals dual-installed for wiring through
- 4 LEDs for visualization at the device
- Hardware reset
- Large wiring terminal compartment

Direct access to the online product selector at **www.leuze.com/en/ma900**

Part no.	Part description	Suitable for	Interface	Supply voltage	Degree of protection
50129663	MA 900	BCL 900i series bar code reader	RS 232, RS 422		IP 65
50129664	MSC 900-1000	BCL 900i series bar code reader	Ethernet, RS 232, TCP/IP, UDP	10 … 30 V, DC	IP 65

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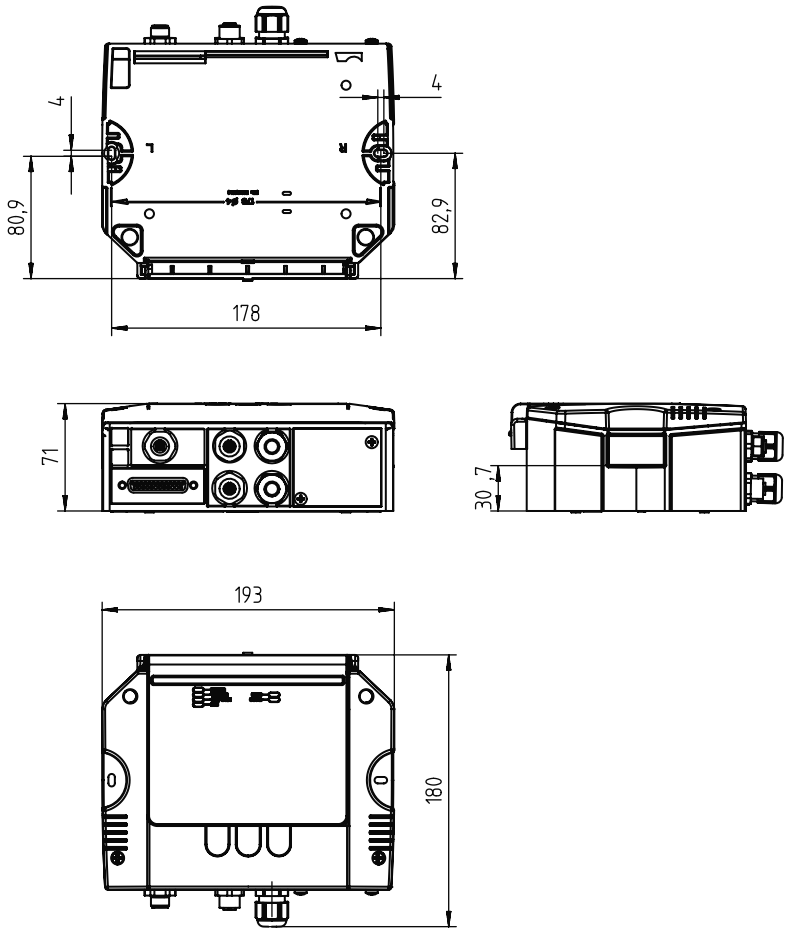
Dimensioned drawings: MA 900 / MSC 900



MA 900 modular connection unit

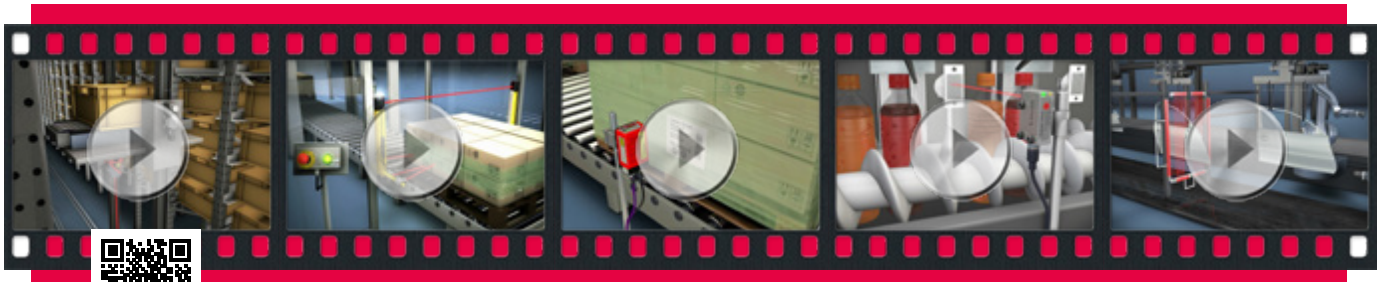
ACCESSORIES: MA 900i

Connection technology

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length
50135340	KB 900-500-MA 921-MA200i	Sub-D, female, axial	25-pin	JST ZHR		500 mm
50131531	KB 900-1000	Connector, M12, axial, female	17-pin	Sub-HD, male, axial	25-pin	1,000 mm
50131529	KB 900-3000	Connector, M12, axial, female	17-pin	Sub-HD, male, axial	25-pin	3,000 mm
50131532	KB 900-5000	Connector, M12, axial, female	17-pin	Sub-HD, male, axial	25-pin	5,000 mm

SMART IS TO SHARE **EXPERIENCE**

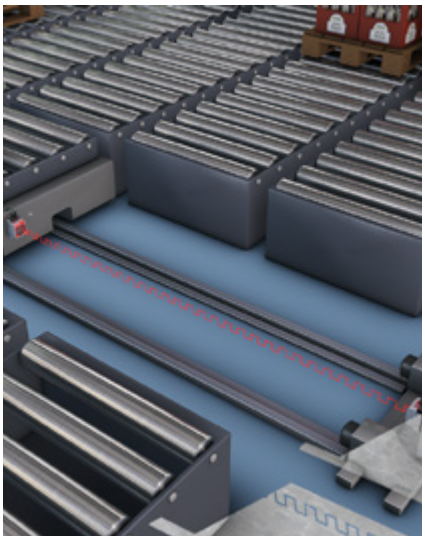


Take a look at our product clips: **www.leuze.com/en/product-clips**

/ DATA TRANSMISSION

CONTACT-FREE TRANSMISSION OF INFORMATION BY MEANS OF INFRARED LIGHT

Whenever data needs to be communicated without contact, optical devices for data transmission are the right choice. The optical data transceivers are used primarily in plant engineering, especially in applications where industrial networks such as PROFINET, PROFIBUS, DeviceNet or Ethernet etc. are connected to system components which are moved.



/// DDLS 500

The DDLS 500 is a data transmission photoelectric sensor for industrial Ethernet with a bandwidth of 100 Mbit/s. With the alignment laser and the pre-mounted mounting plate, the DDLS 500 sets new standards with respect to usability. The location-independent remote diagnostics function via integrated web server or direct connection in PROFINET is unique worldwide.

Benefits:

- Ranges up to 200 m possible
- 100 Mbit/s transparent data transmission of all Ethernet protocols such as PROFINET, EtherNet IP, EtherCat, etc.
- Laser alignment aid
- Monitoring of availability
- Interference-free parallel operation with AMS 300i
- Integrated "one-man" alignment device
- Optionally with heating (down to –30 °C)
- PROFINET participant
- Remote Control

Direct access to the online product selector at **www.leuze.com/en/ddls500**

Part no.	Part description	Operating range	Interface	Opening angle	Transmission speed	Connection 1 Connection 2	Description
Ethernet							
50132913	► DDLS 508 40.3	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	
50132914	◄ DDLS 508 40.4	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	
50132919	► DDLS 508 40.3 H	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating
50132920	◄ DDLS 508 40.4 H	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating
50132925	► DDLS 508 40.3 L	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid
50132926	◄ DDLS 508 40.4 L	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid
50132931	► DDLS 508 40.3 L H	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, heating
50132932	◄ DDLS 508 40.4 L H	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, heating
50134391	► DDLS 508i 40.3	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134392	◄ DDLS 508i 40.4	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134397	► DDLS 508i 40.3 H	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server
50134398	◄ DDLS 508i 40.4 H	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server
50134403	► DDLS 508i 40.3 L	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134404	◄ DDLS 508i 40.4 L	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134409	► DDLS 508i 40.3 L H	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, heating, remote maintenance via web server
50134410	◄ DDLS 508i 40.4 L H	100 … 40,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, heating, remote maintenance via web server
50132915	► DDLS 508 120.3	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	
50132916	◄ DDLS 508 120.4	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	
50132921	► DDLS 508 120.3 H	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating
50132922	◄ DDLS 508 120.4 H	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating
50132927	► DDLS 508 120.3 L	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid
50132928	◄ DDLS 508 120.4 L	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid
50132933	► DDLS 508 120.3 L H	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid
50132934	◄ DDLS 508 120.4 L H	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, heating
50134393	► DDLS 508i 120.3	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134394	◄ DDLS 508i 120.4	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134399	► DDLS 508i 120.3 H	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server
50134400	◄ DDLS 508i 120.4 H	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server

► transmitter / ◄ receiver

Part no.	Part description	Operating range	Interface	Opening angle	Transmission speed	Connection 1 Connection 2	Description
50134405	► DDLS 508i 120.3 L	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134406	◄ DDLS 508i 120.4 L	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134411	► DDLS 508i 120.3 L H	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid, remote maintenance via web server
50134412	◄ DDLS 508i 120.4 L H	100 … 120,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid, remote maintenance via web server
50132917	► DDLS 508 200.3	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	
50132918	◄ DDLS 508 200.4	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	
50132923	► DDLS 508 200.3 H	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating
50132924	◄ DDLS 508 200.4 H	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating
50132929	► DDLS 508 200.3 L	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid
50132930	◄ DDLS 508 200.4 L	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid
50132935	► DDLS 508 200.3 L H	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid
50132936	◄ DDLS 508 200.4 L H	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid
50134395	► DDLS 508i 200.3	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134396	◄ DDLS 508i 200.4	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134401	► DDLS 508i 200.3 H	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server
50134402	◄ DDLS 508i 200.4 H	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server
50134407	► DDLS 508i 200.3 L	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134408	◄ DDLS 508i 200.4 L	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134413	► DDLS 508i 200.3 L H	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, heating, remote maintenance via web server
50134414	◄ DDLS 508i 200.4 L H	100 … 200,000 mm	Ethernet	1 °	100 Mbit/s	Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid, remote maintenance via web server

PROFINET

50134415	► DDLS 548i 40.3	100 … 40,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134416	◄ DDLS 548i 40.4	100 … 40,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134421	► DDLS 548i 40.3 H	100 … 40,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server
50134422	◄ DDLS 548i 40.4 H	100 … 40,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server
50134427	► DDLS 548i 40.3 L	100 … 40,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134428	◄ DDLS 548i 40.4 L	100 … 40,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134433	► DDLS 548i 40.3 L H	100 … 40,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, heating, remote maintenance via web server
50134434	◄ DDLS 548i 40.4 L H	100 … 40,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid, remote maintenance via web server
50134417	► DDLS 548i 120.3	100 … 120,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134418	◄ DDLS 548i 120.4	100 … 120,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134423	► DDLS 548i 120.3 H	100 … 120,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server
50134424	◄ DDLS 548i 120.4 H	100 … 120,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server
50134429	► DDLS 548i 120.3 L	100 … 120,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134430	◄ DDLS 548i 120.4 L	100 … 120,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134435	► DDLS 548i 120.3 L H	100 … 120,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid, remote maintenance via web server
50134436	◄ DDLS 548i 120.4 L H	100 … 120,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid, remote maintenance via web server
50134419	► DDLS 548i 200.3	100 … 200,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134420	◄ DDLS 548i 200.4	100 … 200,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Remote maintenance via web server
50134425	► DDLS 548i 200.3 H	100 … 200,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server
50134426	◄ DDLS 548i 200.4 H	100 … 200,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, remote maintenance via web server

► transmitter / ◄ receiver

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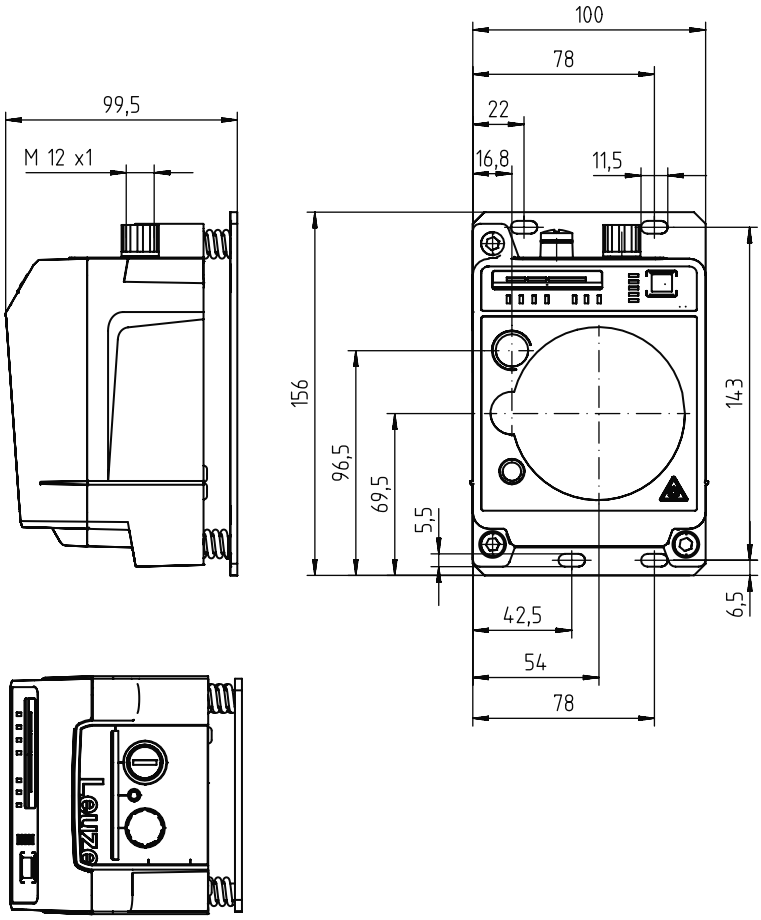
Part no.	Part description	Operating range	Interface	Opening angle	Transmission speed	Connection 1 Connection 2	Description
50134431	► DDLS 548i 200.3 L	100 … 200,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134432	◄ DDLS 548i 200.4 L	100 … 200,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Integrated laser alignment aid, remote maintenance via web server
50134437	► DDLS 548i 200.3 L H	100 … 200,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid, remote maintenance via web server
50134438	◄ DDLS 548i 200.4 L H	100 … 200,000 mm	PROFINET	1 °		Connector, M12, 5-pin Connector, M12, 4-pin	Heating, integrated laser alignment aid, remote maintenance via web server

► transmitter / ◄ receiver

Dimensioned drawings: DDLS 500



DDLS 500 data transmission photoelectric sensor

ACCESSORIES: DDLS 500

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm		PUR
50132080	KD U-M12-5A-V1-100	Connector, M12, axial, female	5-pin	10,000 mm		PVC
50134942	KS ET-M12-4W-P7-050	Connector, M12, angled, male	4-pin	5,000 mm	Ethernet	PUR
50135073	KS ET-M12-4A-P7-020	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50135074	KS ET-M12-4A-P7-050	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135075	KS ET-M12-4A-P7-100	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50135076	KS ET-M12-4A-P7-150	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Cable length	Interface	Sheathing material
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45	1,000 mm	Ethernet	PUR
50135080	KSS ET-M12-4A-RJ45-A-P7-020	Connector, M12, axial, male	4-pin	RJ45	2,000 mm	Ethernet	PUR
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45	5,000 mm	Ethernet	PUR
50135082	KSS ET-M12-4A-RJ45-A-P7-100	Connector, M12, axial, male	4-pin	RJ45	10,000 mm	Ethernet	PUR
50135083	KSS ET-M12-4A-RJ45-A-P7-150	Connector, M12, axial, male	4-pin	RJ45	15,000 mm	Ethernet	PUR
50135084	KSS ET-M12-4A-RJ45-A-P7-300	Connector, M12, axial, male	4-pin	RJ45	30,000 mm	Ethernet	PUR
50126132	KB 307-3000	Socket connector		Socket connector	3,000 mm	SSI	PVC

Further interconnection cables can be found on our website

User-configurable connectors

Part no.	Part description	Connection	No. of pins	Interface
50108991	D-ET1	RJ45		Ethernet
50112155	S-M12A-ET	Connector, M12, axial, male	4-pin	Ethernet
50020501	KD 095-5A	Connector, M12, axial, female	5-pin	

Further connectors can be found on our website

Adapter

Part no.	Part description	Connection 1	No. of pins	Connection 2
50109832	KDS ET-M12 / RJ45 W-4P	Connector, M12, angled, female, D-coded	4-pin	RJ45

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/// DDLS 200

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Part no.	Part description	Operating range	Interface	Opening angle	Transmission speed	Connection 1 Connection 2	Description
CANopen, DeviceNet							
50122268	► DDLS 200/80.2-50-W-M12	200 … 80,000 mm	CANopen, DeviceNet	2 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Connector, M12, 5-pin Connector, M12, 5-pin	Wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50122267	◄ DDLS 200/80.1-50-W-M12	200 … 80,000 mm	CANopen, DeviceNet	2 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Connector, M12, 5-pin Connector, M12, 5-pin	Wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50039937	► DDLS 200/120.1-50	200 … 120,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50039938	◄ DDLS 200/120.2-50	200 … 120,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50039943	► DDLS 200/120.1-50-H	200 … 120,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50039944	◄ DDLS 200/120.2-50-H	200 … 120,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50113046	► DDLS 200/120.1-50-M12	200 … 120,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Connector, M12, 5-pin Connector, M12, 5-pin	Operation of parallel light axes, not influenced by reflective surfaces
50113045	◄ DDLS 200/120.2-50-M12	200 … 120,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Connector, M12, 5-pin Connector, M12, 5-pin	Operation of parallel light axes, not influenced by reflective surfaces
50039939	► DDLS 200/200.1-50	200 … 200,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50039940	◄ DDLS 200/200.2-50	200 … 200,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50039945	► DDLS 200/200.1-50-H	200 … 200,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50039946	◄ DDLS 200/200.2-50-H	200 … 200,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50125767	► DDLS 200/200.1-50-M12	200 … 200,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Connector, M12, 5-pin Connector, M12, 5-pin	Operation of parallel light axes, not influenced by reflective surfaces
50125768	◄ DDLS 200/200.2-50-M12	200 … 200,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Connector, M12, 5-pin Connector, M12, 5-pin	Operation of parallel light axes, not influenced by reflective surfaces
50039941	► DDLS 200/300.1-50	200 … 300,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50039942	◄ DDLS 200/300.2-50	200 … 300,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50039947	► DDLS 200/300.1-50-H	200 … 300,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50039948	◄ DDLS 200/300.2-50-H	200 … 300,000 mm	CANopen, DeviceNet	1 °	10 … 1,000 kBit/s / 125 … 500 kBit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
PROFIBUS DP, RS 485							
50039704	► DDLS 200/30.1-10-W	200 … 30,000 mm	PROFIBUS DP, RS 485	3 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50039705	◄ DDLS 200/30.2-10-W	200 … 30,000 mm	PROFIBUS DP, RS 485	3 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50102312	► DDLS 200/80.1-10-W	200 … 80,000 mm	PROFIBUS DP, RS 485	2 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50102313	◄ DDLS 200/80.2-10-W	200 … 80,000 mm	PROFIBUS DP, RS 485	2 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50102494	► DDLS 200/80.1-10-W-H	200 … 80,000 mm	PROFIBUS DP, RS 485	2 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Heating, wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50102495	◄ DDLS 200/80.2-10-W-H	200 … 80,000 mm	PROFIBUS DP, RS 485	2 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Heating, wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50036282	► DDLS 200/120.1-10	200 … 120,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50036283	◄ DDLS 200/120.2-10	200 … 120,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50036286	► DDLS 200/120.1-10-H	200 … 120,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50036287	◄ DDLS 200/120.2-10-H	200 … 120,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces

► transmitter / ◄ receiver

Part no.	Part description	Operating range	Interface	Opening angle	Transmission speed	Connection 1 Connection 2	Description
50106029	► DDLS 200/120.1-10-H-M12	200 … 120,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Heating, operation of parallel light axes, not influenced by reflective surfaces
50106030	◄ DDLS 200/120.2-10-H-M12	200 … 120,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Heating, operation of parallel light axes, not influenced by reflective surfaces
50106023	► DDLS 200/120.1-10-M12	200 … 120,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Operation of parallel light axes, not influenced by reflective surfaces
50106024	◄ DDLS 200/120.2-10-M12	200 … 120,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Operation of parallel light axes, not influenced by reflective surfaces
50036280	► DDLS 200/200.1-10	200 … 200,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50036281	◄ DDLS 200/200.2-10	200 … 200,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50036284	► DDLS 200/200.1-10-H	200 … 200,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50036285	◄ DDLS 200/200.2-10-H	200 … 200,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50106031	► DDLS 200/200.1-10-H-M12	200 … 200,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Heating, operation of parallel light axes, not influenced by reflective surfaces
50106032	◄ DDLS 200/200.2-10-H-M12	200 … 200,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Heating, operation of parallel light axes, not influenced by reflective surfaces
50106025	► DDLS 200/200.1-10-M12	200 … 200,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Operation of parallel light axes, not influenced by reflective surfaces
50106026	◄ DDLS 200/200.2-10-M12	200 … 200,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Operation of parallel light axes, not influenced by reflective surfaces
50038284	► DDLS 200/300.1-10	200 … 300,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50038285	◄ DDLS 200/300.2-10	200 … 300,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50038286	► DDLS 200/300.1-10-H	200 … 300,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50038287	◄ DDLS 200/300.2-10-H	200 … 300,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50106033	► DDLS 200/300.1-10-H-M12	200 … 300,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Heating, operation of parallel light axes, not influenced by reflective surfaces
50106034	◄ DDLS 200/300.2-10-H-M12	200 … 300,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Heating, operation of parallel light axes, not influenced by reflective surfaces
50106027	► DDLS 200/300.1-10-M12	200 … 300,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Operation of parallel light axes, not influenced by reflective surfaces
50106028	◄ DDLS 200/300.2-10-M12	200 … 300,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 1.5 Mbps	Connector, M12, 5-pin Connector, M12, 5-pin	Operation of parallel light axes, not influenced by reflective surfaces
50040131	► DDLS 200/500.1-10	200 … 500,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 0.09375 Mbps	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50040132	◄ DDLS 200/500.2-10	200 … 500,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 0.09375 Mbps	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50040133	► DDLS 200/500.1-10-H	200 … 500,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 0.09375 Mbps	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50040134	◄ DDLS 200/500.2-10-H	200 … 500,000 mm	PROFIBUS DP, RS 485	1 °	0.0096 … 0.09375 Mbps	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces

RS 422, Interbus-S

50041339	► DDLS 200/30.1-20-W	200 … 30,000 mm	RS 422, Interbus-S	3 °	2 Mbit/s	Terminal, M16 Terminal, M16	Wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50041338	◄ DDLS 200/30.2-20-W	200 … 30,000 mm	RS 422, Interbus-S	3 °	2 Mbit/s	Terminal, M16 Terminal, M16	Wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50106252	► DDLS 200/80.1-20-W	200 … 80,000 mm	RS 422, Interbus-S	2 °	2 Mbit/s	Terminal, M16 Terminal, M16	Wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50106253	◄ DDLS 200/80.2-20-W	200 … 80,000 mm	RS 422, Interbus-S	2 °	2 Mbit/s	Terminal, M16 Terminal, M16	Wide angle version, operation of parallel light axes, not influenced by reflective surfaces
50036290	► DDLS 200/120.1-20	200 … 120,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50036291	◄ DDLS 200/120.2-20	200 … 120,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50036294	► DDLS 200/120.1-20-H	200 … 120,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50036295	◄ DDLS 200/120.2-20-H	200 … 120,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50036288	► DDLS 200/200.1-20	200 … 200,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50036289	◄ DDLS 200/200.2-20	200 … 200,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50036292	► DDLS 200/200.1-20-H	200 … 200,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50036293	◄ DDLS 200/200.2-20-H	200 … 200,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50038288	► DDLS 200/300.1-20	200 … 300,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50038289	◄ DDLS 200/300.2-20	200 … 300,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50038290	► DDLS 200/300.1-20-H	200 … 300,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50038291	◄ DDLS 200/300.2-20-H	200 … 300,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces

► transmitter / ◄ receiver

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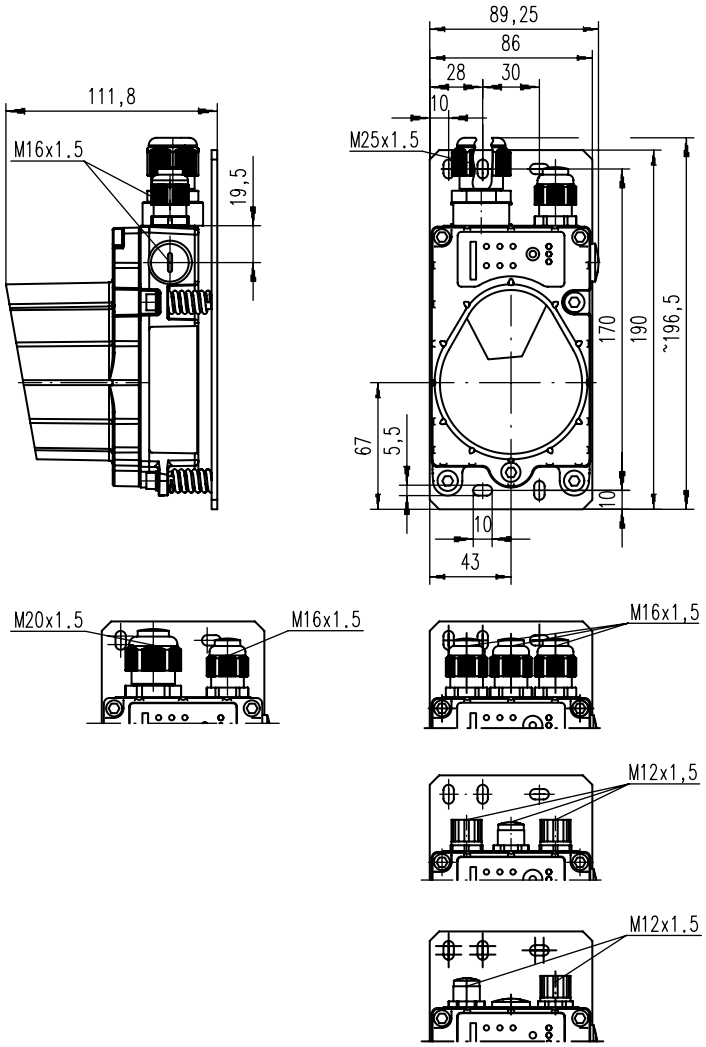
Part no.	Part description	Operating range	Interface	Opening angle	Transmission speed	Connection 1 Connection 2	Description
50040135	► DDLS 200/500.1-20	200 … 500,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50040136	◄ DDLS 200/500.2-20	200 … 500,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50040137	► DDLS 200/500.1-20-H	200 … 500,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50040138	◄ DDLS 200/500.2-20-H	200 … 500,000 mm	RS 422, Interbus-S	1 °	2 Mbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces

Rockwell, DH+/RIO

50038300	► DDLS 200/120.1-40	200 … 120,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50038301	◄ DDLS 200/120.2-40	200 … 120,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50038302	► DDLS 200/120.1-40-H	200 … 120,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50038303	◄ DDLS 200/120.2-40-H	200 … 120,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50036300	► DDLS 200/200.1-40	200 … 200,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50036301	◄ DDLS 200/200.2-40	200 … 200,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50036302	► DDLS 200/200.1-40-H	200 … 200,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50036303	◄ DDLS 200/200.2-40-H	200 … 200,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50038296	► DDLS 200/300.1-40	200 … 300,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50038297	◄ DDLS 200/300.2-40	200 … 300,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Operation of parallel light axes, not influenced by reflective surfaces
50038298	► DDLS 200/300.1-40-H	200 … 300,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, not influenced by reflective surfaces
50038299	◄ DDLS 200/300.2-40-H	200 … 300,000 mm	Rockwell DH+/RIO	1 °	57.6 … 230.4 Kbit/s	Terminal, M16 Terminal, M16	Heating, operation of parallel light axes, n ot influenced by reflective surfaces

► transmitter / ◄ receiver

Dimensioned drawings: DDLS 200



DDLS 200 data transmission photoelectric sensor

ACCESSORIES: DDLS 200

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50133839	**KD U-M12-5A-P1-020**	Connector, M12, axial, female	5-pin	2,000 mm		PUR
50133841	**KD U-M12-5A-P1-050**	Connector, M12, axial, female	5-pin	5,000 mm		PUR
50132080	**KD U-M12-5A-V1-100**	Connector, M12, axial, female	5-pin	10,000 mm		PVC
50135073	**KS ET-M12-4A-P7-020**	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50135074	**KS ET-M12-4A-P7-050**	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135075	**KS ET-M12-4A-P7-100**	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50135076	**KS ET-M12-4A-P7-150**	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR
50135077	**KS ET-M12-4A-P7-300**	Connector, M12, axial, male	4-pin	30,000 mm	Ethernet	PUR
50135247	**KS PB-M12-4A-P3-020**	Connector, M12, axial, male	5-pin	2,000 mm	PROFIBUS DP	PUR
50135248	**KS PB-M12-4A-P3-050**	Connector, M12, axial, male	5-pin	5,000 mm	PROFIBUS DP	PUR
50135249	**KS PB-M12-4A-P3-100**	Connector, M12, axial, male	5-pin	10,000 mm	PROFIBUS DP	PUR
50135250	**KS PB-M12-4A-P3-150**	Connector, M12, axial, male	5-pin	15,000 mm	PROFIBUS DP	PUR
50135251	**KS PB-M12-4A-P3-300**	Connector, M12, axial, male	5-pin	30,000 mm	PROFIBUS DP	PUR
50135242	**KD PB-M12-4A-P3-020**	Connector, M12, axial, female	5-pin	2,000 mm	PROFIBUS DP	PUR

Further connection cables can be found on our website

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Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50135243	KD PB-M12-4A-P3-050	Connector, M12, axial, female	5-pin	5,000 mm	PROFIBUS DP	PUR
50135244	KD PB-M12-4A-P3-100	Connector, M12, axial, female	5-pin	10,000 mm	PROFIBUS DP	PUR
50135245	KD PB-M12-4A-P3-150	Connector, M12, axial, female	5-pin	15,000 mm	PROFIBUS DP	PUR
50135246	KD PB-M12-4A-P3-300	Connector, M12, axial, female	5-pin	30,000 mm	PROFIBUS DP	PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50135252	KDS PB-M12-4A-M12-4A-P3-010	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	1,000 mm	PROFIBUS DP	PUR
50135253	KDS PB-M12-4A-M12-4A-P3-020	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	2,000 mm	PROFIBUS DP	PUR
50135254	KDS PB-M12-4A-M12-4A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	5,000 mm	PROFIBUS DP	PUR
50135255	KDS PB-M12-4A-M12-4A-P3-100	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	10,000 mm	PROFIBUS DP	PUR
50135256	KDS PB-M12-4A-M12-4A-P3-150	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	15,000 mm	PROFIBUS DP	PUR
50135257	KDS PB-M12-4A-M12-4A-P3-300	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	30,000 mm	PROFIBUS DP	PUR

Further interconnection cables can be found on our website

Termination/bus termination

Part no.	Part description	Connection 1	Function
50038539	TS 02-4-SA	Connector, M12, axial, male, 4-pin	Bus termination

Further terminator plugs can be found on our website

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/// PSU

Controlled 1 and 3 phase power supply units with alarm contact in diverse performance levels for installation in cabinet provide the basis for reliable sensor systems.

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- Compact heat optimized PSU2x0 in 1 and 3 phase from 5 to 40 A
- Direct parallel connection possible

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Part no.	Part description	Number of phases	Output voltage Output current	Input voltage Input current	Power boost	Efficiency
50132582	PSU-02A-1P-24V-S	1x	24 V DC (SELV), ± 1% / 22.5 … 28 V adjustable 2.5 A	95 … 265 VAC / 110 … 300 V DC 1.04 A (110 VAC) / 0.63 A (230 VAC)		87% (230 VAC)
50132585	PSU-05A-1P-24V-H	1x	24 V DC (SELV), ± 1% / 24 … 28 V adjustable 5 A	85 … 265 VAC / 90 … 250 V DC 1.3 A (100 VAC) / 0.61 A (240 VAC)	7.5 A / > 4s	94.5% (230 VAC)
50132583	PSU-05A-1P-24V-S	1x	24 V DC (SELV), ± 1% / 22.5 … 28 V adjustable 5 A	100 … 265 V AC 2 A (110 V AC) / 1.16 A (230 V AC)		84% (230 VAC)
50132588	PSU-05A-3P-24V-H	3x	24 V DC (SELV), ± 1% / 24 … 28 V adjustable 5 A	3 x 324 … 572 VAC / 450 … 745 V DC 0.45 A (3 x 360 VAC)	7.5 A / > 5s	92.5% (3 x 400 VAC)
50132586	PSU-10A-1P-24V-H	1x	24 V DC (SELV), ± 1% / 24 … 28 V adjustable 10 A	85 … 265 VAC / 90 … 250 V DC 2.6 A (100 VAC) / 1.1 A (240 VAC)	15 A / > 4s	94.3% (230 VAC)
50132584	PSU-10A-1P-24V-S	1x	24 V DC (SELV), ± 1% / 22.5 … 28 V adjustable 10 A	100 … 265 V AC 3.4 A (115 V AC) / 2.2 A (230 V AC)		87% (230 VAC)
50132589	PSU-10A-3P-24V-H	3x	24 V DC (SELV), ± 1% / 24 … 28 V adjustable 10 A	3 x 324 … 572 VAC / 450 … 745 V DC 0.75 A (3 x 360 VAC) / 0.45 A (3 x 500 VAC)	15 A / > 5s	93.7% (3 x 400 VAC)
50132587	PSU-20A-1P-24V-H	1x	24 V DC (SELV), ± 1% / 24 … 28 V adjustable 20 A	85 … 265 VAC / 90 … 250 V DC 5.2 A (100 VAC) / 2.2 A (240 VAC)	30 A / > 4s	94.1% (230 VAC)
50132590	PSU-20A-3P-24V-H	3x	24 V DC (SELV), ± 1% / 24 … 28 V adjustable 20 A	3 x 324 … 572 VAC / 450 … 745 V DC 1.3 A (3 x 360 VAC) / 1.0 A (3 x 500 VAC)	30 A / > 5s	94.8% (3 x 400 VAC)
50132591	PSU-40A-3P-24V-H	3x	24 V DC (SELV), ± 1% / 24 … 28 V adjustable 40 A	3 x 324 … 572 VAC / 450 … 745 V DC 2.3 A (3 x 360 VAC) / 1.6 A (3 x 500 VAC)	60 A / > 5s	93.7% (3 x 400 VAC)

/// PLM / PBM

In addition to industrial power supply units, additional modules are helpful for an intelligent power supply solution:
PBM: Redundancy modules for optimum load management and safeguarding against failure
PLM: electronic load circuit monitoring and protection of circuits

Benefits:

PBM

- Reduced heat build-up in the switch cabinet
- Regulation of load distribution with redundant design for maximum safeguarding against failure
- Increased life expectancy of the components and reduced downtimes

PLM

- Staggered switch on of load circuits when switching on
- Safe disconnection in the event of a short-circuit or overload to prevent damage
- Reliable switching on of capacitive loads
- Saves installation material and time

Direct access to the online product selector at **www.leuze.com/en/plm_pbm**

Part no.	Part description	Input voltage Input current	Efficiency	Signal outputs	Output channels	Function of the signal outputs
50132595	MOD-BA-I2/20-02/40A-24V	Max. 2 x 20A	99.5%	2x		Potential-free relay contact
50132594	MOD-BD-I2/20-02/40A-24V	Max. 2 x 20A	99.5%	2x		Potential-free relay contact
50132592	MOD-EAC-I2-04/06A-24V			1x	4x	Potential-free, contact opens on shutdown, overload, short-circuit
50132593	MOD-EAC-I2-04/10A-24V			1x	4x	Potential-free, contact opens on shutdown, overload, short-circuit

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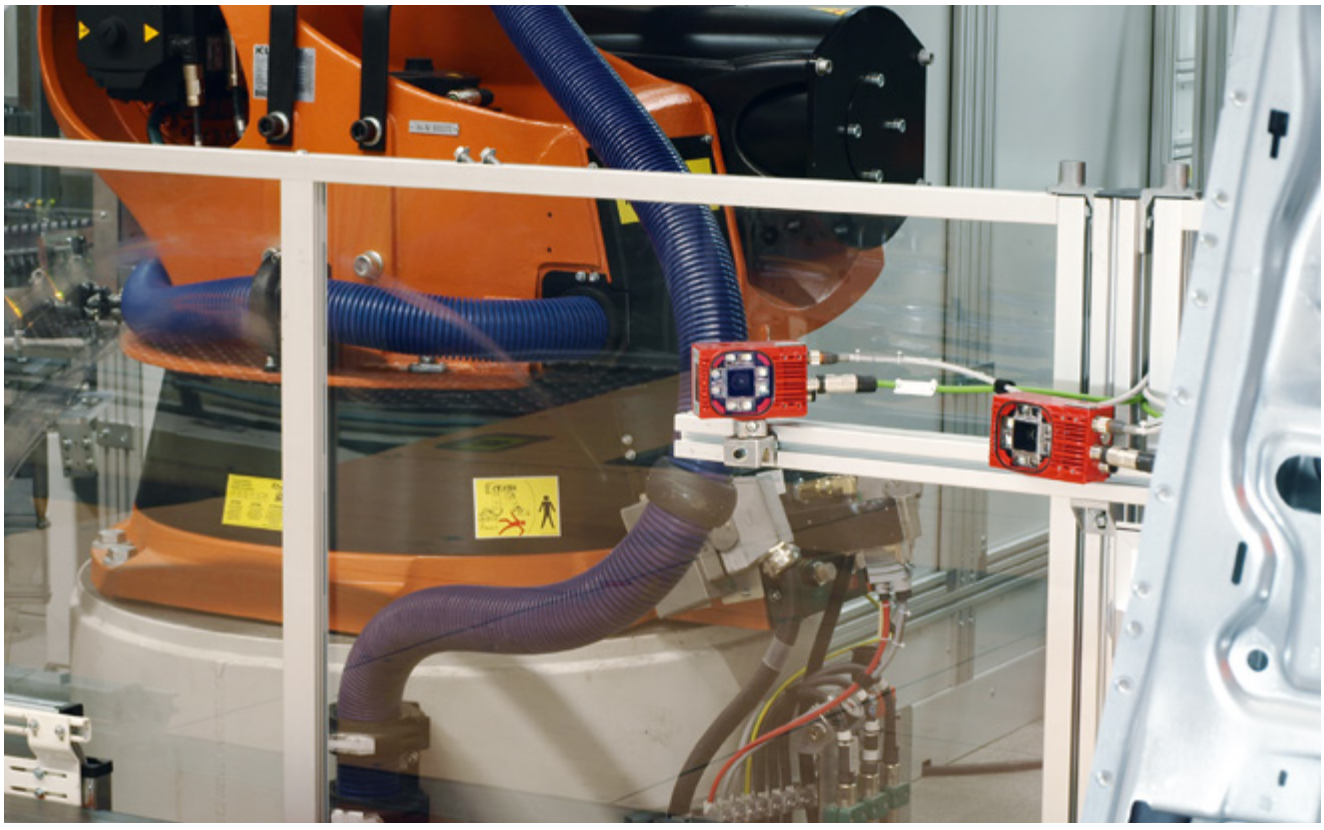
Dr. Falk Hummernbrum
Head of
Application Support Helpline

/ Smart camera Page 474

/ Industrial IP camera Page 479



/ SMART CAMERA

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LSIS 400i smart cameras for industrial image processing can be integrated quickly and at low cost. They are used in quality assurance, object detection and position determination, for identification and for production process monitoring. With their sophisticated range of features, LSIS 400i cameras can also reliably handle complex tasks.

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High-performance smart camera for reliable and convenient quality control, code reading and measurement tasks. Test for presence, completeness, type, position and orientation. The device offers omnidirectional reading of the most important 1D-/2D-codes with reference code comparison. As an additional function, the device can also be used for compartment fine positioning in the X and Y direction.

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- Operation via WebConfig with any standard browser or display
- The integrated, very homogeneous illumination makes possible working distances of up to 1,900 mm
- All interfaces (Ethernet, RS 232, 8x digital I/O) are integrated, no connection units are necessary
- Simple mounting with dovetail or threaded holes

Direct access to the online product selector at **www.leuze.com/en/lsis4xxi**

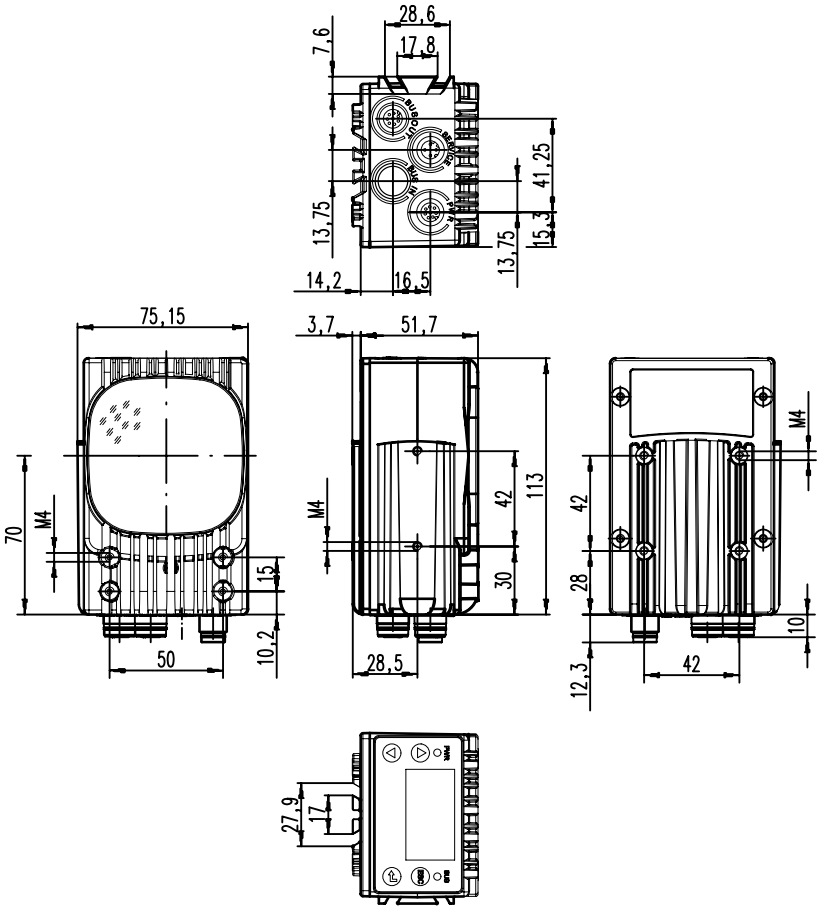
Part no.	Part description	Focal length	Optics cover	Light source	Interface	Software functions	Description
50116970	LSIS 412i M43-I1	8 mm	Glass	LED, infrared	Ethernet, RS 232	BLOB analysis (completeness monitoring), dimension monitoring, BLOB analysis (presence control), position determination, focus adjustment	Degree of protection: IP 65, IP 67
50116969	LSIS 412i M43-I1-01	8 mm	Plastic	LED, infrared	Ethernet, RS 232	BLOB analysis (completeness monitoring), dimension monitoring, BLOB analysis (presence control), position determination, focus adjustment	Degree of protection: IP 65, IP 67
50116972	LSIS 412i M43-M1	8 mm	Glass	LED, RGBW	Ethernet, RS 232	BLOB analysis (completeness monitoring), dimension monitoring, BLOB analysis (presence control), position determination, focus adjustment	Degree of protection: IP 65, IP 67
50116971	LSIS 412i M43-M1-01	8 mm	Plastic	LED, RGBW	Ethernet, RS 232	BLOB analysis (completeness monitoring), dimension monitoring, BLOB analysis (presence control), position determination, focus adjustment	Degree of protection: IP 65, IP 67
50108177	LSIS 412i M43-W1	8 mm	Glass	LED, white	Ethernet, RS 232	BLOB analysis (presence control), dimension monitoring, position determination, BLOB analysis (completeness monitoring), focus adjustment	Degree of protection: IP 65, IP 67
50112928	LSIS 412i M43-W1-01	8 mm	Plastic	LED, white	Ethernet, RS 232	BLOB analysis (presence control), dimension monitoring, position determination, BLOB analysis (completeness monitoring), focus adjustment	Degree of protection: IP 65, IP 67
50116974	LSIS 412i M45-I1	16 mm	Glass	LED, infrared	Ethernet, RS 232	BLOB analysis (completeness monitoring), dimension monitoring, BLOB analysis (presence control), position determination, focus adjustment	Degree of protection: IP 65, IP 67
50116973	LSIS 412i M45-I1-01	16 mm	Plastic	LED, infrared	Ethernet, RS 232	BLOB analysis (completeness monitoring), dimension monitoring, BLOB analysis (presence control), position determination, focus adjustment	Degree of protection: IP 65, IP 67
50116976	LSIS 412i M45-M1	16 mm	Glass	LED, RGBW	Ethernet, RS 232	BLOB analysis (completeness monitoring), dimension monitoring, BLOB analysis (presence control), position determination, focus adjustment	Degree of protection: IP 65, IP 67
50116975	LSIS 412i M45-M1-01	16 mm	Plastic	LED, RGBW	Ethernet, RS 232	BLOB analysis (completeness monitoring), dimension monitoring, BLOB analysis (presence control), position determination, focus adjustment	Degree of protection: IP 65, IP 67
50108990	LSIS 412i M45-W1	16 mm	Glass	LED, white	Ethernet, RS 232	BLOB analysis (presence control), dimension monitoring, position determination, BLOB analysis (completeness monitoring), focus adjustment	Degree of protection: IP 65, IP 67
50112929	LSIS 412i M45-W1-01	16 mm	Plastic	LED, white	Ethernet, RS 232	BLOB analysis (presence control), dimension monitoring, position determination, BLOB analysis (completeness monitoring), focus adjustment	Degree of protection: IP 65, IP 67
50117094	LSIS 412i M49-X9		Glass		Ethernet, RS 232	BLOB analysis (completeness monitoring), dimension monitoring, BLOB analysis (presence control), position determination, focus adjustment	Degree of protection: IP 65, IP 67
50121148	LSIS 412i M49-X9-01		Plastic		Ethernet, RS 232	Dimension monitoring, BLOB analysis (completeness monitoring), BLOB analysis (presence control), position determination, focus adjustment	Degree of protection: IP 65, IP 67
50116986	LSIS 462i M43-I1	8 mm	Glass	LED, infrared	Ethernet, RS 232	Position determination, BLOB analysis (presence control), BLOB analysis (completeness monitoring), reading of 1D codes, dimension monitoring, reading of 2D codes, measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50116985	LSIS 462i M43-I1-01	8 mm	Plastic	LED, infrared	Ethernet, RS 232	Position determination, BLOB analysis (presence control), BLOB analysis (completeness monitoring), reading of 1D codes, dimension monitoring, reading of 2D codes, measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50116988	LSIS 462i M43-M1	8 mm	Glass	LED, RGBW	Ethernet, RS 232	Position determination, BLOB analysis (presence control), BLOB analysis (completeness monitoring), reading of 1D codes, dimension monitoring, reading of 2D codes, measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50116987	LSIS 462i M43-M1-01	8 mm	Plastic	LED, RGBW	Ethernet, RS 232	Position determination, BLOB analysis (presence control), BLOB analysis (completeness monitoring), reading of 1D codes, dimension monitoring, reading of 2D codes, measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50113053	LSIS 462i M43-W1	8 mm	Glass	LED, white	Ethernet, RS 232	BLOB analysis (presence control), dimension monitoring, reading of 1D codes, reading of 2D codes, position determination, BLOB analysis (completeness monitoring), measuring tool, focus adjustment	Degree of protection: IP 65, IP 67

With the LSIS 4xxi...X9, the focal length depends on the used lens
Detailed information can be found online on www.leuze.com/en/lsis412i_462i

Part no.	Part description	Focal length	Optics cover	Light source	Interface	Software functions	Description
50113052	LSIS 462i M43-W1-01	8 mm	Plastic	LED, white	Ethernet, RS 232	BLOB analysis (presence control), dimension monitoring, reading of 1D codes, reading of 2D codes, position determination, BLOB analysis (completeness monitoring), measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50116990	LSIS 462i M45-I1	16 mm	Glass	LED, infrared	Ethernet, RS 232	Position determination, BLOB analysis (presence control), BLOB analysis (completeness monitoring), reading of 1D codes, dimension monitoring, reading of 2D codes, measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50116989	LSIS 462i M45-I1-01	16 mm	Plastic	LED, infrared	Ethernet, RS 232	Position determination, BLOB analysis (presence control), BLOB analysis (completeness monitoring), reading of 1D codes, dimension monitoring, reading of 2D codes, measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50116992	LSIS 462i M45-M1	16 mm	Glass	LED, RGBW	Ethernet, RS 232	Position determination, BLOB analysis (presence control), BLOB analysis (completeness monitoring), reading of 1D codes, dimension monitoring, reading of 2D codes, measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50116991	LSIS 462i M45-M1-01	16 mm	Plastic	LED, RGBW	Ethernet, RS 232	Position determination, BLOB analysis (presence control), BLOB analysis (completeness monitoring), reading of 1D codes, dimension monitoring, reading of 2D codes, measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50113051	LSIS 462i M45-W1	16 mm	Glass	LED, white	Ethernet, RS 232	BLOB analysis (presence control), dimension monitoring, reading of 1D codes, reading of 2D codes, position determination, BLOB analysis (completeness monitoring), measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50113037	LSIS 462i M45-W1-01	16 mm	Plastic	LED, white	Ethernet, RS 232	BLOB analysis (presence control), dimension monitoring, reading of 1D codes, reading of 2D codes, position determination, BLOB analysis (completeness monitoring), measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50117091	LSIS 462i M49-X9		Glass		Ethernet, RS 232	Position determination, BLOB analysis (presence control), BLOB analysis (completeness monitoring), reading of 1D codes, dimension monitoring, reading of 2D codes, measuring tool, focus adjustment	Degree of protection: IP 65, IP 67
50131438	LSIS 472i M43-I1	8 mm	Glass	LED, infrared	Ethernet, RS 232	Compartment fine positioning, focal adjustment	Degree of protection: IP 67, IP 65
50131439	LSIS 472i M43-I1-H	8 mm	Glass	LED, infrared	Ethernet, RS 232	Compartment fine positioning, focal adjustment	Special design: heating; Degree of protection: IP 67, IP 65
50128424	LSIS 472i M45-I1	16 mm	Glass	LED, infrared	Ethernet, RS 232	Compartment fine positioning, focal adjustment	Degree of protection: IP 67, IP 65
50128425	LSIS 472i M45-I1-H	16 mm	Glass	LED, infrared	Ethernet, RS 232	Compartment fine positioning, focal adjustment	Special design: heating; Degree of protection: IP 67, IP 65

With the LSIS 4xxi…X9, the focal length depends on the used lens
Detailed information can be found online on www.leuze.com/en/lsis412i_462i

Dimensioned drawings: LSIS 412i / LSIS 462i / LSIS 472i



LSIS 4xx smart camera

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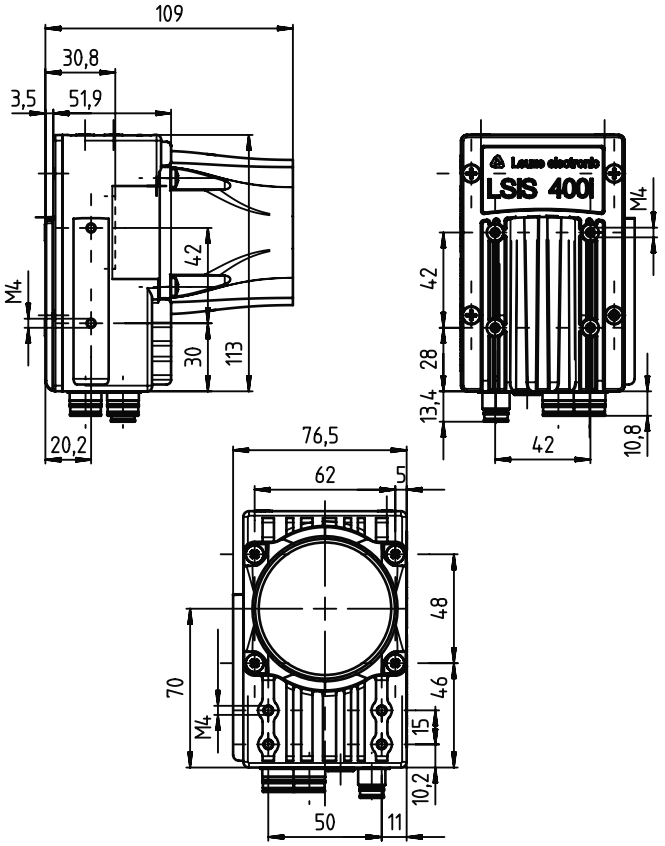
Dimensioned drawings: LSIS 412i / LSIS 462i / LSIS 472i



LSIS 4xx smart camera, C-Mount

ACCESSORIES: LSIS 412i / LSIS 462i / LSIS 472i

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50135074	KS ET-M12-4A-P7-050	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135139	KS S-M12-8A-P1-050	Connector, M12, axial, male	8-pin	5,000 mm		PUR
50135122	KD U-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm		PUR

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50130631	KSS ET-M12-4A-M12-4A-P7-010	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	Ethernet	PUR
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR
50137077	KSS ET-M12-4A-M12-4A-P7-020	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50137078	KSS ET-M12-4A-M12-4A-P7-050	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45		5,000 mm	Ethernet	PUR
50137079	KSS ET-M12-4A-M12-4A-P7-100	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50137080	KSS ET-M12-4A-M12-4A-P7-150	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR

Further interconnection cables can be found on our website

Mounting systems

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50027375	BT 56	Mounting system	Clampable	For 16 mm rod, for 18 mm rod, 20 mm rod	Metal

Further rod mounts can be found on our website

Reflectors for LSIS 472i

Micro-triad-type reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50129092	MTKZ 15-30 SET	Round	15 mm	Clip	Plastic
50132911	REF 7-A-15-30 SET	Round	15 mm	Self-adhesive	

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

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Dr. Marie-Theres Heine,
Product Manager –
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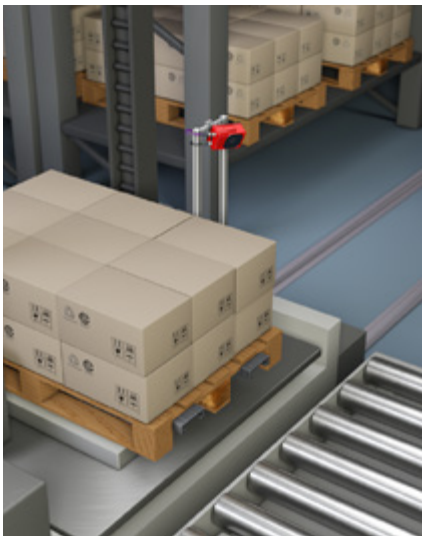
/ INDUSTRIAL IP CAMERA

VISUAL MONITORING OF DIFFICULT TO ACCESS POSITIONS

With the industrial LCAM 408i IP camera, insights into areas which are not accessible by plant operators are possible. Possible collisions are therefore avoided and troubleshooting simplified in case of failure. The robust camera can also be used under harsh environmental conditions due to the industrial design.



/// LCAM

The industrial IP camera LCAM 408i offers insights into areas which are not accessible by plant operators. For example, possible collisions can be avoided and troubleshooting simplified in case of failure. The robust camera delivers live streams at high image quality due to its gigabit Ethernet interface and is easily integrated into the machine or system controller via M12 connections.

Benefits:

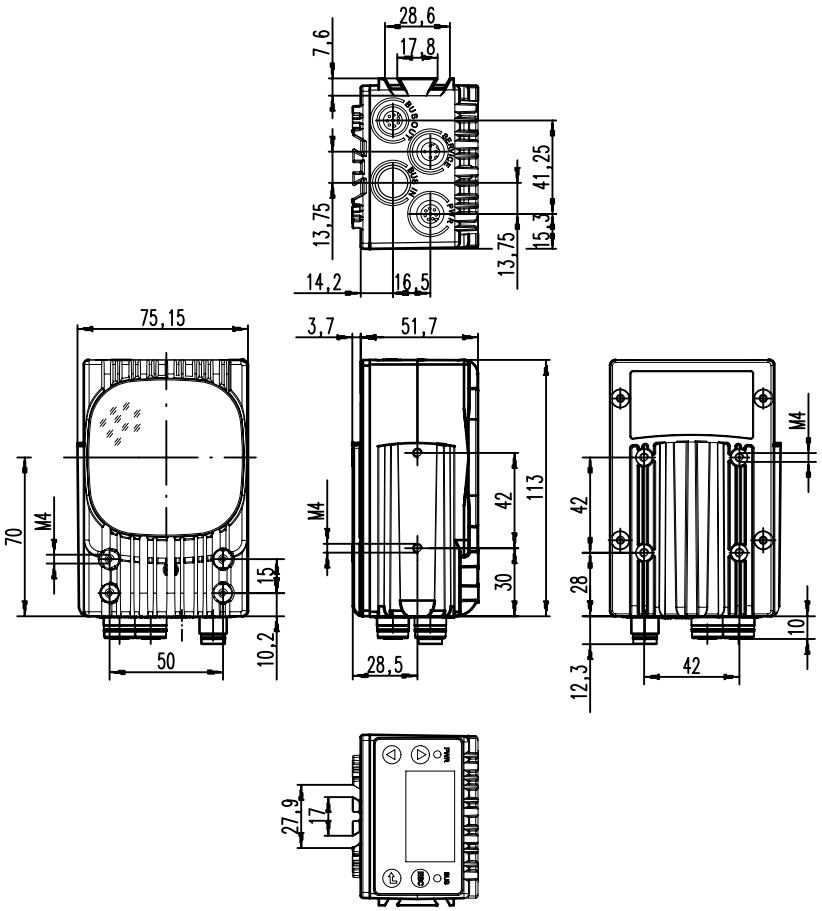
- Robust for industrial use: Metal housing with degree of protection IP 65 / IP 67 and easy to clean glass pane
- High image quality and fast live image transfer via the 5-Megapixel color camera with gigabit-Ethernet interface
- Easy integration via 24V voltage supply and M12 connections
- Configuration via standard-browser and displayed via standard streaming tools: no additional software necessary
- Universal mounting options via dovetail, threaded holes and an extensive selection of mounting accessories

Direct access to the online product selector at **www.leuze.com/en/lcam**

Part no.	Part description	Focal length	Optics cover	Interface	Software functions	Degree of protection
50132136	**LCAM 408i C7F-XX**	4 mm	Glass	Ethernet	Image transfer	IP 67, IP 65

With the LSIS 4xxi...X9, the focal length depends on the used lens
Detailed information can be found online on www.leuze.com/en/lsis412i_462i

Dimensioned drawings: LCAM



LCAM 408i industrial IP camera

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ACCESSORIES: LCAM

Connection technology

Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Interconnection cables

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50130741	KDS U-M12-4A-M12-4A-P1-020	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	2,000 mm		PUR
50130759	KDS U-M12-4A-M12-4W-P1-020	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	2,000 mm		PUR
50130743	KDS U-M12-4A-M12-4A-P1-050	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	5,000 mm		PUR
50130761	KDS U-M12-4A-M12-4W-P1-050	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	5,000 mm		PUR
50130753	KDS U-M12-4A-M12-4W-V1-020	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	2,000 mm		PVC
50130755	KDS U-M12-4A-M12-4W-V1-050	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	5,000 mm		PVC
50133387	KSS ET-M12-8A-RJ45-A-P7-050	Connector, M12, axial, male	8-pin	RJ45		5,000 mm	Ethernet	PUR

Further interconnection cables can be found on our website

Mounting systems

Mounting bracket

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50121433	BT 300 W	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further rod mounts can be found on our website

Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50027375	BT 56	Mounting system	Clampable	For 16 mm rod, for 18 mm rod, 20 mm rod	Metal

Further rod mounts can be found on our website

ACCESSORIES

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Gerd Eschenbächer,
Product Management –
Product Center Supplementary Products and Accessories

/ Connection technology Page 484
/ Mounting systems Page 494
/ Device columns Page 499
/ Deflecting mirrors / Deflecting mirror columns Page 501
/ Protective screens Page 504
/ Signaling devices Page 505
/ Reflectors and reflective tapes Page 509
/ Alignment aids Page 513
/ Bar code tapes Page 514
/ Muting mounting systems Page 515

/ CONNECTION TECHNOLOGY

YOUR CONNECTION TO THE WORLD

Sensors are only as good as the options for integrating them in your controls. For this reason, we offer you an extensive selection of accessories, including everything from the cables, to the plugs to the optional connection box. You can easily find the right parts for your application.

/// Connection cables

Cables with open end, unshielded and shielded with various numbers of wires and various lengths for voltage supply and networks.

Direct access to the online product selector at **www.leuze.com/en/a-cables**

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material	Number of LEDs
150677	CB-M12-10000-5WM	Connector, M12, angled, male	5-pin	10,000 mm	PUR	
50130683	KD U-M12-3W-P1-020	Connector, M12, angled, female	3-pin	2,000 mm	PUR	
50130701	KD U-M12-3W-P1-020-DP	Connector, M12, angled, female	3-pin	2,000 mm	PUR	1x
50130677	KD U-M12-3W-V1-020	Connector, M12, angled, female	3-pin	2,000 mm	PVC	
50130696	KD U-M12-3W-V1-020-DP	Connector, M12, angled, female	3-pin	2,000 mm	PVC	1x
50130684	KD U-M12-3W-P1-030	Connector, M12, angled, female	3-pin	3,000 mm	PUR	
50130702	KD U-M12-3W-P1-030-DP	Connector, M12, angled, female	3-pin	3,000 mm	PUR	1x
50130678	KD U-M12-3W-V1-030	Connector, M12, angled, female	3-pin	3,000 mm	PVC	
50130697	KD U-M12-3W-V1-030-DP	Connector, M12, angled, female	3-pin	3,000 mm	PVC	1x
50130685	KD U-M12-3W-P1-050	Connector, M12, angled, female	3-pin	5,000 mm	PUR	
50130703	KD U-M12-3W-P1-050-DP	Connector, M12, angled, female	3-pin	5,000 mm	PUR	1x
50130679	KD U-M12-3W-V1-050	Connector, M12, angled, female	3-pin	5,000 mm	PVC	
50130698	KD U-M12-3W-V1-050-DP	Connector, M12, angled, female	3-pin	5,000 mm	PVC	1x
50130687	KD U-M12-3W-P1-100	Connector, M12, angled, female	3-pin	10,000 mm	PUR	
50130704	KD U-M12-3W-P1-100-DP	Connector, M12, angled, female	3-pin	10,000 mm	PUR	1x
50130681	KD U-M12-3W-V1-100	Connector, M12, angled, female	3-pin	10,000 mm	PVC	
50130699	KD U-M12-3W-V1-100-DP	Connector, M12, angled, female	3-pin	10,000 mm	PVC	1x
50130705	KD U-M12-3W-P1-150-DP	Connector, M12, angled, female	3-pin	15,000 mm	PUR	1x
50130700	KD U-M12-3W-V1-150-DP	Connector, M12, angled, female	3-pin	15,000 mm	PVC	1x
50130728	KD S-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR	
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR	
50130936	KD U-M12-4W-P1-020-3DP	Connector, M12, angled, female	4-pin	2,000 mm	PUR	3x
50130718	KD U-M12-4W-P1-020-DP	Connector, M12, angled, female	4-pin	2,000 mm	PUR	1x
50104571	K-D M12W-4P-2m-FAB	Connector, M12, angled, female	4-pin	2,000 mm	PVC	
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC	

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Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material	Number of LEDs
50130933	KD U-M12-4W-V1-020-3DP	Connector, M12, angled, female	4-pin	2,000 mm	PVC	3x
50130706	KD U-M12-4W-V1-020-DP	Connector, M12, angled, female	4-pin	2,000 mm	PVC	1x
50130693	KD U-M12-4W-P1-030	Connector, M12, angled, female	4-pin	3,000 mm	PUR	
50130937	KD U-M12-4W-P1-030-3DP	Connector, M12, angled, female	4-pin	3,000 mm	PUR	3x
50130719	KD U-M12-4W-P1-030-DP	Connector, M12, angled, female	4-pin	3,000 mm	PUR	1x
50130689	KD U-M12-4W-V1-030	Connector, M12, angled, female	4-pin	3,000 mm	PVC	
50130708	KD U-M12-4W-V1-030-DP	Connector, M12, angled, female	4-pin	3,000 mm	PVC	1x
50130729	KD S-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR	
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR	
50130938	KD U-M12-4W-P1-050-3DP	Connector, M12, angled, female	4-pin	5,000 mm	PUR	3x
50130720	KD U-M12-4W-P1-050-DP	Connector, M12, angled, female	4-pin	5,000 mm	PUR	1x
50104573	K-D M12W-4P-5m-FAB	Connector, M12, angled, female	4-pin	5,000 mm	PVC	
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC	
50130934	KD U-M12-4W-V1-050-3DP	Connector, M12, angled, female	4-pin	5,000 mm	PVC	3x
50130709	KD U-M12-4W-V1-050-DP	Connector, M12, angled, female	4-pin	5,000 mm	PVC	1x
50130730	KD S-M12-4W-P1-100	Connector, M12, angled, female	4-pin	10,000 mm	PUR	
50130695	KD U-M12-4W-P1-100	Connector, M12, angled, female	4-pin	10,000 mm	PUR	
50130939	KD U-M12-4W-P1-100-3DP	Connector, M12, angled, female	4-pin	10,000 mm	PUR	3x
50130721	KD U-M12-4W-P1-100-DP	Connector, M12, angled, female	4-pin	10,000 mm	PUR	1x
50112961	K-D M12W-4P-10m-FAB	Connector, M12, angled, female	4-pin	10,000 mm	PVC	
50130691	KD U-M12-4W-V1-100	Connector, M12, angled, female	4-pin	10,000 mm	PVC	
50130935	KD U-M12-4W-V1-100-3DP	Connector, M12, angled, female	4-pin	10,000 mm	PVC	3x
50130710	KD U-M12-4W-V1-100-DP	Connector, M12, angled, female	4-pin	10,000 mm	PVC	1x
50130731	KD S-M12-4W-P1-150	Connector, M12, angled, female	4-pin	15,000 mm	PUR	
50130940	KD U-M12-4W-P1-150-3DP	Connector, M12, angled, female	4-pin	15,000 mm	PUR	3x
50137274	KD U-M12-4W-P1-150	Connector, M12, angled, female	4-pin	15,000 mm	PVC	
50104575	K-D M12W-5P-2m-FAB	Connector, M12, angled, female	5-pin	2,000 mm	PVC	
50104577	K-D M12W-5P-5m-FAB	Connector, M12, angled, female	5-pin	5,000 mm	PVC	
429172	CB-M12-25000S-5WF	Connector, M12, angled, female	5-pin	25,000 mm	PUR	
50134943	KD S-M12-CW-P1-050	Connector, M12, angled, female	12-pin	5,000 mm	PUR	
548363	CB-M12-2000-4GMB	Connector, M12, axial, male	4-pin	2,000 mm	PUR	
50135971	KS U-M12-4A-V1-020	Connector, M12, axial, male	4-pin	2,000 mm	PVC	
50135972	KS U-M12-4A-V1-050	Connector, M12, axial, male	4-pin	5,000 mm	PVC	
150717	CB-M12-2000-5GM	Connector, M12, axial, male	5-pin	2,000 mm	PUR	
50101941	KB-008-3000 A-S	Connector, M12, axial, male	5-pin	3,000 mm	PUR	
150718	CB-M12-5000-5GM	Connector, M12, axial, male	5-pin	5,000 mm	PUR	
678050	CB-M12-5000E-5GM	Connector, M12, axial, male	5-pin	5,000 mm	PUR	
678051	CB-M12-10000E-5GM	Connector, M12, axial, male	5-pin	10,000 mm	PUR	
50102971	KB 008-10000 A-S	Connector, M12, axial, male	5-pin	10,000 mm	PUR	
678052	CB-M12-15000E-5GM	Connector, M12, axial, male	5-pin	15,000 mm	PUR	
678053	CB-M12-25000E-5GM	Connector, M12, axial, male	5-pin	25,000 mm	PUR	
50130643	KD U-M12-3A-P1-020	Connector, M12, axial, female	3-pin	2,000 mm	PUR	
50130664	KD U-M12-3A-P1-020-DP	Connector, M12, axial, female	3-pin	2,000 mm	PUR	1x
50130636	KD U-M12-3A-V1-020	Connector, M12, axial, female	3-pin	2,000 mm	PVC	
50130659	KD U-M12-3A-V1-020-DP	Connector, M12, axial, female	3-pin	2,000 mm	PVC	1x
50130644	KD U-M12-3A-P1-030	Connector, M12, axial, female	3-pin	3,000 mm	PUR	
50130665	KD U-M12-3A-P1-030-DP	Connector, M12, axial, female	3-pin	3,000 mm	PUR	1x
50130637	KD U-M12-3A-V1-030	Connector, M12, axial, female	3-pin	3,000 mm	PVC	
50130660	KD U-M12-3A-V1-030-DP	Connector, M12, axial, female	3-pin	3,000 mm	PVC	1x
50130645	KD U-M12-3A-P1-050	Connector, M12, axial, female	3-pin	5,000 mm	PUR	
50130666	KD U-M12-3A-P1-050-DP	Connector, M12, axial, female	3-pin	5,000 mm	PUR	1x
50130638	KD U-M12-3A-V1-050	Connector, M12, axial, female	3-pin	5,000 mm	PVC	
50130661	KD U-M12-3A-V1-050-DP	Connector, M12, axial, female	3-pin	5,000 mm	PVC	1x
50130646	KD U-M12-3A-P1-100	Connector, M12, axial, female	3-pin	10,000 mm	PUR	
50130667	KD U-M12-3A-P1-100-DP	Connector, M12, axial, female	3-pin	10,000 mm	PUR	1x
50130639	KD U-M12-3A-V1-100	Connector, M12, axial, female	3-pin	10,000 mm	PVC	
50130663	KD U-M12-3A-V1-100-DP	Connector, M12, axial, female	3-pin	10,000 mm	PVC	1x
50136682	KD U-M12-3A-P1-150	Connector, M12, axial, female	3-pin	15,000 mm	PUR	
50130725	KD S-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR	
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR	
50130672	KD U-M12-4A-P1-020-DP	Connector, M12, axial, female	4-pin	2,000 mm	PUR	1x
50104570	K-D M12A-4P-2m-FAB	Connector, M12, axial, female	4-pin	2,000 mm	PVC	
50130722	KD S-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC	
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC	
50130668	KD U-M12-4A-V1-020-DP	Connector, M12, axial, female	4-pin	2,000 mm	PVC	1x

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material	Number of LEDs
50130656	KD U-M12-4A-P1-030	Connector, M12, axial, female	4-pin	3,000 mm	PUR	
50130674	KD U-M12-4A-P1-030-DP	Connector, M12, axial, female	4-pin	3,000 mm	PUR	1x
50130651	KD U-M12-4A-V1-030	Connector, M12, axial, female	4-pin	3,000 mm	PVC	
50131063	KD U-M12-4A-V1-030-DP	Connector, M12, axial, female	4-pin	3,000 mm	PVC	1x
50130726	KD S-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR	
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR	
50130675	KD U-M12-4A-P1-050-DP	Connector, M12, axial, female	4-pin	5,000 mm	PUR	1x
50104572	K-D M12A-4P-5m-FAB	Connector, M12, axial, female	4-pin	5,000 mm	PVC	
50130723	KD S-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC	
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC	
50130670	KD U-M12-4A-V1-050-DP	Connector, M12, axial, female	4-pin	5,000 mm	PVC	1x
50130727	KD S-M12-4A-P1-100	Connector, M12, axial, female	4-pin	10,000 mm	PUR	
50130658	KD U-M12-4A-P1-100	Connector, M12, axial, female	4-pin	10,000 mm	PUR	
50130676	KD U-M12-4A-P1-100-DP	Connector, M12, axial, female	4-pin	10,000 mm	PUR	1x
50112960	K-D M12A-4P-10m-FAB	Connector, M12, axial, female	4-pin	10,000 mm	PVC	
50130724	KD S-M12-4A-V1-100	Connector, M12, axial, female	4-pin	10,000 mm	PVC	
50130653	KD U-M12-4A-V1-100	Connector, M12, axial, female	4-pin	10,000 mm	PVC	
50130671	KD U-M12-4A-V1-100-DP	Connector, M12, axial, female	4-pin	10,000 mm	PVC	1x
50132434	KD S-M12-4A-P1-250	Connector, M12, axial, female	4-pin	25,000 mm	PUR	
50104574	K-D M12A-5P-2m-FAB	Connector, M12, axial, female	5-pin	2,000 mm	PVC	
50040757	KB 008-3000 A	Connector, M12, axial, female	5-pin	3,000 mm	PUR	
50133860	KD S-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR	
50104576	K-D M12A-5P-5m-FAB	Connector, M12, axial, female	5-pin	5,000 mm	PVC	
50133861	KD S-M12-5A-P1-100	Connector, M12, axial, female	5-pin	10,000 mm	PUR	
678057	CB-M12-15000E-5GF	Connector, M12, axial, female	5-pin	15,000 mm	PUR	
429075	CB-M12-15000S-5GF	Connector, M12, axial, female	5-pin	15,000 mm	PUR	
429171	CB-M12-25000S-5GF	Connector, M12, axial, female	5-pin	25,000 mm	PUR	
50129553	CB-M12-30000E-5GF	Connector, M12, axial, female	5-pin	30,000 mm	PUR	
429281	CB-M12-50000-5GF	Connector, M12, axial, female	5-pin	50,000 mm	PUR	
678059	CB-M12-50000E-5GF	Connector, M12, axial, female	5-pin	50,000 mm	PUR	
429081	CB-M12-5000S-8GF	Connector, M12, axial, female	8-pin	5,000 mm	PUR	
50135128	KD S-M12-8A-P1-050	Connector, M12, axial, female	8-pin	5,000 mm	PUR	
50135129	KD S-M12-8A-P1-100	Connector, M12, axial, female	8-pin	10,000 mm	PUR	
50135130	KD S-M12-8A-P1-150	Connector, M12, axial, female	8-pin	15,000 mm	PUR	
429288	CB-M12-25000-8GF	Connector, M12, axial, female	8-pin	25,000 mm	PUR	
50135131	KD S-M12-8A-P1-250	Connector, M12, axial, female	8-pin	25,000 mm	PUR	
429289	CB-M12-50000-8GF	Connector, M12, axial, female	8-pin	50,000 mm	PUR	
678064	CB-M12-50000E-8GF	Connector, M12, axial, female	8-pin	50,000 mm	PUR	
50130281	KD S-M12-CA-P1-020	Connector, M12, axial, female	12-pin	2,000 mm	PUR	
50130282	KD S-M12-CA-P1-050	Connector, M12, axial, female	12-pin	5,000 mm	PUR	
50130283	KD S-M12-CA-P1-100	Connector, M12, axial, female	12-pin	10,000 mm	PUR	
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR	
50130893	KD U-M8-3W-P1-020-DP	Connector, M8, angled, female	3-pin	2,000 mm	PUR	1x
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC	
50130889	KD U-M8-3W-V1-020-DP	Connector, M8, angled, female	3-pin	2,000 mm	PVC	1x
50130866	KD U-M8-3W-P1-030	Connector, M8, angled, female	3-pin	3,000 mm	PUR	
50130894	KD U-M8-3W-P1-030-DP	Connector, M8, angled, female	3-pin	3,000 mm	PUR	1x
50130861	KD U-M8-3W-V1-030	Connector, M8, angled, female	3-pin	3,000 mm	PVC	
50130890	KD U-M8-3W-V1-030-DP	Connector, M8, angled, female	3-pin	3,000 mm	PVC	1x
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR	
50130895	KD U-M8-3W-P1-050-DP	Connector, M8, angled, female	3-pin	5,000 mm	PUR	1x
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC	
50130891	KD U-M8-3W-V1-050-DP	Connector, M8, angled, female	3-pin	5,000 mm	PVC	1x
50130868	KD U-M8-3W-P1-100	Connector, M8, angled, female	3-pin	10,000 mm	PUR	
50130896	KD U-M8-3W-P1-100-DP	Connector, M8, angled, female	3-pin	10,000 mm	PUR	1x
50130863	KD U-M8-3W-V1-100	Connector, M8, angled, female	3-pin	10,000 mm	PVC	
50130892	KD U-M8-3W-V1-100-DP	Connector, M8, angled, female	3-pin	10,000 mm	PVC	1x
50130998	KD U-M8-3W-P1-200	Connector, M8, angled, female	3-pin	20,000 mm	PUR	
50130864	KD U-M8-3W-V1-200	Connector, M8, angled, female	3-pin	20,000 mm	PVC	
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR	
50130880	KD U-M8-4W-P1-020-DP	Connector, M8, angled, female	4-pin	2,000 mm	PUR	1x
50106154	K-D M8W-4P-2m-FAB	Connector, M8, angled, female	4-pin	2,000 mm	PVC	
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC	
50130877	KD U-M8-4W-V1-020-DP	Connector, M8, angled, female	4-pin	2,000 mm	PVC	1x
50130874	KD U-M8-4W-P1-030	Connector, M8, angled, female	4-pin	3,000 mm	PUR	
50130870	KD U-M8-4W-V1-030	Connector, M8, angled, female	4-pin	3,000 mm	PVC	

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Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material	Number of LEDs
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR	
50130881	KD U-M8-4W-P1-050-DP	Connector, M8, angled, female	4-pin	5,000 mm	PUR	1x
50106155	K-D M8W-4P-5m-FAB	Connector, M8, angled, female	4-pin	5,000 mm	PVC	
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC	
50130878	KD U-M8-4W-V1-050-DP	Connector, M8, angled, female	4-pin	5,000 mm	PVC	1x
50130876	KD U-M8-4W-P1-100	Connector, M8, angled, female	4-pin	10,000 mm	PUR	
50130882	KD U-M8-4W-P1-100-DP	Connector, M8, angled, female	4-pin	10,000 mm	PUR	1x
50110273	K-D M8W-4P-10m-FAB	Connector, M8, angled, female	4-pin	10,000 mm	PVC	
50130872	KD U-M8-4W-V1-100	Connector, M8, angled, female	4-pin	10,000 mm	PVC	
50130879	KD U-M8-4W-V1-100-DP	Connector, M8, angled, female	4-pin	10,000 mm	PVC	1x
50130829	KS U-M8-3A-P1-020	Connector, M8, axial, male	3-pin	2,000 mm	PUR	
50130831	KS U-M8-3A-P1-050	Connector, M8, axial, male	3-pin	5,000 mm	PUR	
50130833	KS U-M8-3A-P1-100	Connector, M8, axial, male	3-pin	10,000 mm	PUR	
50130834	KS U-M8-4A-P1-020	Connector, M8, axial, male	4-pin	2,000 mm	PUR	
50130835	KS U-M8-4A-P1-050	Connector, M8, axial, male	4-pin	5,000 mm	PUR	
50130836	KS U-M8-4A-P1-100	Connector, M8, axial, male	4-pin	10,000 mm	PUR	
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR	
50130886	KD U-M8-3A-P1-020-DP	Connector, M8, axial, female	3-pin	2,000 mm	PUR	1x
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC	
50130883	KD U-M8-3A-V1-020-DP	Connector, M8, axial, female	3-pin	2,000 mm	PVC	1x
50130843	KD U-M8-3A-P1-030	Connector, M8, axial, female	3-pin	3,000 mm	PUR	
50130838	KD U-M8-3A-V1-030	Connector, M8, axial, female	3-pin	3,000 mm	PVC	
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR	
50130887	KD U-M8-3A-P1-050-DP	Connector, M8, axial, female	3-pin	5,000 mm	PUR	1x
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC	
50130884	KD U-M8-3A-V1-050-DP	Connector, M8, axial, female	3-pin	5,000 mm	PVC	1x
50130845	KD U-M8-3A-P1-100	Connector, M8, axial, female	3-pin	10,000 mm	PUR	
50130888	KD U-M8-3A-P1-100-DP	Connector, M8, axial, female	3-pin	10,000 mm	PUR	1x
50130839	KD U-M8-3A-V1-100	Connector, M8, axial, female	3-pin	10,000 mm	PVC	
50130885	KD U-M8-3A-V1-100-DP	Connector, M8, axial, female	3-pin	10,000 mm	PVC	1x
50130846	KD U-M8-3A-P1-150	Connector, M8, axial, female	3-pin	15,000 mm	PUR	
50130840	KD U-M8-3A-V1-150	Connector, M8, axial, female	3-pin	15,000 mm	PVC	
50130847	KD U-M8-3A-P1-200	Connector, M8, axial, female	3-pin	20,000 mm	PUR	
50130841	KD U-M8-3A-V1-200	Connector, M8, axial, female	3-pin	20,000 mm	PVC	
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR	
50106152	K-D M8A-4P-2m-FAB	Connector, M8, axial, female	4-pin	2,000 mm	PVC	
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC	
50130855	KD U-M8-4A-P1-030	Connector, M8, axial, female	4-pin	3,000 mm	PUR	
50130849	KD U-M8-4A-V1-030	Connector, M8, axial, female	4-pin	3,000 mm	PVC	
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR	
50106153	K-D M8A-4P-5m-FAB	Connector, M8, axial, female	4-pin	5,000 mm	PVC	
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC	
50130857	KD U-M8-4A-P1-100	Connector, M8, axial, female	4-pin	10,000 mm	PUR	
50110274	K-D M8A-4P-10m-FAB	Connector, M8, axial, female	4-pin	10,000 mm	PVC	
50130851	KD U-M8-4A-V1-100	Connector, M8, axial, female	4-pin	10,000 mm	PVC	
50130858	KD U-M8-4A-P1-150	Connector, M8, axial, female	4-pin	15,000 mm	PUR	
50130852	KD U-M8-4A-V1-150	Connector, M8, axial, female	4-pin	15,000 mm	PVC	
50130859	KD U-M8-4A-P1-200	Connector, M8, axial, female	4-pin	20,000 mm	PUR	
50130853	KD U-M8-4A-V1-200	Connector, M8, axial, female	4-pin	20,000 mm	PVC	

CANopen / DeviceNet

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50114693	KB DN/CAN-2000 SA	Connector, M12, axial, male	5-pin	2,000 mm	DeviceNet, CANopen	PUR
50114697	KB DN/CAN-5000 SA	Connector, M12, axial, male	5-pin	5,000 mm	CANopen, DeviceNet	PUR
50114700	KB DN/CAN-10000 SA	Connector, M12, axial, male	5-pin	10,000 mm	DeviceNet, CANopen	PUR
50114702	KB DN/CAN-30000 SA	Connector, M12, axial, male	5-pin	30,000 mm	DeviceNet, CANopen	PUR
50114692	KB DN/CAN-2000 BA	Connector, M12, axial, female	5-pin	2,000 mm	DeviceNet, CANopen	PUR
50114696	KB DN/CAN-5000 BA	Connector, M12, axial, female	5-pin	5,000 mm	DeviceNet, CANopen	PUR
50114699	KB DN/CAN-10000 BA	Connector, M12, axial, female	5-pin	10,000 mm	DeviceNet, CANopen	PUR
50114701	KB DN/CAN-30000 BA	Connector, M12, axial, female	5-pin	30,000 mm	DeviceNet, CANopen	PUR

Ethernet

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50134942	KS ET-M12-4W-P7-050	Connector, M12, angled, male	4-pin	5,000 mm	Ethernet	PUR
50135073	KS ET-M12-4A-P7-020	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50135074	KS ET-M12-4A-P7-050	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135075	KS ET-M12-4A-P7-100	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50135076	KS ET-M12-4A-P7-150	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR
50135077	KS ET-M12-4A-P7-300	Connector, M12, axial, male	4-pin	30,000 mm	Ethernet	PUR

Interbus-S

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50108595	KB IBS-2000-SA	Connector, M12, axial, male	5-pin	2,000 mm	Interbus-S	PUR
50108596	KB IBS-5000-SA	Connector, M12, axial, male	5-pin	5,000 mm	Interbus-S	PUR
50108597	KB IBS-10000-SA	Connector, M12, axial, male	5-pin	10,000 mm	Interbus-S	PUR
50108598	KB IBS-15000-SA	Connector, M12, axial, male	5-pin	15,000 mm	Interbus-S	PUR
50108601	KB IBS-30000-SA	Connector, M12, axial, male	5-pin	30,000 mm	Interbus-S	PUR
50104172	KB SSI/IBS-2000-BA	Connector, M12, axial, female	5-pin	2,000 mm	SSI, Interbus-S	PUR
50104171	KB SSI/IBS-5000-BA	Connector, M12, axial, female	5-pin	5,000 mm	SSI, Interbus-S	PUR
50104170	KB SSI/IBS-10000-BA	Connector, M12, axial, female	5-pin	10,000 mm	SSI, Interbus-S	PUR
50104169	KB SSI/IBS-15000-BA	Connector, M12, axial, female	5-pin	15,000 mm	SSI, Interbus-S	PUR
50108446	KB SSI/IBS-30000-BA	Connector, M12, axial, female	5-pin	30,000 mm	SSI, Interbus-S	PUR

PROFIBUS DP

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50135247	KS PB-M12-4A-P3-020	Connector, M12, axial, male	5-pin	2,000 mm	PROFIBUS DP	PUR
50135248	KS PB-M12-4A-P3-050	Connector, M12, axial, male	5-pin	5,000 mm	PROFIBUS DP	PUR
50135249	KS PB-M12-4A-P3-100	Connector, M12, axial, male	5-pin	10,000 mm	PROFIBUS DP	PUR
50135250	KS PB-M12-4A-P3-150	Connector, M12, axial, male	5-pin	15,000 mm	PROFIBUS DP	PUR
50135251	KS PB-M12-4A-P3-300	Connector, M12, axial, male	5-pin	30,000 mm	PROFIBUS DP	PUR
50135242	KD PB-M12-4A-P3-020	Connector, M12, axial, female	5-pin	2,000 mm	PROFIBUS DP	PUR
50135243	KD PB-M12-4A-P3-050	Connector, M12, axial, female	5-pin	5,000 mm	PROFIBUS DP	PUR
50135244	KD PB-M12-4A-P3-100	Connector, M12, axial, female	5-pin	10,000 mm	PROFIBUS DP	PUR
50135245	KD PB-M12-4A-P3-150	Connector, M12, axial, female	5-pin	15,000 mm	PROFIBUS DP	PUR
50135246	KD PB-M12-4A-P3-300	Connector, M12, axial, female	5-pin	30,000 mm	PROFIBUS DP	PUR

SSI

Part no.	Part description	Connection 1	No. of pins	Cable length	Interface	Sheathing material
50104172	KB SSI/IBS-2000-BA	Connector, M12, axial, female	5-pin	2,000 mm	SSI, Interbus-S	PUR
50104171	KB SSI/IBS-5000-BA	Connector, M12, axial, female	5-pin	5,000 mm	SSI, Interbus-S	PUR
50104170	KB SSI/IBS-10000-BA	Connector, M12, axial, female	5-pin	10,000 mm	SSI, Interbus-S	PUR
50104169	KB SSI/IBS-15000-BA	Connector, M12, axial, female	5-pin	15,000 mm	SSI, Interbus-S	PUR
50108446	KB SSI/IBS-30000-BA	Connector, M12, axial, female	5-pin	30,000 mm	SSI, Interbus-S	PUR

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/// Interconnection cables

Cables with connectors on both ends, unshielded and shielded with various numbers of wires and various lengths as well as service cables for networks.

Direct access to the online product selector at **www.leuze.com/en/c-cables**

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Sheathing material
50035863	CB-D9-3000-5GF/GM	Sub-D, female, axial	9-pin	Sub-D, male, axial		3,000 mm	
50035865	CB-D9-5000-5GF/GM	Sub-D, female, axial	9-pin	Sub-D, male, axial		5,000 mm	
50035867	CB-D9-10000-5GF/GM	Sub-D, female, axial	9-pin	Sub-D, male, axial		10,000 mm	
50130745	KDS U-M12-3W-M12-3A-P1-006	Connector, M12, angled, female	3-pin	Connector, M12, axial, male	3-pin	600 mm	PUR
50130768	KDS U-M12-3W-M12-3A-P1-006-DP	Connector, M12, angled, female	3-pin	Connector, M12, axial, male	3-pin	600 mm	PUR
50130746	KDS U-M12-3W-M12-3A-P1-010	Connector, M12, angled, female	3-pin	Connector, M12, axial, male	3-pin	1,000 mm	PUR
50130769	KDS U-M12-3W-M12-3A-P1-010-DP	Connector, M12, angled, female	3-pin	Connector, M12, axial, male	3-pin	1,000 mm	PUR
548052	CB-M12-1500X-3WF/WM	Connector, M12, angled, female	3-pin	Connector, M12, angled, male	3-pin	1,500 mm	PUR
50130747	KDS U-M12-3W-M12-3A-P1-020	Connector, M12, angled, female	3-pin	Connector, M12, axial, male	3-pin	2,000 mm	PUR
50130770	KDS U-M12-3W-M12-3A-P1-020-DP	Connector, M12, angled, female	3-pin	Connector, M12, axial, male	3-pin	2,000 mm	PUR
50130748	KDS U-M12-3W-M12-3A-P1-030	Connector, M12, angled, female	3-pin	Connector, M12, axial, male	3-pin	3,000 mm	PUR
50130771	KDS U-M12-3W-M12-3A-P1-030-DP	Connector, M12, angled, female	3-pin	Connector, M12, axial, male	3-pin	3,000 mm	PUR
50130749	KDS U-M12-3W-M12-3A-P1-050	Connector, M12, angled, female	3-pin	Connector, M12, axial, male	3-pin	5,000 mm	PUR
50130772	KDS U-M12-3W-M12-3A-P1-050-DP	Connector, M12, angled, female	3-pin	Connector, M12, axial, male	3-pin	5,000 mm	PUR
50130941	KDS U-M12-4W-M12-4A-P1-006-3DP	Connector, M12, angled, female	4-pin	Connector, M12, axial, male	4-pin	600 mm	PUR
50130942	KDS U-M12-4W-M12-4A-P1-010-3DP	Connector, M12, angled, female	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	PUR
50130943	KDS U-M12-4W-M12-4A-P1-015-3DP	Connector, M12, angled, female	4-pin	Connector, M12, axial, male	4-pin	1,500 mm	PUR
50130944	KDS U-M12-4W-M12-4A-P1-020-3DP	Connector, M12, angled, female	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	PUR
50130945	KDS U-M12-4W-M12-4A-P1-030-3DP	Connector, M12, angled, female	4-pin	Connector, M12, axial, male	4-pin	3,000 mm	PUR
50130946	KDS U-M12-4W-M12-4A-P1-050-3DP	Connector, M12, angled, female	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	PUR
50130732	KDS U-M12-3A-M12-3A-P1-006	Connector, M12, axial, female	3-pin	Connector, M12, axial, male	3-pin	600 mm	PUR
50130733	KDS U-M12-3A-M12-3A-P1-010	Connector, M12, axial, female	3-pin	Connector, M12, axial, male	3-pin	1,000 mm	PUR
150680	CB-M12-1500-3GF/GM	Connector, M12, axial, female	3-pin	Connector, M12, axial, male	3-pin	1,500 mm	PUR
150681	CB-M12-1500-3GF/WM	Connector, M12, axial, female	3-pin	Connector, M12, angled, male	3-pin	1,500 mm	PUR
548051	CB-M12-1500X-3GF/GM	Connector, M12, axial, female	3-pin	Connector, M12, axial, male	3-pin	1,500 mm	PUR
548050	CB-M12-1500X-3GF/WM	Connector, M12, axial, female	3-pin	Connector, M12, angled, male	3-pin	1,500 mm	PUR
50130734	KDS U-M12-3A-M12-3A-P1-020	Connector, M12, axial, female	3-pin	Connector, M12, axial, male	3-pin	2,000 mm	PUR
50130735	KDS U-M12-3A-M12-3A-P1-030	Connector, M12, axial, female	3-pin	Connector, M12, axial, male	3-pin	3,000 mm	PUR
150683	CB-M12-5000-3GF/WM	Connector, M12, axial, female	3-pin	Connector, M12, angled, male	3-pin	5,000 mm	PUR
50130736	KDS U-M12-3A-M12-3A-P1-050	Connector, M12, axial, female	3-pin	Connector, M12, axial, male	3-pin	5,000 mm	PUR
150684	CB-M12-15000-3GF/GM	Connector, M12, axial, female	3-pin	Connector, M12, axial, male	3-pin	15,000 mm	PUR
150685	CB-M12-15000-3GF/WM	Connector, M12, axial, female	3-pin	Connector, M12, angled, male	3-pin	15,000 mm	PUR
50130737	KDS U-M12-4A-M12-4A-P1-003	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	300 mm	PUR
50130762	KDS U-M12-4A-M12-4A-P1-003-DP	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	300 mm	PUR
50130756	KDS U-M12-4A-M12-4W-P1-003	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	300 mm	PUR
50116738	K-DS M12A-M8A-4P-0,3m-PVC	Connector, M12, axial, female	4-pin	Connector, M8, axial, male	4-pin	300 mm	PVC
50130750	KDS U-M12-4A-M12-4W-V1-003	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	300 mm	PVC
50130738	KDS U-M12-4A-M12-4A-P1-006	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	600 mm	PUR
50130763	KDS U-M12-4A-M12-4A-P1-006-DP	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	600 mm	PUR
50130757	KDS U-M12-4A-M12-4W-P1-006	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	600 mm	PUR
50130751	KDS U-M12-4A-M12-4W-V1-006	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	600 mm	PVC
50130739	KDS U-M12-4A-M12-4A-P1-010	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	PUR
50130764	KDS U-M12-4A-M12-4A-P1-010-DP	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	PUR
50130758	KDS U-M12-4A-M12-4W-P1-010	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	1,000 mm	PUR
50130752	KDS U-M12-4A-M12-4W-V1-010	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	1,000 mm	PVC
50130740	KDS U-M12-4A-M12-4A-P1-015	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	1,500 mm	PUR
50130741	KDS U-M12-4A-M12-4A-P1-020	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	PUR
50130765	KDS U-M12-4A-M12-4A-P1-020-DP	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	PUR
50130759	KDS U-M12-4A-M12-4W-P1-020	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	2,000 mm	PUR
50132438	KDS U-M12-4A-M12-4A-V1-020	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	PVC

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Sheathing material
50130753	KDS U-M12-4A-M12-4W-V1-020	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	2,000 mm	PVC
50130742	KDS U-M12-4A-M12-4A-P1-030	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	3,000 mm	PUR
50130766	KDS U-M12-4A-M12-4A-P1-030-DP	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	3,000 mm	PUR
50130760	KDS U-M12-4A-M12-4W-P1-030	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	3,000 mm	PUR
50130754	KDS U-M12-4A-M12-4W-V1-030	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	3,000 mm	PVC
50130743	KDS U-M12-4A-M12-4A-P1-050	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	PUR
50130767	KDS U-M12-4A-M12-4A-P1-050-DP	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	PUR
50130761	KDS U-M12-4A-M12-4W-P1-050	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	5,000 mm	PUR
50132439	KDS U-M12-4A-M12-4A-V1-050	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	PVC
50130755	KDS U-M12-4A-M12-4W-V1-050	Connector, M12, axial, female	4-pin	Connector, M12, angled, male	4-pin	5,000 mm	PVC
50130744	KDS U-M12-4A-M12-4A-P1-100	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	10,000 mm	PUR
548100	CB-M12-25000S-4GF/GM	Connector, M12, axial, female	4-pin	Connector, M12, axial, male	4-pin	25,000 mm	PUR
548361	CB-M12-1000-5GF/GM	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	1,000 mm	PUR
50115049	K-DS M12A-MA-5P-3m-S-PUR	Connector, M12, axial, female	5-pin	JST ZHR		3,000 mm	PUR
678032	CB-M12-20000S-5GF/GM	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	20,000 mm	PUR
50120999	K-DS M12A-8P-4P-2m-L-PUR	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	4-pin	2,000 mm	PUR
50135145	KDS S-M12-8A-M12-8A-P1-020	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	8-pin	2,000 mm	PUR
50115050	K-DS M12A-MA-8P-3m-S-PUR	Connector, M12, axial, female	8-pin	JST ZHR		3,000 mm	PUR
50121000	K-DS M12A-8P-4P-5m-L-PUR	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	4-pin	5,000 mm	PUR
50135146	KDS S-M12-8A-M12-8A-P1-050	Connector, M12, axial, female	8-pin	Connector, M12, axial, male	8-pin	5,000 mm	PUR
50130284	KDS S-M12-CA-M12-CA-P1-020	Connector, M12, axial, female	12-pin	Connector, M12, axial, male	12-pin	2,000 mm	PUR
50130285	KDS S-M12-CA-M12-CA-P1-050	Connector, M12, axial, female	12-pin	Connector, M12, axial, male	12-pin	5,000 mm	PUR
50130286	KDS S-M12-CA-M12-CA-P1-100	Connector, M12, axial, female	12-pin	Connector, M12, axial, male	12-pin	10,000 mm	PUR
50130917	KDS U-M8-3W-M8-3A-P1-003	Connector, M8, angled, female	3-pin	Connector, M8, axial, male	3-pin	300 mm	PUR
50130921	KDS U-M8-3W-M8-3A-P1-003-DP	Connector, M8, angled, female	3-pin	Connector, M8, axial, male	3-pin	300 mm	PUR
50130918	KDS U-M8-3W-M8-3A-P1-006	Connector, M8, angled, female	3-pin	Connector, M8, axial, male	3-pin	600 mm	PUR
50130922	KDS U-M8-3W-M8-3A-P1-006-DP	Connector, M8, angled, female	3-pin	Connector, M8, axial, male	3-pin	600 mm	PUR
50130919	KDS U-M8-3W-M8-3A-P1-010	Connector, M8, angled, female	3-pin	Connector, M8, axial, male	3-pin	1,000 mm	PUR
50130923	KDS U-M8-3W-M8-3A-P1-010-DP	Connector, M8, angled, female	3-pin	Connector, M8, axial, male	3-pin	1,000 mm	PUR
50130925	KDS U-M8-3W-M8-3A-P1-015-DP	Connector, M8, angled, female	3-pin	Connector, M8, axial, male	3-pin	1,500 mm	PUR
50130920	KDS U-M8-3W-M8-3A-P1-020	Connector, M8, angled, female	3-pin	Connector, M8, axial, male	3-pin	2,000 mm	PUR
50130926	KDS U-M8-3W-M8-3A-P1-020-DP	Connector, M8, angled, female	3-pin	Connector, M8, axial, male	3-pin	2,000 mm	PUR
50130901	KDS U-M8-3A-M8-3A-P1-003	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	300 mm	PUR
50130908	KDS U-M8-3A-M8-3A-P1-003-DP	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	300 mm	PUR
50130927	KDS U-M8-3A-M12-3A-P1-003	Connector, M8, axial, female	3-pin	Connector, M12, axial, male	3-pin	300 mm	PUR
50130897	KDS U-M8-3A-M8-3A-V1-003	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	300 mm	PVC
50130902	KDS U-M8-3A-M8-3A-P1-006	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	600 mm	PUR
50130909	KDS U-M8-3A-M8-3A-P1-006-DP	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	600 mm	PUR
50130928	KDS U-M8-3A-M12-3A-P1-006	Connector, M8, axial, female	3-pin	Connector, M12, axial, male	3-pin	600 mm	PUR
50130898	KDS U-M8-3A-M8-3A-V1-006	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	600 mm	PVC
50130903	KDS U-M8-3A-M8-3A-P1-010	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	1,000 mm	PUR
50130910	KDS U-M8-3A-M8-3A-P1-010-DP	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	1,000 mm	PUR
50130929	KDS U-M8-3A-M12-3A-P1-010	Connector, M8, axial, female	3-pin	Connector, M12, axial, male	3-pin	1,000 mm	PUR
50130899	KDS U-M8-3A-M8-3A-V1-010	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	1,000 mm	PVC
50136448	KDS U-M8-3A-M12-3A-V1-010	Connector, M8, axial, female	3-pin	Connector, M12, axial, male	3-pin	1,000 mm	PVC
50130904	KDS U-M8-3A-M8-3A-P1-015	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	1,500 mm	PUR
50130911	KDS U-M8-3A-M8-3A-P1-015-DP	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	1,500 mm	PUR
50130930	KDS U-M8-3A-M12-3A-P1-015	Connector, M8, axial, female	3-pin	Connector, M12, axial, male	3-pin	1,500 mm	PUR
50130905	KDS U-M8-3A-M8-3A-P1-020	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	2,000 mm	PUR
50130912	KDS U-M8-3A-M8-3A-P1-020-DP	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	2,000 mm	PUR
50130931	KDS U-M8-3A-M12-3A-P1-020	Connector, M8, axial, female	3-pin	Connector, M12, axial, male	3-pin	2,000 mm	PUR
50130900	KDS U-M8-3A-M8-3A-V1-020	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	2,000 mm	PVC
50130906	KDS U-M8-3A-M8-3A-P1-030	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	3,000 mm	PUR
50130907	KDS U-M8-3A-M8-3A-P1-050	Connector, M8, axial, female	3-pin	Connector, M8, axial, male	3-pin	5,000 mm	PUR
50130932	KDS U-M8-3A-M12-3A-P1-050	Connector, M8, axial, female	3-pin	Connector, M12, axial, male	3-pin	5,000 mm	PUR
50130913	KDS U-M8-4A-M8-4A-P1-003	Connector, M8, axial, female	4-pin	Connector, M8, axial, male	4-pin	300 mm	PUR
50107276	K-DS M8A-M12A-4P-0,3m-PVC	Connector, M8, axial, female	4-pin	Connector, M12, axial, male	4-pin	300 mm	PVC
50130914	KDS U-M8-4A-M8-4A-P1-006	Connector, M8, axial, female	4-pin	Connector, M8, axial, male	4-pin	600 mm	PUR
50130915	KDS U-M8-4A-M8-4A-P1-010	Connector, M8, axial, female	4-pin	Connector, M8, axial, male	4-pin	1,000 mm	PUR
50130916	KDS U-M8-4A-M8-4A-P1-020	Connector, M8, axial, female	4-pin	Connector, M8, axial, male	4-pin	2,000 mm	PUR

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Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50114691	KB DN/CAN-1000 SBA	Connector, M12, axial, male	5-pin	Connector, M12, axial, female	5-pin	1,000 mm	DeviceNet, CANopen	PUR
50114694	KB DN/CAN-2000 SBA	Connector, M12, axial, male	5-pin	Connector, M12, axial, female	5-pin	2,000 mm	DeviceNet, CANopen	PUR
50114698	KB DN/CAN-5000 SBA	Connector, M12, axial, male	5-pin	Connector, M12, axial, female	5-pin	5,000 mm	DeviceNet, CANopen	PUR
50122338	KB DN/CAN-10000 SBA	Connector, M12, axial, male	5-pin	Connector, M12, axial, female	5-pin	10,000 mm	DeviceNet, CANopen	PUR
50122339	KB DN/CAN-20000 SBA	Connector, M12, axial, male	5-pin	Connector, M12, axial, female	5-pin	20,000 mm	CANopen, DeviceNet	PUR
50129779	KDS DN-M12-5A-M12-5A-P3-010	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	1,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129780	KDS DN-M12-5A-M12-5A-P3-020	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	2,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129781	KDS DN-M12-5A-M12-5A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	5,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129782	KDS DN-M12-5A-M12-5A-P3-100	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	10,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129783	KDS DN-M12-5A-M12-5A-P3-200	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	20,000 mm	IO-Link, DeviceNet, CANopen	PUR

Ethernet

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50136183	KSS ET-M12-4W-RJ45-A-P7-050	Connector, M12, angled, male	4-pin	RJ45		5,000 mm	Ethernet	PUR
50136185	KSS ET-M12-4W-RJ45-A-P7-150	Connector, M12, angled, male	4-pin	RJ45		15,000 mm	Ethernet	PUR
50135079	KSS ET-M12-4A-RJ45-A-P7-006	Connector, M12, axial, male	4-pin	RJ45		600 mm	Ethernet	PUR
50130631	KSS ET-M12-4A-M12-4A-P7-010	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	1,000 mm	Ethernet	PUR
50130632	KSS ET-M12-4A-RJ45-A-P7-010	Connector, M12, axial, male	4-pin	RJ45		1,000 mm	Ethernet	PUR
50137077	KSS ET-M12-4A-M12-4A-P7-020	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	2,000 mm	Ethernet	PUR
50135080	KSS ET-M12-4A-RJ45-A-P7-020	Connector, M12, axial, male	4-pin	RJ45		2,000 mm	Ethernet	PUR
50137078	KSS ET-M12-4A-M12-4A-P7-050	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	5,000 mm	Ethernet	PUR
50135081	KSS ET-M12-4A-RJ45-A-P7-050	Connector, M12, axial, male	4-pin	RJ45		5,000 mm	Ethernet	PUR
50137079	KSS ET-M12-4A-M12-4A-P7-100	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	10,000 mm	Ethernet	PUR
50135082	KSS ET-M12-4A-RJ45-A-P7-100	Connector, M12, axial, male	4-pin	RJ45		10,000 mm	Ethernet	PUR
50137080	KSS ET-M12-4A-M12-4A-P7-150	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	15,000 mm	Ethernet	PUR
50135083	KSS ET-M12-4A-RJ45-A-P7-150	Connector, M12, axial, male	4-pin	RJ45		15,000 mm	Ethernet	PUR
50106905	KB ET-30000-SSA	Connector, M12, axial, male	4-pin	Connector, M12, axial, male	4-pin	30,000 mm	Ethernet	PUR
50135084	KSS ET-M12-4A-RJ45-A-P7-300	Connector, M12, axial, male	4-pin	RJ45		30,000 mm	Ethernet	PUR
50133387	KSS ET-M12-8A-RJ45-A-P7-050	Connector, M12, axial, male	8-pin	RJ45		5,000 mm	Ethernet	PUR

IO-Link

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50129779	KDS DN-M12-5A-M12-5A-P3-010	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	1,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129780	KDS DN-M12-5A-M12-5A-P3-020	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	2,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129781	KDS DN-M12-5A-M12-5A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	5,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129782	KDS DN-M12-5A-M12-5A-P3-100	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	10,000 mm	IO-Link, DeviceNet, CANopen	PUR
50129783	KDS DN-M12-5A-M12-5A-P3-200	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	5-pin	20,000 mm	IO-Link, DeviceNet, CANopen	PUR

PROFIBUS DP

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Connection 2, no. of pins	Cable length	Interface	Sheathing material
50135252	KDS PB-M12-4A-M12-4A-P3-010	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	1,000 mm	PROFIBUS DP	PUR
50135253	KDS PB-M12-4A-M12-4A-P3-020	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	2,000 mm	PROFIBUS DP	PUR
50135254	KDS PB-M12-4A-M12-4A-P3-050	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	5,000 mm	PROFIBUS DP	PUR
50135255	KDS PB-M12-4A-M12-4A-P3-100	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	10,000 mm	PROFIBUS DP	PUR
50135256	KDS PB-M12-4A-M12-4A-P3-150	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	15,000 mm	PROFIBUS DP	PUR
50135257	KDS PB-M12-4A-M12-4A-P3-300	Connector, M12, axial, female	5-pin	Connector, M12, axial, male	4-pin	30,000 mm	PROFIBUS DP	PUR

RS 232

Part no.	Part description	Connection 1	Connection 1, no. of pins	Connection 2	Cable length	Interface	Sheathing material
50113396	KB DSub-9P-3000	Sub-D, female, axial	9-pin	Sub-D, female, axial	3,000 mm	RS 232	PVC
50113467	KB JST-M12A-5P-3000	Connector, M12, axial, female	5-pin	JST ZHR	3,000 mm	RS 232	PUR
50114571	KB 301-3000	Socket connector		JST ZHR	3,000 mm	RS 232	PVC
50120463	KB 301-3000-MA200	Socket connector		JST ZHR	3,000 mm	RS 232	PVC
50128318	KB 301-10000	Socket connector		JST ZHR	10,000 mm	RS 232	PVC

SSI

Part no.	Part description	Connection 1	Connection 2	Cable length	Interface	Sheathing material
50126132	KB 307-3000	Socket connector	Socket connector	3,000 mm	SSI	PVC

USB

Part no.	Part description	Connection 1	Connection 2	Cable length	Interface	Sheathing material
50117011	KB USB A - USB miniB	USB 2.0 Standard-A	USB 2.0 Mini-B	1,500 mm	USB	PVC
50107726	KB USB A - USB A	USB	USB	1,800 mm	USB	PVC

/// User-configurable connectors

User-configurable connectors as plugs (male) or sockets (female) for configuration at the system.

Direct access to the online product selector at **www.leuze.com/en/connectors**

Part no.	Part description	Connection	No. of pins	Interface
50108991	D-ET1	RJ45		Ethernet
50104582	D M8A-3P-SK	Connector, M8, axial, female	3-pin	
50104583	D M8A-4P-SK	Connector, M8, axial, female	4-pin	
50031323	KD 095-4A	Connector, M12, axial, female	4-pin	
429175	CB-M12-5GF	Connector, M12, axial, female	5-pin	
50040097	KD 01-5-BA	Connector, M12, axial, female	5-pin	
50038538	KD 02-5-BA	Connector, M12, axial, female	5-pin	PROFIBUS DP, multiNet Plus
50020501	KD 095-5A	Connector, M12, axial, female	5-pin	
50081461	KD 095-5A-PG9	Connector, M12, axial, female	5-pin	

Further connectors can be found on our website

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Part no.	Part description	Connection	No. of pins	Interface
429178	CB-M12-8GF	Connector, M12, axial, female	8-pin	
50040155	KS 095-4A	Connector, M12, axial, male	4-pin	
50112155	S-M12A-ET	Connector, M12, axial, male	4-pin	Ethernet
50040098	KD 01-5-SA	Connector, M12, axial, male	5-pin	
50038537	KD 02-5-SA	Connector, M12, axial, male	5-pin	PROFIBUS DP, multiNet Plus
50114223	KS 095-5A	Connector, M12, axial, male	5-pin	
50112156	KD 01-8-SA	Connector, M12, axial, male	8-pin	
50031324	KD 095-4	Connector, M12, angled, female	4-pin	
50020502	KD 095-5	Connector, M12, angled, female	5-pin	
50101943	KD 01-5-SR	Connector, M12, angled, male	5-pin	
426046	AC-LDH-12GF	Connector, M26, axial, female	12-pin	
426045	AC-LDH-12WF	Connector, M26, angled, female	12-pin	
50132254	D M12A-12P	Connector with solder connection, M12, axial, female	12-pin	
50112157	KD 01-8-BA	Connector with screw terminals, M12, axial, female	8-pin	
520083	AC-D15E-GF	Sub-D, female, axial	15-pin	

Further connectors can be found on our website

/// Distribution box

Sensor distribution box for smart infrastructure for voltage supply and signal collection with M8 and M12 ports.

Direct access to the online product selector at **www.leuze.com/en/distrib-boxes**

Part no.	Part description	Distribution box connections	Distribution box	Master connection	Degree of protection
50130610	MD 7XXP-11-42I05-12	4x	M12, 5-pin, A-coded, female	Connector, M12, 12-pin, A-coded, male	IP 67, IP 65
50130606	MD 7XXP-11-42I05-13	4x	M12, 5-pin, A-coded, female	Connector, M23, 12-pin, A-coded, male	IP 67, IP 65
50130994	MD 7XXP-11-82I05-FK	8x	M12, 5-pin, A-coded, female	Terminal, 21-pin	IP 67, IP 65
50130603	MD 7XXP-11-82I05-K030	8x	M12, 5-pin, A-coded, female	Cable, 3,000 mm	IP 67, IP 65
50130604	MD 7XXP-11-82I05-K050	8x	M12, 5-pin, A-coded, female	Cable, 5,000 mm	IP 67, IP 65
50130605	MD 7XXP-11-82I05-K100	8x	M12, 5-pin, A-coded, female	Cable, 10,000 mm	IP 67, IP 65
50130608	MD 7XXP-11-82I05-13	8x	M12, 5-pin, A-coded, female	Connector, M23, 19-pin, A-coded, male	IP 67, IP 65
50130600	MD 7XXP-11-82I04-K030	8x	M12, 4-pin, A-coded, female	Cable, 3,000 mm	IP 67, IP 65
50130601	MD 7XXP-11-82I04-K050	8x	M12, 4-pin, A-coded, female	Cable, 5,000 mm	IP 67, IP 65
50130602	MD 7XXP-11-82I04-K100	8x	M12, 4-pin, A-coded, female	Cable, 10,000 mm	IP 67, IP 65
50130611	MD 7XXP-11-82I04-12	8x	M12, 4-pin, A-coded, female	Connector, M12, 12-pin, A-coded, male	IP 67, IP 65
50130607	MD 7XXP-11-82I04-13	8x	M12, 4-pin, A-coded, female	Connector, M23, 12-pin, A-coded, male	IP 67, IP 65
50130594	MD 7XXP-11-48I03-K030	4x	M8, 3-pin, A-coded, female	Cable, 3,000 mm	IP 67, IP 65
50130595	MD 7XXP-11-48I03-K050	4x	M8, 3-pin, A-coded, female	Cable, 5,000 mm	IP 67, IP 65
50130596	MD 7XXP-11-48I03-K100	4x	M8, 3-pin, A-coded, female	Cable, 10,000 mm	IP 67, IP 65
50130592	MD 7XXP-11-48I03-12	4x	M8, 3-pin, A-coded, female	Connector, M12, 12-pin, A-coded, male	IP 67, IP 65
50130593	MD 7XXP-11-68I03-12	6x	M8, 3-pin, A-coded, female	Connector, M12, 12-pin, A-coded, male	IP 67, IP 65
50130597	MD 7XXP-11-88I03-K030	8x	M8, 3-pin, A-coded, female	Cable, 3,000 mm	IP 67, IP 65
50130598	MD 7XXP-11-88I03-K050	8x	M8, 3-pin, A-coded, female	Cable, 5,000 mm	IP 67, IP 65
50130599	MD 7XXP-11-88I03-K100	8x	M8, 3-pin, A-coded, female	Cable, 10,000 mm	IP 67, IP 65
50130990	MD 7XXP-11-88I03-12	8x	M8, 3-pin, A-coded, female	Connector, M12, 12-pin, A-coded, male	IP 67, IP 65
50130993	MD 7XXP-11-108I03-12	10x	M8, 3-pin, A-coded, female	Connector, M12, 12-pin, A-coded, male	IP 67, IP 65

/ MOUNTING SYSTEMS

OPTIMUM SUPPORT AT ALL TIMES

For sensor mounting, we offer a large selection of standard mounting materials to help you reliably mount and – if necessary – easily align the devices.

/// Mounting bracket

Selection of mounting brackets for the simple and fast mounting of a sensor on the machine or system. Versions in galvanized material or stainless steel in different sizes for various sensors.

Direct access to the online product selector at **www.leuze.com/en/m-brackets**

Part no.	Part description	Suitable for	Design	Fastening at device	Fastening at system	Material
560120	BT-2S	COMPACTplus safety light curtain, SOLID-4, SOLID-2 safety light curtains, MLD 500, MLD 300 multiple light beam safety devices, CML700i light curtains, MLC 500, MLC 300 safety light curtains		Screw type	Through-hole mounting	Metal
430105	BT-2UM60	UM60 deflecting mirror		Screw type	Through-hole mounting	Metal
424440	BT-MLC-S-C	MLC 520S safety light curtains		Clampable	Screw type	Plastic
424441	BT-MLC-S-L	MLC 520S safety light curtains		Clampable	Screw type	Plastic
424442	BT-MLC-S-O	MLC 520S safety light curtains		Pluggable	Screw type	Plastic
50105585	BT 3.1	3B series sensors, 3C series sensors	Retaining clip	Screw type	Through-hole mounting	Metal
50111830	BT 3.5	3B series sensors	Retaining clip	Screw type	Through-hole mounting	Metal
427302	BT-MSI-MD-FB	MSI-MD-FB safety relay	Mounting plate	Screw type	Through-hole mounting, groove mounting	Metal
50103844	BT 3.2	3B series sensors	Mounting plate	Screw type	Mounting thread	Metal
429056	BT-2L	MLD 500, MLD 300 multiple light beam safety devices, CML700i light curtains, MLC 500, MLC 300 safety light curtains	Angle, L-shape	Screw type	Through-hole mounting	Metal
427303	BT-MSI-MD-FB-L	MSI-MD-FB safety relay	Angle, L-shape	Screw type	Through-hole mounting, groove mounting	Metal
50112206	BT 002M.5	2 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50115197	BT 003M.1	3B series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50060511	BT 3	3B series sensors, 3C series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50105546	BT 3B	3B series sensors, 3C series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50036195	BT 8	8 series sensors, ODSL 30	Angle, L-shape	Screw type	Through-hole mounting	Metal
50006902	BT 16	78 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50011791	BT 24	VS 24	Angle, L-shape	Screw type	Through-hole mounting	Metal
50040269	BT 25	25 series sensors, 55 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50105315	BT 46	46B series sensors, 46C series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50080152	BT 64	LS 64	Angle, L-shape	Screw type	Through-hole mounting	Metal
50016515	BT 66	LS 66, 713 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

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Part no.	Part description	Suitable for	Design	Fastening at device	Fastening at system	Material
50003374	BT 78	78 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50003376	BT 85	85 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50018415	BT 92	92 series sensors, 97 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50020833	BT 95	95 series sensors, 18 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50025570	BT 96	96B series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50080614	BT 96.1	96B series sensors, 49C series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50032319	BT 96.4	96B series sensors, 49C series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50118542	BT 200M.5	3B series sensors, 25B series sensors, 5 series sensors, 18 series sensors, 28 series sensors, 3C series sensors	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50124651	BT 205M	5 series sensors, 3B series sensors, 25B series sensors, 28 series sensors, 3C series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50121433	BT 300 W	BCL 3xxi series bar code readers, BCL 3xxi series bar code readers with deflecting mirror	Angle, L-shape	Screw type	Through-hole mounting	Metal
50118543	BT 300M.5	8 series sensors, 46B series sensors, ODSL 9, 46C series sensors	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel, V2A
50132151	BT 320M	DCR 200i series stationary 2D-code readers	Angle, L-shape	Screw type	Through-hole mounting	Metal
50080776	BT 713	713 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50131534	BT 900	BCL 900i series bar code reader	Angle, L-shape	Screw type	Through-hole mounting	Metal
50009419	BT 910M	TK 100x100 reflector	Angle, L-shape	Screw type	Through-hole mounting	Metal
50113550	BT D08M.5	208 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50113549	BT D12M.5	212 series sensors, sensors with M12 design	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50113548	BT D18M.5	218 series sensors, 318 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50117257	BT D21M	318 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Metal
50113510	BT D30M.5	230 series sensors, 430 series sensors	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
429057	BT-2Z	MLD 500, MLD 300 multiple light beam safety devices, CML700i light curtains, MLC 500, MLC 300 safety light curtains	Angle, Z-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

/// Rod mounts

Selection of mounting brackets for the simple and fast mounting of a sensor on the machine or system. Versions in galvanized material or stainless steel in different sizes for various sensors.

Direct access to the online product selector at **www.leuze.com/en/r-fastening**

Part no.	Part description	Suitable for	Design	Fastening at device	Fastening at system	Material
50111391	BT 20-D10	BCL 2x series bar code readers, 25 series sensors	Mounting system	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50060503	BT 20-D12	BCL 2x series bar code readers, 25 series sensors	Mounting system	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50027375	BT 56	BCL 3x series bar code readers, BCL 5xxi series bar code readers, BPS 3x series bar code positioning system, LSIS 4xxi series stationary 2D-code readers, BCL 3xxi series bar code readers, BCL 3xxi series bar code readers with deflecting mirror, BPS 300i series bar code positioning system, LxS light section sensors	Mounting system	Clampable	For 16 mm rod, for 18 mm rod, 20 mm rod	Metal
50121435	BT 56 - 1	BCL 3xxi series bar code readers, BCL 5xxi series bar code readers, LSIS 4xxi series stationary 2D-code readers, BPS 300i series bar code positioning system, LxS light section sensors	Mounting system	Clampable	For 12 mm rod, for 14 mm rod, 16 mm rod	Metal
50126007	BT 56 - V	LxS light section sensors	Mounting system	Clampable	For 16 mm rod, for 14 mm rod, 12 mm rod	Metal
50121434	BT 300 - 1	BCL 3xxi series bar code readers, BCL 3xxi series bar code readers with deflecting mirror	Mounting system	Screw type	For 12 mm rod, for 14 mm rod, 16 mm rod	Metal
50082084	BT 450.1-96	96B series sensors, 49C series sensors	Mounting system	Screw type	For 10 mm rod	Metal
50104897	BT 450.3-96	96B series sensors, 49C series sensors	Mounting system	Screw type	For 12 mm rod	Metal
50127177	BTU 008M-D10	8 series sensors	Mounting system	Screw type	Sheet-metal mounting, for 10 mm rod	Metal
50116817	BTU 053M.5F-D12-A090	53 series sensors	Mounting system	Screw type	For 12 mm rod	Stainless steel
50116816	BTU 053M.5F-D12-A180	53 series sensors	Mounting system	Screw type	For 12 mm rod	Stainless steel
50116820	BTU 053M.5F-D12-N	53 series sensors	Mounting system	Screw type	For 12 mm rod	Stainless steel
50116819	BTU 053M.5F-D12-SS	53 series sensors	Mounting system	Screw type	For 12 mm rod	Stainless steel
50116815	BTU 053M.5F-D20-N	53 series sensors	Mounting system	Screw type	For 20 mm rod	Stainless steel
50116814	BTU 053M.5F-D20-SS	53 series sensors	Mounting system	Screw type	For 20 mm rod	Stainless steel

Further rod mounts can be found on our website

Part no.	Part description	Suitable for	Design	Fastening at device	Fastening at system	Material
50120426	BTU 200M.5-D12	18 series sensors, 5 series sensors, 25B series sensors, 3B series sensors, 55 series sensors, 28 series sensors, 3C series sensors	Mounting system	Screw type	For 12 mm rod	Stainless steel
50132150	BTU 320M-D12	DCR 200i series stationary 2D-code readers	Mounting system	Screw type	For 12 mm rod	Metal
50132453	BTU 320M-D12-RL70	DCR 200i series stationary 2D-code readers, RL-70/40 illumination	Mounting system	Screw type	For 12 mm rod	Metal
50132605	BTU 360-D18	46B series sensors, 46C series sensors, 49C series sensors, 10 series sensors	Mounting system	Screw type	For 18 mm rod	Plastic, metal
50132606	BTU 360-D30	46B series sensors, 46C series sensors, 49C series sensors, 10 series sensors	Mounting system	Screw type	For 30 mm rod	Plastic, metal
50128379	BTU 460M-D10	49C series sensors, BCL 3xxi series bar code readers, bar code positioning systems, 10 series sensors	Mounting system	Screw type	For 10 mm rod	Metal
50128380	BTU 460M-D12	49C series sensors, BCL 3xxi series bar code readers, bar code positioning systems, 10 series sensors	Mounting system	Screw type	For 12 mm rod	Metal
50120011	BTU 934M-D10-90	PRK retro-reflective photoelectric sensors	Mounting system	Adhesive	For 10 mm rod, sheet-metal mounting	Metal
50120019	BTU 934M-D12-90	PRK retro-reflective photoelectric sensors	Mounting system	Adhesive	For 12 mm rod, sheet-metal mounting	Metal
50120010	BTU 934M-D14-90	PRK retro-reflective photoelectric sensors	Mounting system	Adhesive	Sheet-metal mounting, for 14 mm rod	Metal
50119334	BTU D12M-D12-A090	12 mm rod	Mounting system	Clampable	For 12 mm rod, through-hole mounting	Metal
50119333	BTU D12M-D12-B090	12 mm rod	Mounting system	Clampable	For 12 mm rod, through-hole mounting	Metal
50132567	BTU D12M-VKT-90	12 mm rod	Mounting system	Clampable	Through-hole mounting, for 12 mm rod	Metal
430305	MMS-A-2N55	PRK retro-reflective photoelectric sensor, HRT diffuse reflection sensor	Mounting system	Groove mounting	Through-hole mounting	Metal
430306	MMS-AP-N60	PRK retro-reflective photoelectric sensor, HRT diffuse reflection sensor	Mounting system	Groove mounting	Through-hole mounting	Metal
50026204	UMS 96	96B series sensors	Mounting system	Clampable	For 10 mm rod, for 12 mm rod, 14 mm rod, 16 mm rod	Metal
50027191	UMS 96-82	96B series sensors	Mounting system	Clampable	For 10 mm rod, for 12 mm rod, 14 mm rod, 16 mm rod	Metal
50080334	UMS 96-95	96B series sensors	Mounting system	Clampable	For 10 mm rod, for 12 mm rod, 14 mm rod, 16 mm rod	Metal
50129149	BTU 346M.6-D12	(M)TKS 30x50 reflector, TKS 20x40 reflector, 46B series sensors, TKS 50x50 reflector, (M)TKS 40x60 reflector	Mounting system, turnable, 360 °, adjustable, clampable	Screw type	For 12 mm rod, sheet-metal mounting	Metal, stainless steel
50122797	BTU 346M-D12	46B series sensors, (M)TKS 30x50 reflector, TKS 50x50 reflector, 3B series sensors, 25B series sensors, TKS 20x40 reflector, (M)TKS 40x60 reflector, 46C series sensors	Mounting system, turnable, 360 °, clampable, adjustable	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50122798	BTU 346M.5-D12	46B series sensors, (M)TKS 30x50 reflector, TKS 50x50 reflector, TKS 20x40 reflector, (M)TKS 40x60 reflector	Mounting system, turnable, 360 °, clampable, adjustable	Screw type	For 12 mm rod, sheet-metal mounting	Stainless steel
50119332	BTU 900M-D10	(M)TKS 30x50 reflector, TKS 50x50 reflector, (M)TKS 40x60 reflector, 46C series sensors	Mounting system, clampable, turnable, 360 °, swiveling	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50119331	BTU 900M-D12	(M)TKS 30x50 reflector, TKS 50x50 reflector, (M)TKS 40x60 reflector, 46C series sensors	Mounting system, clampable, turnable, 360 °, swiveling	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50119330	BTU 900M-D14	(M)TKS 30x50 reflector, TKS 50x50 reflector, (M)TKS 40x60 reflector, 46C series sensors	Mounting system, clampable, turnable, 360 °, swiveling	Screw type	For 14 mm rod, sheet-metal mounting	Metal
50117256	BTU 200M-D10	3B series sensors, 25B series sensors, 18 series sensors, 5 series sensors, 55 series sensors, 28 series sensors, 3C series sensors	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	3B series sensors, 25B series sensors, 18 series sensors, 5 series sensors, 55 series sensors, 28 series sensors, 3C series sensors	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	3B series sensors, 25B series sensors, 18 series sensors, 5 series sensors, 55 series sensors, 28 series sensors, 3C series sensors	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal
50117253	BTU 300M-D10	8 series sensors, 46B series sensors, ODSL 9, 46C series sensors, 10 series sensors	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117252	BTU 300M-D12	8 series sensors, 46B series sensors, ODSL 9, 46C series sensors, 10 series sensors	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117251	BTU 300M-D14	8 series sensors, 46B series sensors, ODSL 9, 46C series sensors, 10 series sensors	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod, sheet-metal mounting	Metal
50120425	BTU 300M.5-D12	46B series sensors, 8 series sensors, ODSL 9, 46C series sensors, 10 series sensors	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod, sheet-metal mounting	Stainless steel
50117490	BTU D18M-D12	318 series sensors, 28 series sensors, 218 series sensors, sensors with M18 design	Mounting system, clampable, adjustable, turnable, 360 °	Screw type	Through-hole mounting	Metal
50119325	BTU D12M.5-045-M8	BTU D12M-D12-B090, BTU D12M-D12-A090	12 mm rod	Clampable	Mounting thread	Stainless steel
424900	BTU D12M.5-100	BTU D12M-D12-A090, BTU D12M-D12-B090	12 mm rod	Clampable	Clampable	Stainless steel
50119323	BTU D12M.5-150	BTU D12M-D12-B090, BTU D12M-D12-A090	12 mm rod	Clampable	Clampable	Stainless steel
50119324	BTU D12M.5-250	BTU D12M-D12-B090, BTU D12M-D12-A090	12 mm rod	Clampable	Clampable	Stainless steel
50135446	BTU D12M-L-140	BTU D12M-D12-A090, BTU D12M-D12-B090, BTU D12M-VKT-90	L-shaped 12 mm rod	Clampable	Clampable	Metal
50132565	BTU D12M-Z-230	BTU D12M-D12-A090, BTU D12M-D12-B090, BTU D12M-VKT-90	Z-shaped 12 mm rod	Clampable	Clampable	Metal
50132564	BTU D12M.5-Z-230	BTU D12M-D12-A090, BTU D12M-D12-B090, BTU D12M-VKT-90	Z-shaped 12 mm rod	Clampable	Clampable	Stainless steel

Further rod mounts can be found on our website

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Part no.	Part description	Suitable for	Design	Fastening at device	Fastening at system	Material
50117830	BTP 200M-D10	3B series sensors, 25B series sensors, 18 series sensors, 5 series sensors	Protection hood, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod	Metal
50117829	BTP 200M-D12	3B series sensors, 25B series sensors, 18 series sensors, 5 series sensors	Protection hood, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod	Metal
50117828	BTP 200M-D14	3B series sensors, 18 series sensors, 5 series sensors	Protection hood, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod	Metal
50117827	BTP 300M-D10	46B series sensors, 8 series sensors, ODSL 9	Protection hood, clampable, adjustable, turnable, 360 °	Screw type	For 10 mm rod	Metal
50117826	BTP 300M-D12	46B series sensors, 8 series sensors, ODSL 9	Protection hood, clampable, adjustable, turnable, 360 °	Screw type	For 12 mm rod	Metal
50117825	BTP 300M-D14	46B series sensors, 8 series sensors, ODSL 9	Protection hood, clampable, adjustable, turnable, 360 °	Screw type	For 14 mm rod	Metal

Further rod mounts can be found on our website

/// Other mounting systems

Various mounting devices such as mounting clamps, sliding blocks, swiveling mounting brackets, adjustable mounting brackets, cylindrical mounting systems, table and wall mounting brackets, rope, quick-change mounting brackets and much more.

Direct access to the online product selector at **www.leuze.com/en/s-fastening**

Part no.	Part description	Suitable for	Design	Fastening at device	Fastening at system	Material
50135263	AC MA200-KB	MA 2xxi modular connection units		Adhesive		Metal
50104791	BT 8-01	BPS 8 series bar code positioning system		Screw type	Through-hole mounting	Metal
50037473	BT 21	BCL 2x series bar code reader		Insertable	Mounting thread	Metal
50111224	BT 59	BCL 5xxi series bar code readers, LSIS 4xxi series stationary 2D-code readers, LxS light section sensors		Clampable	Groove mounting	Metal
50107034	BT Rope IT	IT 3800i series mobile bar code readers, FIS series mobile 2D-code readers, IT 1910 series mobile 2D-code readers, IT 1911 series mobile 2D-code readers, IT 1280i series mobile bar code readers, IT 198xi series mobile 2D-code readers		Insertable	Suspended (rope)	Plastic
50124941	BTU 0300M-W	Bar code positioning system, BPS 300i series		Clampable, groove mounting	Through-hole mounting	Metal
50125860	BTX-D18M-D30	Sensors with M18 design		Screw type	Mounting thread	Stainless steel
50132727	AC D08M-CS	Sensors with M8 design	Mounting clamp	Insertable, clampable with limit stop	Screw type, through-hole mounting	Metal
50132728	AC D12M-CS	Sensors with M12 design	Mounting clamp	Insertable, clampable with limit stop	Screw type, through-hole mounting	Metal
50132729	AC D18M-CS	Sensors with M18 design	Mounting clamp	Insertable, clampable with limit stop	Screw type, through-hole mounting	Metal
50132730	AC D30M-CS	Sensors with M30 design	Mounting clamp	Insertable, clampable with limit stop	Screw type, through-hole mounting	Metal
424417	BT-2P40	CML700i light curtains, MLC 500, MLC 300 safety light curtains, Mounting in UDC-S2, DC-S2 device columns, MLD 500, MLD 300 multiple light beam safety devices	Mounting clamp	Groove mounting	Groove mounting	Metal
50128583	BT-GS6X.DT	61/63 series sensors	Mounting clamp	Screw type	Groove mounting	Metal
424421	BT-SB10	MLC 500, MLC 300 safety light curtains, CML700i light curtains, CSL 710 light curtains	Mounting clamp	Clampable	Through-hole mounting	Metal
50036196	BT 8-0	8 series sensors	Mounting clamp	Clampable	Mounting thread	Metal
50121904	BT318B-0M	318 series sensors	Mounting clamp	Screw type	Through-hole mounting	Plastic
50117258	BT 318P-LS	318 series sensors	Mounting clamp	Clampable	Through-hole mounting	Plastic
50126631	BT 328M	328 series sensors, sensors with M18 design	Mounting clamp	Screw type	For 18 mm rod, through-hole mounting	Stainless steel
50115600	BTC 088M-I40	288 series sensors	Mounting clamp	Clampable	Groove mounting	Metal
50134199	MC 003K	206 series sensors, sensors with M3 design	Mounting clamp	Clampable	Through-hole mounting	Plastic
50134200	MC 004K	206 series sensors, sensors with M4 design	Mounting clamp	Clampable	Through-hole mounting	Plastic

Further mounting systems can be found on our website

Part no.	Part description	Suitable for	Design	Fastening at device	Fastening at system	Material
50134201	MC 005K	206 series sensors, sensors with M5 design	Mounting clamp	Clampable	Through-hole mounting	Plastic
50111496	MC 006K	206 series sensors, sensors with M6 design	Mounting clamp	Clampable	Through-hole mounting	Plastic
50111497	MC 008K	208 series sensors, sensors with M8 design	Mounting clamp	Clampable	Through-hole mounting	Plastic
50111498	MC 008K-LS	208 series sensors, sensors with M8 design	Mounting clamp	Clampable with limit stop	Through-hole mounting	Plastic
50111499	MC 012K	212 series sensors, 412 series sensors, sensors with M12 design	Mounting clamp	Clampable	Through-hole mounting	Plastic
50111500	MC 012K-LS	212 series sensors, 412 series sensors, sensors with M12 design	Mounting clamp	Clampable with limit stop	Through-hole mounting	Plastic
50111501	MC 018K	218 series sensors, 418 series sensors, sensors with M18 design	Mounting clamp	Clampable	Through-hole mounting	Plastic
50111502	MC 018K-LS	218 series sensors, 418 series sensors, sensors with M18 design	Mounting clamp	Clampable with limit stop	Through-hole mounting	Plastic
50111503	MC 030K	230 series sensors, 430 series sensors, sensors with M30 design	Mounting clamp	Clampable	Through-hole mounting	Plastic
50111504	MC 030K-LS	230 series sensors, sensors with M30 design	Mounting clamp	Clampable with limit stop	Through-hole mounting	Plastic
50123869	BT-GS6X.H	61/63 series sensors	Mounting plate	Groove mounting	Through-hole mounting	Metal
50112215	BT-GS6X.L	61/63 series sensors	Mounting plate	Groove mounting	Through-hole mounting	Metal
50035030	BT 8-ARH	8 series sensors	Mounting plate	Screw type	Through-hole mounting	Metal
50118539	BT 25-ARH	25 series sensors	Mounting plate	Screw type	Through-hole mounting	Metal
50083189	BT 318-ARH	318 series sensors, 418 series sensors	Mounting plate	Screw type	Through-hole mounting	Metal
50133412	BTX 018M	KRT 18B	Mounting plate	Screw type	Through-hole mounting	Metal
50136665	BTX 046M	46C series sensors	Mounting plate	Screw type	Through-hole mounting	Metal
50126757	BTX 0500 M	DDLS 500 series data transmission systems	Mounting plate	Screw type	Through-hole mounting	Metal
50027167	BT 57	MA 21, MA 31	Mounting system	Screw type	Through-hole mounting	Metal
425740	BT-10NC60	MLC 500, MLC 300 safety light curtains, MLD 300, MLD 500 multiple light beam safety devices	Sliding block	Groove mounting	Mounting thread	Metal
425741	BT-10NC64	MLC 500, MLC 300 safety light curtains, MLD 300, MLD 500 multiple light beam safety devices	Sliding block	Groove mounting	Mounting thread	Metal
425742	BT-10NC65	MLC 500, MLC 300 safety light curtains, MLD 300, MLD 500 multiple light beam safety devices	Sliding block	Groove mounting	Mounting thread	Metal
50128797	BT 1900gCover	IT 1900 series mobile 2D-code readers	Protection hood	Insertable	Suspended (rope)	Plastic
50106109	BT Cover IT4xxx	IT 3820 series mobile bar code readers, IT 3800i series mobile bar code readers	Protection hood	Insertable	Suspended (rope)	Plastic
50109534	BT Cover IT1300g	IT 1300 series mobile bar code readers	Protection hood	Insertable	Suspended (rope)	Plastic
50115358	BT Desktop IT1300g	IT 1300 series mobile bar code readers	Table foot	Insertable	Self-supporting	Plastic
50103402	BT Flex Neck IT 4xxx	IT 3820 series mobile bar code readers, IT 3800i series mobile bar code readers	Table foot	Insertable	Self-supporting	Plastic
50107039	BT Flex Neck IT1300g	IT 1300 series mobile bar code readers	Table foot	Insertable	Self-supporting	Plastic
50130491	BT Holder HCR 6200	HCR 6200 series mobile 2D-code readers	Table foot	Insertable	Self-supporting	Plastic
50114498	BT Holder IT 190x	IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers	Table foot	Insertable	Self-supporting	Plastic
50114501	BT Stand 8 IT 190x	IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers	Table foot	Insertable	Self-supporting	Plastic
50128795	BT Stand 30 IT 191x	IT 1910 series mobile 2D-code readers, IT 1911 series mobile 2D-code readers	Table foot	Insertable	Self-supporting	Plastic
50034617	Holder for Z-3010	Z-3xxx series mobile bar code readers	Table foot	Insertable	Through-hole mounting	Plastic
50106314	BT VMHolder	FIS series mobile 2D-code readers, IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers, IT 3800g series mobile bar code readers, IT 3820 series mobile bar code readers	Wall mounting	Insertable	Mounting thread	Metal
50120444	BT Wallholder HS65x8	HS 65x8, IT 1910 series mobile 2D-code readers, IT 1911 series mobile 2D-code readers	Wall mounting	Insertable	Through-hole mounting	Plastic
50115739	BT Wallholder IT190x	IT 1900 series mobile 2D-code readers, IT 1902 series mobile 2D-code readers	Wall mounting	Insertable	Mounting thread	Plastic
520021	BT-LA-78M	LA-78M laser alignment aids	Angle, L-shape	Screw type	Groove mounting	Metal
520022	BT-LA-78M-UDC	LA-78M laser alignment aids	Angle, L-shape	Screw type		Metal
50107255	MW OMS/AMS 01	AMS 300i	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting systems can be found on our website

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/ DEVICE COLUMNS

ROCK SOLID MOUNTING

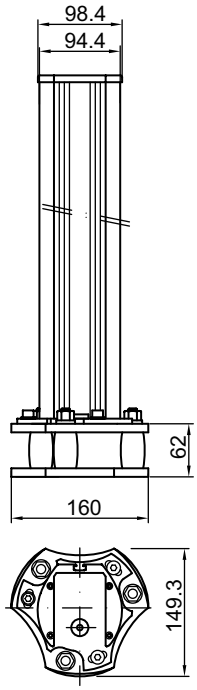
Owing to their different designs and heights, our robust device columns offer flexible options for freestanding mounting of our safety light curtains and multiple light beam safety devices. Muting mounting systems can be attached extremely easily on the outside.

Direct access to the online product selector at **www.leuze.com/en/device-columns**

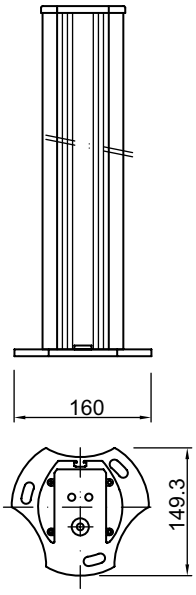
Part no.	Part description	Height	Column height without foot	Mechanical reset function
549620	DC-900-S2	900 mm	900 mm	No
549855	UDC-900-S2	960 mm	900 mm	Yes
549621	DC-1000-S2	1,000 mm	1,000 mm	No
549856	UDC-1000-S2	1,060 mm	1,000 mm	Yes
549881	UDC-1000-S2-R	1,060 mm	1,000 mm	Yes
549627	DC-1070-S2	1,070 mm	1,070 mm	No
549626	DC-1140-S2	1,140 mm	1,140 mm	No
549879	UDC-1140-S2	1,200 mm	1,140 mm	Yes
549622	DC-1300-S2	1,300 mm	1,300 mm	No
549852	UDC-1300-S2	1,360 mm	1,300 mm	Yes
549882	UDC-1300-S2-R	1,360 mm	1,300 mm	Yes
549623	DC-1600-S2	1,600 mm	1,600 mm	No
549853	UDC-1600-S2	1,660 mm	1,600 mm	Yes
549883	UDC-1600-S2-R	1,660 mm	1,600 mm	Yes
549624	DC-1900-S2	1,900 mm	1,900 mm	No
549854	UDC-1900-S2	1,960 mm	1,900 mm	Yes
549884	UDC-1900-S2-R	1,960 mm	1,900 mm	Yes
549867	UDC-2100-S2	2,160 mm	2,100 mm	Yes
549625	DC-2500-S2	2,500 mm	2,500 mm	No
549857	UDC-2500-S2	2,560 mm	2,500 mm	Yes
549885	UDC-2500-S2-R	2,560 mm	2,500 mm	Yes
549865	UDC-3100-S2	3,160 mm	3,100 mm	Yes
549886	UDC-3100-S2-R	3,160 mm	3,100 mm	Yes

Included in delivery: mounting kit for floor assembly (UDC device columns only)
Further device columns can be found on our website

Dimensioned drawings: Device columns



UDC-S2 device column



DC-S2 device column

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/ DEFLECTING MIRRORS / DEFLECTING MIRROR COLUMNS

LETTING LIGHT SHINE – EVEN AROUND CORNERS

It is sometimes necessary for safety at work, to deflect sensor beams on account of structural circumstances. Our deflecting mirrors and columns enable inexpensive solutions for multi-side guarding of danger zones.

/// Deflecting mirror columns / continuous

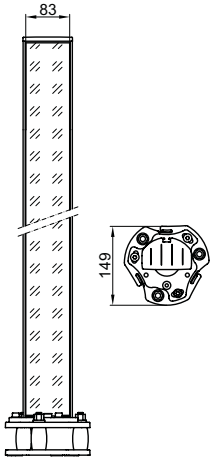
The continuous mirror surface is suitable for the beam deflection of safety light curtains such as the MLC series. Special spring elements offer an automatic resetting after mechanical impacts. For easy alignment, the mirror column can be adjusted in 3 directions.

Direct access to the online product selector at **www.leuze.com/en/uss-d**

Part no.	Part description	Mirror length	Height	Mechanical reset function
549780	UMC-1000-S2	970 mm	1,060 mm	Yes
549781	UMC-1300-S2	1,270 mm	1,360 mm	Yes
549782	UMC-1600-S2	1,570 mm	1,660 mm	Yes
549783	UMC-1900-S2	1,870 mm	1,960 mm	Yes

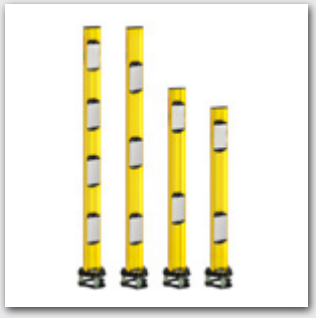
Included in delivery: mounting kit for floor assembly

Dimensioned drawings: Deflecting mirror columns / continuous



Deflecting mirror column UMC-S2, continuous mirror

/// Deflecting mirror columns / individual mirrors



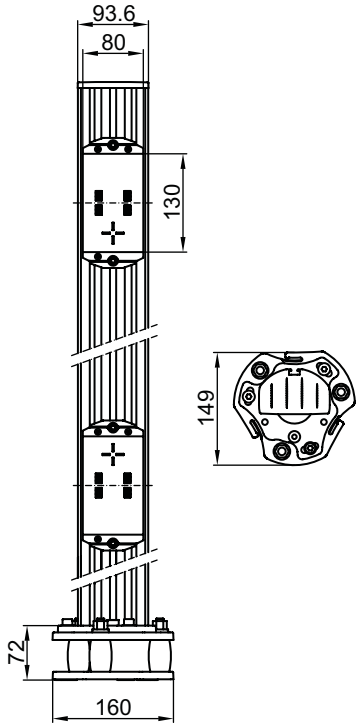
The deflecting mirror columns with individual mirrors are suitable for the beam deflection of multiple light beam safety devices such as the MLD series. Special spring elements offer an automatic resetting after mechanical impacts. For exact alignment, each mirror can be adjusted in 3 axes.

Direct access to the online product selector at **www.leuze.com/en/uss-e**

Part no.	Part description	Column height without foot	Height	Number of individual mirrors	Center-to-center spacing of individual mirrors
549790	UMC-902-S2	900 mm	960 mm	2x	500 mm
549791	UMC-1002-S2	1,000 mm	1,060 mm	2x	500 mm
549797	UMC-1143-S2	1,140 mm	1,200 mm	3x	400 mm
549792	UMC-1303-S2	1,300 mm	1,360 mm	3x	400 mm
549793	UMC-1304-S2	1,300 mm	1,360 mm	4x	300 mm
549796	UMC-1603-S2	1,600 mm	1,660 mm	3x	400 mm

Included in delivery: mounting kit for floor assembly

Dimensioned drawings: Deflecting mirror columns / individual mirrors



UMC-S2 deflecting mirror columns, individual mirrors

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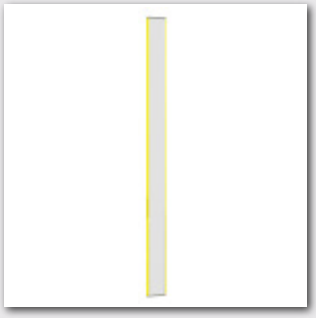
/// Deflecting mirrors / continuous

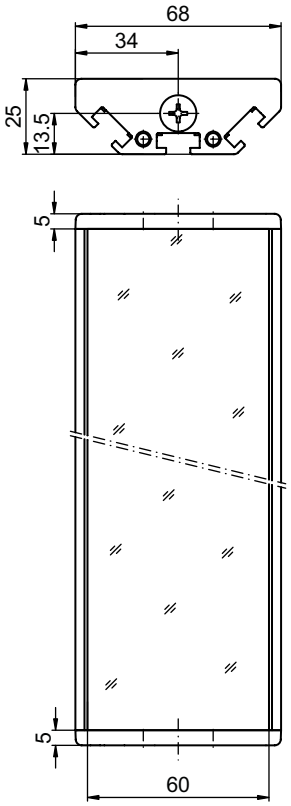


The continuous mirror surface is suitable for the beam deflection of safety light curtains such as the MLC series. The narrow and robust aluminum housing is easy to mount with sliding blocks or swiveling mounting brackets.

Direct access to the online product selector at **www.leuze.com/en/usp-d**

Part no.	Part description	Mirror length	Protected field height up to
529601	UM60-150	210 mm	150 mm
529602	UM60-225	285 mm	225 mm
529603	UM60-300	360 mm	300 mm
529604	UM60-450	510 mm	450 mm
529606	UM60-600	660 mm	600 mm
529607	UM60-750	810 mm	750 mm
529609	UM60-900	960 mm	900 mm
529610	UM60-1050	1,110 mm	1,050 mm
529612	UM60-1200	1,260 mm	1,200 mm
529613	UM60-1350	1,410 mm	1,350 mm
529615	UM60-1500	1,560 mm	1,500 mm
529616	UM60-1650	1,710 mm	1,650 mm
529618	UM60-1800	1,860 mm	1,800 mm

Dimensioned drawings: Deflecting mirrors / continuous



UM60 deflecting mirror

/ PROTECTIVE SCREENS

PROTECTION FOR YOUR SENSORS

Protective screens in different lengths reliably prevent damage to the device window, e.g. caused by scratching and welding sparks.

Direct access to the online product selector at **www.leuze.com/en/protective-screens**

Part no.	Part description	Height	Protective field height	Protective screen material	Suitable for
426185	PSC-900-S2	820 mm		PMMA, gray	UDC-S2, DC-S2 device columns
426186	PSC-1000-S2	980 mm		PMMA, gray	UDC-S2, DC-S2 device columns
426187	PSC-1300-S2	1,280 mm		PMMA, gray	UDC-S2, DC-S2 device columns
426188	PSC-1600-S2	1,580 mm		PMMA, gray	UDC-S2, DC-S2 device columns
426189	PSC-1900-S2	1,880 mm		PMMA, gray	UDC-S2, DC-S2 device columns
426190	PSC-2500-S2	2,480 mm		PMMA, gray	UDC-S2, DC-S2 device columns
347070	MLC-PS150	148 mm	150 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347071	MLC-PS225	223 mm	225 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347072	MLC-PS300	298 mm	300 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347073	MLC-PS450	448 mm	450 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347074	MLC-PS600	598 mm	600 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347075	MLC-PS750	748 mm	750 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347076	MLC-PS900	898 mm	900 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347077	MLC-PS1050	1,048 mm	1,050 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347078	MLC-PS1200	1,198 mm	1,200 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347079	MLC-PS1350	1,348 mm	1,350 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347080	MLC-PS1500	1,498 mm	1,500 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347081	MLC-PS1650	1,648 mm	1,650 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains
347082	MLC-PS1800	1,798 mm	1,800 mm	PMMA, clear	MLC 500, MLC 300 safety light curtains

Notice: If protective screens are used, the range of the safety sensor is reduced by approx. 10 % per screen!

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/ SIGNALING DEVICES

CLEAR SIGNALS FOR AUTOMATION

At many critical points in automated systems and installations, the signaling of status information helps to keep productivity and efficiency at a high level. For this purpose, we offer an extensive range of signal columns, single-color and multicolor signal lamps and acoustic signalers – preassembled and individually combinable.

/// Mounting systems

The configurable signaling columns can be mounted horizontally and vertically for 40 mm (E4) and 70 mm (E7).

Benefits:

- Appropriate mounting type
- Up to 5 or 10 lens

Direct access to the online product selector at **www.leuze.com/en/mon-sys**

Part no.	Part description	Design	Diameter	Length	Module holder	Lens modules	Connection	Description
50135463	A7-MP1-100	Base mounting	70 mm	132 mm	One side	Max. 5 pieces	Terminal	Length: 132 mm; Material: plastic, metal; Fastening, at system: screw type / horizontal
50135464	A7-MP1-250	Base mounting	70 mm	282 mm	One side	Max. 5 pieces	Terminal	Length: 282 mm; Material: metal, plastic; Fastening, at system: screw type / horizontal
50135465	A7-MP1-400	Base mounting	70 mm	432 mm	One side	Max. 5 pieces	Terminal	Length: 432 mm; Material: plastic, metal; Fastening, at system: screw type / horizontal
50130455	E4-MH1	Horizontal mounting	40 mm	43 mm	One side	Max. 5 pieces	Terminal	Length: 43 mm; Material: plastic; Fastening, at system: screw type / horizontal
50130458	E4-MP1-100	Base mounting	40 mm	134 mm	One side	Max. 5 pieces	Terminal	Length: 134 mm; Material: plastic, metal; Fastening, at system: screw type / horizontal
50130459	E4-MP1-250	Base mounting	40 mm	284 mm	One side	Max. 5 pieces	Terminal	Length: 284 mm; Material: plastic, metal; Fastening, at system: screw type / horizontal
50130460	E4-MP1-400	Base mounting	40 mm	434 mm	One side	Max. 5 pieces	Terminal	Length: 434 mm; Material: plastic, metal; Fastening, at system: screw type / horizontal
50130456	E4-MW1	Bracket mounting	40 mm	56 mm	One side	Max. 5 pieces	Terminal	Length: 56 mm; Material: plastic; Fastening, at system: screw type / vertical
50130457	E4-MW2	Bracket mounting	40 mm	56 mm	Two-sided	Max. 10 pieces	Terminal	Length: 56 mm; Material: plastic; Fastening, at system: screw type / vertical
50130436	E7-MH1	Horizontal mounting	70 mm	46 mm	One side	Max. 5 pieces	Terminal	Length: 46 mm; Material: plastic; Fastening, at system: screw type / horizontal
50130440	E7-MP1-100	Base mounting	70 mm	136 mm	One side	Max. 5 pieces	Terminal	Length: 136 mm; Material: plastic, metal; Fastening, at system: screw type / horizontal
50130439	E7-MP1-250	Base mounting	70 mm	286 mm	One side	Max. 5 pieces	Terminal	Length: 286 mm; Material: plastic, metal; Fastening, at system: screw type / horizontal
50130441	E7-MP1-400	Base mounting	70 mm	436 mm	One side	Max. 5 pieces	Terminal	Length: 436 mm; Material: plastic, metal; Fastening, at system: screw type / horizontal
50130437	E7-MW1	Bracket mounting	70 mm	81 mm	One side	Max. 5 pieces	Terminal	Length: 81 mm; Material: plastic; Fastening, at system: screw type / vertical
50130438	E7-MW2	Bracket mounting	70 mm	81 mm	Two-sided	Max. 10 pieces	Terminal	Length: 81 mm; Material: plastic; Fastening, at system: screw type / vertical

/// Calottes

Extensive range of colors (6 colors) for the configurable Leuze electronic E4 (40 mm) and E7 (70 mm) signaling columns suitable for the respective mounting system.

Benefits:

- Connection by means of bayonet coupling
- Simple mounting by means of base marking
- Exclusively long-lasting and power-saving LED modules
- High degree of protection IP 66 (also with sound module)

Direct access to the online product selector at **www.leuze.com/en/lenses**

Part no.	Part description	Signaling	Signal image	Diameter	Lens color	Degree of protection
50135460	A7-V1-DS-B-T	Optical	Continuous light	70 mm	Blue	IP 66
50135459	A7-V1-DS-G-T	Optical	Continuous light	70 mm	Green	IP 66
50135458	A7-V1-DS-O-T	Optical	Continuous light	70 mm	Orange	IP 66
50135457	A7-V1-DS-R-T	Optical	Continuous light	70 mm	Red	IP 66
50135461	A7-V1-DS-W-T	Optical	Continuous light	70 mm	Clear	IP 66
50130454	E4-V1-BZ1	Acoustic		40 mm		IP 66
50130451	E4-V1-DB-B	Optical	Flashing light	40 mm	Blue	IP 66
50130450	E4-V1-DB-C	Optical	Flashing light	40 mm	Clear	IP 66
50130452	E4-V1-DB-G	Optical	Flashing light	40 mm	Green	IP 66
50130448	E4-V1-DB-O	Optical	Flashing light	40 mm	Orange	IP 66
50130449	E4-V1-DB-R	Optical	Flashing light	40 mm	Red	IP 66
50130453	E4-V1-DB-Y	Optical	Flashing light	40 mm	Yellow	IP 66
50130445	E4-V1-DS-B	Optical	Continuous light	40 mm	Blue	IP 66
50130444	E4-V1-DS-C	Optical	Continuous light	40 mm	Clear	IP 66
50130446	E4-V1-DS-G	Optical	Continuous light	40 mm	Green	IP 66
50130442	E4-V1-DS-O	Optical	Continuous light	40 mm	Orange	IP 66
50130443	E4-V1-DS-R	Optical	Continuous light	40 mm	Red	IP 66
50130447	E4-V1-DS-Y	Optical	Continuous light	40 mm	Yellow	IP 66
50130435	E7-V1-BZ1	Acoustic		70 mm		IP 66
50130432	E7-V1-DB-B	Optical	Flashing light	70 mm	Blue	IP 66
50130431	E7-V1-DB-C	Optical	Flashing light	70 mm	Clear	IP 66
50130433	E7-V1-DB-G	Optical	Flashing light	70 mm	Green	IP 66
50130429	E7-V1-DB-O	Optical	Flashing light	70 mm	Orange	IP 66
50130430	E7-V1-DB-R	Optical	Flashing light	70 mm	Red	IP 66
50130434	E7-V1-DB-Y	Optical	Flashing light	70 mm	Yellow	IP 66
50130426	E7-V1-DS-B	Optical	Continuous light	70 mm	Blue	IP 66
50130424	E7-V1-DS-C	Optical	Continuous light	70 mm	Clear	IP 66
50130427	E7-V1-DS-G	Optical	Continuous light	70 mm	Green	IP 66
50130422	E7-V1-DS-O	Optical	Continuous light	70 mm	Orange	IP 66
50130423	E7-V1-DS-R	Optical	Continuous light	70 mm	Red	IP 66
50130428	E7-V1-DS-Y	Optical	Continuous light	70 mm	Yellow	IP 66

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/// Ready-made signaling columns

Preassembled, multicolor signaling devices with 3 colors as signaling columns or wall-mounted devices for signaling with minimum effort.

Direct access to the online product selector at **www.leuze.com/en/preass-sc**

Part no.	Part description	Signaling	Lens modules	Connection	Fastening	Degree of protection
50135466	A7-V1-MP1-DS-ROG-T-100	Optical	3 pieces, ready-made, green, orange, red	Terminal	Screw type / horizontal	IP 66
50130472	C3-V1-B-P0-SGSOSR-K1	Optical	3 pieces, ready-made, green, orange, red	Cable	Screw type / horizontal	IP 65
50130473	D9-V1-G-SGSOSRBZ2	Optical and acoustic	3 pieces, ready-made, green, orange, red	Terminal	Screw type / vertical	IP 65

/// Multitone + beacon

In factory buildings or outdoors, a siren continues to be an important signaling element in addition to visual signals, especially in the case of alarm signals. Here, we offer a selection of stand-alone devices or siren/lamp combinations with a particularly high degree of protection (IP 66).

Direct access to the online product selector at **www.leuze.com/en/multi_bea**

Part no.	Part description	Signaling	Lens color	Tone type	Supply voltage	Degree of protection
50130519	FBA-V1-Q94-O	Optical	Orange		24 V, AC/DC	IP 66
50130521	FBA-V3-Q94-O	Optical	Orange		230 V, AC/DC	IP 66
50130520	FBA-V1-Q94-R	Optical	Red		24 V, AC/DC	IP 66
50130522	FBA-V3-Q94-R	Optical	Red		230 V, AC/DC	IP 66
50130517	EMS-V1-Q94-A32	Acoustic		Multi-tone	24 V, AC/DC	IP 66
50130518	EMS-V3-Q94-A32	Acoustic		Multi-tone	230 V, AC/DC	IP 66

/// Panel-mount modules

Single-color and multicolor transducers in an impact-resistant housing, also combined (lamp and sound module) for installation with M22 in 30, 45 and 65 mm diameter.

Direct access to the online product selector at **www.leuze.com/en/panel-mod**

Part no.	Part description	Signaling	Signal image	Lens color	Illumination type	Diameter	Length in installed state	Degree of protection
50130526	P45-V1-B-DS-O-BZ-098	Optical and acoustic	Continuous or flashing light	Orange	Full	45 mm	48 mm	IP 65
50130531	P45-V1-B-DS-R-BZ-098	Optical and acoustic	Continuous or flashing light	Red	Full	45 mm	48 mm	IP 65
50130524	P65-V1-B-DS-O-BZ-103	Optical and acoustic	Continuous or flashing light	Orange	Full	65 mm	58 mm	IP 65
50130525	P65-V1-B-DS-R-BZ-103	Optical and acoustic	Continuous or flashing light	Red	Full	65 mm	58 mm	IP 65

Part no.	Part description	Signaling	Signal image	Lens color	Illumination type	Diameter	Length in installed state	Degree of protection
50130510	P30-V1-B-DS-B	Optical	Continuous or flashing light	Blue	Full	30 mm	18 mm	IP 65
50130512	P30-V1-B-DS-Y	Optical	Continuous or flashing light	Yellow	Full	30 mm	18 mm	IP 65
50130511	P30-V1-B-DS-G	Optical	Continuous or flashing light	Green	Full	30 mm	18 mm	IP 65
50130509	P30-V1-B-DS-C	Optical	Continuous or flashing light	Clear	Full	30 mm	18 mm	IP 65
50130507	P30-V1-B-DS-O	Optical	Continuous or flashing light	Orange	Full	30 mm	18 mm	IP 65
50130508	P30-V1-B-DS-R	Optical	Continuous or flashing light	Red	Full	30 mm	18 mm	IP 65
50130515	P30-V1-B-DV	Optical	Continuous light	Red, green	Half	30 mm	18 mm	IP 65
50130483	P45-V1-B-DS-B	Optical	Continuous or flashing light	Blue	Full	45 mm	42 mm	IP 65
50130506	P45-V1-B-DS-Y	Optical	Continuous or flashing light	Yellow	Full	45 mm	42 mm	IP 65
50130502	P45-V1-B-DS-G	Optical	Continuous or flashing light	Green	Full	45 mm	42 mm	IP 65
50130482	P45-V1-B-DS-C	Optical	Continuous or flashing light	Clear	Full	45 mm	42 mm	IP 65
50130480	P45-V1-B-DS-O	Optical	Continuous or flashing light	Orange	Full	45 mm	42 mm	IP 65
50130481	P45-V1-B-DS-R	Optical	Continuous or flashing light	Red	Full	45 mm	42 mm	IP 65
50130514	P45-V1-B-DV	Optical	Continuous light	Red, green	Half	45 mm	42 mm	IP 65
50130477	P65-V1-B-DS-B	Optical	Continuous or flashing light	Blue	Full	65 mm	56 mm	IP 65
50130479	P65-V1-B-DS-Y	Optical	Continuous or flashing light	Yellow	Full	65 mm	56 mm	IP 65
50130478	P65-V1-B-DS-G	Optical	Continuous or flashing light	Green	Full	65 mm	56 mm	IP 65
50130476	P65-V1-B-DS-C	Optical	Continuous or flashing light	Clear	Full	65 mm	56 mm	IP 65
50130474	P65-V1-B-DS-O	Optical	Continuous or flashing light	Orange	Full	65 mm	56 mm	IP 65
50130475	P65-V1-B-DS-R	Optical	Continuous or flashing light	Red	Full	65 mm	56 mm	IP 65
50130516	P65-V1-B-DW	Optical	Continuous light	Red, yellow, green	Full	65 mm	56 mm	IP 65
50130513	P65-V1-B-DV	Optical	Continuous light	Red, green	Half	65 mm	56 mm	IP 65
50130532	PBZ-V1-065	Acoustic				30 mm	12 mm	IP 65
50130533	PBZ-V1-085	Acoustic				30 mm	12 mm	IP 65

/// Muting indicators

A wide range of indicators for displaying possible dangers is what makes a safety-at-work system complete.

Direct access to the online product selector at **www.leuze.com/en/muting-indicators**

Part no.	Part description	Diameter	Illuminant	Type of fastening	Degree of protection	Certifications
50135452	M7-V1-MW3-DS-C-T-M12-200	70 mm	LED/24V, clear	Mounting bracket	IP 66	CSA; UL
50135453	M4-V1-MW3-DS-C-T-M12	40 mm	LED/24V, clear	Mounting bracket	IP 66	CSA; UL

SMART IS TO THINK **EASY**

Only with the proper accessories is your solution complete.

We place great value on flexible mounting solutions, simple integration through variable connection technology, alignment aids and innovative mounting systems. Pre-configured and pre-mounted systems also facilitate fast and simple commissioning of, e.g., muting systems for applications in safety at work.

Discover our extensive line of accessories on the web at: **www.leuze.com/en/accessories**

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/ REFLECTORS AND REFLECTIVE TAPES

REFLECTORS TO RETURN THE LIGHT

Sensors that operate according to the reflection principle need high-quality reflectors in order to function. We offer reflectors for all conceivable applications and environmental conditions to ensure an optimum detection result at all times.

/// Standard reflectors

Different reflectors in various designs with reflective element sizes from 2.3 mm to 4 mm for sensors with medium to large light spot.

Direct access to the online product selector at **www.leuze.com/en/stand-refl**

Part no.	Part description	Design	Reflective surface	Triple reflector size	Fastening	Material	Special design
50110282	TKS 10x32	Rectangular	10 mm x 32 mm	2.3 mm	Through-hole mounting, adhesive	Plastic	
50003188	TK 20x75	Rectangular	15 mm x 70 mm	2.6 mm	Adhesive	Plastic	
50081283	TKS 20X40	Rectangular	16 mm x 38 mm	2.3 mm	Through-hole mounting, adhesive	Plastic	
50041606	TKS 20X40.1	Rectangular	16 mm x 39 mm	4 mm	Through-hole mounting, adhesive	Plastic	
50117584	TKS 20x20	Rectangular	18 mm x 20 mm	2.3 mm	Through-hole mounting, adhesive	Plastic	
50108215	TKA 30X60	Rectangular	26 mm x 53 mm	4 mm	Self-adhesive	Plastic	
50023525	TKS 30X50	Rectangular	27 mm x 44 mm	3 mm	Through-hole mounting, adhesive	Plastic	
50030433	TKS 30X60	Rectangular	27 mm x 56 mm	4 mm	Through-hole mounting, adhesive	Plastic	
50108216	TKA 30X46	Rectangular	27 mm x 43 mm	4 mm	Self-adhesive	Plastic	
50114617	TKS 30x45	Rectangular	29 mm x 44 mm	4 mm	Adhesive, through-hole mounting	Plastic	
50003189	TK 30x50	Rectangular	29 mm x 45 mm	4 mm	Adhesive	Plastic	
50027097	TKS 30X500	Rectangular	30 mm x 500 mm	2.6 mm	Through-hole mounting	Plastic	
50003190	TK 40x180	Rectangular	36 mm x 176 mm	3 mm	Through-hole mounting	Plastic	
50130291	TK 40 x180.1-Set	Rectangular	36 mm x 176 mm	3 mm	Adhesive	Plastic	
50040820	TKS 40X60	Rectangular	37 mm x 56 mm	4 mm	Through-hole mounting, adhesive	Plastic	
50109257	TKS 40x60.1	Rectangular	37 mm x 56 mm	2.3 mm	Through-hole mounting, adhesive	Plastic	
50120538	TKS 40x60.1.AF	Rectangular	37 mm x 56 mm	2.3 mm	Through-hole mounting, adhesive	Plastic	Anti-fog coating
50130289	TK 50 x100-Set	Rectangular	46 mm x 96 mm	4 mm	Adhesive	Plastic	
50003191	TK 50x100	Rectangular	46 mm x 96 mm	4 mm	Adhesive	Plastic	
50022815	TKS 50X100	Rectangular	46 mm x 96 mm	4 mm	Through-hole mounting, adhesive	Plastic	
50022814	TKS 50X50	Rectangular	47 mm x 48 mm	4 mm	Through-hole mounting, adhesive	Plastic	
50105153	TKS 50X50.1	Rectangular	47 mm x 48 mm	4 mm	Through-hole mounting, adhesive	Plastic	
50113309	TKS 50x50.1.HT	Rectangular	47 mm x 48 mm	4 mm	Through-hole mounting, adhesive	Plastic	Heat resistant
50116725	TKS 85x85	Rectangular	77 mm x 77 mm	4 mm	Through-hole mounting, adhesive	Plastic	

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

Part no.	Part description	Design	Reflective surface	Triple reflector size	Fastening	Material	Special design
50003192	TK 100x100	Rectangular	96 mm x 96 mm	4 mm	Adhesive	Plastic	
50022816	TKS 100X100	Rectangular	96 mm x 96 mm	4 mm	Through-hole mounting, adhesive	Plastic	
50130290	TK 100 x100-Set	Rectangular	96 mm x 96 mm	4 mm	Supplied mounting bracket, adhesive	Plastic	
50104364	Reflective tape 200x200mm-M	Rectangular	200 mm x 200 mm		Through-hole mounting, mounting plate		
50104365	Reflective tape 500x500mm-M	Rectangular	500 mm x 500 mm		Through-hole mounting, mounting plate		
50104366	Reflective tape 914x914mm-M	Rectangular	914 mm x 914 mm		Through-hole mounting, mounting plate		
50041471	TK 20.1	Round	17 mm	2.3 mm	Adhesive	Plastic	
50027696	TKS 25	Round	23 mm	2.3 mm	M4 threaded pin	Plastic	
50041355	TK 25.1	Round	23 mm	2.3 mm	Adhesive	Plastic	
50101867	TK 35.1	Round	29 mm	2.3 mm	Adhesive	Plastic	
50105990	TK 45.1	Round	37 mm	2.3 mm	Adhesive	Plastic	
50003186	TK 60	Round	55 mm	3 mm	Through-hole mounting	Plastic	
50024127	TK 82.2	Round	79 mm	4 mm	Through-hole mounting, adhesive	Plastic	
50111375	TK 82.AF	Round	79 mm	4 mm	Through-hole mounting, adhesive	Plastic	Anti-fog coating

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

/// Micro-triad-type reflectors

Different reflectors in various designs with reflective element sizes from 0.3 mm to 1.2 mm for sensors with small light spot and laser.

Direct access to the online product selector at **www.leuze.com/en/microtr-refl**

Part no.	Part description	Design	Reflective surface	Triple reflector size	Fastening	Material	Compatibility of materials
50106209	MTKS 14x23	Rectangular	11 mm x 21 mm	1.2 mm	Through-hole mounting, adhesive	Plastic	
50114185	REF 6-S-20x40	Rectangular	16 mm x 38 mm	0.3 mm	Screw type	Plastic	
50104130	MTKS 20x40.1	Rectangular	17 mm x 38 mm	1.2 mm	Through-hole mounting, adhesive	Plastic	
50134985	MTKS 20x30.1	Rectangular	18.5 mm x 28.5 mm	1 mm	Through-hole mounting, adhesive	Plastic	
50040894	MTKS 20x30	Rectangular	19 mm x 29 mm	1.2 mm	Through-hole mounting, adhesive	Plastic	
50040895	MTKS 20x20	Rectangular	20 mm x 20 mm	1.2 mm	Through-hole mounting, adhesive	Plastic	
50124004	REF 6-S-26x280	Rectangular	22 mm x 276 mm	0.3 mm	M4 threaded pin	Plastic	
50104132	MTKS 30x50.1	Rectangular	27 mm x 44 mm	1.2 mm	Through-hole mounting, adhesive	Plastic	
50104131	MTKS 40x60.1	Rectangular	37 mm x 56 mm	1.2 mm	Through-hole mounting, adhesive	Plastic	
50117583	MTKS 50x50.1	Rectangular	50 mm x 50 mm	1.2 mm	Through-hole mounting, adhesive	Plastic	
50109828	MTK 20	Round	17 mm	1.2 mm	Adhesive	Plastic	

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further micro-triad-type reflectors can be found on our website

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/// Reflectors with higher resistance

Reflectors in different sizes and formats with reflective element sizes from 0.3 to 4 mm with especially resistant surface (e.g., against cleaning agents and for use in the pharmaceutical and food industry).

Direct access to the online product selector at **www.leuze.com/en/refl-pharma**

Part no.	Part description	Design	Reflective surface	Triple reflector size	Fastening	Material	Compatibility of materials
50106961	MTKS 14x23.P	Rectangular	11 mm x 21 mm	1.2 mm	Through-hole mounting, adhesive	Plastic	ECOLAB
50106960	TKS 20x40.P	Rectangular	16 mm x 38 mm	2.3 mm	Through-hole mounting, adhesive	Plastic	Alcohol, H2O2, ECOLAB
50137427	REF 6-S-20x40.P	Rectangular	16 mm x 38 mm	0.3 mm	Screw type	Plastic	Alcohol, H2O2, ECOLAB
50112142	TK BR 53	Rectangular	29 mm x 10 mm	0.3 mm	Housing fit	Plastic	
50136383	TKS 40x60.Chem	Rectangular	37 mm x 56 mm	4 mm	Through-hole mounting, adhesive	Plastic	Alcohol, H2O2, ECOLAB
50106957	TKS 40x60.P	Rectangular	37 mm x 56 mm	4 mm	Through-hole mounting, adhesive	Plastic	ECOLAB
50136823	MTKS 7x7M.5	Rectangular	7 mm x 7 mm	0.3 mm	Through-hole mounting	Stainless steel	Alcohol, CleanProof+, ECOLAB, H2O2
50136824	MTKS 12x20M.5	Rectangular	12 mm x 20 mm	0.3 mm	Through-hole mounting	Stainless steel	Alcohol, CleanProof+, ECOLAB, H2O2
50116939	TK 10.P	Round	8.5 mm	1.5 mm	Adhesive	Plastic	ECOLAB
50106958	TKS 20.P	Round	17 mm	2.3 mm	M4 threaded pin	Plastic	ECOLAB

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

/// Reflectors with heating

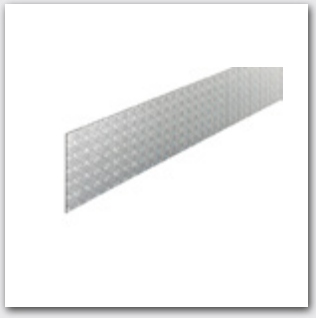
Different reflectors with heating for AC and DC (e. g., for use in the deep-freeze area).

Direct access to the online product selector at **www.leuze.com/en/heatable-reflectors**

Part no.	Part description	Design	Reflective surface	Fastening	Material	Special design
50115020	Reflective tape 200x200mm-H	Rectangular	200 mm x 200 mm	Mounting plate, through-hole mounting		Heating
50115021	Reflective tape 500x500mm-H	Rectangular	500 mm x 500 mm	Mounting plate, through-hole mounting		Heating
50115022	Reflective tape 914x914mm-H	Rectangular	914 mm x 914 mm	Mounting plate, through-hole mounting		Heating
50000068	HTK 82	Round	78 mm	Through-hole mounting	Plastic	Heating
50000071	HTK 82-24V	Round	78 mm	Through-hole mounting	Plastic	Heating

Dimensional tolerances for all specified dimensions: ± 0.2 mm
Further standard reflectors can be found on our website

/// Reflective tapes for standard applications



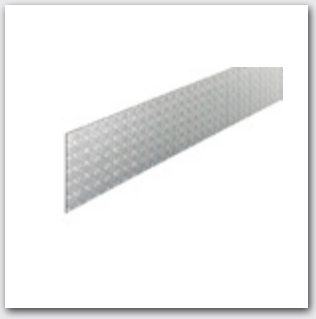
Reflective films in various dimensions for sensors with medium to large light spot.

Direct access to the online product selector at **www.leuze.com/en/refl-fo-stand**

Part no.	Part description	Design	Reflective surface	Fastening	Material
50107057	REF 4-A-20x20	Rectangular	20 mm x 20 mm	Self-adhesive	Plastic
50102604	REF 4-A-25X1000	Rectangular	25 mm x 1,000 mm	Self-adhesive	Plastic
50041876	REF 4-A-25x22800	Rectangular	25 mm x 22,800 mm	Self-adhesive	Plastic
50038060	REF 4-A-50X1000	Rectangular	50 mm x 1,000 mm	Self-adhesive	Plastic
50108300	REF 4-A-50x50	Rectangular	50 mm x 50 mm	Self-adhesive	Plastic
50111772	REF 4-A-50x45700	Rectangular	50 mm x 45,700 mm	Self-adhesive	Plastic
50106119	REF 4-A-100x100	Rectangular	100 mm x 100 mm	Self-adhesive	Plastic
50104657	REF 4-A-100x45700	Rectangular	100 mm x 45,700 mm	Self-adhesive	Plastic
50104361	Reflective tape 200x200mm-S	Rectangular	200 mm x 200 mm	Adhesive	
50104362	Reflective tape 500x500mm-S	Rectangular	500 mm x 500 mm	Adhesive	
50104363	Reflective tape 749x914mm-S	Rectangular	749 mm x 914 mm	Adhesive	
50108988	Reflective tape 914x914mm-S	Rectangular	914 mm x 914 mm	Adhesive	
50038117	REF 4-A-920x749	Rectangular	920 mm x 749 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website

/// Reflective tapes for laser and clear-glass applications



Reflective films with small reflective element in various dimensions for sensors with small light spot and laser as well as for clear glass applications.

Direct access to the online product selector at **www.leuze.com/en/refl-fo-laser**

Part no.	Part description	Design	Reflective surface	Triple reflector size	Fastening	Material
50123899	REF 6-A-9x9	Rectangular	9 mm x 9 mm	0.3 mm	Self-adhesive	Plastic
50123861	REF 6-A-14x45	Rectangular	15 mm x 45 mm	0.3 mm	Self-adhesive	Plastic
50110191	REF 6-A-25x25	Rectangular	25 mm x 25 mm	0.3 mm	Self-adhesive	Plastic
50110192	REF 6-A-50x50	Rectangular	50 mm x 50 mm	0.3 mm	Self-adhesive	Plastic
50111829	REF 6-A-77x77	Rectangular	77 mm x 77 mm	0.3 mm	Self-adhesive	Plastic
50111527	REF 7-A-100x100	Rectangular	100 mm x 100 mm		Self-adhesive	Plastic
50116687	REF 7-A-200x300	Rectangular	300 mm x 200 mm		Self-adhesive	Plastic
50115444	REF 7-A-1000x600	Rectangular	1,000 mm x 600 mm		Self-adhesive	Plastic

Further reflective tapes can be found on our website

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/ ALIGNMENT AIDS

KEEPING SIGHT OF THE TARGET

Sensor alignment is generally very unproblematic and can even easily be performed without additional tools. For some devices and application cases, it can still sometimes be helpful to make use of one of our alignment aids.

Direct access to the online product selector at **www.leuze.com/en/alignment-aids**

Part no.	Part description	Light source	Housing material
427300	AC-ALM		Plastic
520101	AC-ALM-M		Plastic
50080537	ARH 10	Laser, red	Metal
50040739	ARH 46	Laser, red	Metal
50129659	ARH 46C	Laser, red	Metal
50129660	ARH 49C	Laser, red	Metal
50080502	ARH 96	Laser, red	Metal
549000	LA-78	Laser, red	Metal
520023	LA-78M	Laser, red	Metal
520024	LA-78M-UDC	Laser, red	Metal
560020	LA-78U	Laser, red	Metal
520004	LA-78UDC	Laser, red	Metal
50109545	SAT 5		Metal

/ BAR CODE TAPES

BAR FOR BAR, FOR MORE PRECISION

Bar code positioning systems use bar code tapes to determine positions with millimeter accuracy. For our systems, we offer such tapes in standard lengths from 30 mm to 200 m. In addition, special lengths of up to 10 km are possible. The self-adhesive plastic tape is UV resistant, extremely resilient and mechanically durable.

Direct access to the online product selector at **www.leuze.com/en/bar-code-tapes**

Part no.	Part description	Suitable for	Dimensions	Grid dimension
50038895	BCB 005	Bar code positioning system, BPS 300i series	47 mm x 5,000 mm	40 mm
50040041	BCB 010	Bar code positioning system, BPS 300i series	47 mm x 10,000 mm	40 mm
50037489	BCB 020	Bar code positioning system, BPS 300i series	47 mm x 20,000 mm	40 mm
50037491	BCB 030	Bar code positioning system, BPS 300i series	47 mm x 30,000 mm	40 mm
50037492	BCB 040	Bar code positioning system, BPS 300i series	47 mm x 40,000 mm	40 mm
50038894	BCB 050	Bar code positioning system, BPS 300i series	47 mm x 50,000 mm	40 mm
50038893	BCB 060	Bar code positioning system, BPS 300i series	47 mm x 60,000 mm	40 mm
50038892	BCB 070	Bar code positioning system, BPS 300i series	47 mm x 70,000 mm	40 mm
50038891	BCB 080	Bar code positioning system, BPS 300i series	47 mm x 80,000 mm	40 mm
50038890	BCB 090	Bar code positioning system, BPS 300i series	47 mm x 90,000 mm	40 mm
50106467	BCB 8 005	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 5,000 mm	30 mm
50104792	BCB 8 010	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 10,000 mm	30 mm
50104793	BCB 8 020	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 20,000 mm	30 mm
50104794	BCB 8 030	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 30,000 mm	30 mm
50104795	BCB 8 040	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 40,000 mm	30 mm
50104796	BCB 8 050	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 50,000 mm	30 mm
50104797	BCB 8 060	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 60,000 mm	30 mm
50104798	BCB 8 070	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 70,000 mm	30 mm
50104799	BCB 8 080	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 80,000 mm	30 mm
50104800	BCB 8 090	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 90,000 mm	30 mm
50104801	BCB 8 100	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 100,000 mm	30 mm
50104802	BCB 8 110	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 110,000 mm	30 mm
50104803	BCB 8 120	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 120,000 mm	30 mm
50104804	BCB 8 130	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 130,000 mm	30 mm
50104805	BCB 8 140	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 140,000 mm	30 mm
50104806	BCB 8 150	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 150,000 mm	30 mm
50106468	BCB 8 200	BPS 8 series bar code positioning system, BPS 300i series bar code positioning system	47 mm x 200,000 mm	30 mm
50037493	BCB 100	Bar code positioning system, BPS 300i series	47 mm x 100,000 mm	40 mm
50040042	BCB 110	Bar code positioning system, BPS 300i series	47 mm x 110,000 mm	40 mm
50040043	BCB 120	Bar code positioning system, BPS 300i series	47 mm x 120,000 mm	40 mm
50040044	BCB 130	Bar code positioning system, BPS 300i series	47 mm x 130,000 mm	40 mm
50040045	BCB 140	Bar code positioning system, BPS 300i series	47 mm x 140,000 mm	40 mm
50040046	BCB 150	Bar code positioning system, BPS 300i series	47 mm x 150,000 mm	40 mm
50037494	BCB 200	Bar code positioning system, BPS 300i series	47 mm x 200,000 mm	40 mm

Further bar code tapes can be found on our website

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/ MUTING MOUNTING SYSTEMS

SAFETY RIGHT OFF THE SHELF

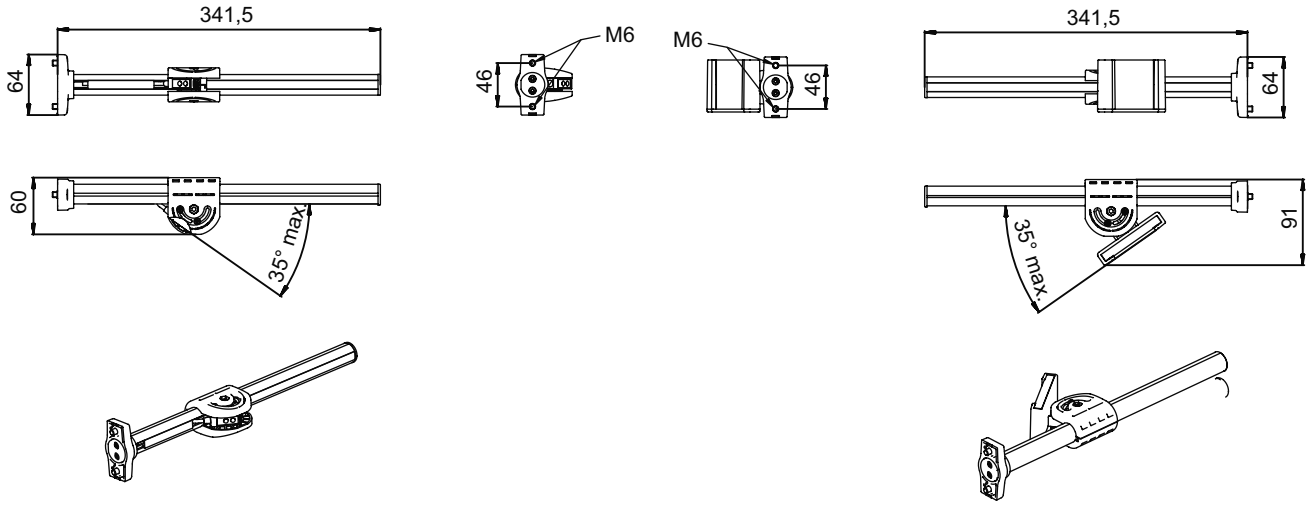
These preassembled systems simplify the creation of your own muting solutions. They can be easily attached to columns and safety sensors.

Direct access to the online product selector at **www.leuze.com/en/muting-mounting**

Part no.	Part description	Operating range	Number of muting sensors	Type of muting sensors	Cable length of muting sensors	Number of reflectors	Muting type
426506	Set-AC-MTX.2-1S	0 … 8 m	1x	PRK 25B retro-reflective photoelectric sensors	2,000 mm	1x	
426490	Set-AC-ML-2SA	0 … 4 m	2x	PRK 3B retro-reflective photoelectric sensors	300 mm	2x	Sequence controlled 2-sensor muting
426491	Set-AC-ML-2SB	0 … 4 m	2x	PRK 3B retro-reflective photoelectric sensors	300 mm	2x	Sequence controlled 2-sensor muting
426494	Set-AC-MT-2S	0 … 4 m	2x	PRK 3B retro-reflective photoelectric sensors	300 mm	2x	Timing controlled 2-sensor muting
426524	Set-AC-MTX-2S	0 … 8 m	2x	PRK 25B retro-reflective photoelectric sensors	300 mm	2x	Timing controlled 2-sensor muting
426520	Set-AC-MLX-2SA	0 … 8 m	2x	PRK 25B retro-reflective photoelectric sensors	700 mm	2x	Sequence controlled 2-sensor muting
426521	Set-AC-MLX-2SB	0 … 8 m	2x	PRK 25B retro-reflective photoelectric sensors	700 mm	2x	Sequence controlled 2-sensor muting
426526	Set-AC-MLX.2-2SA	0 … 8 m	2x	PRK 25B retro-reflective photoelectric sensors	2,000 mm	2x	Sequence controlled 2-sensor muting
426527	Set-AC-MLX.2-2SB	0 … 8 m	2x	PRK 25B retro-reflective photoelectric sensors	2,000 mm	2x	Sequence controlled 2-sensor muting
426529	Set-AC-MTX.2-2S	0 … 8 m	2x	PRK 25B retro-reflective photoelectric sensors	2,000 mm	2x	Timing controlled 2-sensor muting
426492	Set-AC-MT-4S	0 … 4 m	4x	PRK 3B retro-reflective photoelectric sensors	300 mm	4x	Timing controlled 4-sensor muting
426522	Set-AC-MTX-4S	0 … 8 m	4x	PRK 25B retro-reflective photoelectric sensors	300 mm	4x	Timing controlled 4-sensor muting
426528	Set-AC-MTX.2-4S	0 … 8 m	4x	PRK 25B retro-reflective photoelectric sensors	2,000 mm	4x	Timing controlled 4-sensor muting

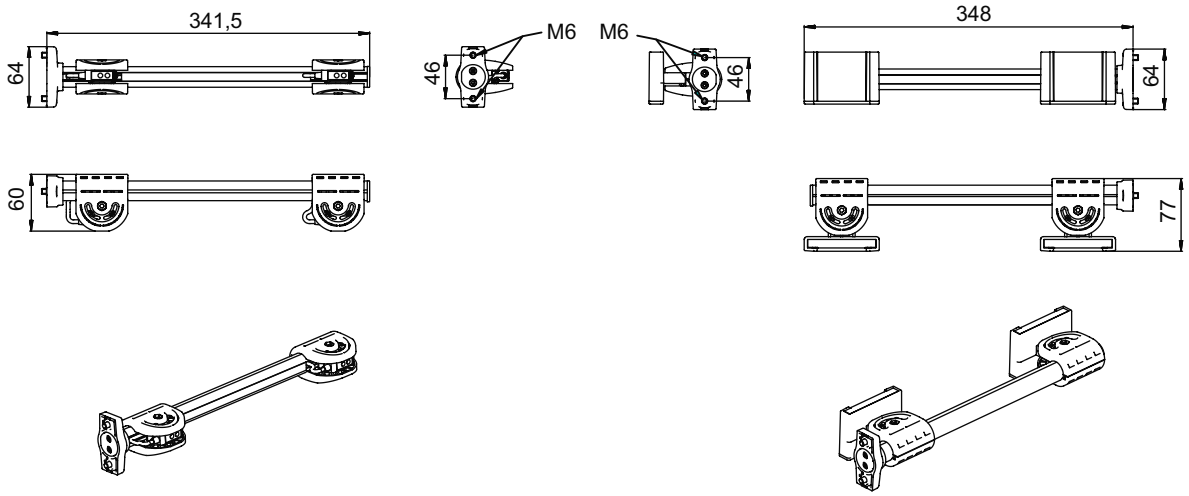
Further muting mounting systems can be found on our website

Dimensioned drawings: Muting mounting systems



Muting sensor set for timing controlled 2-sensor muting

Dimensioned drawings: Muting mounting systems



Muting sensor set for timing controlled 4-sensor muting

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PART INDEX
BY PART NUMBER

150677 484
150680 489
150681 489
150683 489
150684 489
150685 489
150717 485
150718 485
347070 504
347071 504
347072 504
347073 504
347074 504
347075 504
347076 504
347077 504
347078 504
347079 504
347080 504
347081 504
347082 504
349939 290
349945 290
424417 192
424417 266
424417 290
424417 312
424417 497
424421 497
424422 290
424423 290
424440 290
424440 494
424441 290
424441 494
424442 290
424442 494
424900 496
425740 192
425740 266
425740 290
425740 498
425741 192
425741 266
425741 290
425741 498
425742 192
425742 266
425742 290
425742 498
426045 493
426046 493
426185 504
426186 504
426187 504
426188 504
426189 504
426190 504
426280 330
426280 330
426280 330
426281 330
426288 330
426289 330
426296 312
426305 330
426306 330
426306 330
426306 330
426307 330
426308 330
426345 330
426379 330
426415 330
426490 312
426490 515
426491 312
426491 515
426492 312
426492 515
426494 515
426506 515
426520 312
426520 515
426521 312
426521 515
426522 312
426522 515
426524 515
426526 515
426527 515
426528 515
426529 515
426535 330
427300 513
427302 494
427303 494
429005 290
429006 290
429046 192
429046 266
429049 192
429049 266
429056 192
429056 266
429056 290
429056 494
429057 192
429057 266
429057 290
429057 495
429058 192
429058 266
429059 192
429059 266
429075 486
429081 486
429171 486
429172 485
429175 290
429175 311
429175 318
429175 492
429178 191
429178 266
429178 290
429178 311
429178 318
429178 493
429281 486
429288 486
429289 486
429393 290
429394 290
429395 290
429396 290
430105 494
430305 496
430306 496
430400 328
430410 328
430414 290
430424 290
520004 513
520021 498
520022 498
520023 513
520024 513
520071 312
520071 318
520083 493
520101 290
520101 513
520140 312
520141 312
520142 312
520150 312
520151 312
520152 312
520160 290
520162 290
529601 503
529602 503
529603 503
529604 503
529606 503
529607 503
529609 503
529610 503
529612 503
529613 503
529615 503
529616 503
529618 503
540350 312
540351 312
540352 312
540353 312
540354 318
540355 318
544000 274
544001 274
544002 274
544003 274
544004 275
544005 275
544006 275
544007 274
544008 274
544009 274
544010 274
544011 275
544012 275
544013 275
547802 379
547803 379
547804 381
547805 381
547806 380
547812 379
547813 379
547814 381
547815 381
547820 381
547821 381
547822 381
547823 381
547825 381
547931 367
547932 367
547933 374
547934 374
547935 370
547936 370
547950 365
547951 365
547952 366
547953 366
547954 371
547955 371
547958 368
547959 368
547960 368
547961 368
547962 368
547963 368
548050 489
548051 489
548052 489
548100 490
548361 490
548363 485
549000 513
549620 499
549621 499
549622 499
549623 499
549624 499
549625 499
549626 499
549627 499
549780 501
549781 501
549782 501
549783 501
549790 502
549791 502
549792 502
549793 502
549796 502
549797 502
549852 499
549853 499
549854 499
549855 499
549856 499
549857 499
549865 499
549867 499
549879 499
549881 499
549882 499
549883 499
549884 499
549885 499
549886 499
549941 362
549942 362
549992 369
560020 513
560120 494
560340 312
560341 312
560342 312
560343 312
560344 318
560345 318
580020 382
580021 382
580024 382
580025 382
580028 383
580029 383
580032 384
580055 382
580056 382
580057 383
580058 383
678032 490
678050 311
678050 318
678050 485
678051 311
678051 318
678051 485
678052 311
678052 318
678052 485
678053 311
678053 318
678053 485
678057 289
678057 311
678057 317
678057 357
678057 486
678059 289
678059 311
678059 317
678059 357
678059 486
678064 289
678064 311
678064 318
678064 357
678064 486
50000068 . . . 511
50000071 . . . 511
50003186 . . . 112
50003186 . . . 510
50003188 . . . 509
50003189 . . . 509
50003190 . . . 509
50003191 . . . 509
50003192 . . . 510
50003374 . . . 495
50003376 . . . 495
50006902 . . . 494
50009374 55
50009419 . . . 495
50011791 . . . 494
50016515 . . . 494
50018415 . . . 112
50018415 . . . 495
50019925 86
50020501 . . . 182
50020501 . . . 237
50020501 . . . 240
50020501 . . . 410
50020501 . . . 417
50020501 . . . 421
50020501 . . . 464
50020501 . . . 492
50020502 . . . 182
50020502 . . . 493
50020833 55
50020833 87
50020833 . . . 116
50020833 . . . 153
50020833 . . . 198
50020833 . . . 495
50022680 85
50022681 85
50022814 72
50022814 88
50022814 94
50022814 . . . 116
50022814 . . . 509
50022815 . . . 509
50022816 29
50022816 34
50022816 40
50022816 44
50022816 51
50022816 55
50022816 62
50022816 66
50022816 72
50022816 76
50022816 79
50022816 84
50022816 88
50022816 94
50022816 99
50022816 . . . 102
50022816 . . . 106
50022816 . . . 108
50022816 . . . 110
50022816 . . . 114
50022816 . . . 116
50022816 . . . 117
50022816 . . . 209
50022816 . . . 510
50023525 34
50023525 40
50023525 44
50023525 55
50023525 62
50023525 66
50023525 72
50023525 76
50023525 88
50023525 94
50023525 99
50023525 . . . 102
50023525 . . . 106
50023525 . . . 108
50023525 . . . 110
50023525 . . . 112
50023525 . . . 116
50023525 . . . 117
50023525 . . . 509
50024127 34
50024127 40
50024127 51
50024127 62
50024127 66
50024127 71
50024127 76
50024127 99
50024127 . . . 106
50024127 . . . 116
50024127 . . . 510
50025112 92
50025114 92
50025116 92
50025118 92
50025124 91
50025126 91
50025131 92
50025132 92
50025133 92
50025135 92
50025163 90
50025165 90
50025166 90
50025167 90
50025168 90
50025178 90
50025182 90
50025186 90
50025195 89
50025197 88
50025201 89
50025205 89
50025217 89
50025223 89
50025225 89
50025228 89
50025570 75
50025570 94
50025570 . . . 117
50025570 . . . 221
50025570 . . . 495
50025609 86
50025610 86
50025612 86
50026204 94
50026204 . . . 221
50026204 . . . 496
50026371 . . . 178
50026835 85
50026836 85
50027095 86
50027097 . . . 509
50027167 . . . 498
50027191 . . . 496
50027375 . . . 240
50027375 . . . 251
50027375 . . . 411
50027375 . . . 417
50027375 . . . 421
50027375 . . . 435
50027375 . . . 478
50027375 . . . 481
50027375 . . . 495
50027696 . . . 510
50027993 85
50028975 90

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Part no. . . Page no.

50029880 90
50029881 90
50030077 54
50030269 88
50030433 . . . 509
50030481 . . . 454
50030648 90
50030835 . . . 455
50030836 . . . 455
50030838 . . . 455
50030986 . . . 396
50030987 . . . 395
50030988 . . . 396
50030989 . . . 395
50030990 . . . 397
50030991 . . . 397
50030992 . . . 397
50030993 . . . 397
50031070 . . . 396
50031072 . . . 395
50031076 . . . 396
50031078 . . . 396
50031080 . . . 396
50031082 . . . 396
50031084 . . . 396
50031086 . . . 396
50031088 . . . 397
50031090 . . . 397
50031094 . . . 397
50031096 . . . 397
50031100 . . . 397
50031102 . . . 397
50031104 . . . 397
50031106 . . . 397
50031256 . . . 454
50031295 89
50031323 . . . 492
50031324 . . . 493
50031537 . . . 456
50031549 90
50031574 88
50031575 88
50031651 89
50031704 . . . 398
50031714 . . . 178
50031720 . . . 395
50032003 88
50032004 88
50032028 . . . 396
50032030 . . . 395
50032032 . . . 396
50032034 . . . 395
50032036 . . . 396
50032038 . . . 396
50032040 . . . 396
50032042 . . . 396
50032044 . . . 396
50032047 . . . 396
50032049 . . . 396
50032051 . . . 396
50032053 . . . 396
50032055 . . . 396
50032057 . . . 396
50032059 . . . 396
50032061 . . . 396
50032063 . . . 396
50032065 . . . 396
50032067 . . . 396
50032069 . . . 396
50032071 . . . 396
50032073 . . . 396
50032075 . . . 397
50032078 . . . 397
50032080 . . . 397
50032082 . . . 397
50032084 . . . 397
50032087 . . . 398
50032089 . . . 397
50032091 . . . 397
50032093 . . . 397
50032095 . . . 397
50032097 . . . 397
50032099 . . . 398
50032101 . . . 397
50032104 . . . 397
50032106 . . . 397
50032108 . . . 397
50032110 . . . 397
50032112 . . . 397
50032114 . . . 398
50032116 . . . 397
50032118 . . . 398
50032120 . . . 397
50032127 91
50032128 88
50032129 88
50032319 . . . 495
50032395 . . . 446
50032396 . . . 446
50032798 53
50033328 89
50033328 89
50033552 53
50033554 53
50034119 54
50034128 89
50034509 85
50034510 85
50034511 85
50034512 85
50034514 86
50034515 86
50034617 . . . 498
50035030 . . . 498
50035351 89
50035674 . . . 201
50035863 . . . 489
50035865 . . . 489
50035867 . . . 489
50036195 44
50036195 . . . 206
50036195 . . . 214
50036195 . . . 216
50036195 . . . 494
50036196 . . . 242
50036196 . . . 497
50036264 . . . 159
50036269 . . . 230
50036280 . . . 466
50036281 . . . 466
50036282 . . . 465
50036283 . . . 465
50036284 . . . 466
50036285 . . . 466
50036286 . . . 465
50036287 . . . 465
50036288 . . . 466
50036289 . . . 466
50036290 . . . 466
50036291 . . . 466
50036292 . . . 466
50036293 . . . 466
50036294 . . . 466
50036295 . . . 466
50036300 . . . 467
50036301 . . . 467
50036302 . . . 467
50036303 . . . 467
50036350 43
50036352 43
50036354 41
50036356 41
50036358 41
50036359 41
50036359 41
50036360 42
50036362 42
50036363 42
50036364 41
50036365 41
50036370 43
50036374 42
50037133 42
50037134 42
50037135 42
50037324 . . . 457
50037325 . . . 457
50037473 . . . 497
50037489 . . . 240
50037489 . . . 514
50037491 . . . 514
50037492 . . . 514
50037493 . . . 240
50037493 . . . 514
50037494 . . . 514
50037783 . . . 112
50037784 . . . 112
50038060 . . . 512
50038066 . . . 253
50038069 . . . 253
50038117 . . . 512
50038284 . . . 466
50038285 . . . 466
50038286 . . . 466
50038287 . . . 466
50038288 . . . 466
50038289 . . . 466
50038290 . . . 466
50038291 . . . 466
50038296 . . . 467
50038297 . . . 467
50038298 . . . 467
50038299 . . . 467
50038300 . . . 467
50038301 . . . 467
50038302 . . . 467
50038303 . . . 467
50038449 . . . 109
50038450 . . . 109
50038451 . . . 109
50038471 91
50038482 43
50038537 . . . 237
50038537 . . . 240
50038537 . . . 410
50038537 . . . 417
50038537 . . . 421
50038537 . . . 452
50038537 . . . 493
50038538 . . . 237
50038538 . . . 240
50038538 . . . 266
50038538 . . . 394
50038538 . . . 410
50038538 . . . 417
50038538 . . . 421
50038538 . . . 452
50038538 . . . 492
50038539 . . . 266
50038539 . . . 469
50038789 42
50038890 . . . 514
50038891 . . . 514
50038892 . . . 514
50038893 . . . 514
50038894 . . . 240
50038894 . . . 514
50038895 . . . 514
50038948 . . . 393
50038949 . . . 393
50039069 . . . 446
50039070 . . . 446
50039447 . . . 222
50039638 . . . 179
50039650 43
50039704 . . . 465
50039705 . . . 465
50039937 . . . 465
50039938 . . . 465
50039939 . . . 465
50039940 . . . 465
50039941 . . . 465
50039942 . . . 465
50039943 . . . 465
50039944 . . . 465
50039945 . . . 465
50039946 . . . 465
50039947 . . . 465
50039948 . . . 465
50040041 . . . 240
50040041 . . . 514
50040042 . . . 514
50040043 . . . 514
50040044 . . . 514
50040045 . . . 514
50040046 . . . 514
50040097 . . . 237
50040097 . . . 240
50040097 . . . 242
50040097 . . . 394
50040097 . . . 492
50040098 . . . 237
50040098 . . . 493
50040099 . . . 266
50040131 . . . 466
50040132 . . . 466
50040133 . . . 466
50040134 . . . 466
50040135 . . . 467
50040136 . . . 467
50040137 . . . 467
50040138 . . . 467
50040155 . . . 417
50040155 . . . 493
50040190 . . . 179
50040191 . . . 179
50040192 . . . 179
50040229 . . . 393
50040230 . . . 393
50040269 51
50040269 62
50040269 84
50040269 . . . 200
50040269 . . . 323
50040269 . . . 494
50040278 54
50040358 92
50040497 . . . 445
50040498 . . . 445
50040499 . . . 445
50040500 . . . 444
50040720 . . . 222
50040739 . . . 513
50040757 . . . 242
50040757 . . . 486
50040820 29
50040820 34
50040820 40
50040820 51
50040820 55
50040820 62
50040820 66
50040820 72
50040820 79
50040820 84
50040820 99
50040820 . . . 102
50040820 . . . 106
50040820 . . . 114
50040820 . . . 116
50040820 . . . 509
50040894 34
50040894 . . . 510
50040895 62
50040895 . . . 510
50041007 . . . 201
50041042 89
50041203 . . . 222
50041204 . . . 222
50041338 . . . 466
50041339 . . . 466
50041355 . . . 510
50041471 . . . 510
50041597 91
50041598 91
50041606 . . . 509
50041840 . . . 205
50041876 . . . 512
50060503 . . . 398
50060503 . . . 495
50060511 . . . 494
50060857 91
50060858 91
50061102 92
50061111 89
50061281 . . . 396
50061283 . . . 396
50061285 . . . 396
50061287 . . . 396
50061289 . . . 396
50061291 . . . 396
50061293 . . . 396
50061295 . . . 396
50061297 . . . 396
50061299 . . . 396
50061301 . . . 396
50061303 . . . 396
50061305 . . . 397
50061307 . . . 397
50061309 . . . 398
50061311 . . . 397
50061313 . . . 398
50061315 . . . 397
50061317 . . . 398
50061319 . . . 397
50061321 . . . 398
50061323 . . . 397
50061325 . . . 398
50061327 . . . 397
50061451 . . . 397
50061452 89
50080047 91
50080048 91
50080075 92
50080076 92
50080080 89
50080081 89
50080152 . . . 494
50080242 91
50080327 91
50080334 . . . 496
50080469 90
50080470 90
50080476 90
50080477 90
50080502 . . . 513
50080537 . . . 513
50080614 . . . 495
50080657 88
50080723 111
50080724 111
50080760 90
50080776 . . . 495
50081283 29
50081283 34
50081283 40
50081283 44
50081283 51
50081283 55
50081283 62
50081283 66
50081283 71
50081283 76
50081283 79
50081283 84
50081283 88
50081283 94
50081283 99
50081283 . . . 102
50081283 . . . 106
50081283 . . . 108
50081283 . . . 110
50081283 . . . 114
50081283 . . . 116
50081283 . . . 117
50081283 . . . 509
50081325 89
50081407 . . . 107
50081408 . . . 107
50081409 . . . 107
50081410 . . . 107
50081431 . . . 107
50081432 . . . 107
50081461 . . . 492
50081464 91
50082039 88
50082040 88
50082060 90
50082065 89
50082066 89
50082067 89
50082084 75
50082084 94
50082084 . . . 117
50082084 . . . 221
50082084 . . . 495
50082092 90
50082199 . . . 323
50082200 . . . 323
50082296 89
50083116 . . . 323
50083117 . . . 323
50083132 . . . 323
50083133 . . . 323
50083171 . . . 100
50083172 . . . 100
50083175 . . . 100
50083176 . . . 100
50083179 . . . 100
50083180 . . . 100
50083183 . . . 100
50083184 . . . 100
50083188 . . . 101
50083189 . . . 320
50083189 . . . 324
50083189 . . . 498
50101699 . . . 394
50101699 . . . 458
50101867 . . . 510
50101879 . . . 213
50101880 . . . 213
50101881 . . . 220
50101882 . . . 220
50101941 . . . 242
50101941 . . . 394
50101941 . . . 485
50101943 . . . 493
50102312 . . . 465
50102313 . . . 465
50102379 89
50102494 . . . 465
50102495 . . . 465
50102604 . . . 512
50102613 85
50102704 43
50102705 43
50102915 . . . 447
50102916 . . . 447
50102917 . . . 447
50102956 . . . 447
50102971 . . . 394
50102971 . . . 485
50103080 68
50103087 . . . 445
50103090 92
50103125 . . . 454
50103216 90
50103217 92
50103290 89
50103291 89
50103360 43
50103361 43
50103364 . . . 151
50103365 . . . 151
50103402 . . . 428
50103402 . . . 498
50103403 . . . 428
50103404 . . . 428
50103412 . . . 428
50103709 43
50103844 . . . 494
50103989 . . . 428
50104078 . . . 384
50104130 79
50104130 84
50104130 . . . 114
50104130 . . . 510
50104131 . . . 510
50104132 . . . 510
50104169 . . . 488
50104169 . . . 488
50104170 . . . 488
50104170 . . . 488
50104171 . . . 236
50104171 . . . 240
50104171 . . . 410
50104171 . . . 488
50104171 . . . 488
50104172 . . . 488
50104172 . . . 488
50104231 57
50104232 57
50104233 57
50104234 57
50104235 57
50104279 90
50104361 . . . 237
50104361 . . . 512
50104362 . . . 237
50104362 . . . 512
50104363 . . . 512
50104364 . . . 237
50104364 . . . 510
50104365 . . . 237
50104365 . . . 510
50104366 . . . 237
50104366 . . . 510
50104570 . . . 485
50104571 . . . 484
50104572 . . . 486
50104573 . . . 485
50104574 . . . 486
50104575 . . . 485
50104576 . . . 486
50104577 . . . 485
50104582 . . . 492
50104583 . . . 492
50104586 . . . 428
50104657 . . . 512

50104783 . . . 241
50104784 . . . 241
50104789 . . . 458
50104790 . . . 242
50104790 . . . 394
50104790 . . . 458
50104791 . . . 242
50104791 . . . 497
50104792 . . . 242
50104792 . . . 514
50104793 . . . 242
50104793 . . . 514
50104794 . . . 514
50104795 . . . 514
50104796 . . . 242
50104796 . . . 514
50104797 . . . 514
50104798 . . . 514
50104799 . . . 514
50104800 . . . 514
50104801 . . . 240
50104801 . . . 242
50104801 . . . 514
50104802 . . . 514
50104803 . . . 514
50104804 . . . 514
50104805 . . . 514
50104806 . . . 514
50104897 . . . 117
50104897 . . . 495
50105153 . . . 509
50105315 71
50105315 . . . 314
50105315 . . . 321
50105315 . . . 494
50105417 . . . 393
50105418 . . . 393
50105419 . . . 393
50105420 . . . 393
50105454 . . . 412
50105455 . . . 412
50105457 . . . 412
50105458 . . . 412
50105460 . . . 412
50105461 . . . 413
50105463 . . . 412
50105464 . . . 413
50105466 . . . 412
50105467 . . . 413
50105469 . . . 412
50105470 . . . 413
50105472 . . . 412
50105473 . . . 412
50105475 . . . 412
50105476 . . . 412
50105478 . . . 412
50105479 . . . 412
50105481 . . . 412
50105482 . . . 412
50105484 . . . 412
50105485 . . . 412
50105487 . . . 412
50105488 . . . 412
50105490 . . . 413
50105491 . . . 414
50105493 . . . 413
50105494 . . . 414
50105496 . . . 413
50105497 . . . 414
50105499 . . . 413
50105500 . . . 414
50105502 . . . 414
50105503 . . . 414
50105505 . . . 414
50105506 . . . 414
50105508 . . . 414
50105509 . . . 414
50105511 . . . 414
50105512 . . . 414
50105514 . . . 414
50105515 . . . 414
50105517 . . . 414
50105518 . . . 414
50105520 . . . 414
50105521 . . . 414
50105523 . . . 414
50105524 . . . 414
50105546 34
50105546 . . . 197
50105546 . . . 494
50105585 . . . 494
50105587 90
50105622 90
50105667 91
50105761 . . . 213
50105792 81
50105793 81
50105794 81
50105795 81
50105796 81
50105797 81
50105804 81
50105805 81
50105990 . . . 510
50106023 . . . 466
50106024 . . . 466
50106025 . . . 466
50106026 . . . 466
50106027 . . . 466
50106028 . . . 466
50106029 . . . 466
50106030 . . . 466
50106031 . . . 466
50106032 . . . 466
50106033 . . . 466
50106034 . . . 466
50106085 98
50106086 . . . 101
50106089 98
50106090 . . . 101
50106109 . . . 498
50106119 44
50106119 55
50106119 62
50106119 72
50106119 76
50106119 88
50106119 94
50106119 . . . 102
50106119 . . . 512
50106152 79
50106152 83
50106152 . . . 487
50106153 79
50106153 83
50106153 . . . 487
50106154 79
50106154 83
50106154 . . . 486
50106155 83
50106155 . . . 487
50106209 . . . 510
50106238 . . . 427
50106240 . . . 427
50106242 . . . 427
50106252 . . . 466
50106253 . . . 466
50106314 . . . 498
50106412 . . . 447
50106413 . . . 447
50106467 . . . 514
50106468 . . . 514
50106480 . . . 252
50106481 . . . 252
50106559 70
50106562 70
50106593 . . . 219
50106594 . . . 219
50106597 . . . 219
50106598 . . . 219
50106599 . . . 219
50106720 . . . 219
50106721 . . . 219
50106727 . . . 218
50106728 . . . 219
50106729 . . . 219
50106730 . . . 218
50106731 . . . 218
50106732 . . . 219
50106733 . . . 219
50106735 . . . 219
50106736 . . . 219
50106737 . . . 219
50106871 89
50106881 . . . 253
50106905 . . . 491
50106957 79
50106957 . . . 511
50106958 . . . 511
50106960 79
50106960 . . . 511
50106961 79
50106961 . . . 511
50106974 54
50106976 . . . 253
50107034 . . . 428
50107034 . . . 440
50107034 . . . 497
50107039 . . . 426
50107039 . . . 498
50107057 . . . 512
50107216 89
50107255 . . . 498
50107276 . . . 490
50107484 82
50107492 82
50107493 82
50107495 82
50107496 82
50107498 82
50107499 78
50107503 78
50107507 78
50107603 77
50107605 77
50107726 . . . 492
50107790 . . . 447
50108070 . . . 447
50108138 . . . 253
50108177 . . . 475
50108178 . . . 434
50108215 . . . 509
50108216 . . . 509
50108224 43
50108290 . . . 447
50108300 29
50108300 34
50108300 40
50108300 51
50108300 62
50108300 66
50108300 72
50108300 76
50108300 79
50108300 84
50108300 99
50108300 . . . 106
50108300 . . . 114
50108300 . . . 512
50108361 . . . 213
50108362 . . . 213
50108363 . . . 213
50108364 . . . 213
50108446 . . . 488
50108446 . . . 488
50108477 56
50108478 56
50108479 56
50108480 56
50108483 56
50108483 56
50108484 56
50108485 56
50108486 56
50108487 56
50108487 56
50108489 . . . 322
50108490 . . . 322
50108491 . . . 322
50108492 . . . 322
50108493 . . . 322
50108494 . . . 322
50108587 . . . 115
50108589 . . . 115
50108591 . . . 115
50108593 . . . 115
50108595 . . . 488
50108596 . . . 236
50108596 . . . 488
50108597 . . . 488
50108598 . . . 488
50108601 . . . 488
50108715 80
50108717 80
50108721 80
50108723 80
50108736 76
50108742 76
50108889 92
50108943 . . . 115
50108945 . . . 114
50108988 . . . 237
50108988 . . . 512
50108990 . . . 475
50108991 . . . 410
50108991 . . . 417
50108991 . . . 421
50108991 . . . 464
50108991 . . . 492
50109208 90
50109232 . . . 447
50109233 . . . 447
50109257 . . . 509
50109290 . . . 220
50109291 . . . 220
50109292 . . . 220
50109293 . . . 220
50109294 . . . 220
50109295 . . . 220
50109297 . . . 220
50109298 . . . 220
50109299 . . . 220
50109300 . . . 220
50109301 . . . 220
50109302 . . . 220
50109303 . . . 220
50109343 . . . 205
50109523 . . . 116
50109534 . . . 426
50109534 . . . 498
50109545 . . . 314
50109545 . . . 320
50109545 . . . 321
50109545 . . . 323
50109545 . . . 513
50109594 . . . 207
50109595 . . . 207
50109596 . . . 207
50109597 . . . 207
50109598 . . . 207
50109599 . . . 207
50109600 . . . 207
50109601 . . . 207
50109639 . . . 125
50109640 . . . 125
50109641 . . . 125
50109642 . . . 125
50109645 . . . 124
50109646 . . . 124
50109647 . . . 124
50109649 . . . 124
50109652 . . . 124
50109653 . . . 124
50109654 . . . 124
50109655 . . . 124
50109656 . . . 124
50109658 . . . 124
50109659 . . . 124
50109660 . . . 124
50109661 . . . 124
50109662 . . . 124
50109663 . . . 124
50109664 . . . 127
50109665 . . . 127
50109666 . . . 127
50109668 . . . 126
50109669 . . . 126
50109670 . . . 126
50109671 . . . 126
50109672 . . . 127
50109673 . . . 127
50109674 . . . 126
50109675 . . . 127
50109676 . . . 126
50109677 . . . 127
50109678 . . . 126
50109679 . . . 126
50109680 . . . 126
50109682 . . . 126
50109684 . . . 127
50109685 . . . 127
50109686 . . . 141
50109687 . . . 127
50109688 . . . 126
50109689 . . . 126
50109692 . . . 129
50109693 . . . 129
50109694 . . . 129
50109696 . . . 128
50109697 . . . 128
50109698 . . . 128
50109699 . . . 128
50109700 . . . 128
50109701 . . . 128
50109702 . . . 128
50109703 . . . 129
50109704 . . . 129
50109705 . . . 128
50109706 . . . 128
50109707 . . . 128
50109708 . . . 128
50109709 . . . 128
50109710 . . . 128
50109711 . . . 128
50109712 . . . 130
50109713 . . . 130
50109714 . . . 130
50109716 . . . 130
50109717 . . . 130
50109718 . . . 130
50109719 . . . 130
50109720 . . . 130
50109721 . . . 130
50109722 . . . 130
50109723 . . . 130
50109726 . . . 130
50109727 . . . 130
50109728 . . . 130
50109732 . . . 132
50109732 . . . 136
50109734 . . . 132
50109734 . . . 136
50109736 . . . 132
50109736 . . . 135
50109738 . . . 132
50109738 . . . 135
50109828 . . . 510
50109829 . . . 434
50109832 . . . 464
50109834 . . . 266
50109890 . . . 412
50109891 . . . 412
50109893 . . . 412
50109894 . . . 412
50109896 . . . 414
50109897 . . . 414
50109899 . . . 414
50109900 . . . 414
50109905 . . . 414
50109906 . . . 415
50109908 . . . 414
50109909 . . . 415
50109911 . . . 412
50109912 . . . 413
50109914 . . . 412
50109915 . . . 413
50110108 . . . 175
50110109 . . . 175
50110110 . . . 175
50110111 . . . 175
50110112 . . . 175
50110113 . . . 175
50110151 . . . 322
50110152 . . . 322
50110191 34
50110191 . . . 512
50110192 34
50110192 44
50110192 55
50110192 79
50110192 84
50110192 . . . 114
50110192 . . . 512
50110231 . . . 218
50110238 . . . 252
50110273 79
50110273 . . . 487
50110274 79
50110274 . . . 487
50110282 . . . 509
50110471 . . . 427
50110572 . . . 195
50110573 . . . 195
50110576 . . . 195
50110577 . . . 195
50110578 . . . 195
50110579 . . . 195
50110580 . . . 195
50110581 . . . 195
50110582 . . . 195
50110583 . . . 195
50110584 . . . 195
50110585 . . . 195
50110586 . . . 195
50110587 . . . 195
50110588 . . . 195
50110589 . . . 195
50110590 . . . 195
50110591 . . . 195
50110592 . . . 195
50110593 . . . 195
50110594 . . . 195
50110595 . . . 195
50110601 . . . 199
50110602 . . . 199
50110603 . . . 199
50110610 . . . 199
50110611 . . . 199
50110612 . . . 199
50110613 . . . 199
50110614 . . . 199
50110615 . . . 199
50110616 . . . 199
50110663 . . . 428
50110666 . . . 252
50110667 . . . 252
50110677 . . . 253
50110761 . . . 175
50110762 . . . 175
50110763 . . . 175
50110764 . . . 175
50110765 . . . 175
50110766 . . . 175
50110767 . . . 175
50110768 . . . 175
50110769 . . . 175
50110770 . . . 175
50110782 . . . 173
50110783 . . . 173
50110784 . . . 173
50110785 . . . 173
50110786 . . . 173
50110787 . . . 173
50110788 . . . 173
50110789 . . . 173
50110790 . . . 173
50110791 . . . 173
50110792 . . . 173
50110793 . . . 173
50110794 . . . 173
50110795 . . . 173
50110872 56
50110873 56
50110921 57
50110922 56
50110923 56
50110952 93
50110990 92
50111015 . . . 116
50111016 . . . 116
50111035 . . . 219
50111087 . . . 116
50111088 . . . 116
50111089 . . . 116
50111154 . . . 193
50111155 . . . 193
50111157 . . . 214
50111158 . . . 215
50111159 . . . 214
50111160 . . . 215
50111161 . . . 214
50111162 . . . 215
50111164 . . . 219
50111166 . . . 215
50111167 . . . 215
50111168 . . . 215
50111169 . . . 215
50111170 . . . 215
50111171 . . . 215
50111172 . . . 215
50111174 . . . 215
50111175 . . . 213
50111208 92
50111224 . . . 417
50111224 . . . 421
50111224 . . . 497
50111225 . . . 433
50111227 . . . 433
50111312 . . . 195

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Part no. . . Page no.

50111313 . . . 195
50111319 . . . 195
50111320 . . . 195
50111321 . . . 195
50111324 . . . 248
50111325 . . . 248
50111327 . . . 249
50111329 . . . 249
50111330 . . . 250
50111331 . . . 249
50111332 . . . 250
50111333 . . . 249
50111334 . . . 248
50111375 . . . 510
50111391 . . . 398
50111391 . . . 495
50111412 . . . 425
50111413 . . . 425
50111435 . . . 132
50111435 . . . 137
50111436 . . . 132
50111436 . . . 137
50111437 . . . 141
50111438 . . . 141
50111496 . . . 498
50111497 . . . 498
50111498 . . . 498
50111499 . . . 498
50111500 . . . 498
50111501 . . . 498
50111502 . . . 498
50111503 . . . 498
50111504 . . . 498
50111519 . . . 114
50111520 . . . 114
50111527 47
50111527 94
50111527 . . . 218
50111527 . . . 221
50111527 . . . 512
50111642 . . . 199
50111643 . . . 199
50111644 . . . 199
50111741 . . . 127
50111743 . . . 128
50111744 . . . 128
50111745 . . . 129
50111768 . . . 195
50111769 . . . 195
50111772 . . . 512
50111815 92
50111829 . . . 512
50111830 . . . 494
50111870 . . . 127
50111871 . . . 130
50111952 . . . 126
50111953 . . . 128
50111954 . . . 128
50111963 . . . 126
50111966 81
50111967 81
50111968 82
50111969 80
50111970 80
50112065 . . . 219
50112104 . . . 129
50112109 28
50112110 27
50112111 27
50112112 28
50112113 27
50112114 27
50112115 27
50112116 27
50112117 27
50112118 27
50112119 27
50112120 27
50112121 27
50112122 27
50112123 27
50112124 27
50112125 27
50112126 27
50112127 26
50112128 26
50112129 26
50112130 26
50112131 26
50112132 26
50112133 26
50112134 26
50112135 26
50112136 27
50112137 27
50112138 27
50112139 27
50112140 27
50112141 27
50112142 . . . 511
50112155 . . . 410
50112155 . . . 417
50112155 . . . 421
50112155 . . . 464
50112155 . . . 493
50112156 . . . 493
50112157 . . . 493
50112206 29
50112206 . . . 494
50112209 . . . 126
50112215 . . . 498
50112293 . . . 129
50112415 . . . 425
50112416 . . . 425
50112417 . . . 425
50112418 . . . 425
50112419 . . . 425
50112420 . . . 425
50112422 . . . 175
50112423 . . . 175
50112424 . . . 175
50112425 . . . 175
50112426 . . . 175
50112427 . . . 175
50112444 . . . 125
50112475 77
50112477 81
50112478 81
50112757 . . . 418
50112759 . . . 418
50112803 92
50112804 92
50112806 . . . 126
50112807 . . . 126
50112808 . . . 126
50112862 92
50112885 . . . 120
50112886 . . . 120
50112887 . . . 120
50112888 . . . 120
50112889 . . . 120
50112890 . . . 120
50112891 . . . 451
50112892 . . . 451
50112893 . . . 451
50112914 . . . 126
50112915 . . . 129
50112928 . . . 475
50112929 . . . 475
50112960 . . . 486
50112961 . . . 485
50112991 81
50112992 81
50113037 . . . 476
50113045 . . . 465
50113046 . . . 465
50113051 . . . 476
50113052 . . . 476
50113053 . . . 475
50113054 . . . 434
50113055 . . . 434
50113183 . . . 413
50113184 . . . 413
50113187 . . . 413
50113188 . . . 413
50113191 . . . 413
50113192 . . . 413
50113195 . . . 413
50113196 . . . 413
50113199 . . . 413
50113200 . . . 413
50113201 . . . 413
50113202 . . . 413
50113203 . . . 413
50113204 . . . 413
50113205 . . . 413
50113206 . . . 413
50113207 . . . 125
50113208 . . . 120
50113209 . . . 139
50113210 . . . 139
50113211 . . . 124
50113212 . . . 140
50113213 . . . 140
50113225 . . . 252
50113226 . . . 252
50113309 . . . 509
50113332 . . . 215
50113396 . . . 492
50113397 . . . 426
50113397 . . . 427
50113397 . . . 427
50113397 . . . 428
50113397 . . . 439
50113397 . . . 440
50113397 . . . 441
50113397 . . . 452
50113435 . . . 201
50113436 . . . 201
50113437 . . . 201
50113438 . . . 201
50113467 . . . 452
50113467 . . . 492
50113468 . . . 452
50113478 . . . 139
50113510 . . . 228
50113510 . . . 231
50113510 . . . 495
50113548 99
50113548 . . . 102
50113548 . . . 106
50113548 . . . 161
50113548 . . . 226
50113548 . . . 229
50113548 . . . 324
50113548 . . . 495
50113549 . . . 108
50113549 . . . 131
50113549 . . . 133
50113549 . . . 133
50113549 . . . 138
50113549 . . . 495
50113550 . . . 131
50113550 . . . 133
50113550 . . . 138
50113550 . . . 495
50113583 . . . 214
50113661 . . . 235
50113662 . . . 235
50113663 . . . 235
50113664 . . . 235
50113665 . . . 235
50113666 . . . 235
50113667 . . . 235
50113668 . . . 235
50113669 . . . 235
50113670 . . . 235
50113671 . . . 235
50113672 . . . 235
50113673 . . . 235
50113674 . . . 235
50113675 . . . 235
50113676 . . . 235
50113677 . . . 234
50113678 . . . 234
50113679 . . . 234
50113680 . . . 234
50113681 . . . 234
50113682 . . . 234
50113683 . . . 234
50113684 . . . 234
50113685 . . . 234
50113686 . . . 234
50113687 . . . 234
50113688 . . . 234
50113689 . . . 234
50113690 . . . 234
50113691 . . . 234
50113692 . . . 234
50113693 . . . 233
50113694 . . . 233
50113695 . . . 233
50113696 . . . 233
50113697 . . . 233
50113698 . . . 233
50113699 . . . 233
50113700 . . . 233
50113701 . . . 233
50113702 . . . 234
50113703 . . . 234
50113704 . . . 234
50113705 . . . 234
50113706 . . . 234
50113707 . . . 234
50113708 . . . 234
50113709 . . . 234
50113710 . . . 234
50113711 . . . 235
50113712 . . . 235
50113713 . . . 234
50113714 . . . 234
50113715 . . . 235
50113716 . . . 235
50113717 . . . 233
50113718 . . . 233
50113719 . . . 233
50113720 . . . 233
50113721 . . . 233
50113722 . . . 233
50113723 . . . 233
50113724 . . . 233
50113725 . . . 234
50113726 . . . 234
50113727 . . . 234
50113728 . . . 234
50113729 . . . 234
50113730 . . . 234
50113731 . . . 234
50113732 . . . 234
50113733 . . . 234
50113734 . . . 234
50113735 . . . 234
50113736 . . . 234
50113737 . . . 234
50113738 . . . 234
50113739 . . . 234
50113740 . . . 234
50113783 . . . 120
50113800 92
50113909 91
50113981 . . . 152
50113982 . . . 152
50113983 . . . 152
50113984 . . . 152
50113985 . . . 152
50113986 . . . 152
50113987 . . . 152
50113988 . . . 152
50113989 . . . 152
50113990 . . . 152
50113991 . . . 152
50113992 . . . 152
50113993 . . . 157
50113994 . . . 157
50113995 . . . 157
50113996 . . . 157
50113997 . . . 157
50113998 . . . 157
50113999 . . . 157
50114000 . . . 157
50114032 69
50114034 70
50114051 . . . 124
50114052 . . . 126
50114069 82
50114070 82
50114071 81
50114072 81
50114074 . . . 199
50114075 . . . 199
50114154 . . . 451
50114155 . . . 451
50114156 . . . 451
50114157 . . . 451
50114185 44
50114185 . . . 510
50114201 . . . 201
50114202 . . . 201
50114203 . . . 121
50114204 . . . 121
50114205 . . . 121
50114206 . . . 121
50114207 . . . 121
50114208 . . . 121
50114209 . . . 121
50114210 . . . 121
50114211 . . . 122
50114212 . . . 122
50114213 . . . 122
50114214 . . . 122
50114223 . . . 493
50114306 93
50114369 . . . 409
50114369 . . . 453
50114380 . . . 127
50114409 . . . 114
50114427 . . . 128
50114490 . . . 124
50114492 . . . 439
50114498 . . . 439
50114498 . . . 498
50114501 . . . 498
50114504 . . . 439
50114507 . . . 439
50114509 . . . 439
50114511 . . . 439
50114513 . . . 439
50114515 . . . 439
50114521 . . . 426
50114521 . . . 427
50114521 . . . 428
50114521 . . . 439
50114521 . . . 440
50114523 . . . 426
50114523 . . . 427
50114523 . . . 428
50114523 . . . 439
50114523 . . . 440
50114525 . . . 426
50114525 . . . 427
50114525 . . . 428
50114525 . . . 439
50114525 . . . 440
50114571 . . . 410
50114571 . . . 492
50114617 . . . 509
50114627 . . . 214
50114691 . . . 246
50114691 . . . 491
50114692 . . . 246
50114692 . . . 487
50114693 . . . 246
50114693 . . . 487
50114694 . . . 246
50114694 . . . 491
50114696 . . . 236
50114696 . . . 452
50114696 . . . 487
50114697 . . . 236
50114697 . . . 452
50114697 . . . 487
50114698 . . . 236
50114698 . . . 452
50114698 . . . 491
50114699 . . . 487
50114700 . . . 487
50114701 . . . 487
50114702 . . . 487
50114706 . . . 396
50114707 . . . 395
50114714 . . . 397
50114715 . . . 397
50114822 . . . 405
50114823 . . . 409
50114876 60
50114962 . . . 447
50115015 93
50115016 93
50115020 . . . 511
50115021 . . . 511
50115022 . . . 511
50115029 . . . 215
50115030 . . . 215
50115044 . . . 452
50115049 . . . 452
50115049 . . . 490
50115050 . . . 223
50115050 . . . 452
50115050 . . . 490
50115069 . . . 441
50115157 60
50115158 60
50115193 53
50115197 . . . 494
50115202 78
50115203 78
50115204 82
50115205 82
50115206 82
50115207 . . . 112
50115269 . . . 112
50115358 . . . 426
50115358 . . . 498
50115418 . . . 250
50115444 . . . 512
50115600 . . . 497
50115688 43
50115689 41
50115690 92
50115738 . . . 428
50115738 . . . 439
50115738 . . . 440
50115739 . . . 439
50115739 . . . 498
50115803 . . . 268
50115806 . . . 268
50115807 . . . 268
50115809 . . . 268
50116172 26
50116173 26
50116177 . . . 201
50116179 . . . 401
50116180 . . . 401
50116181 . . . 401
50116182 . . . 401
50116183 . . . 401
50116184 . . . 401
50116185 . . . 401
50116186 . . . 401
50116187 . . . 400
50116191 . . . 400
50116192 . . . 400
50116193 . . . 400
50116194 . . . 400
50116195 . . . 400
50116196 . . . 400
50116197 . . . 400
50116198 . . . 400
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50116200 . . . 400
50116201 . . . 400
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50116203 . . . 400
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50116207 . . . 400
50116208 . . . 400
50116209 . . . 400
50116210 . . . 400
50116211 . . . 400
50116212 . . . 400
50116213 . . . 400
50116214 . . . 400
50116215 . . . 400
50116216 . . . 400
50116217 . . . 400
50116218 . . . 400
50116219 . . . 400
50116220 . . . 400
50116221 . . . 400
50116222 . . . 400
50116223 . . . 400
50116224 . . . 400
50116225 . . . 400
50116226 . . . 400
50116272 . . . 404
50116273 . . . 404
50116274 . . . 404
50116275 . . . 404
50116276 . . . 404
50116277 . . . 404
50116278 . . . 404
50116279 . . . 404
50116280 . . . 404
50116284 . . . 404
50116285 . . . 404
50116286 . . . 404
50116287 . . . 404
50116288 . . . 404
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50116290 . . . 404
50116291 . . . 404
50116292 . . . 404
50116293 . . . 404
50116294 . . . 404
50116295 . . . 404
50116296 . . . 404
50116297 . . . 404

50116298 . . . 404
50116299 . . . 403
50116300 . . . 403
50116301 . . . 403
50116302 . . . 404
50116303 . . . 404
50116304 . . . 404
50116305 . . . 403
50116306 . . . 403
50116307 . . . 403
50116308 . . . 404
50116309 . . . 403
50116310 . . . 404
50116311 . . . 403
50116312 . . . 403
50116313 . . . 403
50116314 . . . 403
50116315 . . . 403
50116316 . . . 403
50116317 . . . 403
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50116320 . . . 403
50116321 . . . 403
50116322 . . . 403
50116323 . . . 403
50116324 . . . 403
50116325 . . . 403
50116326 . . . 403
50116327 . . . 403
50116328 . . . 403
50116332 . . . 403
50116333 . . . 403
50116334 . . . 403
50116335 . . . 403
50116336 . . . 403
50116337 . . . 403
50116338 . . . 403
50116339 . . . 403
50116340 . . . 403
50116341 . . . 403
50116342 . . . 403
50116343 . . . 403
50116344 . . . 402
50116345 . . . 402
50116346 . . . 402
50116347 . . . 402
50116348 . . . 402
50116349 . . . 402
50116350 . . . 402
50116351 . . . 403
50116352 . . . 402
50116353 . . . 402
50116354 . . . 402
50116355 . . . 402
50116356 . . . 402
50116357 . . . 402
50116358 . . . 402
50116359 . . . 402
50116360 . . . 402
50116361 . . . 402
50116362 . . . 402
50116363 . . . 402
50116364 . . . 402
50116365 . . . 402
50116366 . . . 402
50116367 . . . 402
50116368 . . . 405
50116369 . . . 405
50116370 . . . 405
50116371 . . . 405
50116372 . . . 405
50116373 . . . 405
50116374 . . . 405
50116375 . . . 405
50116376 . . . 405
50116380 . . . 405
50116381 . . . 405
50116382 . . . 405
50116383 . . . 405
50116384 . . . 405
50116385 . . . 405
50116386 . . . 405
50116387 . . . 405
50116388 . . . 405
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50116390 . . . 405
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50116392 . . . 405
50116393 . . . 405
50116394 . . . 405
50116395 . . . 404
50116396 . . . 405
50116397 . . . 405
50116398 . . . 405
50116399 . . . 405
50116400 . . . 405
50116401 . . . 405
50116402 . . . 405
50116403 . . . 405
50116404 . . . 405
50116405 . . . 405
50116406 . . . 404
50116407 . . . 404
50116408 . . . 404
50116409 . . . 405
50116410 . . . 405
50116411 . . . 405
50116412 . . . 404
50116413 . . . 404
50116414 . . . 404
50116415 . . . 402
50116416 . . . 402
50116417 . . . 402
50116418 . . . 402
50116419 . . . 402
50116420 . . . 402
50116421 . . . 402
50116422 . . . 402
50116423 . . . 402
50116427 . . . 402
50116428 . . . 402
50116429 . . . 401
50116430 . . . 401
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50116432 . . . 402
50116433 . . . 401
50116434 . . . 401
50116435 . . . 402
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50116441 . . . 401
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50116445 . . . 401
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50116456 . . . 401
50116457 . . . 401
50116458 . . . 401
50116459 . . . 401
50116460 . . . 401
50116461 . . . 401
50116462 . . . 401
50116463 . . . 409
50116464 . . . 409
50116465 . . . 239
50116465 . . . 409
50116466 . . . 409
50116467 . . . 239
50116467 . . . 409
50116468 . . . 409
50116469 . . . 409
50116470 . . . 239
50116470 . . . 409
50116471 . . . 239
50116471 . . . 409
50116474 . . . 201
50116532 60
50116678 93
50116687 . . . 512
50116725 . . . 509
50116732 . . . 205
50116738 . . . 489
50116814 . . . 495
50116815 . . . 495
50116816 . . . 495
50116817 79
50116817 . . . 495
50116819 . . . 495
50116820 . . . 495
50116828 82
50116844 96
50116844 96
50116844 96
50116845 96
50116845 96
50116845 96
50116845 96
50116846 96
50116846 96
50116846 96
50116847 96
50116847 96
50116847 96
50116847 96
50116848 96
50116849 96
50116850 96
50116851 96
50116852 96
50116853 96
50116854 96
50116855 96
50116856 96
50116857 96
50116858 96
50116859 96
50116860 96
50116861 96
50116862 96
50116863 96
50116864 . . . 426
50116939 . . . 511
50116969 . . . 475
50116970 . . . 475
50116971 . . . 475
50116972 . . . 475
50116973 . . . 475
50116974 . . . 475
50116975 . . . 475
50116976 . . . 475
50116977 . . . 434
50116978 . . . 434
50116979 . . . 434
50116980 . . . 434
50116981 . . . 434
50116982 . . . 434
50116983 . . . 434
50116984 . . . 434
50116985 . . . 475
50116986 . . . 475
50116987 . . . 475
50116988 . . . 475
50116989 . . . 476
50116990 . . . 476
50116991 . . . 476
50116992 . . . 476
50117011 . . . 378
50117011 . . . 492
50117069 . . . 396
50117070 . . . 395
50117071 . . . 397
50117072 . . . 397
50117091 . . . 476
50117093 . . . 434
50117094 . . . 475
50117199 82
50117200 . . . 139
50117201 . . . 124
50117251 44
50117251 71
50117251 . . . 116
50117251 . . . 206
50117251 . . . 216
50117251 . . . 314
50117251 . . . 321
50117251 . . . 433
50117251 . . . 496
50117252 44
50117252 71
50117252 . . . 116
50117252 . . . 206
50117252 . . . 216
50117252 . . . 314
50117252 . . . 321
50117252 . . . 433
50117252 . . . 496
50117253 44
50117253 71
50117253 . . . 116
50117253 . . . 206
50117253 . . . 216
50117253 . . . 314
50117253 . . . 321
50117253 . . . 433
50117253 . . . 496
50117254 34
50117254 40
50117254 51
50117254 55
50117254 62
50117254 65
50117254 84
50117254 . . . 113
50117254 . . . 197
50117254 . . . 198
50117254 . . . 323
50117254 . . . 496
50117255 34
50117255 40
50117255 51
50117255 55
50117255 62
50117255 65
50117255 84
50117255 . . . 113
50117255 . . . 153
50117255 . . . 197
50117255 . . . 198
50117255 . . . 323
50117255 . . . 496
50117256 34
50117256 40
50117256 51
50117256 55
50117256 62
50117256 65
50117256 84
50117256 . . . 113
50117256 . . . 197
50117256 . . . 198
50117256 . . . 323
50117256 . . . 496
50117257 99
50117257 . . . 106
50117257 . . . 495
50117258 . . . 324
50117258 . . . 497
50117334 . . . 215
50117356 52
50117357 52
50117358 52
50117359 52
50117360 53
50117361 52
50117362 53
50117363 52
50117364 52
50117365 52
50117366 53
50117367 53
50117368 53
50117369 53
50117370 54
50117371 53
50117372 52
50117373 52
50117374 52
50117375 52
50117377 53
50117379 53
50117412 . . . 447
50117490 99
50117490 . . . 102
50117490 . . . 106
50117490 . . . 161
50117490 . . . 226
50117490 . . . 229
50117490 . . . 324
50117490 . . . 496
50117534 . . . 432
50117536 . . . 432
50117583 34
50117583 44
50117583 51
50117583 55
50117583 62
50117583 72
50117583 76
50117583 79
50117583 84
50117583 . . . 102
50117583 . . . 114
50117583 . . . 510
50117584 . . . 509
50117683 36
50117688 36
50117688 36
50117688 36
50117689 35
50117689 35
50117689 35
50117690 36
50117691 36
50117691 36
50117691 36
50117692 35
50117692 35
50117692 35
50117693 36
50117694 36
50117695 35
50117702 37
50117703 37
50117704 37
50117705 37
50117706 37
50117707 37
50117727 . . . 169
50117728 . . . 169
50117729 . . . 169
50117730 . . . 169
50117731 . . . 169
50117732 . . . 169
50117733 . . . 169
50117734 . . . 169
50117735 . . . 169
50117736 . . . 169
50117737 . . . 169
50117738 . . . 168
50117739 . . . 168
50117740 . . . 168
50117741 . . . 168
50117742 . . . 169
50117743 . . . 169
50117744 . . . 169
50117745 . . . 169
50117746 . . . 169
50117747 . . . 169
50117748 . . . 169
50117749 . . . 168
50117750 . . . 168
50117751 . . . 169
50117752 . . . 169
50117753 . . . 169
50117754 . . . 169
50117755 . . . 169
50117756 . . . 169
50117757 . . . 169
50117758 . . . 169
50117759 . . . 169
50117760 . . . 169
50117761 . . . 169
50117762 . . . 169
50117763 . . . 169
50117764 . . . 169
50117765 . . . 169
50117766 . . . 168
50117767 . . . 168
50117768 . . . 168
50117769 . . . 168
50117770 . . . 168
50117771 . . . 168
50117772 . . . 168
50117773 . . . 168
50117774 . . . 168
50117775 . . . 168
50117776 . . . 168
50117777 . . . 168
50117778 . . . 169
50117797 . . . 121
50117818 . . . 268
50117825 . . . 497
50117826 . . . 497
50117827 . . . 497
50117828 . . . 323
50117828 . . . 497
50117829 . . . 323
50117829 . . . 497
50117830 . . . 323
50117830 . . . 497
50117920 93
50117924 63
50117925 64
50117926 63
50117927 64
50117928 63
50117929 63
50117930 63
50117931 63
50117932 63
50117933 63
50118182 . . . 265
50118183 . . . 265
50118184 . . . 246
50118184 . . . 265
50118185 . . . 246
50118185 . . . 265
50118358 . . . 426
50118369 . . . 124
50118393 . . . 195
50118398 . . . 163
50118399 . . . 163
50118400 . . . 164
50118401 . . . 164
50118402 . . . 164
50118403 . . . 164
50118404 . . . 165
50118405 . . . 165
50118406 . . . 165
50118407 . . . 165
50118408 . . . 165
50118409 . . . 165
50118410 . . . 165
50118411 . . . 165
50118521 . . . 129
50118539 . . . 498
50118542 40
50118542 65
50118542 . . . 495
50118543 40
50118543 44
50118543 71
50118543 . . . 206
50118543 . . . 495
50118585 . . . 261
50118616 . . . 261
50118633 . . . 262
50118649 . . . 262
50118664 . . . 261
50118697 . . . 261
50118715 . . . 262
50118731 . . . 262
50118746 . . . 261
50118778 . . . 261
50118796 . . . 262
50118812 . . . 262
50118827 . . . 261
50118872 . . . 261
50118890 . . . 262
50118906 . . . 262
50118921 . . . 261
50118953 . . . 262
50118970 . . . 262
50118986 . . . 262
50119002 . . . 261
50119032 . . . 205
50119033 . . . 205
50119070 . . . 165
50119071 . . . 165
50119090 . . . 262
50119108 . . . 262
50119124 . . . 262
50119139 . . . 261
50119171 . . . 262
50119188 . . . 262
50119204 . . . 262
50119219 . . . 261
50119251 . . . 262
50119269 . . . 262
50119285 . . . 262
50119323 . . . 496
50119324 . . . 496
50119325 . . . 496
50119330 . . . 314
50119330 . . . 321

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Part no. . . Page no.

50119330 . . . 496
50119331 . . . 314
50119331 . . . 321
50119331 . . . 496
50119332 . . . 314
50119332 . . . 321
50119332 . . . 496
50119333 . . . 496
50119334 . . . 496
50119364 . . . 112
50119377 . . . 256
50119409 . . . 256
50119427 . . . 257
50119443 . . . 257
50119458 . . . 256
50119491 . . . 256
50119509 . . . 257
50119525 . . . 257
50119615 . . . 256
50119647 . . . 256
50119665 . . . 257
50119681 . . . 257
50119710 . . . 268
50119711 . . . 268
50119712 . . . 268
50119714 68
50119724 . . . 256
50119756 . . . 256
50119774 . . . 257
50119790 . . . 257
50119805 . . . 256
50119837 . . . 256
50119855 . . . 257
50119871 . . . 257
50119913 . . . 256
50119945 . . . 256
50119963 . . . 257
50119979 . . . 257
50119994 . . . 256
50120000 . . . 214
50120010 . . . 496
50120011 . . . 496
50120019 . . . 496
50120080 . . . 256
50120098 . . . 257
50120115 . . . 257
50120131 . . . 256
50120164 . . . 256
50120182 . . . 257
50120198 . . . 257
50120273 . . . 128
50120274 . . . 126
50120425 . . . 314
50120425 . . . 321
50120425 . . . 496
50120426 . . . 198
50120426 . . . 496
50120444 . . . 426
50120444 . . . 427
50120444 . . . 428
50120444 . . . 428
50120444 . . . 440
50120444 . . . 441
50120444 . . . 442
50120444 . . . 498
50120463 . . . 492
50120538 . . . 509
50120622 78
50120623 82
50120748 . . . 407
50120749 . . . 407
50120750 . . . 407
50120751 . . . 407
50120752 . . . 407
50120753 . . . 407
50120754 . . . 407
50120755 . . . 407
50120756 . . . 406
50120760 . . . 406
50120761 . . . 406
50120762 . . . 406
50120763 . . . 406
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50120770 . . . 406
50120771 . . . 406
50120772 . . . 406
50120773 . . . 406
50120774 . . . 406
50120775 . . . 406
50120776 . . . 406
50120777 . . . 406
50120778 . . . 406
50120779 . . . 406
50120780 . . . 406
50120781 . . . 406
50120782 . . . 406
50120783 . . . 406
50120784 . . . 406
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50120788 . . . 406
50120789 . . . 406
50120790 . . . 406
50120791 . . . 406
50120792 . . . 406
50120793 . . . 406
50120794 . . . 406
50120795 . . . 406
50120796 . . . 409
50120797 . . . 409
50120825 . . . 214
50120855 27
50120999 . . . 191
50120999 . . . 265
50120999 . . . 490
50121000 . . . 191
50121000 . . . 265
50121000 . . . 490
50121012 . . . 126
50121079 . . . 169
50121098 . . . 191
50121098 . . . 266
50121148 . . . 475
50121227 54
50121228 53
50121229 53
50121230 53
50121231 53
50121232 53
50121291 . . . 208
50121292 . . . 208
50121293 . . . 208
50121294 . . . 208
50121387 . . . 425
50121388 . . . 425
50121433 . . . 240
50121433 . . . 411
50121433 . . . 481
50121433 . . . 495
50121434 . . . 411
50121434 . . . 495
50121435 . . . 411
50121435 . . . 495
50121898 77
50121899 78
50121900 78
50121901 . . . 141
50121902 . . . 141
50121904 . . . 497
50121907 . . . 320
50121908 . . . 320
50121909 . . . 320
50121910 . . . 320
50121911 . . . 320
50121912 . . . 320
50121913 . . . 320
50121914 . . . 320
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50121916 . . . 320
50121917 . . . 320
50121918 . . . 320
50121919 . . . 320
50121920 . . . 320
50121921 . . . 320
50121922 . . . 320
50122066 37
50122106 37
50122261 78
50122267 . . . 465
50122268 . . . 465
50122319 . . . 222
50122327 . . . 168
50122328 . . . 168
50122336 . . . 265
50122337 . . . 265
50122338 . . . 491
50122339 . . . 491
50122431 . . . 440
50122434 . . . 440
50122436 . . . 440
50122446 37
50122455 . . . 125
50122456 . . . 166
50122457 . . . 166
50122459 . . . 166
50122460 . . . 166
50122550 97
50122551 97
50122552 97
50122553 97
50122554 97
50122555 97
50122556 97
50122557 97
50122558 97
50122559 97
50122560 97
50122561 97
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50122590 64
50122591 64
50122592 64
50122593 64
50122594 64
50122595 64
50122596 64
50122597 64
50122598 64
50122599 64
50122600 64
50122601 64
50122689 . . . 104
50122690 . . . 104
50122691 . . . 104
50122694 . . . 104
50122695 . . . 104
50122696 . . . 104
50122697 . . . 104
50122698 . . . 104
50122699 . . . 103
50122700 . . . 103
50122701 . . . 103
50122702 . . . 103
50122703 . . . 103
50122704 . . . 103
50122705 . . . 103
50122706 . . . 103
50122707 . . . 103
50122709 . . . 103
50122710 . . . 103
50122711 . . . 103
50122712 . . . 103
50122713 . . . 105
50122714 . . . 105
50122715 . . . 105
50122716 . . . 105
50122717 . . . 104
50122718 . . . 104
50122719 . . . 104
50122720 . . . 104
50122721 . . . 104
50122722 . . . 104
50122724 . . . 104
50122725 . . . 104
50122726 . . . 105
50122727 . . . 105
50122728 . . . 104
50122729 . . . 105
50122769 . . . 415
50122770 . . . 415
50122771 . . . 415
50122772 . . . 415
50122773 . . . 415
50122775 . . . 415
50122776 . . . 415
50122780 . . . 415
50122781 . . . 415
50122782 . . . 415
50122783 . . . 415
50122784 . . . 415
50122785 . . . 415
50122786 . . . 415
50122787 . . . 415
50122788 . . . 415
50122797 . . . 323
50122797 . . . 496
50122798 . . . 496
50122954 . . . 256
50122957 . . . 256
50122989 . . . 256
50122998 . . . 256
50123037 . . . 257
50123046 . . . 257
50123057 . . . 257
50123062 . . . 257
50123130 . . . 261
50123137 . . . 261
50123173 . . . 261
50123179 . . . 262
50123206 . . . 262
50123216 . . . 262
50123221 . . . 262
50123231 . . . 262
50123263 . . . 265
50123265 . . . 265
50123266 37
50123267 37
50123279 . . . 261
50123312 . . . 261
50123330 . . . 262
50123346 . . . 262
50123362 . . . 261
50123394 . . . 262
50123412 . . . 262
50123432 . . . 262
50123449 . . . 256
50123482 . . . 256
50123503 . . . 406
50123504 . . . 402
50123505 . . . 405
50123506 . . . 403
50123507 . . . 404
50123508 . . . 400
50123553 . . . 257
50123569 . . . 257
50123584 . . . 256
50123616 . . . 256
50123634 . . . 257
50123652 . . . 257
50123686 . . . 219
50123687 . . . 219
50123861 44
50123861 62
50123861 79
50123861 84
50123861 . . . 102
50123861 . . . 114
50123861 . . . 512
50123862 . . . 440
50123869 . . . 498
50123899 34
50123899 44
50123899 62
50123899 79
50123899 84
50123899 . . . 102
50123899 . . . 114
50123899 . . . 512
50124004 . . . 510
50124260 . . . 228
50124261 . . . 228
50124263 . . . 228
50124264 . . . 228
50124265 . . . 230
50124266 . . . 230
50124267 . . . 158
50124268 . . . 158
50124269 . . . 158
50124270 . . . 158
50124271 . . . 158
50124272 . . . 158
50124273 . . . 159
50124297 . . . 266
50124651 40
50124651 51
50124651 62
50124651 65
50124651 . . . 323
50124651 . . . 495
50124693 . . . 205
50124703 . . . 173
50124941 . . . 497
50124943 53
50124944 53
50124945 53
50124981 . . . 238
50124982 . . . 238
50124983 . . . 238
50125111 93
50125541 . . . 251
50125668 . . . 238
50125669 . . . 238
50125670 . . . 238
50125671 . . . 238
50125672 . . . 238
50125673 . . . 238
50125674 . . . 238
50125675 . . . 238
50125676 . . . 238
50125677 . . . 238
50125678 . . . 238
50125679 . . . 238
50125752 67
50125754 68
50125755 67
50125767 . . . 465
50125768 . . . 465
50125790 . . . 181
50125860 . . . 161
50125860 . . . 497
50125991 67
50126007 . . . 495
50126080 . . . 422
50126081 . . . 422
50126082 . . . 422
50126130 . . . 239
50126131 . . . 239
50126132 . . . 464
50126132 . . . 492
50126327 . . . 313
50126328 . . . 313
50126329 . . . 313
50126330 . . . 313
50126331 . . . 313
50126332 . . . 313
50126333 . . . 313
50126334 . . . 313
50126360 . . . 260
50126361 . . . 260
50126362 . . . 260
50126374 . . . 260
50126375 . . . 260
50126376 . . . 260
50126391 . . . 260
50126392 . . . 260
50126393 . . . 260
50126405 . . . 260
50126406 . . . 260
50126407 . . . 260
50126459 . . . 170
50126460 . . . 170
50126461 . . . 170
50126462 . . . 170
50126463 . . . 170
50126464 . . . 170
50126465 . . . 170
50126466 . . . 170
50126467 . . . 170
50126468 . . . 170
50126469 . . . 170
50126470 . . . 170
50126471 . . . 171
50126472 . . . 171
50126473 . . . 171
50126474 . . . 171
50126475 . . . 170
50126476 . . . 170
50126477 . . . 171
50126478 . . . 171
50126479 . . . 171
50126480 . . . 171
50126481 . . . 170
50126482 . . . 170
50126483 . . . 171
50126484 . . . 171
50126485 . . . 170
50126486 . . . 171
50126487 . . . 170
50126488 . . . 170
50126489 . . . 170
50126490 . . . 170
50126491 . . . 170
50126492 . . . 171
50126493 . . . 171
50126494 . . . 171
50126495 . . . 170
50126496 . . . 170
50126497 . . . 170
50126498 . . . 170
50126499 . . . 170
50126500 . . . 170
50126545 . . . 313
50126546 . . . 313
50126547 . . . 313
50126548 . . . 313
50126549 . . . 313
50126550 . . . 313
50126551 . . . 313
50126552 . . . 313
50126556 57
50126559 93
50126605 96
50126606 97
50126607 97
50126608 97
50126609 97
50126631 . . . 497
50126757 . . . 498
50126764 67
50126781 . . . 180
50126782 . . . 180
50126783 . . . 180
50126784 . . . 181
50126785 . . . 181
50126786 . . . 181
50126787 . . . 181
50126788 . . . 181
50126800 41
50126801 41
50126801 41
50126940 53
50126967 . . . 168
50126968 . . . 124
50126969 . . . 419
50126970 . . . 419
50126971 . . . 419
50126972 . . . 419
50126973 . . . 419
50126974 . . . 419
50126975 . . . 419
50126976 . . . 419
50127012 68
50127013 68
50127014 68
50127015 68
50127016 68
50127017 68
50127018 68
50127019 68
50127021 68
50127024 68
50127025 69
50127026 69
50127027 68
50127028 69
50127029 68
50127030 68
50127031 69
50127032 68
50127033 66
50127033 67
50127034 67

50127035 67
50127036 66
50127036 67
50127037 66
50127037 67
50127038 66
50127038 67
50127039 67
50127040 67
50127042 66
50127043 67
50127044 67
50127045 67
50127046 67
50127048 69
50127049 69
50127050 69
50127051 69
50127052 69
50127054 69
50127055 69
50127056 69
50127057 69
50127058 69
50127059 69
50127060 69
50127061 70
50127062 70
50127063 70
50127064 70
50127065 70
50127066 70
50127067 70
50127101 . . . 447
50127177 . . . 214
50127177 . . . 242
50127177 . . . 394
50127177 . . . 495
50127193 74
50127219 . . . 235
50127220 . . . 235
50127221 . . . 235
50127222 . . . 235
50127223 . . . 235
50127224 . . . 235
50127225 . . . 235
50127226 . . . 235
50127338 . . . 170
50127339 . . . 170
50127340 . . . 170
50127341 . . . 170
50127342 . . . 171
50127420 74
50127421 74
50127422 74
50127423 74
50127424 74
50127425 74
50127426 74
50127427 74
50127430 74
50127431 74
50127432 74
50127433 75
50127434 75
50127435 75
50127436 75
50127437 73
50127438 72
50127439 73
50127440 73
50127441 73
50127442 72
50127443 73
50127444 72
50127445 73
50127446 73
50127447 73
50127448 73
50127450 . . . 423
50127451 . . . 423
50127466 . . . 126
50127466 . . . 129
50127488 . . . 220
50127550 92
50127723 . . . 422
50127764 . . . 158
50127771 80
50127772 80
50127773 . . . 105
50127841 . . . 203
50127853 . . . 217
50127898 . . . 427
50127901 38
50127902 38
50127903 38
50127904 38
50127929 97
50127932 41
50127969 . . . 181
50127996 97
50127997 97
50127998 97
50127999 97
50128001 . . . 176
50128002 . . . 176
50128003 . . . 176
50128004 . . . 176
50128005 . . . 176
50128006 . . . 177
50128007 . . . 177
50128008 . . . 176
50128009 . . . 176
50128010 . . . 176
50128011 . . . 176
50128012 . . . 176
50128013 . . . 176
50128014 . . . 176
50128015 . . . 177
50128149 . . . 133
50128150 . . . 133
50128151 . . . 133
50128152 . . . 133
50128153 . . . 133
50128154 . . . 133
50128163 . . . 132
50128163 . . . 137
50128164 . . . 132
50128164 . . . 137
50128165 . . . 132
50128165 . . . 137
50128166 . . . 132
50128166 . . . 137
50128169 . . . 132
50128169 . . . 136
50128170 . . . 132
50128170 . . . 136
50128171 . . . 132
50128171 . . . 136
50128172 . . . 132
50128172 . . . 136
50128173 . . . 132
50128173 . . . 135
50128175 . . . 132
50128175 . . . 135
50128176 . . . 132
50128176 . . . 135
50128177 . . . 132
50128177 . . . 135
50128178 . . . 132
50128178 . . . 135
50128181 . . . 132
50128181 . . . 134
50128182 . . . 132
50128182 . . . 134
50128183 . . . 132
50128183 . . . 134
50128184 . . . 132
50128184 . . . 134
50128196 . . . 105
50128197 . . . 105
50128200 37
50128201 37
50128202 37
50128203 37
50128204 . . . 436
50128204 . . . 437
50128204 . . . 438
50128287 . . . 192
50128288 . . . 192
50128289 . . . 192
50128290 . . . 192
50128318 . . . 492
50128379 47
50128379 75
50128379 . . . 218
50128379 . . . 496
50128380 47
50128380 75
50128380 . . . 218
50128380 . . . 496
50128388 45
50128424 . . . 476
50128425 . . . 476
50128583 . . . 497
50128782 . . . 430
50128783 . . . 430
50128784 . . . 430
50128785 . . . 430
50128786 . . . 430
50128787 . . . 430
50128788 . . . 430
50128789 . . . 430
50128790 . . . 430
50128795 . . . 498
50128797 . . . 498
50128811 82
50128813 . . . 130
50128889 . . . 188
50128890 . . . 188
50128891 . . . 188
50128892 . . . 188
50128893 . . . 188
50128894 . . . 188
50128895 . . . 188
50128896 . . . 188
50128897 . . . 188
50128898 . . . 188
50128899 . . . 188
50128900 . . . 188
50128901 . . . 188
50128902 . . . 188
50128903 . . . 188
50128904 . . . 188
50128905 . . . 188
50128906 . . . 188
50128907 . . . 188
50128908 . . . 188
50128909 . . . 188
50128910 . . . 188
50128911 . . . 188
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50128936 . . . 189
50128937 . . . 189
50128938 . . . 189
50128939 . . . 189
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50128990 . . . 188
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50128993 . . . 188
50128994 . . . 188
50128995 . . . 188
50128996 . . . 188
50128997 . . . 188
50128998 . . . 188
50128999 . . . 188
50129000 . . . 189
50129001 . . . 189
50129002 . . . 189
50129003 . . . 189
50129004 . . . 189
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50129006 . . . 189
50129007 . . . 189
50129008 . . . 189
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50129016 . . . 189
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50129019 . . . 189
50129020 . . . 189
50129021 . . . 189
50129022 . . . 189
50129023 . . . 189
50129024 . . . 189
50129025 . . . 189
50129026 . . . 189
50129027 . . . 189
50129028 . . . 189
50129029 . . . 189
50129030 . . . 189
50129031 . . . 189
50129032 . . . 189
50129033 . . . 189
50129034 . . . 189
50129035 . . . 190
50129036 . . . 190
50129037 . . . 190
50129038 . . . 190
50129039 . . . 190
50129040 . . . 190
50129041 . . . 190
50129042 . . . 190
50129043 . . . 190
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50129046 . . . 190
50129047 . . . 190
50129048 . . . 190
50129049 . . . 190
50129050 . . . 190
50129051 . . . 190
50129052 . . . 190
50129053 . . . 190
50129054 . . . 190
50129055 . . . 190
50129056 . . . 190
50129057 . . . 190
50129077 92
50129092 . . . 244
50129092 . . . 478
50129093 . . . 419
50129094 . . . 419
50129095 . . . 419
50129096 . . . 419
50129139 . . . 105
50129140 . . . 105
50129149 . . . 496
50129208 . . . 437
50129248 . . . 176
50129345 . . . 125
50129346 . . . 125
50129347 . . . 124
50129348 . . . 124
50129349 . . . 124
50129350 . . . 127
50129351 . . . 126
50129352 . . . 126
50129353 . . . 126
50129354 . . . 127
50129355 . . . 126
50129356 . . . 126
50129357 . . . 126
50129358 . . . 126
50129359 . . . 126
50129360 . . . 128
50129361 . . . 128
50129362 . . . 128
50129363 . . . 128
50129364 . . . 128
50129365 . . . 128
50129366 . . . 128
50129367 . . . 129
50129368 . . . 129
50129369 . . . 130
50129370 . . . 130
50129371 . . . 130
50129375 32
50129379 32
50129383 32
50129387 33
50129399 39
50129400 39
50129401 39
50129402 39
50129403 30
50129407 31
50129411 30
50129415 . . . 127
50129507 96
50129528 . . . 217
50129529 . . . 217
50129530 . . . 217
50129531 . . . 217
50129532 . . . 217
50129533 . . . 217
50129534 . . . 217
50129535 . . . 217
50129536 . . . 217
50129537 45
50129538 45
50129539 45
50129540 45
50129541 45
50129542 46
50129543 46
50129545 46
50129546 46
50129547 45
50129548 45
50129549 46
50129550 45
50129551 45
50129552 45
50129553 . . . 486
50129659 . . . 513
50129660 . . . 513
50129661 . . . 421
50129662 . . . 421
50129663 . . . 422
50129663 . . . 458
50129664 . . . 458
50129670 69
50129671 70
50129751 70
50129752 69
50129753 68
50129779 . . . 191
50129779 . . . 246
50129779 . . . 265
50129779 . . . 491
50129779 . . . 491
50129780 . . . 191
50129780 . . . 246
50129780 . . . 265
50129780 . . . 491
50129780 . . . 491
50129781 . . . 191
50129781 . . . 265
50129781 . . . 491
50129781 . . . 491
50129782 . . . 191
50129782 . . . 265
50129782 . . . 491
50129782 . . . 491
50129783 . . . 191
50129783 . . . 265
50129783 . . . 491
50129783 . . . 491
50129795 . . . 252
50129824 . . . 158
50129825 . . . 158
50129826 . . . 158
50129827 . . . 158
50130024 . . . 425
50130047 63
50130049 63
50130201 69
50130232 . . . 425
50130280 38
50130281 . . . 244
50130281 . . . 431
50130281 . . . 486
50130282 . . . 244
50130282 . . . 431
50130282 . . . 486
50130283 . . . 486
50130284 . . . 244
50130284 . . . 432
50130284 . . . 490
50130285 . . . 244
50130285 . . . 432
50130285 . . . 490
50130286 . . . 490
50130289 . . . 509
50130290 . . . 510
50130291 . . . 509
50130343 . . . 244
50130422 . . . 506
50130423 . . . 506
50130424 . . . 506
50130426 . . . 506
50130427 . . . 506
50130428 . . . 506
50130429 . . . 506
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50130440 . . . 505
50130441 . . . 505
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50130446 . . . 506
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50130456 . . . 505
50130457 . . . 505
50130458 . . . 505
50130459 . . . 505
50130460 . . . 505
50130462 73

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Part no. . . Page no.

50130463 73
50130464 73
50130465 73
50130466 73
50130467 73
50130468 74
50130469 74
50130470 74
50130471 75
50130472 . . . 507
50130473 . . . 507
50130474 . . . 508
50130475 . . . 508
50130476 . . . 508
50130477 . . . 508
50130478 . . . 508
50130479 . . . 508
50130480 . . . 508
50130481 . . . 508
50130482 . . . 508
50130483 . . . 508
50130487 . . . 441
50130489 . . . 441
50130490 . . . 441
50130491 . . . 441
50130491 . . . 498
50130495 . . . 440
50130497 . . . 440
50130499 . . . 427
50130501 . . . 426
50130502 . . . 508
50130504 . . . 426
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50130507 . . . 508
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50130531 . . . 507
50130532 . . . 508
50130533 . . . 508
50130543 36
50130550 80
50130592 . . . 493
50130593 . . . 493
50130594 . . . 493
50130595 . . . 493
50130596 . . . 493
50130597 . . . 493
50130598 . . . 493
50130599 . . . 493
50130600 . . . 493
50130601 . . . 493
50130602 . . . 493
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50130604 . . . 493
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50130606 . . . 493
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50130608 . . . 493
50130610 . . . 493
50130611 . . . 493
50130631 . . . 236
50130631 . . . 240
50130631 . . . 410
50130631 . . . 417
50130631 . . . 420
50130631 . . . 435
50130631 . . . 452
50130631 . . . 477
50130631 . . . 491
50130632 . . . 236
50130632 . . . 240
50130632 . . . 251
50130632 . . . 253
50130632 . . . 410
50130632 . . . 417
50130632 . . . 420
50130632 . . . 435
50130632 . . . 452
50130632 . . . 464
50130632 . . . 477
50130632 . . . 491
50130636 . . . 485
50130637 . . . 485
50130638 . . . 485
50130639 . . . 485
50130643 . . . 485
50130644 . . . 485
50130645 . . . 485
50130646 . . . 485
50130648 28
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50130648 . . . 200
50130648 . . . 204
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50130648 . . . 319
50130648 . . . 321
50130648 . . . 481
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50130651 . . . 319
50130651 . . . 486
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50130659 . . . 485
50130660 . . . 485
50130661 . . . 485
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50130685 . . . 484
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50130694 . . . 226
50130694 . . . 481
50130695 . . . 485
50130696 . . . 484
50130697 . . . 484
50130698 . . . 484
50130699 . . . 484
50130700 . . . 484
50130701 . . . 484
50130702 . . . 484
50130703 . . . 484
50130704 . . . 484
50130705 . . . 484
50130706 . . . 485
50130708 . . . 485
50130709 . . . 485
50130710 . . . 485
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50130719 . . . 485
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50130724 . . . 486
50130725 . . . 485
50130726 . . . 289
50130726 . . . 328
50130726 . . . 486
50130727 . . . 289
50130727 . . . 328
50130727 . . . 486
50130728 . . . 484
50130729 . . . 485
50130730 . . . 485
50130731 . . . 485
50130732 . . . 489
50130733 . . . 489
50130734 . . . 489
50130735 . . . 489
50130736 . . . 489
50130737 . . . 489
50130738 . . . 489
50130739 . . . 489
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50130741 . . . 481
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50130742 . . . 490
50130743 . . . 481
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50130746 . . . 489
50130747 . . . 489
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50130751 . . . 489
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50130757 . . . 489
50130758 . . . 489
50130759 . . . 481
50130759 . . . 489
50130760 . . . 490
50130761 . . . 481
50130761 . . . 490
50130762 . . . 489
50130763 . . . 489
50130764 . . . 489
50130765 . . . 489
50130766 . . . 490
50130767 . . . 490
50130768 . . . 489
50130769 . . . 489
50130770 . . . 489
50130771 . . . 489
50130772 . . . 489
50130821 . . . 425
50130829 . . . 487
50130831 . . . 487
50130832 28
50130832 34
50130832 40
50130832 . . . 113
50130832 . . . 123
50130832 . . . 131
50130832 . . . 133
50130832 . . . 138
50130832 . . . 141
50130832 . . . 167
50130832 . . . 174
50130832 . . . 182
50130832 . . . 487
50130833 . . . 487
50130834 . . . 487
50130835 . . . 487
50130836 . . . 487
50130837 28
50130837 33
50130837 40
50130837 . . . 113
50130837 . . . 123
50130837 . . . 131
50130837 . . . 133
50130837 . . . 138
50130837 . . . 141
50130837 . . . 167
50130837 . . . 174
50130837 . . . 182
50130837 . . . 487
50130838 . . . 487
50130839 . . . 487
50130840 . . . 487
50130841 . . . 487
50130842 28
50130842 33
50130842 40
50130842 . . . 113
50130842 . . . 123
50130842 . . . 131
50130842 . . . 133
50130842 . . . 138
50130842 . . . 141
50130842 . . . 167
50130842 . . . 174
50130842 . . . 182
50130842 . . . 487
50130843 . . . 487
50130844 28
50130844 33
50130844 40
50130844 . . . 113
50130844 . . . 123
50130844 . . . 131
50130844 . . . 133
50130844 . . . 138
50130844 . . . 141
50130844 . . . 167
50130844 . . . 174
50130844 . . . 182
50130844 . . . 487
50130845 . . . 487
50130846 . . . 487

50130847 . . . 487
50130848 28
50130848 34
50130848 40
50130848 50
50130848 61
50130848 83
50130848 . . . 113
50130848 . . . 123
50130848 . . . 153
50130848 . . . 167
50130848 . . . 182
50130848 . . . 187
50130848 . . . 196
50130848 . . . 200
50130848 . . . 487
50130849 . . . 487
50130850 28
50130850 34
50130850 40
50130850 50
50130850 61
50130850 83
50130850 . . . 113
50130850 . . . 123
50130850 . . . 153
50130850 . . . 167
50130850 . . . 182
50130850 . . . 187
50130850 . . . 196
50130850 . . . 200
50130850 . . . 487
50130851 . . . 487
50130852 . . . 487
50130853 . . . 487
50130854 28
50130854 34
50130854 40
50130854 50
50130854 61
50130854 83
50130854 . . . 113
50130854 . . . 123
50130854 . . . 153
50130854 . . . 167
50130854 . . . 182
50130854 . . . 187
50130854 . . . 196
50130854 . . . 200
50130854 . . . 322
50130854 . . . 355
50130854 . . . 487
50130855 . . . 487
50130856 28
50130856 34
50130856 40
50130856 50
50130856 61
50130856 83
50130856 . . . 113
50130856 . . . 123
50130856 . . . 153
50130856 . . . 167
50130856 . . . 182
50130856 . . . 187
50130856 . . . 196
50130856 . . . 200
50130856 . . . 322
50130856 . . . 355
50130856 . . . 487
50130857 . . . 322
50130857 . . . 355
50130857 . . . 487
50130858 . . . 487
50130859 . . . 487
50130860 28
50130860 33
50130860 39
50130860 . . . 123
50130860 . . . 131
50130860 . . . 133
50130860 . . . 138
50130860 . . . 141
50130860 . . . 167
50130860 . . . 174
50130860 . . . 182
50130860 . . . 486
50130861 . . . 486
50130862 28
50130862 33
50130862 39
50130862 . . . 123
50130862 . . . 131
50130862 . . . 133
50130862 . . . 138
50130862 . . . 141
50130862 . . . 167
50130862 . . . 174
50130862 . . . 182
50130862 . . . 486
50130863 . . . 486
50130864 . . . 486
50130865 28
50130865 33
50130865 39
50130865 . . . 123
50130865 . . . 131
50130865 . . . 133
50130865 . . . 138
50130865 . . . 141
50130865 . . . 167
50130865 . . . 174
50130865 . . . 182
50130865 . . . 486
50130866 . . . 486
50130867 28
50130867 33
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50130867 . . . 123
50130867 . . . 131
50130867 . . . 133
50130867 . . . 138
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50130867 . . . 167
50130867 . . . 174
50130867 . . . 182
50130867 . . . 486
50130868 . . . 486
50130869 28
50130869 33
50130869 39
50130869 50
50130869 61
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50130869 . . . 123
50130869 . . . 153
50130869 . . . 167
50130869 . . . 182
50130869 . . . 187
50130869 . . . 196
50130869 . . . 200
50130869 . . . 486
50130870 . . . 486
50130871 28
50130871 33
50130871 40
50130871 50
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50130871 . . . 123
50130871 . . . 153
50130871 . . . 167
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50130871 . . . 200
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50130873 . . . 167
50130873 . . . 182
50130873 . . . 187
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50130873 . . . 486
50130874 . . . 486
50130875 28
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50130875 . . . 123
50130875 . . . 153
50130875 . . . 167
50130875 . . . 182
50130875 . . . 187
50130875 . . . 196
50130875 . . . 200
50130875 . . . 487
50130876 . . . 487
50130877 . . . 486
50130878 . . . 487
50130879 . . . 487
50130880 . . . 486
50130881 . . . 487
50130882 . . . 487
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50130890 . . . 486
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50130897 . . . 490
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50130899 . . . 490
50130900 . . . 490
50130901 . . . 490
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50130941 . . . 489
50130942 . . . 489
50130943 . . . 489
50130944 . . . 489
50130945 . . . 489
50130946 . . . 489
50130950 . . . 197
50130990 . . . 493
50130993 . . . 493
50130994 . . . 493
50130998 . . . 486
50131020 . . . 158
50131063 . . . 486
50131241 . . . 197
50131242 . . . 197
50131243 . . . 197
50131244 . . . 197
50131245 . . . 197
50131246 . . . 197
50131247 . . . 197
50131248 . . . 197
50131249 . . . 197
50131254 . . . 409
50131255 . . . 409
50131256 . . . 239
50131256 . . . 409
50131258 . . . 409
50131259 . . . 409
50131308 . . . 184
50131309 . . . 184
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50131353 . . . 185
50131354 . . . 185
50131355 . . . 185
50131356 . . . 185
50131357 . . . 185
50131358 . . . 185
50131359 . . . 185
50131360 . . . 185
50131361 . . . 185
50131362 . . . 185
50131363 . . . 185
50131364 . . . 185
50131365 . . . 184
50131366 . . . 184
50131367 . . . 184
50131368 . . . 184
50131369 . . . 184
50131370 . . . 184
50131371 . . . 184
50131372 . . . 184
50131373 . . . 184
50131374 . . . 184
50131375 . . . 184
50131376 . . . 184
50131377 . . . 184
50131378 . . . 184
50131379 . . . 184
50131380 . . . 184
50131381 . . . 184
50131382 . . . 184
50131383 . . . 184
50131384 . . . 184
50131385 . . . 184
50131386 . . . 184
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50131392 . . . 185
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50131394 . . . 185
50131395 . . . 185
50131396 . . . 185
50131397 . . . 185
50131398 . . . 185
50131399 . . . 185
50131400 . . . 185
50131401 . . . 185
50131402 . . . 185
50131403 . . . 185
50131404 . . . 185
50131405 . . . 185
50131406 . . . 185
50131407 . . . 185
50131408 . . . 185
50131409 . . . 185
50131410 . . . 185
50131411 . . . 185
50131412 . . . 185
50131413 . . . 185
50131414 . . . 185
50131415 . . . 185
50131416 . . . 185
50131417 . . . 185
50131418 . . . 185
50131419 . . . 185
50131420 . . . 185
50131438 . . . 476
50131439 . . . 476
50131458 . . . 437
50131482 . . . 453
50131483 . . . 453
50131484 . . . 453
50131485 . . . 453
50131498 . . . 419
50131499 . . . 419
50131529 . . . 422
50131529 . . . 459
50131531 . . . 422
50131531 . . . 459
50131532 . . . 422
50131532 . . . 459
50131534 . . . 422
50131534 . . . 495
50131549 70
50131550 69
50131551 70
50131552 70
50131552 70
50131553 70
50131553 70
50131554 70
50131555 66
50131556 66
50131572 38
50131580 38
50131581 . . . 437
50131582 . . . 422
50131604 . . . 177
50131746 . . . 261
50131747 . . . 261
50131784 . . . 261
50131785 . . . 262
50131820 . . . 262
50131821 . . . 262
50131840 . . . 262
50131841 . . . 262
50131908 . . . 256
50131909 . . . 256
50131946 . . . 256
50131947 . . . 256
50131982 . . . 257
50131983 . . . 257
50132002 . . . 257
50132003 . . . 257
50132036 . . . 347
50132037 . . . 347
50132038 . . . 347
50132039 . . . 347
50132040 . . . 347
50132041 . . . 347
50132042 . . . 347
50132043 . . . 347
50132044 . . . 347
50132045 . . . 348
50132046 . . . 348
50132047 . . . 348
50132048 . . . 347
50132049 . . . 347
50132050 . . . 347
50132051 . . . 347
50132052 . . . 347
50132053 . . . 348
50132054 . . . 348
50132056 . . . 348
50132057 . . . 347
50132058 . . . 347
50132059 . . . 347
50132060 . . . 347
50132061 . . . 349
50132062 . . . 349
50132063 . . . 349
50132064 . . . 349
50132065 . . . 349
50132066 . . . 349
50132069 . . . 187
50132077 44
50132077 47
50132077 55
50132077 87
50132077 94
50132077 . . . 153
50132077 . . . 160
50132077 . . . 167
50132077 . . . 182
50132077 . . . 193
50132077 . . . 198
50132077 . . . 202
50132077 . . . 206
50132077 . . . 208
50132077 . . . 214
50132077 . . . 216
50132077 . . . 218
50132077 . . . 221
50132077 . . . 226
50132077 . . . 228
50132077 . . . 229
50132077 . . . 231
50132077 . . . 264
50132077 . . . 269
50132079 44
50132079 47
50132079 55
50132079 87
50132079 94
50132079 . . . 153
50132079 . . . 160
50132079 . . . 167
50132079 . . . 182
50132079 . . . 193
50132079 . . . 198
50132079 . . . 202
50132079 . . . 206
50132079 . . . 208
50132079 . . . 214
50132079 . . . 216
50132079 . . . 218
50132079 . . . 221
50132079 . . . 226
50132079 . . . 228
50132079 . . . 229
50132079 . . . 231
50132079 . . . 265
50132079 . . . 269
50132079 . . . 410
50132079 . . . 417
50132079 . . . 420
50132079 . . . 452
50132080 . . . 464
50132080 . . . 468
50132082 . . . 152
50132136 . . . 480
50132149 . . . 168
50132150 . . . 244
50132150 . . . 432
50132150 . . . 496
50132151 . . . 244
50132151 . . . 432
50132151 . . . 495
50132201 . . . 347
50132202 . . . 347
50132203 . . . 347
50132204 . . . 347
50132210 . . . 347
50132213 . . . 347

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Part no. . . Page no.

50132214 . . . 347
50132215 . . . 347
50132216 . . . 347
50132217 . . . 347
50132218 . . . 347
50132219 . . . 347
50132254 . . . 493
50132275 60
50132278 60
50132417 36
50132417 36
50132418 36
50132419 37
50132420 36
50132420 36
50132421 37
50132430 . . . 321
50132431 . . . 319
50132431 . . . 321
50132434 . . . 289
50132434 . . . 328
50132434 . . . 486
50132438 . . . 489
50132439 . . . 490
50132453 . . . 496
50132521 53
50132534 . . . 289
50132536 43
50132536 47
50132536 54
50132536 87
50132536 94
50132536 . . . 153
50132536 . . . 160
50132536 . . . 167
50132536 . . . 182
50132536 . . . 193
50132536 . . . 198
50132536 . . . 202
50132536 . . . 206
50132536 . . . 208
50132536 . . . 214
50132536 . . . 216
50132536 . . . 218
50132536 . . . 221
50132536 . . . 226
50132536 . . . 228
50132536 . . . 229
50132536 . . . 231
50132536 . . . 264
50132536 . . . 269
50132537 43
50132537 47
50132537 54
50132537 87
50132537 94
50132537 . . . 153
50132537 . . . 160
50132537 . . . 167
50132537 . . . 182
50132537 . . . 193
50132537 . . . 198
50132537 . . . 202
50132537 . . . 206
50132537 . . . 208
50132537 . . . 214
50132537 . . . 216
50132537 . . . 218
50132537 . . . 221
50132537 . . . 226
50132537 . . . 228
50132537 . . . 229
50132537 . . . 231
50132537 . . . 264
50132537 . . . 269
50132564 . . . 496
50132565 . . . 496
50132567 . . . 496
50132572 . . . 197
50132578 69
50132582 . . . 471
50132583 . . . 471
50132584 . . . 471
50132585 . . . 471
50132586 . . . 471
50132587 . . . 471
50132588 . . . 471
50132589 . . . 471
50132590 . . . 471
50132591 . . . 471
50132592 . . . 471
50132593 . . . 471
50132594 . . . 471
50132595 . . . 471
50132598 37
50132605 . . . 496
50132606 . . . 496
50132612 . . . 197
50132613 . . . 197
50132614 . . . 197
50132617 70
50132724 . . . 425
50132725 . . . 425
50132726 . . . 425
50132727 . . . 497
50132728 . . . 497
50132729 . . . 497
50132730 . . . 497
50132731 96
50132746 . . . 168
50132799 . . . 425
50132800 . . . 425
50132817 . . . 169
50132822 96
50132826 . . . 419
50132827 . . . 419
50132828 . . . 419
50132829 . . . 419
50132830 . . . 419
50132831 . . . 419
50132832 . . . 419
50132833 . . . 419
50132844 . . . 418
50132845 . . . 418
50132846 . . . 418
50132847 . . . 418
50132848 . . . 418
50132849 . . . 418
50132850 . . . 418
50132851 . . . 418
50132852 . . . 418
50132853 . . . 418
50132854 . . . 418
50132855 . . . 418
50132856 . . . 418
50132857 . . . 418
50132899 . . . 425
50132900 . . . 425
50132911 . . . 244
50132911 . . . 478
50132913 . . . 461
50132914 . . . 461
50132915 . . . 461
50132916 . . . 461
50132917 . . . 462
50132918 . . . 462
50132919 . . . 461
50132920 . . . 461
50132921 . . . 461
50132922 . . . 461
50132923 . . . 462
50132924 . . . 462
50132925 . . . 461
50132926 . . . 461
50132927 . . . 461
50132928 . . . 461
50132929 . . . 462
50132930 . . . 462
50132931 . . . 461
50132932 . . . 461
50132933 . . . 461
50132934 . . . 461
50132935 . . . 462
50132936 . . . 462
50132984 . . . 376
50132985 . . . 376
50132986 . . . 376
50132987 . . . 376
50132988 . . . 376
50132989 . . . 376
50132990 . . . 378
50132991 . . . 378
50132992 . . . 378
50132993 . . . 378
50132994 . . . 377
50132995 . . . 377
50132996 . . . 378
50132997 . . . 378
50132998 . . . 378
50132999 . . . 377
50133000 . . . 369
50133001 . . . 369
50133002 . . . 378
50133004 . . . 364
50133005 . . . 364
50133006 . . . 364
50133007 . . . 364
50133008 . . . 362
50133009 . . . 362
50133010 . . . 363
50133011 . . . 363
50133012 . . . 372
50133013 . . . 372
50133014 . . . 372
50133015 . . . 372
50133016 . . . 360
50133017 . . . 360
50133018 . . . 361
50133019 . . . 361
50133020 . . . 369
50133021 . . . 369
50133022 . . . 360
50133023 . . . 360
50133024 . . . 359
50133025 . . . 359
50133026 . . . 373
50133027 . . . 373
50133028 . . . 373
50133029 . . . 373
50133030 . . . 375
50133031 . . . 375
50133045 68
50133045 68
50133132 . . . 139
50133270 98
50133271 98
50133271 . . . 105
50133287 . . . 349
50133288 . . . 349
50133312 . . . 347
50133313 . . . 348
50133387 . . . 481
50133387 . . . 491
50133397 56
50133397 56
50133403 77
50133409 . . . 126
50133412 . . . 198
50133412 . . . 498
50133413 67
50133520 . . . 122
50133521 . . . 122
50133590 32
50133592 32
50133598 32
50133624 30
50133628 30
50133644 31
50133648 31
50133652 31
50133668 31
50133672 31
50133688 31
50133693 31
50133697 31
50133698 31
50133714 31
50133718 31
50133722 31
50133738 30
50133739 30
50133743 30
50133771 . . . 261
50133772 . . . 261
50133789 . . . 261
50133790 . . . 261
50133802 44
50133802 47
50133802 54
50133802 87
50133802 94
50133802 . . . 153
50133802 . . . 160
50133802 . . . 167
50133802 . . . 182
50133802 . . . 193
50133802 . . . 198
50133802 . . . 202
50133802 . . . 206
50133802 . . . 208
50133802 . . . 214
50133802 . . . 216
50133802 . . . 218
50133802 . . . 221
50133802 . . . 226
50133802 . . . 228
50133802 . . . 229
50133802 . . . 231
50133802 . . . 264
50133802 . . . 269
50133839 44
50133839 47
50133839 55
50133839 87
50133839 94
50133839 . . . 153
50133839 . . . 160
50133839 . . . 167
50133839 . . . 182
50133839 . . . 193
50133839 . . . 198
50133839 . . . 202
50133839 . . . 206
50133839 . . . 208
50133839 . . . 214
50133839 . . . 216
50133839 . . . 218
50133839 . . . 221
50133839 . . . 226
50133839 . . . 228
50133839 . . . 229
50133839 . . . 231
50133839 . . . 264
50133839 . . . 269
50133839 . . . 468
50133841 44
50133841 47
50133841 55
50133841 87
50133841 94
50133841 . . . 153
50133841 . . . 160
50133841 . . . 167
50133841 . . . 182
50133841 . . . 193
50133841 . . . 198
50133841 . . . 202
50133841 . . . 206
50133841 . . . 208
50133841 . . . 214
50133841 . . . 216
50133841 . . . 218
50133841 . . . 221
50133841 . . . 226
50133841 . . . 228
50133841 . . . 229
50133841 . . . 231
50133841 . . . 236
50133841 . . . 240
50133841 . . . 264
50133841 . . . 269
50133841 . . . 289
50133841 . . . 464
50133841 . . . 468
50133842 43
50133842 47
50133842 54
50133842 87
50133842 94
50133842 . . . 153
50133842 . . . 160
50133842 . . . 167
50133842 . . . 182
50133842 . . . 193
50133842 . . . 198
50133842 . . . 202
50133842 . . . 206
50133842 . . . 208
50133842 . . . 214
50133842 . . . 216
50133842 . . . 218
50133842 . . . 221
50133842 . . . 226
50133842 . . . 228
50133842 . . . 229
50133842 . . . 231
50133842 . . . 264
50133842 . . . 269
50133860 . . . 289
50133860 . . . 311
50133860 . . . 317
50133860 . . . 357
50133860 . . . 486
50133861 . . . 289
50133861 . . . 311
50133861 . . . 317
50133861 . . . 357
50133861 . . . 486
50133884 . . . 242
50133884 . . . 394
50133891 . . . 242
50133891 . . . 394
50133896 . . . 201
50133928 38
50133929 38
50133930 38
50133931 38
50133932 38
50133933 38
50133934 38
50133935 38
50133940 98
50133940 . . . 105
50133941 98
50133941 . . . 105
50133942 98
50133942 . . . 105
50133943 98
50133944 97
50133945 97
50133962 . . . 165
50133963 . . . 165
50133964 . . . 165
50133965 . . . 165
50133966 . . . 166
50133967 . . . 165
50133969 . . . 166
50133970 . . . 166
50133971 . . . 166
50133973 . . . 165
50133974 . . . 165
50133975 . . . 165
50133976 . . . 165
50133977 . . . 165
50133978 . . . 165
50133980 . . . 165
50133981 . . . 165
50133982 . . . 165
50133983 . . . 165
50133985 . . . 165
50133986 . . . 165
50133987 . . . 165
50133988 . . . 165
50133990 . . . 165
50133991 . . . 165
50133992 . . . 165
50133993 . . . 165
50133995 . . . 165
50133996 . . . 165
50133998 . . . 165
50133999 . . . 165
50134001 . . . 165
50134002 . . . 165
50134004 . . . 165
50134005 . . . 165
50134007 . . . 166
50134008 . . . 166
50134009 . . . 166
50134012 . . . 318
50134013 . . . 318
50134014 . . . 318
50134015 . . . 318
50134069 . . . 419
50134070 . . . 419
50134095 . . . 128
50134096 . . . 430
50134097 . . . 430
50134098 . . . 430
50134099 . . . 430
50134100 . . . 430
50134101 . . . 430
50134199 . . . 497
50134200 . . . 497
50134201 . . . 498
50134215 59
50134216 59
50134217 59
50134218 59
50134219 59
50134220 59
50134221 59
50134222 59
50134231 60
50134232 60
50134233 60
50134234 60
50134235 60
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50134244 60
50134245 60
50134246 60
50134255 58
50134256 58
50134257 58
50134258 58
50134259 58
50134260 58
50134261 58
50134262 58
50134271 58
50134272 58
50134273 58
50134274 58
50134275 58
50134276 58
50134277 58
50134278 58
50134279 57
50134280 57
50134281 57
50134282 57
50134283 57
50134284 57
50134285 57
50134286 57
50134287 59
50134288 59
50134289 59
50134290 59
50134291 59
50134292 59
50134293 59
50134294 59
50134295 59
50134296 59
50134297 59
50134298 59
50134299 59
50134300 59
50134301 59
50134302 59
50134311 . . . 376
50134312 . . . 376
50134313 . . . 376
50134314 . . . 376
50134315 . . . 376
50134316 . . . 376
50134346 49
50134347 49
50134349 49
50134350 49
50134351 49
50134353 49
50134354 49
50134355 49
50134357 49
50134358 49
50134359 49
50134361 49
50134362 48
50134363 48
50134365 48
50134366 48
50134367 48
50134369 48
50134370 48
50134371 49
50134373 49
50134374 48
50134375 49
50134377 48
50134378 48

50134379 49
50134381 49
50134382 48
50134388 49
50134391 . . . 461
50134392 . . . 461
50134393 . . . 461
50134394 . . . 461
50134395 . . . 462
50134396 . . . 462
50134397 . . . 461
50134398 . . . 461
50134399 . . . 461
50134400 . . . 461
50134401 . . . 462
50134402 . . . 462
50134403 . . . 461
50134404 . . . 461
50134405 . . . 462
50134406 . . . 462
50134407 . . . 462
50134408 . . . 462
50134409 . . . 461
50134410 . . . 461
50134411 . . . 462
50134412 . . . 462
50134413 . . . 462
50134414 . . . 462
50134415 . . . 462
50134416 . . . 462
50134417 . . . 462
50134418 . . . 462
50134419 . . . 462
50134420 . . . 462
50134421 . . . 462
50134422 . . . 462
50134423 . . . 462
50134424 . . . 462
50134425 . . . 462
50134426 . . . 462
50134427 . . . 462
50134428 . . . 462
50134429 . . . 462
50134430 . . . 462
50134431 . . . 463
50134432 . . . 463
50134433 . . . 462
50134434 . . . 462
50134435 . . . 462
50134436 . . . 462
50134437 . . . 463
50134438 . . . 463
50134446 74
50134447 74
50134448 74
50134450 72
50134451 73
50134452 73
50134453 73
50134454 72
50134454 73
50134455 72
50134455 73
50134456 72
50134456 73
50134457 72
50134457 73
50134458 73
50134458 73
50134459 73
50134459 73
50134460 73
50134460 73
50134461 74
50134462 74
50134464 75
50134465 49
50134470 36
50134471 36
50134493 56
50134494 56
50134495 57
50134496 57
50134497 57
50134498 57
50134522 56
50134523 57
50134524 57
50134526 . . . 431
50134527 . . . 431
50134528 . . . 431
50134529 . . . 431
50134530 . . . 431
50134531 . . . 431
50134533 . . . 431
50134534 . . . 431
50134535 . . . 431
50134568 67
50134572 67
50134578 37
50134579 37
50134580 37
50134581 60
50134582 59
50134583 60
50134584 60
50134585 35
50134589 78
50134592 35
50134592 35
50134592 35
50134593 35
50134593 35
50134593 35
50134594 35
50134595 35
50134595 35
50134595 35
50134596 35
50134596 35
50134596 35
50134607 69
50134608 69
50134609 69
50134610 69
50134612 70
50134636 38
50134656 . . . 328
50134746 37
50134895 . . . 140
50134919 171
50134927 . . . 409
50134928 . . . 409
50134929 . . . 409
50134930 . . . 239
50134930 . . . 409
50134931 . . . 239
50134931 . . . 409
50134932 . . . 195
50134942 . . . 464
50134942 . . . 488
50134943 . . . 244
50134943 . . . 431
50134943 . . . 485
50134985 . . . 510
50134999 . . . 435
50135000 . . . 436
50135022 . . . 407
50135023 . . . 407
50135024 . . . 407
50135025 . . . 407
50135026 . . . 407
50135027 . . . 407
50135028 . . . 407
50135029 . . . 407
50135030 . . . 407
50135031 . . . 407
50135032 . . . 407
50135033 . . . 407
50135034 . . . 407
50135035 . . . 407
50135036 . . . 408
50135037 . . . 407
50135038 . . . 408
50135039 . . . 408
50135040 . . . 407
50135041 . . . 407
50135042 . . . 407
50135043 . . . 407
50135044 . . . 407
50135045 . . . 407
50135046 . . . 407
50135047 . . . 407
50135048 . . . 407
50135049 . . . 407
50135050 . . . 407
50135051 . . . 407
50135052 . . . 408
50135053 . . . 408
50135054 . . . 408
50135055 . . . 408
50135056 . . . 408
50135057 . . . 408
50135058 . . . 408
50135059 . . . 408
50135060 . . . 408
50135061 . . . 408
50135062 . . . 408
50135063 . . . 408
50135064 . . . 408
50135065 . . . 408
50135066 . . . 408
50135067 . . . 408
50135073 . . . 464
50135073 . . . 468
50135073 . . . 488
50135074 . . . 236
50135074 . . . 464
50135074 . . . 468
50135074 . . . 477
50135074 . . . 488
50135075 . . . 464
50135075 . . . 468
50135075 . . . 488
50135076 . . . 464
50135076 . . . 468
50135076 . . . 488
50135077 . . . 468
50135077 . . . 488
50135079 . . . 491
50135080 . . . 328
50135080 . . . 464
50135080 . . . 491
50135081 . . . 237
50135081 . . . 240
50135081 . . . 251
50135081 . . . 253
50135081 . . . 328
50135081 . . . 410
50135081 . . . 417
50135081 . . . 420
50135081 . . . 452
50135081 . . . 464
50135081 . . . 477
50135081 . . . 491
50135082 . . . 328
50135082 . . . 464
50135082 . . . 491
50135083 . . . 328
50135083 . . . 464
50135083 . . . 491
50135084 . . . 328
50135084 . . . 464
50135084 . . . 491
50135120 . . . 246
50135121 . . . 191
50135121 . . . 208
50135121 . . . 209
50135121 . . . 223
50135121 . . . 246
50135121 . . . 265
50135122 . . . 191
50135122 . . . 208
50135122 . . . 209
50135122 . . . 223
50135122 . . . 251
50135122 . . . 253
50135122 . . . 265
50135122 . . . 435
50135122 . . . 477
50135123 . . . 191
50135123 . . . 208
50135123 . . . 209
50135123 . . . 223
50135123 . . . 265
50135127 . . . 208
50135127 . . . 209
50135128 . . . 208
50135128 . . . 209
50135128 . . . 289
50135128 . . . 311
50135128 . . . 318
50135128 . . . 328
50135128 . . . 333
50135128 . . . 334
50135128 . . . 336
50135128 . . . 338
50135128 . . . 340
50135128 . . . 341
50135128 . . . 343
50135128 . . . 344
50135128 . . . 349
50135128 . . . 357
50135128 . . . 486
50135129 . . . 208
50135129 . . . 209
50135129 . . . 289
50135129 . . . 311
50135129 . . . 318
50135129 . . . 328
50135129 . . . 333
50135129 . . . 334
50135129 . . . 336
50135129 . . . 338
50135129 . . . 340
50135129 . . . 341
50135129 . . . 343
50135129 . . . 344
50135129 . . . 349
50135129 . . . 357
50135129 . . . 486
50135130 . . . 289
50135130 . . . 311
50135130 . . . 318
50135130 . . . 328
50135130 . . . 333
50135130 . . . 334
50135130 . . . 336
50135130 . . . 338
50135130 . . . 340
50135130 . . . 341
50135130 . . . 343
50135130 . . . 344
50135130 . . . 349
50135130 . . . 357
50135130 . . . 486
50135131 . . . 289
50135131 . . . 311
50135131 . . . 318
50135131 . . . 333
50135131 . . . 334
50135131 . . . 336
50135131 . . . 338
50135131 . . . 340
50135131 . . . 341
50135131 . . . 343
50135131 . . . 344
50135131 . . . 349
50135131 . . . 357
50135131 . . . 486
50135133 . . . 208
50135133 . . . 209
50135134 . . . 208
50135134 . . . 209
50135139 . . . 251
50135139 . . . 435
50135139 . . . 477
50135140 . . . 311
50135141 . . . 311
50135142 . . . 311
50135145 . . . 289
50135145 . . . 433
50135145 . . . 490
50135146 . . . 289
50135146 . . . 490
50135163 . . . 195
50135164 . . . 199
50135194 . . . 128
50135195 . . . 128
50135196 . . . 453
50135197 . . . 453
50135242 . . . 265
50135242 . . . 468
50135242 . . . 488
50135243 . . . 236
50135243 . . . 240
50135243 . . . 251
50135243 . . . 265
50135243 . . . 410
50135243 . . . 417
50135243 . . . 420
50135243 . . . 452
50135243 . . . 469
50135243 . . . 488
50135244 . . . 265
50135244 . . . 469
50135244 . . . 488
50135245 . . . 265
50135245 . . . 469
50135245 . . . 488
50135246 . . . 469
50135246 . . . 488
50135247 . . . 265
50135247 . . . 468
50135247 . . . 488
50135248 . . . 236
50135248 . . . 240
50135248 . . . 251
50135248 . . . 265
50135248 . . . 410
50135248 . . . 417
50135248 . . . 420
50135248 . . . 452
50135248 . . . 468
50135248 . . . 488
50135249 . . . 265
50135249 . . . 468
50135249 . . . 488
50135250 . . . 265
50135250 . . . 468
50135250 . . . 488
50135251 . . . 468
50135251 . . . 488
50135252 . . . 469
50135252 . . . 492
50135253 . . . 265
50135253 . . . 469
50135253 . . . 492
50135254 . . . 237
50135254 . . . 240
50135254 . . . 265
50135254 . . . 410
50135254 . . . 417
50135254 . . . 420
50135254 . . . 452
50135254 . . . 469
50135254 . . . 492
50135255 . . . 265
50135255 . . . 469
50135255 . . . 492
50135256 . . . 265
50135256 . . . 469
50135256 . . . 492
50135257 . . . 469
50135257 . . . 492
50135262 39
50135263 . . . 497
50135286 97
50135306 37
50135331 . . . 243
50135340 . . . 422
50135340 . . . 459
50135361 32
50135397 . . . 128
50135419 80
50135419 . . . 112
50135420 80
50135420 . . . 112
50135436 37
50135446 . . . 496
50135452 . . . 508
50135453 . . . 508
50135457 . . . 506
50135458 . . . 506
50135459 . . . 506
50135460 . . . 506
50135461 . . . 506
50135463 . . . 505
50135464 . . . 505
50135465 . . . 505
50135466 . . . 507
50135546 . . . 347
50135657 . . . 340
50135685 93
50135688 . . . 144
50135689 . . . 144
50135690 . . . 144
50135691 . . . 144
50135692 . . . 144
50135693 . . . 144
50135694 . . . 144
50135695 . . . 144
50135696 . . . 144
50135697 . . . 144
50135698 . . . 144
50135699 . . . 144
50135700 . . . 144
50135701 . . . 144
50135702 . . . 144
50135703 . . . 144
50135704 . . . 144
50135705 . . . 144
50135706 . . . 144
50135707 . . . 144
50135708 . . . 144
50135709 . . . 144
50135710 . . . 144
50135711 . . . 144
50135712 . . . 144
50135713 . . . 144
50135714 . . . 144
50135715 . . . 144
50135716 . . . 144
50135717 . . . 144
50135718 . . . 144
50135719 . . . 144
50135720 . . . 149
50135721 . . . 149
50135722 . . . 144
50135723 . . . 144
50135724 . . . 144
50135725 . . . 144
50135726 . . . 144
50135727 . . . 144
50135728 . . . 144
50135729 . . . 144
50135730 . . . 144
50135731 . . . 144
50135732 . . . 144
50135733 . . . 144
50135734 . . . 144
50135735 . . . 144
50135736 . . . 144
50135737 . . . 144
50135738 . . . 149
50135739 . . . 149
50135740 . . . 147
50135741 . . . 147
50135742 . . . 147
50135743 . . . 147
50135744 . . . 147
50135745 . . . 147
50135746 . . . 147
50135747 . . . 143
50135748 . . . 143
50135749 . . . 143
50135750 . . . 143
50135751 . . . 143
50135752 . . . 143
50135753 . . . 143
50135754 . . . 143
50135755 . . . 143
50135756 . . . 143
50135757 . . . 143
50135758 . . . 143
50135759 . . . 143
50135760 . . . 143
50135761 . . . 143
50135762 . . . 143
50135763 . . . 143
50135763 . . . 148
50135764 . . . 143
50135764 . . . 148
50135765 . . . 143
50135765 . . . 148
50135766 . . . 143
50135766 . . . 148
50135767 . . . 143
50135768 . . . 143
50135769 . . . 143
50135770 . . . 143
50135771 . . . 144
50135772 . . . 144
50135773 . . . 143
50135774 . . . 143
50135775 . . . 143
50135776 . . . 143
50135777 . . . 143
50135778 . . . 143
50135779 . . . 143
50135780 . . . 143
50135781 . . . 143
50135782 . . . 143
50135783 . . . 143
50135783 . . . 148
50135784 . . . 143
50135784 . . . 148
50135785 . . . 143
50135785 . . . 148

© Leuze electronic GmbH + Co. KG

Part no. . . Page no.

50135786 . . . 143
50135786 . . . 148
50135787 . . . 143
50135788 . . . 143
50135789 . . . 143
50135790 . . . 143
50135791 . . . 144
50135792 . . . 144
50135793 . . . 144
50135794 . . . 144
50135795 . . . 143
50135796 . . . 143
50135797 . . . 143
50135798 . . . 143
50135799 . . . 143
50135800 . . . 143
50135801 . . . 143
50135802 . . . 143
50135803 . . . 143
50135803 . . . 148
50135804 . . . 143
50135804 . . . 148
50135805 . . . 143
50135805 . . . 148
50135806 . . . 143
50135806 . . . 148
50135925 36
50135925 36
50135925 36
50135926 36
50135926 36
50135926 36
50135971 . . . 321
50135971 . . . 485
50135972 . . . 321
50135972 . . . 485
50136009 31
50136070 . . . 154
50136071 . . . 154
50136072 . . . 225
50136073 . . . 225
50136074 . . . 154
50136075 . . . 154
50136076 . . . 225
50136077 . . . 225
50136078 . . . 155
50136079 . . . 155
50136080 . . . 155
50136081 . . . 155
50136082 . . . 154
50136083 . . . 154
50136084 . . . 225
50136085 . . . 225
50136086 . . . 225
50136087 . . . 225
50136088 . . . 154
50136089 . . . 154
50136090 . . . 225
50136091 . . . 225
50136092 . . . 225
50136093 . . . 225
50136094 . . . 155
50136095 . . . 155
50136096 . . . 155
50136097 . . . 155
50136098 . . . 154
50136099 . . . 154
50136100 . . . 225
50136101 . . . 225
50136102 . . . 225
50136103 . . . 225
50136104 . . . 154
50136105 . . . 155
50136106 . . . 225
50136107 . . . 225
50136108 . . . 225
50136109 . . . 225
50136110 . . . 156
50136111 . . . 156
50136112 . . . 227
50136112 . . . 230
50136113 . . . 227
50136113 . . . 230
50136114 . . . 227
50136114 . . . 230
50136115 . . . 227
50136115 . . . 230
50136116 . . . 156
50136117 . . . 227
50136117 . . . 230
50136148 67
50136154 . . . 219
50136159 53
50136183 . . . 491
50136185 . . . 491
50136241 32
50136246 33
50136248 32
50136251 32
50136253 31
50136258 31
50136261 30
50136264 30
50136265 31
50136304 68
50136332 . . . 122
50136333 . . . 122
50136334 . . . 238
50136335 . . . 238
50136336 . . . 238
50136383 79
50136383 . . . 511
50136400 38
50136417 70
50136448 . . . 490
50136517 . . . 145
50136518 . . . 145
50136519 . . . 145
50136520 . . . 145
50136521 . . . 145
50136522 . . . 145
50136523 . . . 145
50136524 . . . 145
50136525 . . . 145
50136526 . . . 145
50136527 . . . 145
50136528 . . . 145
50136529 . . . 145
50136530 . . . 145
50136531 . . . 145
50136532 . . . 145
50136533 . . . 145
50136534 . . . 145
50136535 . . . 145
50136536 . . . 145
50136537 . . . 145
50136538 . . . 145
50136539 . . . 145
50136540 . . . 145
50136541 . . . 145
50136542 . . . 145
50136543 . . . 145
50136544 . . . 145
50136545 . . . 146
50136546 . . . 146
50136547 . . . 146
50136548 . . . 146
50136549 . . . 145
50136550 . . . 145
50136551 . . . 145
50136552 . . . 145
50136553 . . . 145
50136554 . . . 145
50136555 . . . 145
50136556 . . . 145
50136557 . . . 145
50136558 . . . 145
50136559 . . . 145
50136560 . . . 145
50136561 . . . 146
50136562 . . . 146
50136563 . . . 146
50136564 . . . 146
50136573 . . . 144
50136574 . . . 144
50136575 . . . 144
50136576 . . . 144
50136577 . . . 145
50136578 . . . 145
50136579 . . . 145
50136580 . . . 145
50136581 . . . 144
50136582 . . . 144
50136583 . . . 144
50136584 . . . 144
50136585 . . . 145
50136586 . . . 145
50136587 . . . 145
50136588 . . . 145
50136593 . . . 144
50136594 . . . 144
50136595 . . . 144
50136596 . . . 144
50136597 . . . 145
50136598 . . . 145
50136599 . . . 145
50136600 . . . 145
50136601 . . . 145
50136602 . . . 145
50136603 . . . 145
50136604 . . . 144
50136605 . . . 145
50136606 . . . 145
50136607 . . . 145
50136608 . . . 145
50136613 . . . 144
50136614 . . . 144
50136615 . . . 144
50136616 . . . 144
50136617 . . . 145
50136618 . . . 145
50136619 . . . 145
50136620 . . . 145
50136621 . . . 145
50136622 . . . 145
50136623 . . . 145
50136624 . . . 145
50136625 . . . 145
50136626 . . . 145
50136627 . . . 145
50136628 . . . 145
50136665 . . . 498
50136678 . . . 249
50136682 . . . 485
50136738 . . . 435
50136748 . . . 436
50136823 . . . 511
50136824 . . . 511
50136904 68
50137044 32
50137047 32
50137049 33
50137050 32
50137052 32
50137055 30
50137056 30
50137057 31
50137060 30
50137061 31
50137077 . . . 237
50137077 . . . 240
50137077 . . . 410
50137077 . . . 417
50137077 . . . 420
50137077 . . . 435
50137077 . . . 452
50137077 . . . 477
50137077 . . . 491
50137078 . . . 237
50137078 . . . 240
50137078 . . . 410
50137078 . . . 417
50137078 . . . 420
50137078 . . . 435
50137078 . . . 452
50137078 . . . 477
50137078 . . . 491
50137079 . . . 237
50137079 . . . 240
50137079 . . . 410
50137079 . . . 417
50137079 . . . 420
50137079 . . . 435
50137079 . . . 452
50137079 . . . 477
50137079 . . . 491
50137080 . . . 237
50137080 . . . 240
50137080 . . . 410
50137080 . . . 417
50137080 . . . 420
50137080 . . . 435
50137080 . . . 452
50137080 . . . 477
50137080 . . . 491
50137114 . . . 130
50137115 . . . 130
50137133 48
50137154 30
50137162 30
50137166 30
50137171 30
50137173 30
50137180 30
50137180 30
50137189 30
50137189 30
50137192 30
50137192 30
50137194 29
50137198 30
50137201 29
50137201 30
50137205 29
50137205 30
50137207 29
50137207 30
50137263 . . . 328
50137264 . . . 328
50137265 . . . 328
50137269 . . . 328
50137270 . . . 328
50137271 . . . 328
50137274 . . . 485
50137284 49
50137332 77
50137340 . . . 347
50137343 58
50137344 58
50137345 58
50137346 58
50137351 . . . 248
50137382 . . . 168
50137383 . . . 168
50137427 . . . 511
50137458 48
50137459 48
50137460 48
50137461 48
50137462 48
50137463 49
50137464 48
50137465 49
50137466 48
50137467 49
50137468 48
50137469 49
50137472 . . . 245
50137473 . . . 245
50137474 . . . 245
50137475 . . . 245
50137476 . . . 245
50137477 . . . 245
50137522 57
50137531 . . . 289
50137532 . . . 289
50137533 . . . 289
50137565 39
50137570 . . . 430
50137571 . . . 430
50137572 . . . 431
50137573 . . . 431
50137574 . . . 430
50137593 . . . 235
50137594 . . . 235
50137598 32
50137873 . . . 246
50137874 . . . 246
50137875 . . . 246
50137876 . . . 246
50137877 . . . 246
50137938 33
50138136 . . . 441
50138138 . . . 441
50138140 . . . 441
50138350 . . . 442
50138353 . . . 442
50138360 . . . 442
53800130 . . . 328
53800131 . . . 328
53800132 . . . 328
53800133 . . . 328
53800134 . . . 328
53800135 . . . 328
53800136 . . . 328
53800137 . . . 328
53800201 . . . 325
53800202 . . . 325
53800203 . . . 325
53800204 . . . 325
53800205 . . . 325
53800206 . . . 325
53800207 . . . 325
53800208 . . . 325
53800209 . . . 326
53800210 . . . 326
53800211 . . . 326
53800212 . . . 326
53800213 . . . 326
53800214 . . . 326
53800215 . . . 326
53800216 . . . 326
53800217 . . . 326
53800218 . . . 326
53800219 . . . 326
53800220 . . . 326
53800221 . . . 326
53800222 . . . 326
53800223 . . . 326
53800224 . . . 326
53800225 . . . 326
53800226 . . . 326
53800227 . . . 326
53800228 . . . 326
53800229 . . . 326
53800230 . . . 326
53800231 . . . 326
53800232 . . . 326
53800233 . . . 327
53800234 . . . 327
53800235 . . . 327
53800236 . . . 327
53800237 . . . 327
53800238 . . . 327
53800239 . . . 327
53800240 . . . 327
53800241 . . . 327
53800242 . . . 327
53800243 . . . 327
53800244 . . . 327
53800245 . . . 325
53800246 . . . 325
53800247 . . . 325
53800248 . . . 326
53800249 . . . 326
53800250 . . . 326
53800251 . . . 326
53800252 . . . 326
53800253 . . . 326
53800254 . . . 326
53800255 . . . 326
53800256 . . . 326
53800257 . . . 326
53800258 . . . 326
53800259 . . . 327
53800260 . . . 327
53800261 . . . 327
53800262 . . . 327
63000000 . . . 352
63000002 . . . 352
63000004 . . . 352
63000006 . . . 352
63000100 . . . 332
63000101 . . . 332
63000102 . . . 332
63000103 . . . 332
63000104 . . . 332
63000105 . . . 332
63000106 . . . 332
63000200 . . . 333
63000201 . . . 333
63000202 . . . 333
63000203 . . . 333
63000300 . . . 335
63000301 . . . 335
63000302 . . . 335
63000303 . . . 335
63000304 . . . 335
63000305 . . . 335
63000306 . . . 335
63000307 . . . 335
63000308 . . . 335
63000309 . . . 335
63000310 . . . 335
63000400 . . . 337
63000401 . . . 337
63000402 . . . 337
63000403 . . . 337
63000404 . . . 339
63000405 . . . 339
63000406 . . . 337
63000407 . . . 337
63000408 . . . 339
63000409 . . . 339
63000410 . . . 339
63000411 . . . 337
63000412 . . . 339
63000420 . . . 340
63000421 . . . 340
63000422 . . . 340
63000423 . . . 340
63000500 . . . 350
63000501 . . . 350
63000502 . . . 350
63000503 . . . 350
63000504 . . . 350
63000520 . . . 350
63000521 . . . 350
63000522 . . . 350
63000523 . . . 350
63000524 . . . 350
63000525 . . . 350
63000550 . . . 342
63000551 . . . 342
63000552 . . . 342
63000553 . . . 342
63000554 . . . 342
63000555 . . . 342
63000558 . . . 342
63000559 . . . 342
63000600 . . . 344
63000601 . . . 344
63000602 . . . 344
63000650 . . . 345
63000651 . . . 345
63000652 . . . 345
63000653 . . . 345
63000700 . . . 333
63000701 . . . 333
63000702 . . . 333
63000703 . . . 333
63000704 . . . 333
63000705 . . . 333
63000706 . . . 333
63000707 . . . 333
63000720 . . . 334
63000720 . . . 343
63000720 . . . 345
63000721 . . . 334
63000721 . . . 343
63000721 . . . 345
63000722 . . . 334
63000722 . . . 343
63000722 . . . 345
63000723 . . . 334
63000723 . . . 343
63000723 . . . 345
63000724 . . . 334
63000724 . . . 343
63000724 . . . 345
63000725 . . . 334
63000725 . . . 343
63000725 . . . 345
63000740 . . . 346
63000741 . . . 346
63000742 . . . 346
63000743 . . . 346
63000749 . . . 346
63000750 . . . 346
63000751 . . . 346
63000752 . . . 346
63000753 . . . 346
63000754 . . . 346
63000770 . . . 338
63000771 . . . 338
63000772 . . . 338
63000773 . . . 340
63000774 . . . 338
63000774 . . . 340
63000774 . . . 341
63000775 . . . 338
63000778 . . . 341
63000779 . . . 341
63000790 . . . 351
63000791 . . . 351
63000792 . . . 351
63000793 . . . 351
63000794 . . . 351
63000795 . . . 351

63000796 . . . 351
63000797 . . . 351
63000798 . . . 351
63000799 . . . 351
63000800 . . . 351
63000843 . . . 333
63000843 . . . 334
63000843 . . . 336
63000843 . . . 343
63000843 . . . 344
63000843 . . . 346
63000844 . . . 333
63000844 . . . 343
63000844 . . . 344
63000845 . . . 334
63000845 . . . 336
63000845 . . . 343
63000846 . . . 334
63000846 . . . 343
63000846 . . . 345
63000847 . . . 346
63000880 . . . 336
63000881 . . . 336
63000882 . . . 336
63000883 . . . 336
63000884 . . . 336
63001000 . . . 353
63001001 . . . 353
63001002 . . . 353
63001003 . . . 353
63001004 . . . 353
63001005 . . . 353
63001006 . . . 353
63001007 . . . 353
63001020 . . . 353
63001021 . . . 353
63001025 . . . 353
63001026 . . . 353
63001027 . . . 353
63001030 . . . 353
63001031 . . . 353
63001041 . . . 353
63001050 . . . 353
63001051 . . . 353
63001052 . . . 353
63001053 . . . 353
63001054 . . . 353
63001055 . . . 353
63001056 . . . 353
63001057 . . . 353
63001070 . . . 353
63001071 . . . 353
63001076 . . . 353
63001077 . . . 353
63001100 . . . 353
63001101 . . . 353
63001102 . . . 354
63001103 . . . 353
63001104 . . . 353
63001105 . . . 354
63001106 . . . 354
63001107 . . . 354
63001120 . . . 353
63001121 . . . 353
63001126 . . . 353
63001127 . . . 353
63001150 . . . 355
63001151 . . . 355
63001152 . . . 355
63001153 . . . 355
63001154 . . . 355
63001155 . . . 355
63001156 . . . 355
63001157 . . . 355
63002000 . . . 356
63002001 . . . 356
63002002 . . . 356
63002003 . . . 356
63002010 . . . 356
63002011 . . . 356
63002012 . . . 356
63002013 . . . 356
63002020 . . . 356
63002021 . . . 356
63002050 . . . 356
63002051 . . . 356
63002052 . . . 356
63002053 . . . 356
63002060 . . . 356
63002061 . . . 356
63002062 . . . 356
63002063 . . . 356
63002100 . . . 357
63002101 . . . 357
66001100 . . . 302
66001100 . . . 303
66001100 . . . 304
66001100 . . . 304
66001100 . . . 305
66001100 . . . 305
66001100 . . . 306
66001100 . . . 306
66001200 . . . 303
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66001200 . . . 304
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66001500 . . . 302
66001500 . . . 303
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66001600 . . . 303
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66001600 . . . 306
66001700 . . . 303
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66001700 . . . 305
66001700 . . . 306
66002100 . . . 303
66002100 . . . 303
66002100 . . . 304
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66002100 . . . 305
66002100 . . . 305
66002100 . . . 306
66002100 . . . 306
66002200 . . . 303
66002200 . . . 303
66002200 . . . 304
66002200 . . . 304
66002200 . . . 305
66002200 . . . 305
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66002200 . . . 306
66002300 . . . 303
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66002300 . . . 304
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66002300 . . . 306
66002500 . . . 303
66002500 . . . 303
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66002500 . . . 304
66002500 . . . 305
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66002600 . . . 303
66002600 . . . 303
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66002700 . . . 303
66002700 . . . 303
66002700 . . . 304
66002700 . . . 304
66002700 . . . 305
66002700 . . . 306
66033100 . . . 302
66033200 . . . 303
66033300 . . . 303
66033500 . . . 302
66033600 . . . 303
66033700 . . . 303
66036100 . . . 303
66036200 . . . 303
66036300 . . . 303
66036500 . . . 303
66036600 . . . 303
66036700 . . . 303
66037100 . . . 308
66037200 . . . 308
66043100 . . . 303
66043200 . . . 303
66043300 . . . 303
66043500 . . . 303
66043600 . . . 303
66043700 . . . 303
66046100 . . . 303
66046200 . . . 303
66046300 . . . 303
66046500 . . . 303
66046600 . . . 303
66046700 . . . 303
66047100 . . . 309
66047200 . . . 309
66053100 . . . 304
66053200 . . . 304
66053300 . . . 304
66053500 . . . 304
66053600 . . . 304
66053700 . . . 304
66054100 . . . 304
66054200 . . . 304
66054300 . . . 304
66054500 . . . 304
66054600 . . . 304
66054700 . . . 304
66055100 . . . 304
66055200 . . . 304
66055300 . . . 304
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66055700 . . . 304
66056100 . . . 304
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66056300 . . . 304
66056500 . . . 304
66056600 . . . 304
66056700 . . . 304
66057100 . . . 309
66057200 . . . 309
66058100 . . . 309
66058200 . . . 309
66063100 . . . 305
66063200 . . . 305
66063300 . . . 305
66063500 . . . 305
66063600 . . . 305
66063700 . . . 305
66064100 . . . 305
66064200 . . . 305
66064300 . . . 305
66065100 . . . 305
66065200 . . . 305
66065300 . . . 305
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66066200 . . . 305
66066300 . . . 305
66066500 . . . 305
66066600 . . . 305
66066700 . . . 305
66067100 . . . 309
66067200 . . . 309
66068100 . . . 309
66068200 . . . 309
66073100 . . . 306
66073200 . . . 306
66073300 . . . 306
66073500 . . . 306
66073600 . . . 306
66073700 . . . 306
66074100 . . . 306
66074200 . . . 306
66074300 . . . 306
66075100 . . . 306
66075200 . . . 306
66075300 . . . 306
66076100 . . . 306
66076200 . . . 306
66076300 . . . 306
66076500 . . . 306
66076600 . . . 306
66076700 . . . 306
66077100 . . . 310
66077200 . . . 310
66078100 . . . 310
66078200 . . . 310
66500100 . . . 299
66500100 . . . 299
66500100 . . . 299
66500100 . . . 299
66500100 . . . 299
66500100 . . . 299
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66500201 . . . 308
66500201 . . . 309
66500201 . . . 309
66500201 . . . 309
66500201 . . . 309
66500201 . . . 310
66500201 . . . 310
66501000 . . . 315
66501000 . . . 316
66501000 . . . 317
66501001 . . . 315
66501001 . . . 315
66501100 . . . 292
66501100 . . . 294
66501100 . . . 294
66501100 . . . 295
66501100 . . . 295
66501100 . . . 296
66501100 . . . 296
66501101 . . . 292
66501101 . . . 292
66501101 . . . 292
66501200 . . . 292
66501200 . . . 294
66501200 . . . 294
66501200 . . . 295
66501200 . . . 295
66501200 . . . 296
66501200 . . . 296
66501201 . . . 292
66501201 . . . 292
66501201 . . . 292
66501300 . . . 293
66501300 . . . 294
66501300 . . . 294
66501300 . . . 295
66501300 . . . 295
66501300 . . . 296
66501300 . . . 296
66501301 . . . 293
66501301 . . . 293
66501301 . . . 293
66501400 . . . 315
66501400 . . . 316
66501400 . . . 317
66501401 . . . 315
66501401 . . . 315
66501500 . . . 292
66501500 . . . 294
66501500 . . . 294
66501500 . . . 295
66501500 . . . 296
66501501 . . . 292
66501501 . . . 292
66501600 . . . 292
66501600 . . . 294
66501600 . . . 294
66501600 . . . 295
66501600 . . . 296
66501601 . . . 292
66501601 . . . 292
66501700 . . . 293
66501700 . . . 294
66501700 . . . 294
66501700 . . . 295
66501700 . . . 296
66501701 . . . 293
66501701 . . . 293
66502000 . . . 315
66502000 . . . 316
66502000 . . . 317
66502001 . . . 315
66502001 . . . 315
66502100 . . . 292
66502100 . . . 294
66502100 . . . 294
66502100 . . . 295
66502100 . . . 295
66502100 . . . 296
66502100 . . . 296
66502101 . . . 292
66502101 . . . 292
66502101 . . . 292
66502200 . . . 293
66502200 . . . 294
66502200 . . . 294
66502200 . . . 295
66502200 . . . 295
66502200 . . . 296
66502200 . . . 296
66502201 . . . 292
66502201 . . . 292
66502201 . . . 293
66502300 . . . 293
66502300 . . . 294
66502300 . . . 294
66502300 . . . 295
66502300 . . . 296
66502300 . . . 296
66502301 . . . 293
66502301 . . . 293
66502301 . . . 293
66502500 . . . 292
66502500 . . . 294
66502500 . . . 294
66502500 . . . 295
66502500 . . . 296
66502501 . . . 292
66502501 . . . 292
66502600 . . . 293
66502600 . . . 294
66502600 . . . 294
66502600 . . . 295
66502600 . . . 296
66502601 . . . 292
66502601 . . . 293
66502700 . . . 293
66502700 . . . 294
66502700 . . . 294
66502700 . . . 295
66502700 . . . 296
66502701 . . . 293
66502701 . . . 293
66533000 . . . 315
66533001 . . . 315
66533002 . . . 315
66533100 . . . 292
66533101 . . . 292
66533102 . . . 292
66533200 . . . 292
66533201 . . . 292
66533202 . . . 292
66533300 . . . 293
66533301 . . . 293
66533302 . . . 293
66533400 . . . 315
66533401 . . . 315
66533402 . . . 315
66533500 . . . 292
66533501 . . . 292
66533502 . . . 292
66533600 . . . 292
66533601 . . . 292
66533602 . . . 292
66533700 . . . 293
66533701 . . . 293
66533702 . . . 293
66534101 . . . 292
66534201 . . . 292
66534301 . . . 293
66535101 . . . 292
66535201 . . . 292
66535301 . . . 293
66536000 . . . 315
66536001 . . . 315
66536002 . . . 315
66536100 . . . 292
66536101 . . . 292
66536102 . . . 292
66536200 . . . 293
66536201 . . . 292
66536202 . . . 293
66536300 . . . 293
66536301 . . . 293
66536302 . . . 293
66536500 . . . 292
66536501 . . . 292
66536502 . . . 292
66536600 . . . 293
66536601 . . . 292
66536602 . . . 293
66536700 . . . 293
66536701 . . . 293
66536702 . . . 293
66537100 . . . 299
66537101 . . . 299
66537102 . . . 299
66537200 . . . 299
66537201 . . . 299
66537202 . . . 299
66538101 . . . 299
66538102 . . . 299
66538201 . . . 299
66538202 . . . 299
66553000 . . . 316
66553100 . . . 294
66553200 . . . 294
66553300 . . . 294
66553400 . . . 316
66553500 . . . 294
66553600 . . . 294
66553700 . . . 294
66554100 . . . 294
66554200 . . . 294
66554300 . . . 294
66554500 . . . 294
66554600 . . . 294
66554700 . . . 294
66555100 . . . 294
66555200 . . . 294
66555300 . . . 294
66555500 . . . 294
66555600 . . . 294
66555700 . . . 294
66556000 . . . 316
66556100 . . . 294
66556200 . . . 294
66556300 . . . 294
66556500 . . . 294
66556600 . . . 294

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Part no. . . Page no.

66556700 . . . 294
66557100 . . . 299
66557200 . . . 299
66558100 . . . 299
66558200 . . . 299
66563000 . . . 317
66563100 . . . 295
66563200 . . . 295
66563300 . . . 295
66563400 . . . 317
66563500 . . . 295
66563600 . . . 295
66563700 . . . 295
66564100 . . . 295
66564200 . . . 295
66564300 . . . 295
66565100 . . . 295
66565200 . . . 295
66565300 . . . 295
66566000 . . . 317
66566100 . . . 295
66566200 . . . 295
66566300 . . . 295
66566500 . . . 295
66566600 . . . 295
66566700 . . . 295
66567100 . . . 300
66567200 . . . 300
66568100 . . . 300
66568200 . . . 300
66573100 . . . 296
66573200 . . . 296
66573300 . . . 296
66573500 . . . 296
66573600 . . . 296
66573700 . . . 296
66574100 . . . 296
66574200 . . . 296
66574300 . . . 296
66575100 . . . 296
66575200 . . . 296
66575300 . . . 296
66576100 . . . 296
66576200 . . . 296
66576300 . . . 296
66576500 . . . 296
66576600 . . . 296
66576700 . . . 296
66577100 . . . 300
66577200 . . . 300
66578100 . . . 300
66578200 . . . 300
66900012 . . . 329
66900013 . . . 329
66900021 . . . 329
66900022 . . . 329
66900023 . . . 329
66900024 . . . 329
66900025 . . . 329
66900026 . . . 329
66900027 . . . 329
66900028 . . . 329
68000101 . . . 274
68000101 . . . 276
68000101 . . . 279
68000103 . . . 274
68000103 . . . 276
68000103 . . . 279
68000104 . . . 274
68000104 . . . 277
68000104 . . . 279
68000106 . . . 274
68000106 . . . 277
68000106 . . . 279
68000107 . . . 274
68000107 . . . 277
68000107 . . . 279
68000109 . . . 274
68000109 . . . 277
68000109 . . . 279
68000110 . . . 275
68000110 . . . 277
68000110 . . . 279
68000112 . . . 275
68000112 . . . 277
68000112 . . . 279
68000113 . . . 275
68000113 . . . 277
68000113 . . . 279
68000115 . . . 275
68000115 . . . 277
68000115 . . . 279
68000116 . . . 275
68000116 . . . 277
68000116 . . . 279
68000118 . . . 275
68000118 . . . 277
68000118 . . . 279
68000119 . . . 275
68000119 . . . 277
68000119 . . . 279
68000121 . . . 275
68000121 . . . 277
68000121 . . . 279
68000122 . . . 275
68000122 . . . 277
68000122 . . . 279
68000124 . . . 275
68000124 . . . 277
68000124 . . . 280
68000125 . . . 275
68000125 . . . 277
68000125 . . . 280
68000127 . . . 275
68000127 . . . 277
68000127 . . . 280
68000128 . . . 275
68000128 . . . 277
68000128 . . . 280
68000130 . . . 275
68000130 . . . 277
68000130 . . . 280
68000131 . . . 276
68000133 . . . 274
68000133 . . . 276
68000133 . . . 279
68000134 . . . 274
68000134 . . . 277
68000134 . . . 279
68000136 . . . 274
68000136 . . . 277
68000136 . . . 279
68000137 . . . 274
68000137 . . . 277
68000137 . . . 279
68000139 . . . 274
68000139 . . . 277
68000139 . . . 279
68000301 . . . 280
68000302 . . . 280
68000303 . . . 280
68000304 . . . 280
68000306 . . . 280
68000307 . . . 280
68000309 . . . 280
68000310 . . . 280
68000312 . . . 280
68000313 . . . 280
68000315 . . . 280
68000316 . . . 280
68000318 . . . 280
68000319 . . . 280
68000321 . . . 280
68000322 . . . 280
68000324 . . . 280
68000325 . . . 281
68000327 . . . 281
68000328 . . . 281
68000330 . . . 281
68001101 . . . 274
68001103 . . . 274
68001104 . . . 274
68001106 . . . 274
68001107 . . . 274
68001109 . . . 274
68001110 . . . 275
68001112 . . . 275
68001113 . . . 275
68001115 . . . 275
68001116 . . . 275
68001118 . . . 275
68001119 . . . 275
68001121 . . . 275
68001122 . . . 275
68001124 . . . 275
68001125 . . . 275
68001127 . . . 275
68001128 . . . 275
68001130 . . . 275
68001133 . . . 274
68001134 . . . 274
68001136 . . . 274
68001137 . . . 274
68001139 . . . 274
68002101 . . . 276
68002103 . . . 276
68002104 . . . 277
68002106 . . . 277
68002107 . . . 277
68002109 . . . 277
68002110 . . . 277
68002112 . . . 277
68002113 . . . 277
68002115 . . . 277
68002116 . . . 277
68002118 . . . 277
68002119 . . . 277
68002121 . . . 277
68002122 . . . 277
68002124 . . . 277
68002125 . . . 277
68002127 . . . 277
68002128 . . . 277
68002130 . . . 277
68002131 . . . 276
68002133 . . . 276
68002134 . . . 277
68002136 . . . 277
68002137 . . . 277
68002139 . . . 277
68003101 . . . 279
68003103 . . . 279
68003104 . . . 279
68003106 . . . 279
68003107 . . . 279
68003109 . . . 279
68003110 . . . 279
68003112 . . . 279
68003113 . . . 279
68003115 . . . 279
68003116 . . . 279
68003118 . . . 279
68003119 . . . 279
68003121 . . . 279
68003122 . . . 279
68003124 . . . 280
68003125 . . . 280
68003127 . . . 280
68003128 . . . 280
68003130 . . . 280
68003133 . . . 279
68003134 . . . 279
68003136 . . . 279
68003137 . . . 279
68003139 . . . 279
68004103 . . . 276
68004104 . . . 276
68004106 . . . 276
68004107 . . . 276
68004109 . . . 276
68004110 . . . 276
68004112 . . . 276
68004113 . . . 276
68004115 . . . 276
68004116 . . . 276
68004118 . . . 276
68005103 . . . 276
68005104 . . . 276
68005106 . . . 276
68005107 . . . 276
68005109 . . . 276
68005110 . . . 276
68005112 . . . 276
68005113 . . . 276
68005115 . . . 276
68005116 . . . 276
68005118 . . . 276
68006101 . . . 274
68006103 . . . 274
68006104 . . . 274
68006106 . . . 274
68006107 . . . 274
68006109 . . . 274
68006110 . . . 275
68006112 . . . 275
68006113 . . . 275
68006115 . . . 275
68006116 . . . 275
68006118 . . . 275
68007101 . . . 274
68007103 . . . 274
68007104 . . . 274
68007106 . . . 274
68007107 . . . 274
68007109 . . . 274
68007110 . . . 275
68007112 . . . 275
68007113 . . . 275
68007115 . . . 275
68007116 . . . 275
68007118 . . . 275
68008101 . . . 274
68008103 . . . 274
68008104 . . . 274
68008106 . . . 274
68008107 . . . 274
68008109 . . . 274
68008110 . . . 275
68008112 . . . 275
68008113 . . . 275
68008115 . . . 275
68008116 . . . 275
68008118 . . . 275
68009301 . . . 280
68009302 . . . 280
68009303 . . . 280
68009304 . . . 280
68009306 . . . 280
68009307 . . . 280
68009309 . . . 280
68009310 . . . 280
68009312 . . . 280
68009313 . . . 280
68009315 . . . 280
68009316 . . . 280
68009318 . . . 280
68009319 . . . 280
68009321 . . . 280
68009322 . . . 280
68009324 . . . 280
68009325 . . . 281
68009327 . . . 281
68009328 . . . 281
68009330 . . . 281
68010103 . . . 281
68010104 . . . 281
68010106 . . . 281
68010107 . . . 281
68010109 . . . 281
68010110 . . . 281
68010112 . . . 282
68010113 . . . 282
68010115 . . . 282
68010116 . . . 282
68010118 . . . 282
68012103 . . . 281
68012104 . . . 281
68012106 . . . 281
68012107 . . . 281
68012109 . . . 281
68012110 . . . 281
68012112 . . . 282
68012113 . . . 282
68012115 . . . 282
68012116 . . . 282
68012118 . . . 282
68016103 . . . 281
68016104 . . . 281
68016106 . . . 281
68016107 . . . 281
68016109 . . . 281
68016110 . . . 281
68016112 . . . 282
68016113 . . . 282
68016115 . . . 282
68016116 . . . 282
68016118 . . . 282
68017103 . . . 281
68017104 . . . 281
68017106 . . . 281
68017107 . . . 281
68017109 . . . 281
68017110 . . . 281
68017112 . . . 282
68017113 . . . 282
68017115 . . . 282
68017116 . . . 282
68017118 . . . 282
68020101 . . . 283
68020103 . . . 283
68020104 . . . 283
68020106 . . . 283
68020107 . . . 283
68020109 . . . 283
68020110 . . . 283
68020112 . . . 283
68020113 . . . 283
68020115 . . . 283
68020116 . . . 283
68020118 . . . 283
68021101 . . . 283
68021103 . . . 283
68021104 . . . 283
68021106 . . . 283
68021107 . . . 283
68021109 . . . 283
68021110 . . . 283
68021112 . . . 283
68021113 . . . 283
68021115 . . . 283
68021116 . . . 283
68021118 . . . 283
68022103 . . . 282
68022104 . . . 282
68022106 . . . 282
68022107 . . . 282
68022109 . . . 282
68022110 . . . 282
68022112 . . . 283
68022113 . . . 283
68022115 . . . 283
68022116 . . . 283
68022118 . . . 283
68023103 . . . 282
68023104 . . . 282
68023106 . . . 282
68023107 . . . 282
68023109 . . . 282
68023110 . . . 282
68023112 . . . 283
68023113 . . . 283
68023115 . . . 283
68023116 . . . 283
68023118 . . . 283
68040206 . . . 284
68040207 . . . 284
68040209 . . . 284
68040210 . . . 284
68040212 . . . 284
68040213 . . . 284
68040215 . . . 284
68042206 . . . 284
68042207 . . . 284
68042209 . . . 284
68042210 . . . 284
68042212 . . . 284
68042213 . . . 284
68042215 . . . 284
68090201 . . . 287
68090201 . . . 288
68090202 . . . 287
68090202 . . . 288
68090203 . . . 287
68090203 . . . 288
68090204 . . . 287
68090204 . . . 288
68090206 . . . 287
68090206 . . . 288
68090207 . . . 287
68090207 . . . 288
68090209 . . . 287
68090209 . . . 288
68090210 . . . 287
68090210 . . . 288
68090212 . . . 287
68090212 . . . 288
68090213 . . . 287
68090213 . . . 288
68090215 . . . 287
68090215 . . . 288
68090216 . . . 287
68090216 . . . 288
68090218 . . . 287
68090218 . . . 288
68091201 . . . 287
68091202 . . . 287
68091203 . . . 287
68091204 . . . 287
68091206 . . . 287
68091207 . . . 287
68091209 . . . 287
68091210 . . . 287
68091212 . . . 287
68091213 . . . 287
68091215 . . . 287
68091216 . . . 287
68091218 . . . 287
68092201 . . . 288
68092202 . . . 288
68092203 . . . 288
68092204 . . . 288
68092206 . . . 288
68092207 . . . 288
68092209 . . . 288
68092210 . . . 288
68092212 . . . 288
68092213 . . . 288
68092215 . . . 288
68092216 . . . 288
68092218 . . . 288
68094403 . . . 287
68094404 . . . 287
68094406 . . . 287
68094407 . . . 287
68094409 . . . 287
68094410 . . . 288
68094412 . . . 288
68095403 . . . 287
68095404 . . . 287
68095406 . . . 287
68095407 . . . 287
68095409 . . . 287
68095410 . . . 288
68095412 . . . 288
68601015 . . . 278
68601021 . . . 278
68601027 . . . 278
68601030 . . . 278
68601033 . . . 278
68601036 . . . 278
68601039 . . . 278
68601042 . . . 278
68601045 . . . 278
68601048 . . . 278
68601051 . . . 278
68601054 . . . 278
68601057 . . . 278
68601060 . . . 278
68601063 . . . 278
68601066 . . . 278
68601069 . . . 278
68601072 . . . 278
68601075 . . . 278
68601078 . . . 278
68601081 . . . 278
68601084 . . . 278
68601087 . . . 278
68601090 . . . 278
68601093 . . . 278
68601096 . . . 278
68601099 . . . 278
68601102 . . . 278
68601105 . . . 278
68601108 . . . 278
68601111 . . . 278
68601114 . . . 278
68601117 . . . 279
68601120 . . . 279
S991002 . . . 386
S991004 . . . 386
S991005 . . . 386
S991007 . . . 386
S991008 . . . 386
S991009 . . . 386
S991015 . . . 386
S991016 . . . 386
S991017 . . . 386
S991018 . . . 386
S991019 . . . 386
S991020 . . . 387
S991021 . . . 387
S991022 . . . 387
S991023 . . . 387
S991024 . . . 387
S991025 . . . 387
S991026 . . . 387
S991027 . . . 387
S991028 . . . 387
S991030 . . . 387
S991031 . . . 387
S991032 . . . 387
S991033 . . . 387
S991034 . . . 387
S991035 . . . 387
S991036 . . . 387
S991038 . . . 387
S991040 . . . 386
S991041 . . . 386
S991042 . . . 386
S991043 . . . 386

PART INDEX
BY TYPE DESIGNATION

50136146 . . . 289
50136146 . . . 311
A7-MP1-100 . . . 505
A7-MP1-250 . . . 505
A7-MP1-400 . . . 505
A7-V1-DS-B-T . . . 506
A7-V1-DS-G-T . . . 506
A7-V1-DS-O-T . . . 506
A7-V1-DS-R-T . . . 506
A7-V1-DS-W-T . . . 506
A7-V1-MP1-DS-ROG-T-100 . . . 507
AC-ABF70 . . . 312
AC-AH-A . . . 334
AC-AH-A . . . 343
AC-AH-A . . . 345
AC-AH-F1J2 . . . 334
AC-AH-F1J2 . . . 343
AC-AH-F1J2 . . . 345
AC-AH-F2J2 . . . 334
AC-AH-F2J2 . . . 343
AC-AH-F2J2 . . . 345
AC-AH-F4 . . . 334
AC-AH-F4 . . . 343
AC-AH-F4 . . . 345
AC-AH-F4J2-TK . . . 334
AC-AH-F4J2-TK . . . 343
AC-AH-F4J2-TK . . . 345
AC-AHL-A . . . 346
AC-AHL-F4J2-TK . . . 346
AC-AHL-RM . . . 346
AC-AHL-S . . . 346
AC-AH-S . . . 334
AC-AH-S . . . 343
AC-AH-S . . . 345
AC-ALM . . . 513
AC-ALM-M . . . 290
AC-ALM-M . . . 513
AC-AL-R . . . 336
AC-A-M20-12NPT . . . 333
AC-A-M20-12NPT . . . 334
AC-A-M20-12NPT . . . 336
AC-A-M20-12NPT . . . 343
AC-A-M20-12NPT . . . 344
AC-A-M20-12NPT . . . 346
AC-AN-A . . . 333
AC-AN-AL . . . 333
AC-AN-ASH . . . 333
AC-AN-F1J2 . . . 333
AC-AN-F2J2 . . . 333
AC-AN-F4 . . . 333
AC-AN-S . . . 333
AC-AN-SL . . . 333
AC-AP-ERS . . . 351
Access Point f. IT . . . 428
Access Point f. IT . . . 439
Access Point f. IT . . . 440
AC D08M-CS . . . 497
AC D12M-CS . . . 497
AC-D15E-GF . . . 493
AC D18M-CS . . . 497
AC D30M-CS . . . 497
AC-ENCLF-ERS . . . 351
AC-Exit-PB . . . 346
AC-H-S400 . . . 338
AC-H-S400-S . . . 338
AC-H-S410 . . . 340
AC-H-S420 . . . 341
AC-KL-AH . . . 334
AC-KL-AH . . . 343
AC-KL-AH . . . 345
AC-KL-AHL . . . 346
AC-KT10-ERS . . . 351
AC-KT20-ERS . . . 351
AC-L300-PB30 . . . 349
AC-L300-PB40 . . . 349
AC-L300-PB50 . . . 349
AC-L300-PB60 . . . 349
AC-L300-SCA . . . 349
AC-L300-SH-LCK0-B3-P . . . 349
AC-L300-SH-LCK1-A3-P . . . 349
AC-L300-UCA . . . 349
AC-LDH-12GF . . . 493
AC-LDH-12WF . . . 493
AC-LL-R . . . 336
AC-LL-R40 . . . 336
AC MA200-KB . . . 497
AC-MK1 . . . 312
AC-MK1 . . . 318
AC-MP1-S400 . . . 338
AC-MP3-S400 . . . 338
AC-MSI-CFG1 . . . 381
AC-MSI-TC . . . 381
AC-MSI-TCS . . . 381
AC-MSI-USB . . . 381
AC-PB15-L200 . . . 346
AC-PB30-L200 . . . 346
AC-PB40-L200 . . . 346
AC-PB60-L200 . . . 346
AC-PB500-L200 . . . 346
AC-P-ERS . . . 351
AC-PL . . . 336
AC-PLM-8 . . . 334
AC-PLM-8 . . . 336
AC-PLM-8 . . . 343
AC-PLP-8 . . . 333
AC-PLP-8 . . . 343
AC-PLP-8 . . . 344
AC-SA-ERS . . . 351
AC-SBO-ERS . . . 351
AC-SCM5U . . . 312
AC-SCM5U-BT . . . 312
AC-SCM5U-BT-L . . . 312
AC-SCM6U . . . 312
AC-SCM6U-BT . . . 312
AC-SCM6U-BT-L . . . 312
AC-SCM8U . . . 290
AC-SCM8U-BT-L . . . 290
AC-SEPL-S4xx . . . 338
AC-SEPL-S4xx . . . 340
AC-SEPL-S4xx . . . 341
AC-SL-ERS . . . 351
AC-SL-R . . . 336
AC-S-S420 . . . 341
AC-STOP-ERS . . . 351
AC-STRO-35-ERS . . . 351
AC-STRO-100-ERS . . . 351
AC-TR14/30 . . . 290
AC-TR14-S . . . 290
AC-TR20/40 . . . 290
AC-TR24-S . . . 290
AMS 300i 40 . . . 235
AMS 300i 40 H . . . 235
AMS 300i 120 . . . 235
AMS 300i 120 H . . . 235
AMS 300i 200 . . . 235
AMS 300i 200 H . . . 235
AMS 300i 300 . . . 235
AMS 300i 300 H . . . 235
AMS 301i 40 . . . 235
AMS 301i 40 H . . . 235
AMS 301i 120 . . . 235
AMS 301i 120 H . . . 235
AMS 301i 200 . . . 235
AMS 301i 200 H . . . 235
AMS 301i 300 . . . 235
AMS 301i 300 H . . . 235
AMS 304i 40 . . . 234
AMS 304i 40 H . . . 234
AMS 304i 120 . . . 234
AMS 304i 120 H . . . 234
AMS 304i 200 . . . 234
AMS 304i 200 H . . . 234
AMS 304i 300 . . . 234
AMS 304i 300 H . . . 234
AMS 307i 40 . . . 235
AMS 307i 120 . . . 235
AMS 308i 40 . . . 234
AMS 308i 40 H . . . 234
AMS 308i 120 . . . 234
AMS 308i 120 H . . . 234
AMS 308i 200 . . . 234
AMS 308i 200 H . . . 234
AMS 308i 300 . . . 234
AMS 308i 300 H . . . 234
AMS 335i 40 . . . 233
AMS 335i 40 H . . . 233
AMS 335i 120 . . . 233
AMS 335i 120 H . . . 233
AMS 335i 200 . . . 233
AMS 335i 200 H . . . 233
AMS 335i 300 . . . 233
AMS 335i 300 H . . . 233
AMS 338i 40 . . . 233
AMS 338i 40 H . . . 234
AMS 338i 120 . . . 234
AMS 338i 120 H . . . 234
AMS 338i 200 . . . 234
AMS 338i 200 H . . . 234
AMS 338i 300 . . . 234
AMS 338i 300 H . . . 234
AMS 348i 40 . . . 234
AMS 348i 40 H . . . 234
AMS 348i 40 H SSI . . . 235
AMS 348i 40 SSI . . . 235
AMS 348i 120 . . . 234
AMS 348i 120 H . . . 234
AMS 348i 120 H SSI . . . 235
AMS 348i 120 SSI . . . 235
AMS 348i 200 . . . 235
AMS 348i 200 H . . . 235
AMS 348i 200 H SSI . . . 235
AMS 348i 200 SSI . . . 235
AMS 348i 300 . . . 235
AMS 348i 300 H . . . 235
AMS 348i 300 H SSI . . . 235
AMS 348i 300 SSI . . . 235
AMS 355i 40 . . . 233
AMS 355i 40 H . . . 233
AMS 355i 120 . . . 233
AMS 355i 120 H . . . 233
AMS 355i 200 . . . 233
AMS 355i 200 H . . . 233
AMS 355i 300 . . . 233
AMS 355i 300 H . . . 233

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Type designation. . . Page no.

AMS 358i 40 . . . 234
AMS 358i 40 H . . . 234
AMS 358i 120 . . . 234
AMS 358i 120 H . . . 234
AMS 358i 200 . . . 234
AMS 358i 200 H . . . 234
AMS 358i 300 . . . 234
AMS 358i 300 H . . . 234
AMS 384i 40 . . . 234
AMS 384i 40 H . . . 234
AMS 384i 120 . . . 234
AMS 384i 120 H . . . 234
AMS 384i 200 . . . 234
AMS 384i 200 H . . . 234
AMS 384i 300 . . . 234
AMS 384i 300 H . . . 234
ARH 10 . . . 513
ARH 46 . . . 513
ARH 46C . . . 513
ARH 49C . . . 513
ARH 96 . . . 513
ASM1/1 . . . 382
ASM1/2 . . . 382
ASM1E/1 . . . 382
ASM1E/2 . . . 382
ASM1E-m/1 . . . 382
ASM1E-m/2 . . . 382
ASM2E/1 . . . 383
ASM2E/2 . . . 383
ASM2E-m/1 . . . 383
ASM2E-m/2 . . . 383
ASM-SWC . . . 384
Base f. IT 1902 . . . 439
Base f. IT 1911 . . . 440
Base IT 1452g . . . 427
BCB 005 . . . 514
BCB 8 005 . . . 514
BCB 8 010 . . . 242
BCB 8 010 . . . 514
BCB 8 020 . . . 242
BCB 8 020 . . . 514
BCB 8 030 . . . 514
BCB 8 040 . . . 514
BCB 8 050 . . . 242
BCB 8 050 . . . 514
BCB 8 060 . . . 514
BCB 8 070 . . . 514
BCB 8 080 . . . 514
BCB 8 090 . . . 514
BCB 8 100 . . . 240
BCB 8 100 . . . 242
BCB 8 100 . . . 514
BCB 8 110 . . . 514
BCB 8 120 . . . 514
BCB 8 130 . . . 514
BCB 8 140 . . . 514
BCB 8 150 . . . 514
BCB 8 200 . . . 514
BCB 010 . . . 240
BCB 010 . . . 514
BCB 020 . . . 240
BCB 020 . . . 514
BCB 030 . . . 514
BCB 040 . . . 514
BCB 050 . . . 240
BCB 050 . . . 514
BCB 060 . . . 514
BCB 070 . . . 514
BCB 080 . . . 514
BCB 090 . . . 514
BCB 100 . . . 240
BCB 100 . . . 514
BCB 110 . . . 514
BCB 120 . . . 514
BCB 130 . . . 514
BCB 140 . . . 514
BCB 150 . . . 514
BCB 200 . . . 514
BCL 8 SM 100 . . . 393
BCL 8 SM 102 . . . 393
BCL 8 SM 550 . . . 393
BCL 8 SM 552 . . . 393
BCL 8 SN 100 . . . 393
BCL 8 SN 102 . . . 393
BCL 8 SN 550 . . . 393
BCL 8 SN 552 . . . 393
BCL 21 R1 F 200 . . . 396
BCL 21 R1 F 202 . . . 396
BCL 21 R1 F 210 . . . 396
BCL 21 R1 F 212 . . . 396
BCL 21 R1 F 300 . . . 396
BCL 21 R1 F 302 . . . 396
BCL 21 R1 F 310 . . . 396
BCL 21 R1 F 312 . . . 396
BCL 21 R1 M 200 . . . 396
BCL 21 R1 M 202 . . . 396
BCL 21 R1 M 210 . . . 396
BCL 21 R1 M 212 . . . 396
BCL 21 R1 M 300 . . . 396
BCL 21 R1 M 302 . . . 396
BCL 21 R1 M 310 . . . 396
BCL 21 R1 M 312 . . . 396
BCL 21 R1 N 200 . . . 396
BCL 21 R1 N 202 . . . 396
BCL 21 R1 N 210 . . . 396
BCL 21 R1 N 212 . . . 396
BCL 21 R1 N 300 . . . 396
BCL 21 R1 N 302 . . . 396
BCL 21 R1 N 310 . . . 396
BCL 21 R1 N 312 . . . 396
BCL 21 S B 200 . . . 396
BCL 21 S B 202 . . . 395
BCL 21 S B 300 . . . 396
BCL 21 S B 302 . . . 395
BCL 21 S F 200 . . . 396
BCL 21 S F 202 . . . 396
BCL 21 S F 210 . . . 396
BCL 21 S F 212 . . . 396
BCL 21 S F 300 . . . 396
BCL 21 S F 302 . . . 396
BCL 21 S F 310 . . . 396
BCL 21 S F 312 . . . 396
BCL 21 S M 200 . . . 396
BCL 21 S M 202 . . . 395
BCL 21 S M 210 . . . 396
BCL 21 S M 212 . . . 395
BCL 21 S M 300 . . . 396
BCL 21 S M 302 . . . 396
BCL 21 S M 310 . . . 396
BCL 21 S M 312 . . . 396
BCL 21 S N 200 . . . 396
BCL 21 S N 202 . . . 395
BCL 21 S N 210 . . . 396
BCL 21 S N 212 . . . 395
BCL 21 S N 300 . . . 396
BCL 21 S N 302 . . . 395
BCL 21 S N 310 . . . 396
BCL 21 S N 312 . . . 395
BCL 22 R1 F 200 . . . 398
BCL 22 R1 F 202 . . . 397
BCL 22 R1 F 210 . . . 398
BCL 22 R1 F 212 . . . 397
BCL 22 R1 F 300 . . . 398
BCL 22 R1 F 302 . . . 397
BCL 22 R1 F 310 . . . 398
BCL 22 R1 F 312 . . . 397
BCL 22 R1 M 200 . . . 398
BCL 22 R1 M 202 . . . 397
BCL 22 R1 M 210 . . . 398
BCL 22 R1 M 212 . . . 397
BCL 22 R1 M 300 . . . 398
BCL 22 R1 M 302 . . . 397
BCL 22 R1 M 310 . . . 398
BCL 22 R1 M 312 . . . 397
BCL 22 R1 N 200 . . . 397
BCL 22 R1 N 202 . . . 397
BCL 22 R1 N 210 . . . 397
BCL 22 R1 N 212 . . . 397
BCL 22 R1 N 300 . . . 398
BCL 22 R1 N 302 . . . 397
BCL 22 R1 N 310 . . . 398
BCL 22 R1 N 312 . . . 397
BCL 22 S B 200 . . . 397
BCL 22 S B 202 . . . 397
BCL 22 S B 300 . . . 397
BCL 22 S B 302 . . . 397
BCL 22 S F 200 . . . 397
BCL 22 S F 202 . . . 397
BCL 22 S F 210 . . . 397
BCL 22 S F 212 . . . 397
BCL 22 S F 300 . . . 397
BCL 22 S F 302 . . . 397
BCL 22 S F 310 . . . 397
BCL 22 S F 312 . . . 397
BCL 22 S M 200 . . . 397
BCL 22 S M 202 . . . 397
BCL 22 S M 210 . . . 397
BCL 22 S M 212 . . . 397
BCL 22 S M 300 . . . 397
BCL 22 S M 302 . . . 397
BCL 22 S M 310 . . . 397
BCL 22 S M 312 . . . 397
BCL 22 S N 200 . . . 397
BCL 22 S N 202 . . . 397
BCL 22 S N 210 . . . 397
BCL 22 S N 212 . . . 397
BCL 22 S N 300 . . . 397
BCL 22 S N 302 . . . 397
BCL 22 S N 310 . . . 397
BCL 22 S N 312 . . . 397
BCL 300i OF 100 . . . 401
BCL 300i OF 100 D . . . 401
BCL 300i OF 100 D H . . . 401
BCL 300i OL 100 . . . 401
BCL 300i OL 100 D . . . 401
BCL 300i OL 100 D H . . . 401
BCL 300i OM 100 . . . 401
BCL 300i OM 100 D . . . 401
BCL 300i OM 100 D H . . . 400
BCL 300i R1 F 100 . . . 400
BCL 300i R1 F 100 D . . . 400
BCL 300i R1 F 102 . . . 400
BCL 300i R1 F 102 D . . . 400
BCL 300i R1 J 100 . . . 400
BCL 300i R1 M 100 . . . 400
BCL 300i R1 M 100 D . . . 400
BCL 300i R1 M 102 . . . 400
BCL 300i R1 M 102 D . . . 400
BCL 300i R1 N 100 . . . 400
BCL 300i R1 N 100 D . . . 400
BCL 300i R1 N 102 . . . 400
BCL 300i R1 N 102 D . . . 400
BCL 300i SF 100 . . . 400
BCL 300i SF 100 D . . . 400
BCL 300i SF 100 D H . . . 400
BCL 300i SF 102 . . . 400
BCL 300i SF 102 D . . . 400
BCL 300i SF 102 D H . . . 400
BCL 300i SL 100 . . . 400
BCL 300i SL 100 D . . . 400
BCL 300i SL 100 D H . . . 400
BCL 300i SL 102 . . . 400
BCL 300i SL 102 D . . . 400
BCL 300i SL 102 D H . . . 400
BCL 300i SM 100 . . . 400
BCL 300i SM 100 D . . . 400
BCL 300i SM 100 D H . . . 400
BCL 300i SM 102 . . . 400
BCL 300i SM 102 D . . . 400
BCL 300i SM 102 D H . . . 400
BCL 300i SN 100 . . . 400

BCL 300i SN 100 D. 400
BCL 300i SN 100 D H 400
BCL 300i SN 102 400
BCL 300i SN 102 D. 400
BCL 300i SN 102 D H 400
BCL 301i OF 100 404
BCL 301i OF 100 D. 404
BCL 301i OF 100 D H 404
BCL 301i OL 100 404
BCL 301i OL 100 D. 404
BCL 301i OL 100 D H 404
BCL 301i OM 100 404
BCL 301i OM 100 D 404
BCL 301i OM 100 D H 404
BCL 301i R1 F 100 404
BCL 301i R1 F 100 D 404
BCL 301i R1 F 102 404
BCL 301i R1 F 102 D 404
BCL 301i R1 J 100 404
BCL 301i R1 M 100. 404
BCL 301i R1 M 100 D 404
BCL 301i R1 M 102. 404
BCL 301i R1 M 102 D 404
BCL 301i R1 N 100 404
BCL 301i R1 N 100 D 404
BCL 301i R1 N 102 404
BCL 301i R1 N 102 D 404
BCL 301i SF 100. 404
BCL 301i SF 100 D 404
BCL 301i SF 100 D H 404
BCL 301i SF 102. 403
BCL 301i SF 102 D 403
BCL 301i SF 102 D H 403
BCL 301i SL 100. 404
BCL 301i SL 100 D 404
BCL 301i SL 100 D H 404
BCL 301i SL 102. 403
BCL 301i SL 102 D 403
BCL 301i SL 102 D H 403
BCL 301i SM 100 404
BCL 301i SM 100 D 404
BCL 301i SM 100 D H. 403
BCL 301i SM 102 403
BCL 301i SM 102 D 403
BCL 301i SM 102 D H. 403
BCL 301i SN 100 403
BCL 301i SN 100 D. 403
BCL 301i SN 100 D H 403
BCL 301i SN 102 403
BCL 301i SN 102 D. 403
BCL 301i SN 102 D H 403
BCL 304i OF 100 403
BCL 304i OF 100 D. 403
BCL 304i OF 100 D H 403
BCL 304i OL 100 403
BCL 304i OL 100 D. 403
BCL 304i OL 100 D H 403
BCL 304i OM 100 403
BCL 304i OM 100 D 403
BCL 304i OM 100 D H 403
BCL 304i R1 F 100 403
BCL 304i R1 F 100 D 403
BCL 304i R1 F 102 403
BCL 304i R1 F 102 D 403
BCL 304i R1 J 100 403
BCL 304i R1 M 100. 403
BCL 304i R1 M 100 D 403
BCL 304i R1 M 102. 403
BCL 304i R1 M 102 D 403
BCL 304i R1 N 100 403
BCL 304i R1 N 100 D 403
BCL 304i R1 N 102 403
BCL 304i R1 N 102 D 403
BCL 304i SF 100. 402
BCL 304i SF 100 D 402
BCL 304i SF 100 D H 402
BCL 304i SF 102. 402
BCL 304i SF 102 D 402
BCL 304i SF 102 D H 402
BCL 304i SL 100. 402
BCL 304i SL 100 D 403
BCL 304i SL 100 D H 402
BCL 304i SL 102. 402
BCL 304i SL 102 D 402
BCL 304i SL 102 D H 402
BCL 304i SM 100 402
BCL 304i SM 100 D 402
BCL 304i SM 100 D H. 402
BCL 304i SM 102 402
BCL 304i SM 102 D 402
BCL 304i SM 102 D H. 402
BCL 304i SN 100 402
BCL 304i SN 100 D. 402
BCL 304i SN 100 D H 402
BCL 304i SN 102 402
BCL 304i SN 102 D. 402
BCL 304i SN 102 D H 402
BCL 308i OF 100 405
BCL 308i OF 100 D. 405
BCL 308i OF 100 D H 405
BCL 308i OL 100 405
BCL 308i OL 100 D. 405
BCL 308i OL 100 D H 405
BCL 308i OM 100 405
BCL 308i OM 100 D 405
BCL 308i OM 100 D H 405
BCL 308i R1 F 100 405
BCL 308i R1 F 100 D 405
BCL 308i R1 F 102 405
BCL 308i R1 F 102 D 405
BCL 308i R1 J 100 405
BCL 308i R1 M 100. 405
BCL 308i R1 M 100 D 405
BCL 308i R1 M 102. 405
BCL 308i R1 M 102 D 405
BCL 308i R1 N 100 405
BCL 308i R1 N 100 D 405
BCL 308i R1 N 102 405
BCL 308i R1 N 102 D 405
BCL 308i SF 100. 405
BCL 308i SF 100 D 405
BCL 308i SF 100 D H 405
BCL 308i SF 102. 405
BCL 308i SF 102 D 405
BCL 308i SF 102 D H 404
BCL 308i SL 100. 405
BCL 308i SL 100 D 405
BCL 308i SL 100 D H 405
BCL 308i SL 102. 405
BCL 308i SL 102 D 405
BCL 308i SL 102 D H 405
BCL 308i SM 100 405
BCL 308i SM 100 D 405
BCL 308i SM 100 D H. 405
BCL 308i SM 102 404
BCL 308i SM 102 D 404
BCL 308i SM 102 D H. 404
BCL 308i SN 100 405
BCL 308i SN 100 D. 405
BCL 308i SN 100 D H 405
BCL 308i SN 102 404
BCL 308i SN 102 D. 404
BCL 308i SN 102 D H 404
BCL 338i O F 100 408
BCL 338i O F 100 D 408
BCL 338i O F 100 D H 408
BCL 338i O L 100 408
BCL 338i O L 100 D 408
BCL 338i O L 100 D H 408
BCL 338i O M 100 408
BCL 338i O M 100 D. 408
BCL 338i O M 100 D H 408
BCL 338i R1 F 100 408
BCL 338i R1 F 100 D 408
BCL 338i R1 F 102 408
BCL 338i R1 F 102 D 408
BCL 338i R1 J 100 408
BCL 338i R1 M 100. 408
BCL 338i R1 M 100 D 408
BCL 338i R1 M 102. 407
BCL 338i R1 M 102 D 408
BCL 338i R1 N 100 408
BCL 338i R1 N 100 D 408
BCL 338i R1 N 102 407
BCL 338i R1 N 102 D 407
BCL 338i S F 100 407
BCL 338i S F 100 D 407
BCL 338i S F 100 D H. 407
BCL 338i SF 102. 407
BCL 338i SF 102 D 407
BCL 338i SF 102 D H 407
BCL 338i S L 100 407
BCL 338i S L 100 D 407
BCL 338i S L 100 D H. 407
BCL 338i SL 102. 407
BCL 338i SL 102 D. 407
BCL 338i SL 102 D H 407
BCL 338i S M 100. 407
BCL 338i S M 100 D 407
BCL 338i S M 100 D H 407
BCL 338i SM 102 407
BCL 338i SM 102 D 407
BCL 338i SM 102 D H. 407
BCL 338i S N 100 407
BCL 338i S N 100 D 407
BCL 338i S N 100 D H 407
BCL 338i SN 102 407
BCL 338i SN 102 D. 407
BCL 338i SN 102 D H 407
BCL 348i OF 100 402
BCL 348i OF 100 D. 402
BCL 348i OF 100 D H 402
BCL 348i OL 100 402
BCL 348i OL 100 D. 402
BCL 348i OL 100 D H 402
BCL 348i OM 100 402
BCL 348i OM 100 D 402
BCL 348i OM 100 D H 402
BCL 348i R1 F 100 402
BCL 348i R1 F 100 D 402
BCL 348i R1 F 102 401
BCL 348i R1 F 102 D 401
BCL 348i R1 J 100 402
BCL 348i R1 M 100. 402
BCL 348i R1 M 100 D 402
BCL 348i R1 M 102. 401
BCL 348i R1 M 102 D 401
BCL 348i R1 N 100 401
BCL 348i R1 N 100 D 402
BCL 348i R1 N 102 401
BCL 348i R1 N 102 D 401
BCL 348i SF 100. 401
BCL 348i SF 100 D. 401
BCL 348i SF 100 D H 401
BCL 348i SF 102. 401
BCL 348i SF 102 D 401
BCL 348i SF 102 D H 401
BCL 348i SL 100. 401
BCL 348i S L 100 D 401
BCL 348i SL 100 D H 401
BCL 348i SL 102. 401
BCL 348i SL 102 D. 401
BCL 348i SL 102 D H 401
BCL 348i SM 100 401
BCL 348i SM 100 D 401
BCL 348i SM 100 D H. 401
BCL 348i SM 102 401
BCL 348i SM 102 D 401
BCL 348i SM 102 D H. 401
BCL 348i SN 100 401
BCL 348i SN 100 D. 401

© Leuze electronic GmbH + Co. KG

Type designation. . . Page no.

BCL 348i SN 100 D H . . . 401
BCL 348i SN 102 . . . 401
BCL 348i SN 102 D . . . 401
BCL 348i SN 102 D H . . . 401
BCL 358i OF 100 . . . 407
BCL 358i OF 100 D . . . 407
BCL 358i OF 100 D H . . . 407
BCL 358i OL 100 . . . 407
BCL 358i OL 100 D . . . 407
BCL 358i OL 100 D H . . . 407
BCL 358i OM 100 . . . 407
BCL 358i OM 100 D . . . 407
BCL 358i OM 100 D H . . . 406
BCL 358i R1 F 100 . . . 406
BCL 358i R1 F 100 D . . . 406
BCL 358i R1 F 102 . . . 406
BCL 358i R1 F 102 D . . . 406
BCL 358i R1 J 100 . . . 406
BCL 358i R1 M 100 . . . 406
BCL 358i R1 M 100 D . . . 406
BCL 358i R1 M 102 . . . 406
BCL 358i R1 M 102 D . . . 406
BCL 358i R1 N 100 . . . 406
BCL 358i R1 N 100 D . . . 406
BCL 358i R1 N 102 . . . 406
BCL 358i R1 N 102 D . . . 406
BCL 358i SF 100 . . . 406
BCL 358i SF 100 D . . . 406
BCL 358i SF 100 D H . . . 406
BCL 358i SF 102 . . . 406
BCL 358i SF 102 D . . . 406
BCL 358i SF 102 D H . . . 406
BCL 358i SL 100 . . . 406
BCL 358i SL 100 D . . . 406
BCL 358i SL 100 D H . . . 406
BCL 358i SL 102 . . . 406
BCL 358i SL 102 D . . . 406
BCL 358i SL 102 D H . . . 406
BCL 358i SM 100 . . . 406
BCL 358i SM 100 D . . . 406
BCL 358i SM 100 D H . . . 406
BCL 358i SM 102 . . . 406
BCL 358i SM 102 D . . . 406
BCL 358i SM 102 D H . . . 406
BCL 358i SN 100 . . . 406
BCL 358i SN 100 D . . . 406
BCL 358i SN 100 D H . . . 406
BCL 358i SN 102 . . . 406
BCL 358i SN 102 D . . . 406
BCL 358i SN 102 D H . . . 406
BCL 500i OF 100 . . . 413
BCL 500i OF 100 H . . . 413
BCL 500i OL 100 . . . 413
BCL 500i OL 100 H . . . 413
BCL 500i OM 100 . . . 413
BCL 500i OM 100 H . . . 413
BCL 500i ON 100 . . . 412
BCL 500i ON 100 H . . . 412
BCL 500i SF 102 . . . 412
BCL 500i SF 102 H . . . 412
BCL 500i SL 102 . . . 412
BCL 500i SL 102 H . . . 412
BCL 500i SM 102 . . . 412
BCL 500i SM 102 H . . . 412
BCL 500i SN 102 . . . 412
BCL 500i SN 102 H . . . 412
BCL 501i OF 100 . . . 412
BCL 501i OF 100 H . . . 412
BCL 501i OL 100 . . . 412
BCL 501i OL 100 H . . . 412
BCL 501i OM 100 . . . 412
BCL 501i OM 100 H . . . 412
BCL 501i ON 100 . . . 412
BCL 501i ON 100 H . . . 412
BCL 501i SF 102 . . . 412
BCL 501i SF 102 H . . . 412
BCL 501i SL 102 . . . 412
BCL 501i SL 102 H . . . 412
BCL 501i SM 102 . . . 412
BCL 501i SM 102 H . . . 412
BCL 501i SN 102 . . . 412
BCL 501i SN 102 H . . . 412
BCL 504i OF 100 . . . 414
BCL 504i OF 100 H . . . 414
BCL 504i OL 100 . . . 414
BCL 504i OL 100 H . . . 414
BCL 504i OM 100 . . . 414
BCL 504i OM 100 H . . . 414
BCL 504i ON 100 . . . 414
BCL 504i ON 100 H . . . 414
BCL 504i SF 102 . . . 414
BCL 504i SF 102 H . . . 414
BCL 504i SL 102 . . . 414
BCL 504i SL 102 H . . . 414
BCL 504i SM 102 . . . 413
BCL 504i SM 102 H . . . 413
BCL 504i SN 102 . . . 413
BCL 504i SN 102 H . . . 413
BCL 508i OF 100 . . . 414
BCL 508i OF 100 H . . . 414
BCL 508i OL 100 . . . 415
BCL 508i OL 100 H . . . 415
BCL 508i OM 100 . . . 414
BCL 508i OM 100 H . . . 414
BCL 508i ON 100 . . . 414
BCL 508i ON 100 H . . . 414
BCL 508i SF 102 . . . 414
BCL 508i SF 102 H . . . 414
BCL 508i SL 102 . . . 414
BCL 508i SL 102 H . . . 414
BCL 508i SM 102 . . . 414
BCL 508i SM 102 H . . . 414
BCL 508i SN 102 . . . 414
BCL 508i SN 102 H . . . 414
BCL 548i OF 100 . . . 413
BCL 548i OF 100 H . . . 413
BCL 548i OL 100 . . . 413
BCL 548i OL 100 H . . . 413
BCL 548i OM 100 . . . 413
BCL 548i OM 100 H . . . 413
BCL 548i ON 100 . . . 413
BCL 548i ON 100 H . . . 413
BCL 548i SF 102 . . . 413
BCL 548i SF 102 H . . . 413
BCL 548i SL 102 . . . 413
BCL 548i SL 102 H . . . 413
BCL 548i SM 102 . . . 413
BCL 548i SM 102 H . . . 413
BCL 548i SN 102 . . . 413
BCL 548i SN 102 H . . . 413
BCL 558i OF 100 . . . 415
BCL 558i OF 100 H . . . 415
BCL 558i OL 100 . . . 415
BCL 558i OL 100 H . . . 415
BCL 558i OM 100 . . . 415
BCL 558i OM 100 H . . . 415
BCL 558i ON 100 . . . 415
BCL 558i ON 100 H . . . 415
BCL 558i SF 102 . . . 415
BCL 558i SF 102 H . . . 415
BCL 558i SL 102 . . . 415
BCL 558i SL 102 H . . . 415
BCL 558i SM 102 . . . 415
BCL 558i SM 102 H . . . 415
BCL 558i SN 102 . . . 415
BCL 558i SN 102 H . . . 415
BCL 600i OF 100 . . . 418
BCL 600i OF 100 H . . . 418
BCL 600i OM 100 . . . 418
BCL 600i OM 100 H . . . 418
BCL 600i SF 102 . . . 418
BCL 600i SF 102 H . . . 418
BCL 600i SM 102 . . . 418
BCL 600i SM 102 H . . . 418
BCL 601i OF 100 . . . 418
BCL 601i OF 100 H . . . 418
BCL 601i OM 100 . . . 418
BCL 601i OM 100 H . . . 418
BCL 601i SF 102 . . . 418
BCL 601i SF 102 H . . . 418
BCL 601i SM 102 . . . 418
BCL 601i SM 102 H . . . 418
BCL 604i OF 100 . . . 419
BCL 604i OF 100 H . . . 419
BCL 604i OM 100 . . . 419
BCL 604i OM 100 H . . . 419
BCL 604i SF 102 . . . 419
BCL 604i SF 102 H . . . 419
BCL 604i SM 102 . . . 419
BCL 604i SM 102 H . . . 419
BCL 608i OF 100 . . . 419
BCL 608i OF 100 H . . . 419
BCL 608i OM 100 . . . 419
BCL 608i OM 100 H . . . 419
BCL 608i SF 102 . . . 419
BCL 608i SF 102 H . . . 419
BCL 608i SM 102 . . . 419
BCL 608i SM 102 H . . . 419
BCL 648i OF 100 . . . 419
BCL 648i OF 100 H . . . 419
BCL 648i OM 100 . . . 419
BCL 648i OM 100 H . . . 419
BCL 648i SF 102 . . . 419
BCL 648i SF 102 H . . . 419
BCL 648i SM 102 . . . 419
BCL 648i SM 102 H . . . 419
BCL 900i SM 102 . . . 421
BCL 900i SN 102 . . . 421
BK7 KB-092-5000-4A Ex . . . 112
BK7 KB-092-5000-4 Ex . . . 112
BPS 8 SM 100-01 . . . 241
BPS 8 SM 102-01 . . . 241
BPS 300i SM 100 . . . 238
BPS 300i SM 100 D . . . 238
BPS 300i SM 100 D H . . . 238
BPS 301i SM 100 . . . 238
BPS 301i SM 100 D . . . 238
BPS 301i SM 100 D H . . . 238
BPS 304i SM 100 . . . 238
BPS 304i SM 100 D . . . 238
BPS 304i SM 100 D H . . . 238
BPS 304i SM 100 H . . . 238
BPS 307i SM 100 . . . 238
BPS 307i SM 100 D . . . 238
BPS 307i SM 100 D H . . . 238
BPS 307i SM 100 H . . . 238
BPS 348i SM 100 . . . 238
BPS 348i SM 100 D . . . 238
BPS 348i SM 100 D H . . . 238
BPS 348i SM 100 H . . . 238
BT-2HF . . . 290
BT-2HF-G . . . 290
BT-2HF-GS . . . 290
BT-2HF-S . . . 290
BT-2L . . . 192
BT-2L . . . 266
BT-2L . . . 290
BT-2L . . . 494
BT-2L-HG . . . 290
BT 002M.5 . . . 29
BT 002M.5 . . . 494
BT-2P40 . . . 192
BT-2P40 . . . 266
BT-2P40 . . . 290
BT-2P40 . . . 312
BT-2P40 . . . 497
BT-2R1 . . . 192
BT-2R1 . . . 266
BT-2S . . . 494
BT-2SB10 . . . 290
BT-2SB10-S . . . 290

BT-2SSD. 192
BT-2SSD. 266
BT-2SSD-270 192
BT-2SSD-270 266
BT-2UM60 494
BT-2Z 192
BT-2Z 266
BT-2Z 290
BT-2Z 495
BT 3 494
BT 3.1 494
BT 3.2 494
BT 3.5 494
BT 3B 34
BT 3B 197
BT 3B 494
BT 003M.1 494
BT-4SSD. 192
BT-4SSD. 266
BT 8 44
BT 8 206
BT 8 214
BT 8 216
BT 8 494
BT 8-0 242
BT 8-0 497
BT 8-01 242
BT 8-01 497
BT 8-ARH 498
BT-10NC60. 192
BT-10NC60. 266
BT-10NC60. 290
BT-10NC60. 498
BT-10NC64. 192
BT-10NC64. 266
BT-10NC64. 290
BT-10NC64. 498
BT-10NC65. 192
BT-10NC65. 266
BT-10NC65. 290
BT-10NC65. 498
BT 16 494
BT 20-D10 398
BT 20-D10 495
BT 20-D12 398
BT 20-D12 495
BT 21 497
BT 24 494
BT 25 51
BT 25 62
BT 25 84
BT 25 200
BT 25 323
BT 25 494
BT 25-ARH 498
BT 46 71
BT 46 314
BT 46 321
BT 46 494
BT 56 240
BT 56 251
BT 56 411
BT 56 417
BT 56 421
BT 56 435
BT 56 478
BT 56 481
BT 56 495
BT 56 - 1 411
BT 56 - 1 495
BT 56 - V 495
BT 57 498
BT 59 417
BT 59 421
BT 59 497
BT 64 494
BT 66 494
BT 78 495
BT 85 495
BT 92 112
BT 92 495
BT 95 55
BT 95 87
BT 95 116
BT 95 153
BT 95 198
BT 95 495
BT 96 75
BT 96 94
BT 96 117
BT 96 221
BT 96 495
BT 96.1. 495
BT 96.4. 495
BT 200M.5 40
BT 200M.5 65
BT 200M.5 495
BT 205M. 40
BT 205M. 51
BT 205M. 62
BT 205M. 65
BT 205M. 323
BT 205M. 495
BT 300 - 1 411
BT 300 - 1 495
BT 300M.5 40
BT 300M.5 44
BT 300M.5 71
BT 300M.5 206
BT 300M.5 495
BT 300 W 240
BT 300 W 411
BT 300 W 481
BT 300 W 495
BT 318-ARH 320
BT 318-ARH 324
BT 318-ARH 498
BT318B-OM 497
BT 318P-LS 324
BT 318P-LS 497
BT 320M. 244
BT 320M. 432
BT 320M. 495
BT 328M. 497
BT 450.1-96 75
BT 450.1-96 94
BT 450.1-96 117
BT 450.1-96 221
BT 450.1-96 495
BT 450.3-96 117
BT 450.3-96 495
BT 713 495
BT800MA 328
BT840M 328
BT856M 328
BT 900 422
BT 900 495
BT 910M. 495
BT 1900gCover. 498
BTC 088M-I40 497
BT Cover IT4xxx 498
BT Cover IT1300g. 426
BT Cover IT1300g. 498
BT D08M.5 131
BT D08M.5 133
BT D08M.5 138
BT D08M.5 495
BT D12M.5 108
BT D12M.5 131
BT D12M.5 133
BT D12M.5 133
BT D12M.5 138
BT D12M.5 495
BT D18M.5 99
BT D18M.5 102
BT D18M.5 106
BT D18M.5 161
BT D18M.5 226
BT D18M.5 229
BT D18M.5 324
BT D18M.5 495
BT D21M 99
BT D21M 106
BT D21M 495
BT D30M.5 228
BT D30M.5 231
BT D30M.5 495
BT Desktop IT1300g 426
BT Desktop IT1300g 498
BTF815M 328
BTF830M 328
BT Flex Neck IT 4xxx. 428
BT Flex Neck IT 4xxx. 498
BT Flex Neck IT1300g. 426
BT Flex Neck IT1300g. 498
BT-GS6X.DT 497
BT-GS6X.H 498
BT-GS6X.L 498
BT Holder HCR 6200 441
BT Holder HCR 6200 498
BT Holder IT 190x. 439
BT Holder IT 190x. 498
BT-LA-78M 498
BT-LA-78M-UDC. 498
BT-L-HG 290
BT-MLC-S-C. 290
BT-MLC-S-C. 494
BT-MLC-S-L 290
BT-MLC-S-L 494
BT-MLC-S-O. 290
BT-MLC-S-O. 494
BT-MSI-MD-FB 494
BT-MSI-MD-FB-L 494
BTP 200M-D10. 323
BTP 200M-D10. 497
BTP 200M-D12. 323
BTP 200M-D12. 497
BTP 200M-D14. 323
BTP 200M-D14. 497
BTP 300M-D10. 497
BTP 300M-D12. 497
BTP 300M-D14. 497
BTP800M 328
BT Rope IT 428
BT Rope IT 440
BT Rope IT 497
BT-SB10. 497
BT-SET-240BC 312
BT-SET-240BC-E 312
BT-SET-240BCS 312
BT-SET-240BCS-E 312
BT-SET-240C 318
BT-SET-240CC 312
BT-SET-240CC-E 312
BT-SET-240CCS 312
BT-SET-240CCS-E 312
BT-SET-240C-E. 318
BT-SET-240CS 318
BT-SET-240CS-E. 318
BT Stand 8 IT 190x. 498
BT Stand 30 IT 191x. 498
BTU 008M-D10. 214
BTU 008M-D10. 242
BTU 008M-D10. 394
BTU 008M-D10. 495
BTU 053M.5F-D12-A090. 79
BTU 053M.5F-D12-A090. 495
BTU 053M.5F-D12-A180. 495
BTU 053M.5F-D12-N 495
BTU 053M.5F-D12-SS 495
BTU 053M.5F-D20-N 495

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Type designation. . . Page no.

BTU 053M.5F-D20-SS 495
BTU 200M.5-D12 198
BTU 200M.5-D12 496
BTU 200M-D10. 34
BTU 200M-D10. 40
BTU 200M-D10. 51
BTU 200M-D10. 55
BTU 200M-D10. 62
BTU 200M-D10. 65
BTU 200M-D10. 84
BTU 200M-D10. 113
BTU 200M-D10. 197
BTU 200M-D10. 198
BTU 200M-D10. 323
BTU 200M-D10. 496
BTU 200M-D12. 34
BTU 200M-D12. 40
BTU 200M-D12. 51
BTU 200M-D12. 55
BTU 200M-D12. 62
BTU 200M-D12. 65
BTU 200M-D12. 84
BTU 200M-D12. 113
BTU 200M-D12. 153
BTU 200M-D12. 197
BTU 200M-D12. 198
BTU 200M-D12. 323
BTU 200M-D12. 496
BTU 200M-D14. 34
BTU 200M-D14. 40
BTU 200M-D14. 51
BTU 200M-D14. 55
BTU 200M-D14. 62
BTU 200M-D14. 65
BTU 200M-D14. 84
BTU 200M-D14. 113
BTU 200M-D14. 197
BTU 200M-D14. 198
BTU 200M-D14. 323
BTU 200M-D14. 496
BTU 300M.5-D12 314
BTU 300M.5-D12 321
BTU 300M.5-D12 496
BTU 300M-D10. 44
BTU 300M-D10. 71
BTU 300M-D10. 116
BTU 300M-D10. 206
BTU 300M-D10. 216
BTU 300M-D10. 314
BTU 300M-D10. 321
BTU 300M-D10. 433
BTU 300M-D10. 496
BTU 300M-D12. 44
BTU 300M-D12. 71
BTU 300M-D12. 116
BTU 300M-D12. 206
BTU 300M-D12. 216
BTU 300M-D12. 314
BTU 300M-D12. 321
BTU 300M-D12. 433
BTU 300M-D12. 496
BTU 300M-D14. 44
BTU 300M-D14. 71
BTU 300M-D14. 116
BTU 300M-D14. 206
BTU 300M-D14. 216
BTU 300M-D14. 314
BTU 300M-D14. 321
BTU 300M-D14. 433
BTU 300M-D14. 496
BTU 0300M-W 497
BTU 320M-D12. 244
BTU 320M-D12. 432
BTU 320M-D12. 496
BTU 320M-D12-RL70 496
BTU 346M.5-D12 496
BTU 346M.6-D12 496
BTU 346M-D12. 323
BTU 346M-D12. 496
BTU 360-D18 496
BTU 360-D30 496
BTU 460M-D10. 47
BTU 460M-D10. 75
BTU 460M-D10. 218
BTU 460M-D10. 496
BTU 460M-D12. 47
BTU 460M-D12. 75
BTU 460M-D12. 218
BTU 460M-D12. 496
BTU800M 328
BTU804MA 328
BTU 900M-D10. 314
BTU 900M-D10. 321
BTU 900M-D10. 496
BTU 900M-D12. 314
BTU 900M-D12. 321
BTU 900M-D12. 496
BTU 900M-D14. 314
BTU 900M-D14. 321
BTU 900M-D14. 496
BTU 934M-D10-90 496
BTU 934M-D12-90 496
BTU 934M-D14-90 496
BTU D12M.5-045-M8 496
BTU D12M.5-100 496
BTU D12M.5-150 496
BTU D12M.5-250 496
BTU D12M.5-Z-230. 496
BTU D12M-D12-A090. 496
BTU D12M-D12-B090. 496
BTU D12M-L-140 496
BTU D12M-VKT-90 496
BTU D12M-Z-230 496
BTU D18M-D12 99
BTU D18M-D12 102
BTU D18M-D12 106
BTU D18M-D12 161
BTU D18M-D12 226
BTU D18M-D12 229
BTU D18M-D12 324
BTU D18M-D12 496
BT VMHolder 498
BT Wallholder HS65x8. 426
BT Wallholder HS65x8. 427
BT Wallholder HS65x8. 428
BT Wallholder HS65x8. 428
BT Wallholder HS65x8. 440
BT Wallholder HS65x8. 441
BT Wallholder HS65x8. 442
BT Wallholder HS65x8. 498
BT Wallholder IT190x 439
BT Wallholder IT190x 498
BTX 018M. 198
BTX 018M. 498
BTX 046M. 498
BTX 0500 M 498
BTX-D18M-D30 161
BTX-D18M-D30 497
C3-V1-B-P0-SGSOSR-K1 507
CB-ASM-PK1 384
CB-D9-3000-5GF/GM. 489
CB-D9-5000-5GF/GM. 489
CB-D9-10000-5GF/GM. 489
CB-M12-5GF 290
CB-M12-5GF 311
CB-M12-5GF 318
CB-M12-5GF 492
CB-M12-8GF 191
CB-M12-8GF 266
CB-M12-8GF 290
CB-M12-8GF 311
CB-M12-8GF 318
CB-M12-8GF 493
CB-M12-1000-5GF/GM 490
CB-M12-1500-3GF/GM 489
CB-M12-1500-3GF/WM 489
CB-M12-1500X-3GF/GM 489
CB-M12-1500X-3GF/WM 489
CB-M12-1500X-3WF/WM 489
CB-M12-2000-4GMB 485
CB-M12-2000-5GM 485
CB-M12-5000-3GF/WM 489
CB-M12-5000-5GM 485
CB-M12-5000E-5GM 311
CB-M12-5000E-5GM 318
CB-M12-5000E-5GM 485
CB-M12-5000S-8GF. 486
CB-M12-10000-5WM 484
CB-M12-10000E-5GM 311
CB-M12-10000E-5GM 318
CB-M12-10000E-5GM 485
CB-M12-15000-3GF/GM. 489
CB-M12-15000-3GF/WM 489
CB-M12-15000E-5GF. 289
CB-M12-15000E-5GF. 311
CB-M12-15000E-5GF. 317
CB-M12-15000E-5GF. 357
CB-M12-15000E-5GF. 486
CB-M12-15000E-5GM 311
CB-M12-15000E-5GM 318
CB-M12-15000E-5GM 485
CB-M12-15000S-5GF. 486
CB-M12-20000S-5GF/GM 490
CB-M12-25000-8GF. 486
CB-M12-25000E-5GM 311
CB-M12-25000E-5GM 318
CB-M12-25000E-5GM 485
CB-M12-25000S-4GF/GM 490
CB-M12-25000S-5GF. 486
CB-M12-25000S-5WF 485
CB-M12-30000E-5GF. 486
CB-M12-50000-5GF. 486
CB-M12-50000-8GF. 486
CB-M12-50000E-5GF. 289
CB-M12-50000E-5GF. 311
CB-M12-50000E-5GF. 317
CB-M12-50000E-5GF. 357
CB-M12-50000E-5GF. 486
CB-M12-50000E-8GF. 289
CB-M12-50000E-8GF. 311
CB-M12-50000E-8GF. 318
CB-M12-50000E-8GF. 357
CB-M12-50000E-8GF. 486
CB-M12-MLC-S-100-5TP 289
CB-M12-MLC-S-500-5TP 289
CB-M12-MLC-S-1000-5TP 289
CML720i-R05-800.A/CN-M12 256
CML720i-R05-800.A/CV-M12 256
CML720i-R05-800.A/D3-M12 256
CML720i-R05-800.A/L-M12 256
CML720i-R05-800.A/PB-M12 256
CML720i-R05-800.A/PN-M12 256
CML720i-R05-800.R/CN-M12 256
CML720i-R05-800.R/CV-M12 256
CML720i-R05-800.R/D3-M12 256
CML720i-R05-800.R/L-M12 256
CML720i-R05-800.R/PB-M12 256
CML720i-R05-800.R/PN-M12 256
CML720i-R10-620.A/CN-M12-EX 260
CML720i-R10-780.A/CN-M12-EX 260
CML720i-R10-800.A/CN-M12 256
CML720i-R10-800.A/CV-M12 256
CML720i-R10-800.A/D3-M12 256
CML720i-R10-800.A/L-M12 256
CML720i-R10-800.A/PB-M12 256
CML720i-R10-800.A/PN-M12 256
CML720i-R10-800.R/CN-M12 256
CML720i-R10-800.R/CV-M12 256
CML720i-R10-800.R/D3-M12 256
CML720i-R10-800.R/L-M12 256
CML720i-R10-800.R/PB-M12 256

CML720i-R10-800.R/PN-M12 256
CML720i-R10-940.A/CN-M12-EX 260
CML720i-R20-610.A/CN-M12-EX 260
CML720i-R20-770.A/CN-M12-EX 260
CML720i-R20-790.A/CN-M12 257
CML720i-R20-790.A/CV-M12 257
CML720i-R20-790.A/D3-M12 257
CML720i-R20-790.A/L-M12 257
CML720i-R20-790.A/PB-M12 257
CML720i-R20-790.A/PN-M12 257
CML720i-R20-790.R/CN-M12 257
CML720i-R20-790.R/CV-M12 257
CML720i-R20-790.R/D3-M12 257
CML720i-R20-790.R/L-M12 257
CML720i-R20-790.R/PB-M12 257
CML720i-R20-790.R/PN-M12 257
CML720i-R20-930.A/CN-M12-EX 260
CML720i-R40-930.A/CN-M12 257
CML720i-R40-930.A/CV-M12 257
CML720i-R40-930.A/D3-M12 257
CML720i-R40-930.A/L-M12 257
CML720i-R40-930.A/PB-M12 257
CML720i-R40-930.A/PN-M12 257
CML720i-R40-930.R/CN-M12 257
CML720i-R40-930.R/CV-M12 257
CML720i-R40-930.R/D3-M12 257
CML720i-R40-930.R/L-M12 257
CML720i-R40-930.R/PB-M12 257
CML720i-R40-930.R/PN-M12 257
CML720i-T05-800.A-M12 256
CML720i-T05-800.R-M12 256
CML720i-T10-620.A-M12-EX 260
CML720i-T10-780.A-M12-EX 260
CML720i-T10-800.A-M12 256
CML720i-T10-800.R-M12 256
CML720i-T10-940.A-M12-EX 260
CML720i-T20-610.A-M12-EX 260
CML720i-T20-770.A-M12-EX 260
CML720i-T20-790.A-M12 257
CML720i-T20-790.R-M12 257
CML720i-T20-930.A-M12-EX 260
CML720i-T40-930.A-M12 257
CML720i-T40-930.R-M12 257
CML730i-R05-800.A/CN-M12 261
CML730i-R05-800.A/CV-M12 261
CML730i-R05-800.A/CV-PS-M12 261
CML730i-R05-800.A/D3-M12 261
CML730i-R05-800.A/L-M12 261
CML730i-R05-800.A/PB-M12 261
CML730i-R05-800.A/PN-M12 261
CML730i-R05-800.R/CN-M12 261
CML730i-R05-800.R/CV-M12 261
CML730i-R05-800.R/CV-PS-M12 261
CML730i-R05-800.R/D3-M12 261
CML730i-R05-800.R/L-M12 261
CML730i-R05-800.R/PB-M12 261
CML730i-R05-800.R/PN-M12 261
CML730i-R10-800.A/CN-M12 261
CML730i-R10-800.A/CV-M12 261
CML730i-R10-800.A/D3-M12 261
CML730i-R10-800.A/L-M12 261
CML730i-R10-800.A/PB-M12 261
CML730i-R10-800.A/PN-M12 261
CML730i-R10-800.R/CN-M12 262
CML730i-R10-800.R/CV-M12 262
CML730i-R10-800.R/D3-M12 262
CML730i-R10-800.R/L-M12 262
CML730i-R10-800.R/PB-M12 262
CML730i-R10-800.R/PN-M12 262
CML730i-R20-790.A/CN-M12 262
CML730i-R20-790.A/CV-M12 262
CML730i-R20-790.A/D3-M12 262
CML730i-R20-790.A/L-M12 262
CML730i-R20-790.A/PB-M12 262
CML730i-R20-790.A/PN-M12 262
CML730i-R20-790.R/CN-M12 262
CML730i-R20-790.R/CV-M12 262
CML730i-R20-790.R/D3-M12 262
CML730i-R20-790.R/L-M12 262
CML730i-R20-790.R/PB-M12 262
CML730i-R20-790.R/PN-M12 262
CML730i-R40-930.A/CN-M12 262
CML730i-R40-930.A/CV-M12 262
CML730i-R40-930.A/D3-M12 262
CML730i-R40-930.A/L-M12 262
CML730i-R40-930.A/PB-M12 262
CML730i-R40-930.A/PN-M12 262
CML730i-R40-930.R/CN-M12 262
CML730i-R40-930.R/CV-M12 262
CML730i-R40-930.R/D3-M12 262
CML730i-R40-930.R/L-M12 262
CML730i-R40-930.R/PB-M12 262
CML730i-R40-930.R/PN-M12 262
CML730i-T05-800.A-M12 261
CML730i-T05-800.A-PS-M12 261
CML730i-T05-800.R-M12 261
CML730i-T05-800.R-PS-M12 261
CML730i-T10-800.A-M12 261
CML730i-T10-800.R-M12 262
CML730i-T20-790.A-M12 262
CML730i-T20-790.R-M12 262
CML730i-T40-930.A-M12 262
CML730i-T40-930.R-M12 262
CR50M2/R2-S5 422
CR50-Starterkit 422
CR55M2/R2 422
CR55M2/R2-150-M12.8 422
CR55M2/UB-1800-S6 422
CR100M0/R2 423
CR100M2/R2 423
CRT 20B M/N-12-001-S12 207
CRT 20B M/N-12-004-S12 207
CRT 20B M/N-60-001-S12 207
CRT 20B M/N-60-004-S12 207
CRT 20B M/P-12-001-S12 207
CRT 20B M/P-12-004-S12 207
CRT 20B M/P-60-001-S12 207
CRT 20B M/P-60-004-S12 207
CRT 448.L3/222-M12 208
CRT 448.L3/444-M12 208
CRT 448.S3/222-M12 208
CRT 448.S3/444-M12 208
CS-KRS/AS 387
CS-KRS/NM 387
CS-KRS/PS 387
CS-KRS/SE 387
CS-KRS/SS 387
CSL505 interface 187
CSL505-R05-35-M8 184
CSL505-R05-75-M8 184
CSL505-R05-115-M8 184
CSL505-R05-155-M8 184
CSL505-R05-195-M8 184
CSL505-R05-235-M8 184
CSL505-R05-275-M8 184
CSL505-R05-315-M8 184
CSL505-R05-355-M8 184
CSL505-R05-395-M8 184
CSL505-R12.5-88-M8 184
CSL505-R12.5-188-M8 184
CSL505-R12.5-288-M8 184
CSL505-R12.5-388-M8 184
CSL505-R12.5-488-M8 184
CSL505-R12.5-588-M8 184
CSL505-R12.5-688-M8 184
CSL505-R12.5-788-M8 184
CSL505-R12.5-888-M8 184
CSL505-R12.5-988-M8 184
CSL505-R25-175-M8 184
CSL505-R25-275-M8 184
CSL505-R25-375-M8 184
CSL505-R25-475-M8 184
CSL505-R25-575-M8 184
CSL505-R25-675-M8 184
CSL505-R25-775-M8 185
CSL505-R25-875-M8 185
CSL505-R25-975-M8 185
CSL505-R25-1075-M8 185
CSL505-R25-1175-M8 185
CSL505-R25-1275-M8 185
CSL505-R25-1375-M8 185
CSL505-R25-1475-M8 185
CSL505-R25-1575-M8 185
CSL505-R25-1675-M8 185
CSL505-R25-1775-M8 185
CSL505-R25-1875-M8 185
CSL505-R25-1975-M8 185
CSL505-R25-2175-M8 185
CSL505-R25-2375-M8 185
CSL505-R50-350-M8 185
CSL505-R50-750-M8 185
CSL505-R50-1150-M8 185
CSL505-R50-1550-M8 185
CSL505-R50-1950-M8 185
CSL505-R50-2350-M8 185
CSL505-R50-2750-M8 185
CSL505-R50-3150-M8 185
CSL505-R100-700-M8 185
CSL505-R100-1100-M8 185
CSL505-R100-1500-M8 185
CSL505-R100-1900-M8 185
CSL505-R100-2300-M8 185
CSL505-R100-2700-M8 185
CSL505-R100-3100-M8 185
CSL505-T05-35-M8 184
CSL505-T05-75-M8 184
CSL505-T05-115-M8 184
CSL505-T05-155-M8 184
CSL505-T05-195-M8 184
CSL505-T05-235-M8 184
CSL505-T05-275-M8 184
CSL505-T05-315-M8 184
CSL505-T05-355-M8 184
CSL505-T05-395-M8 184
CSL505-T12.5-88-M8 184
CSL505-T12.5-188-M8 184
CSL505-T12.5-288-M8 184
CSL505-T12.5-388-M8 184
CSL505-T12.5-488-M8 184
CSL505-T12.5-588-M8 184
CSL505-T12.5-688-M8 184
CSL505-T12.5-788-M8 184
CSL505-T12.5-888-M8 184
CSL505-T12.5-988-M8 184
CSL505-T25-175-M8 184
CSL505-T25-275-M8 184
CSL505-T25-375-M8 184
CSL505-T25-475-M8 184
CSL505-T25-575-M8 184
CSL505-T25-675-M8 184
CSL505-T25-775-M8 185
CSL505-T25-875-M8 185
CSL505-T25-975-M8 185
CSL505-T25-1075-M8 185
CSL505-T25-1175-M8 185
CSL505-T25-1275-M8 185
CSL505-T25-1375-M8 185
CSL505-T25-1475-M8 185
CSL505-T25-1575-M8 185
CSL505-T25-1675-M8 185
CSL505-T25-1775-M8 185
CSL505-T25-1875-M8 185
CSL505-T25-1975-M8 185
CSL505-T25-2175-M8 185
CSL505-T25-2375-M8 185
CSL505-T50-350-M8 185
CSL505-T50-750-M8 185
CSL505-T50-1150-M8 185
CSL505-T50-1550-M8 185
CSL505-T50-1950-M8 185
CSL505-T50-2350-M8 185

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Type designation. . . Page no.

CSL505-T50-2750-M8 185
CSL505-T50-3150-M8 185
CSL505-T100-700-M8 185
CSL505-T100-1100-M8 185
CSL505-T100-1500-M8 185
CSL505-T100-1900-M8 185
CSL505-T100-2300-M8 185
CSL505-T100-2700-M8 185
CSL505-T100-3100-M8 185
CSL710-R05-160.A/L-M12 188
CSL710-R05-240.A/L-M12 188
CSL710-R05-320.A/L-M12 188
CSL710-R05-400.A/L-M12 188
CSL710-R05-480.A/L-M12 188
CSL710-R05-560.A/L-M12 188
CSL710-R05-640.A/L-M12 188
CSL710-R05-720.A/L-M12 188
CSL710-R05-800.A/L-M12 188
CSL710-R05-880.A/L-M12 188
CSL710-R05-960.A/L-M12 188
CSL710-R05-1040.A/L-M12 188
CSL710-R05-1120.A/L-M12 188
CSL710-R05-1200.A/L-M12 188
CSL710-R05-1280.A/L-M12 188
CSL710-R05-1360.A/L-M12 188
CSL710-R05-1440.A/L-M12 188
CSL710-R05-1520.A/L-M12 188
CSL710-R05-1600.A/L-M12 188
CSL710-R05-1680.A/L-M12 188
CSL710-R05-1760.A/L-M12 188
CSL710-R05-1840.A/L-M12 188
CSL710-R05-1920.A/L-M12 188
CSL710-R05-2000.A/L-M12 189
CSL710-R05-2080.A/L-M12 189
CSL710-R05-2160.A/L-M12 189
CSL710-R05-2240.A/L-M12 189
CSL710-R05-2320.A/L-M12 189
CSL710-R05-2400.A/L-M12 189
CSL710-R05-2480.A/L-M12 189
CSL710-R05-2560.A/L-M12 189
CSL710-R05-2640.A/L-M12 189
CSL710-R05-2720.A/L-M12 189
CSL710-R05-2800.A/L-M12 189
CSL710-R05-2880.A/L-M12 189
CSL710-R05-2960.A/L-M12 189
CSL710-R10-160.A/L-M12 189
CSL710-R10-320.A/L-M12 189
CSL710-R10-480.A/L-M12 189
CSL710-R10-640.A/L-M12 189
CSL710-R10-800.A/L-M12 189
CSL710-R10-960.A/L-M12 189
CSL710-R10-1120.A/L-M12 189
CSL710-R10-1280.A/L-M12 189
CSL710-R10-1440.A/L-M12 189
CSL710-R10-1600.A/L-M12 189
CSL710-R10-1760.A/L-M12 189
CSL710-R10-1920.A/L-M12 189
CSL710-R10-2080.A/L-M12 189
CSL710-R10-2240.A/L-M12 189
CSL710-R10-2400.A/L-M12 189
CSL710-R10-2560.A/L-M12 189
CSL710-R10-2720.A/L-M12 189
CSL710-R10-2880.A/L-M12 189
CSL710-R20-150.A/L-M12 189
CSL710-R20-310.A/L-M12 189
CSL710-R20-470.A/L-M12 189
CSL710-R20-630.A/L-M12 189
CSL710-R20-790.A/L-M12 190
CSL710-R20-950.A/L-M12 190
CSL710-R20-1110.A/L-M12 190
CSL710-R20-1270.A/L-M12 190
CSL710-R20-1430.A/L-M12 190
CSL710-R20-1590.A/L-M12 190
CSL710-R20-1750.A/L-M12 190
CSL710-R20-1910.A/L-M12 190
CSL710-R20-2070.A/L-M12 190
CSL710-R20-2230.A/L-M12 190
CSL710-R20-2390.A/L-M12 190
CSL710-R20-2550.A/L-M12 190
CSL710-R20-2710.A/L-M12 190
CSL710-R20-2870.A/L-M12 190
CSL710-R40-290.A/L-M12 190
CSL710-R40-610.A/L-M12 190
CSL710-R40-930.A/L-M12 190
CSL710-R40-1250.A/L-M12 190
CSL710-R40-1570.A/L-M12 190
CSL710-R40-1890.A/L-M12 190
CSL710-R40-2210.A/L-M12 190
CSL710-R40-2530.A/L-M12 190
CSL710-R40-2850.A/L-M12 190
CSL710-T05-160.A-M12. 188
CSL710-T05-240.A-M12. 188
CSL710-T05-320.A-M12. 188
CSL710-T05-400.A-M12. 188
CSL710-T05-480.A-M12. 188
CSL710-T05-560.A-M12. 188
CSL710-T05-640.A-M12. 188
CSL710-T05-720.A-M12. 188
CSL710-T05-800.A-M12. 188
CSL710-T05-880.A-M12. 188
CSL710-T05-960.A-M12. 188
CSL710-T05-1040.A-M12. 188
CSL710-T05-1120.A-M12. 188
CSL710-T05-1200.A-M12. 188
CSL710-T05-1280.A-M12. 188
CSL710-T05-1360.A-M12. 188
CSL710-T05-1440.A-M12. 188
CSL710-T05-1520.A-M12. 188
CSL710-T05-1600.A-M12. 188
CSL710-T05-1680.A-M12. 188
CSL710-T05-1760.A-M12. 188
CSL710-T05-1840.A-M12. 188
CSL710-T05-1920.A-M12. 188
CSL710-T05-2000.A-M12. 189
CSL710-T05-2080.A-M12. 189
CSL710-T05-2160.A-M12. 189
CSL710-T05-2240.A-M12. 189
CSL710-T05-2320.A-M12. 189
CSL710-T05-2400.A-M12. 189
CSL710-T05-2480.A-M12. 189
CSL710-T05-2560.A-M12. 189
CSL710-T05-2640.A-M12. 189
CSL710-T05-2720.A-M12. 189
CSL710-T05-2800.A-M12. 189
CSL710-T05-2880.A-M12. 189
CSL710-T05-2960.A-M12. 189
CSL710-T10-160.A-M12. 189
CSL710-T10-320.A-M12. 189
CSL710-T10-480.A-M12. 189
CSL710-T10-640.A-M12. 189
CSL710-T10-800.A-M12. 189
CSL710-T10-960.A-M12. 189
CSL710-T10-1120.A-M12. 189
CSL710-T10-1280.A-M12. 189
CSL710-T10-1440.A-M12. 189
CSL710-T10-1600.A-M12. 189
CSL710-T10-1760.A-M12. 189
CSL710-T10-1920.A-M12. 189
CSL710-T10-2080.A-M12. 189
CSL710-T10-2240.A-M12. 189
CSL710-T10-2400.A-M12. 189
CSL710-T10-2560.A-M12. 189
CSL710-T10-2720.A-M12. 189
CSL710-T10-2880.A-M12. 189
CSL710-T20-150.A-M12. 189
CSL710-T20-310.A-M12. 189
CSL710-T20-470.A-M12. 189
CSL710-T20-630.A-M12. 189
CSL710-T20-790.A-M12. 190
CSL710-T20-950.A-M12. 190
CSL710-T20-1110.A-M12. 190
CSL710-T20-1270.A-M12. 190
CSL710-T20-1430.A-M12. 190
CSL710-T20-1590.A-M12. 190
CSL710-T20-1750.A-M12. 190
CSL710-T20-1910.A-M12. 190
CSL710-T20-2070.A-M12. 190
CSL710-T20-2230.A-M12. 190
CSL710-T20-2390.A-M12. 190
CSL710-T20-2550.A-M12. 190
CSL710-T20-2710.A-M12. 190
CSL710-T20-2870.A-M12. 190
CSL710-T40-290.A-M12. 190
CSL710-T40-610.A-M12. 190
CSL710-T40-930.A-M12. 190
CSL710-T40-1250.A-M12. 190
CSL710-T40-1570.A-M12. 190
CSL710-T40-1890.A-M12. 190
CSL710-T40-2210.A-M12. 190
CSL710-T40-2530.A-M12. 190
CSL710-T40-2850.A-M12. 190
CSR780-01-96/6WHE-M12. 192
CSR780-01-96/GWHE-M12 192
CSR780-01-432/6WHE-M12. 192
CSR780-01-432/GWHE-M12 192
CS-SC1/FR. 387
CS-SC2/FR. 387
CS-SC3/FR. 387
CS-SC4/FR. 387
CS-SC5/FR. 387
CS-SC6/FR. 387
CS-SC7/FR. 387
CS-SCF/FR. 387
CS-SCH/FR 387
CS-SCP/FR 386
CS-SI05/FR 386
CS-SI06/FR 386
CS-SI07/FR 386
CS-SI08/FR 386
CS-SIF/FR 386
CS-SIL/FR 386
CS-SIN/FR 386
CS-SIO/FR 386
CS-SMS/FR 386
CS-SMX/FR 386
CS-SRS/FR. 386
CS-SSF/FR. 386
CS-SSH/FR 386
CS-TR01/FR 387
CS-TR02/FR 387
CS-TR03/FR 387
CS-WT1/FR 386
D9-V1-G-SGSOSRBZ2 507
DC-900-S2 499
DC-1000-S2 499
DC-1070-S2 499
DC-1140-S2 499
DC-1300-S2 499
DC-1600-S2 499
DC-1900-S2 499
DC-2500-S2 499
DCR40-IFK 436
DCR40M2/R2 435
DCR40M2/R2-MTX 435
DCR50M2/R2 436
DCR80M2/R2-S5 437
DCR85M2/R2 437
DCR85M2/R2-150-M12.8 437
DCR 202i FIX-F1-102-R3. 430
DCR 202i FIX-F1-102-R3-G. 430
DCR 202i FIX-F1-102-R3-G-V 430
DCR 202i FIX-F1-102-R3-P 430
DCR 202i FIX-F1-102-R3-V 430
DCR 202i FIX-L1-102-R3. 430
DCR 202i FIX-L1-102-R3-G. 430
DCR 202i FIX-M1-102-R3 430
DCR 202i FIX-M1-102-R3-G 430
DCR 202i FIX-M1-102-R3-G-V 430
DCR 202i FIX-M1-102-R3-P 430
DCR 202i FIX-M1-102-R3-V 430
DCR 202i FIX-N1-102-R3 430

DCR 202i FIX-N1-102-R3-G 430
DCR 202i FIX-N1-102-R3-G-V. 430
DCR 202i FIX-N1-102-R3-P 430
DCR 202i FIX-N1-102-R3-V. 430
DCR 202i FIX-U2-102-R3 430
DCR 248i FIX-F2-102-R3. 431
DCR 248i FIX-F2-102-R3-G. 431
DCR 248i FIX-F2-102-R3-P. 431
DCR 248i FIX-L1-102-R3. 431
DCR 248i FIX-L1-102-R3-G. 431
DCR 248i FIX-M1-102-R3 431
DCR 248i FIX-M1-102-R3-G 431
DCR 248i FIX-M1-102-R3-P 431
DCR 248i FIX-N1-102-R3 431
DCR 248i FIX-N1-102-R3-G 431
DCR 248i FIX-N1-102-R3-P 431
DDLS 200/30.1-10-W 465
DDLS 200/30.1-20-W 466
DDLS 200/30.2-10-W 465
DDLS 200/30.2-20-W 466
DDLS 200/80.1-10-W 465
DDLS 200/80.1-10-W-H 465
DDLS 200/80.1-20-W 466
DDLS 200/80.1-50-W-M12 465
DDLS 200/80.2-10-W 465
DDLS 200/80.2-10-W-H 465
DDLS 200/80.2-20-W 466
DDLS 200/80.2-50-W-M12 465
DDLS 200/120.1-10 465
DDLS 200/120.1-10-H 465
DDLS 200/120.1-10-H-M12 466
DDLS 200/120.1-10-M12 466
DDLS 200/120.1-20 466
DDLS 200/120.1-20-H 466
DDLS 200/120.1-40 467
DDLS 200/120.1-40-H 467
DDLS 200/120.1-50 465
DDLS 200/120.1-50-H 465
DDLS 200/120.1-50-M12 465
DDLS 200/120.2-10 465
DDLS 200/120.2-10-H 465
DDLS 200/120.2-10-H-M12 466
DDLS 200/120.2-10-M12 466
DDLS 200/120.2-20 466
DDLS 200/120.2-20-H 466
DDLS 200/120.2-40 467
DDLS 200/120.2-40-H 467
DDLS 200/120.2-50 465
DDLS 200/120.2-50-H 465
DDLS 200/120.2-50-M12 465
DDLS 200/200.1-10 466
DDLS 200/200.1-10-H 466
DDLS 200/200.1-10-H-M12 466
DDLS 200/200.1-10-M12 466
DDLS 200/200.1-20 466
DDLS 200/200.1-20-H 466
DDLS 200/200.1-40 467
DDLS 200/200.1-40-H 467
DDLS 200/200.1-50 465
DDLS 200/200.1-50-H 465
DDLS 200/200.1-50-M12 465
DDLS 200/200.2-10 466
DDLS 200/200.2-10-H 466
DDLS 200/200.2-10-H-M12 466
DDLS 200/200.2-10-M12 466
DDLS 200/200.2-20 466
DDLS 200/200.2-20-H 466
DDLS 200/200.2-40 467
DDLS 200/200.2-40-H 467
DDLS 200/200.2-50 465
DDLS 200/200.2-50-H 465
DDLS 200/200.2-50-M12 465
DDLS 200/300.1-10 466
DDLS 200/300.1-10-H 466
DDLS 200/300.1-10-H-M12 466
DDLS 200/300.1-10-M12 466
DDLS 200/300.1-20 466
DDLS 200/300.1-20-H 466
DDLS 200/300.1-40 467
DDLS 200/300.1-40-H 467
DDLS 200/300.1-50 465
DDLS 200/300.1-50-H 465
DDLS 200/300.2-10 466
DDLS 200/300.2-10-H 466
DDLS 200/300.2-10-H-M12 466
DDLS 200/300.2-10-M12 466
DDLS 200/300.2-20 466
DDLS 200/300.2-20-H 466
DDLS 200/300.2-40 467
DDLS 200/300.2-40-H 467
DDLS 200/300.2-50 465
DDLS 200/300.2-50-H 465
DDLS 200/500.1-10 466
DDLS 200/500.1-10-H 466
DDLS 200/500.1-20 467
DDLS 200/500.1-20-H 467
DDLS 200/500.2-10 466
DDLS 200/500.2-10-H 466
DDLS 200/500.2-20 467
DDLS 200/500.2-20-H 467
DDLS 508 40.3 461
DDLS 508 40.3 H 461
DDLS 508 40.3 L 461
DDLS 508 40.3 L H. 461
DDLS 508 40.4 461
DDLS 508 40.4 H 461
DDLS 508 40.4 L 461
DDLS 508 40.4 L H. 461
DDLS 508 120.3 461
DDLS 508 120.3 H 461
DDLS 508 120.3 L 461
DDLS 508 120.3 L H. 461
DDLS 508 120.4 461
DDLS 508 120.4 H 461
DDLS 508 120.4 L 461
DDLS 508 120.4 L H. 461
DDLS 508 200.3 462
DDLS 508 200.3 H 462
DDLS 508 200.3 L 462
DDLS 508 200.3 L H. 462
DDLS 508 200.4 462
DDLS 508 200.4 H 462
DDLS 508 200.4 L 462
DDLS 508 200.4 L H. 462
DDLS 508i 40.3 461
DDLS 508i 40.3 H. 461
DDLS 508i 40.3 L 461
DDLS 508i 40.3 L H 461
DDLS 508i 40.4 461
DDLS 508i 40.4 H. 461
DDLS 508i 40.4 L 461
DDLS 508i 40.4 L H 461
DDLS 508i 120.3. 461
DDLS 508i 120.3 H. 461
DDLS 508i 120.3 L 462
DDLS 508i 120.3 L H 462
DDLS 508i 120.4. 461
DDLS 508i 120.4 H. 461
DDLS 508i 120.4 L 462
DDLS 508i 120.4 L H 462
DDLS 508i 200.3. 462
DDLS 508i 200.3 H. 462
DDLS 508i 200.3 L 462
DDLS 508i 200.3 L H 462
DDLS 508i 200.4. 462
DDLS 508i 200.4 H. 462
DDLS 508i 200.4 L 462
DDLS 508i 200.4 L H 462
DDLS 548i 40.3 462
DDLS 548i 40.3 H. 462
DDLS 548i 40.3 L 462
DDLS 548i 40.3 L H 462
DDLS 548i 40.4 462
DDLS 548i 40.4 H. 462
DDLS 548i 40.4 L 462
DDLS 548i 40.4 L H 462
DDLS 548i 120.3. 462
DDLS 548i 120.3 H. 462
DDLS 548i 120.3 L 462
DDLS 548i 120.3 L H 462
DDLS 548i 120.4. 462
DDLS 548i 120.4 H. 462
DDLS 548i 120.4 L 462
DDLS 548i 120.4 L H 462
DDLS 548i 200.3. 462
DDLS 548i 200.3 H. 462
DDLS 548i 200.3 L 463
DDLS 548i 200.3 L H 463
DDLS 548i 200.4. 462
DDLS 548i 200.4 H. 462
DDLS 548i 200.4 L 463
DDLS 548i 200.4 L H 463
D-ET1. 410
D-ET1. 417
D-ET1. 421
D-ET1. 464
D-ET1. 492
D M8A-3P-SK. 492
D M8A-4P-SK. 492
D M12A-12P. 493
DMU318-300/CT-M12. 225
DMU318-300/VT-M12 225
DMU318-400.3/2CK-M12 225
DMU318-400.3/2VK-M12 225
DMU318-400.3/4CK-M12 225
DMU318-400.3/4VK-M12 225
DMU318-400.W3/2CK-M12 225
DMU318-400.W3/2VK-M12. 225
DMU318-400.W3/4CK-M12 225
DMU318-400.W3/4VK-M12. 225
DMU318-1200/CT-M12. 225
DMU318-1200/VT-M12 225
DMU318-1600.3/2CK-M12 225
DMU318-1600.3/2VK-M12 225
DMU318-1600.3/4CK-M12 225
DMU318-1600.3/4VK-M12 225
DMU318-1600.W3/2CK-M12 225
DMU318-1600.W3/2VK-M12. 225
DMU318-1600.W3/4CK-M12 225
DMU318-1600.W3/4VK-M12. 225
DMU330-3500.3/2CK-M12 227
DMU330-3500.3/2CK-M12 230
DMU330-3500.3/2VK-M12 227
DMU330-3500.3/2VK-M12 230
DMU330-3500.3/4CK-M12 227
DMU330-3500.3/4CK-M12 230
DMU330-3500.3/4VK-M12 227
DMU330-3500.3/4VK-M12 230
DMU330-6000.3/4CK-M12 227
DMU330-6000.3/4CK-M12 230
DMU418B-400.X3/LTC-M12 228
DMU418B-400.X3/LTV-M12 228
DMU418B-1300.X3/LTC-M12 228
DMU418B-1300.X3/LTV-M12 228
DMU430B-3000.X3/LTC-M12 230
DMU430B-3000.X3/LTV-M12 230
E4-MH1 505
E4-MP1-100. 505
E4-MP1-250. 505
E4-MP1-400. 505
E4-MW1 505
E4-MW2 505
E4-V1-BZ1 506
E4-V1-DB-B 506
E4-V1-DB-C 506
E4-V1-DB-G 506
E4-V1-DB-O 506
E4-V1-DB-R 506
E4-V1-DB-Y 506
E4-V1-DS-B 506
E4-V1-DS-C 506

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Type designation. . . Page no.

E4-V1-DS-G . . . 506
E4-V1-DS-O . . . 506
E4-V1-DS-R . . . 506
E4-V1-DS-Y . . . 506
E7-MH1 . . . 505
E7-MP1-100 . . . 505
E7-MP1-250 . . . 505
E7-MP1-400 . . . 505
E7-MW1 . . . 505
E7-MW2 . . . 505
E7-V1-BZ1 . . . 506
E7-V1-DB-B . . . 506
E7-V1-DB-C . . . 506
E7-V1-DB-G . . . 506
E7-V1-DB-O . . . 506
E7-V1-DB-R . . . 506
E7-V1-DB-Y . . . 506
E7-V1-DS-B . . . 506
E7-V1-DS-C . . . 506
E7-V1-DS-G . . . 506
E7-V1-DS-O . . . 506
E7-V1-DS-R . . . 506
E7-V1-DS-Y . . . 506
EMS-V1-Q94-A32 . . . 507
EMS-V3-Q94-A32 . . . 507
ERS200-M0C3-M20-HAL . . . 350
ERS200-M0C3-M20-HAR . . . 350
ERS200-M0C3-M20-HLR . . . 350
ERS200-M1C1-M20-HAL . . . 350
ERS200-M1C1-M20-HAR . . . 350
ERS200-M1C3-M20-HLR . . . 350
ERS200-M4C1-M12-HLR . . . 350
ERS200-M4C1-M20-HLR . . . 350
ERS200-M4C3-M20-HAL . . . 350
ERS200-M4C3-M20-HAR . . . 350
ERS200-M4C3-M20-HLR . . . 350
ESB200-4KR-C . . . 352
ESB200-4KR-M12p . . . 352
ESB200-4TR-C . . . 352
ESB200-4TR-M12p . . . 352
ET5.3/2-M8.3 . . . 38
ET5.3/2N . . . 38
ET5.3/2N-200-M12 . . . 38
ET5.3/2N-M8 . . . 38
ET5.3/4-M8.3 . . . 38
ET5.3/4P . . . 38
ET5.3/4P-200-M12 . . . 38
ET5.3/4P-M8 . . . 38
ET5I.3/2N . . . 38
ET5I.3/4P . . . 38
ET5I.3/4P-M8 . . . 38
ET28.3/2N . . . 64
ET28.3/2N-200-M12 . . . 64
ET28.3/2N-M12 . . . 64
ET28.3/4P . . . 64
ET28.3/4P-200-M12 . . . 64
ET28.3/4P-M12 . . . 64
ET318B.3/2N . . . 97
ET318B.3/2N-M12 . . . 97
ET318B.3/4P . . . 97
ET318B.3/4P-M12 . . . 97
ET318BI.3/2N . . . 97
ET318BI.3/2N-M12 . . . 97
ET318BI.3/4P . . . 97
ET318BI.3/4P-M12 . . . 97
ET318BI-400F.3/2N . . . 97
ET318B.W3/2N . . . 97
ET318B.W3/2N-M12 . . . 97
ET318B.W3/4P . . . 97
ET318B.W3/4P-M12 . . . 97
ET328.3/2N . . . 105
ET328.3/2N-M12 . . . 104
ET328.3/4P . . . 105
ET328.3/4P-M12 . . . 105
ET328I-400F.3/2N . . . 105
ET328I-400F.3/2N-M12 . . . 105
ET328I-400F.3/4P . . . 105
ET328I-400F.3/4P-M12 . . . 105
ET328.W3/2N . . . 104
ET328.W3/2N-M12 . . . 104
ET328.W3/4P . . . 104
ET328.W3/4P-M12 . . . 104
FBA-V1-Q94-O . . . 507
FBA-V1-Q94-R . . . 507
FBA-V3-Q94-O . . . 507
FBA-V3-Q94-R . . . 507
FRK 92/3-300 L Ex . . . 111
FRK 95/44-150 L . . . 86
FRK 95/44-350 L . . . 86
FRKR 95/44-150 L . . . 86
FRKR 95/44-350 L . . . 86
FT5.3/2-M8.3 . . . 38
FT5.3/2N . . . 38
FT5.3/2N-200-M12 . . . 38
FT5.3/2N-M8 . . . 38
FT5.3/4-M8.3 . . . 38
FT5.3/4P . . . 38
FT5.3/4P-200-M12 . . . 38
FT5.3/4P-M8 . . . 38
FT5I.3/2N . . . 38
FT5I.3/2N-M8 . . . 38
FT5I.3/4P . . . 38
FT5I.3/4P-200-M8P1 . . . 38
FT5I.3/4P-200-M12P1 . . . 38
FT5I.3/4P-M8 . . . 38
FT5I.X3/2N . . . 38
FT5I.X3/2N-M8 . . . 38
FT5I.X3/4P . . . 38
FT5I.X3/4P-M8 . . . 38
FT28.3/2N . . . 64
FT28.3/2N-200-M12 . . . 64
FT28.3/2N-M12 . . . 64
FT28.3/4P . . . 64
FT28.3/4P-200-M12 . . . 64
FT28.3/4P-M12 . . . 64
FT318B.3/2N . . . 97
FT318B.3/2N-M12 . . . 97
FT318B.3/4P . . . 97
FT318B.3/4P-M12 . . . 97
FT318BI.3/2N . . . 97
FT318BI.3/2N-M12 . . . 97
FT318BI.3/4P . . . 97
FT318BI.3/4P-M12 . . . 97
FT318BI-100F.X/4P-M12 . . . 97
FT318BI.X3/2N . . . 98
FT318BI.X3/2N-M12 . . . 97
FT318BI.X3/4P . . . 98
FT318BI.X3/4P-M12 . . . 97
FT318B.W3/2N . . . 97
FT318B.W3/2N-M12 . . . 97
FT318B.W3/4P . . . 97
FT318B.W3/4P-M12 . . . 97
FT328.3/2N . . . 104
FT328.3/2N-M12 . . . 104
FT328.3/4P . . . 104
FT328.3/4P-M12 . . . 104
FT328I.3/4P-M12P1 . . . 105
FT328I.X3/2N . . . 98
FT328I.X3/2N . . . 105
FT328I.X3/2N-M12 . . . 98
FT328I.X3/2N-M12 . . . 105
FT328I.X3/4P . . . 98
FT328I.X3/4P . . . 105
FT328I.X3/4P-M12 . . . 98
FT328I.X3/4P-M12 . . . 105
FT328.W3/2N . . . 105
FT328.W3/2N-M12 . . . 105
FT328.W3/4P . . . 105
FT328.W3/4P-M12 . . . 105
GF-ETB-SS-305-SM . . . 171
GF-ETG-BR-305-IQ . . . 171
GF-ETG-BR-310-IQ . . . 170
GF-ETG-BR-605-IQ . . . 171
GF-ETG-BR-610-IQ . . . 171
GF-ETG-BR-630-IQ . . . 170
GF-ETG-BR-650-IQ . . . 170
GF-ETG-BR-710-SU . . . 171
GF-ETG-SI-305-IQ . . . 171
GF-ETG-SI-310-IQ . . . 171
GF-ETG-SI-605-IQ . . . 171
GF-ETG-SI-610-IQ . . . 171
GF-ETG-SI-630-IQ . . . 170
GF-ETG-SI-650-IQ . . . 170
GF-ETG-SI-710-SU . . . 171
GF-ETG-SS-305-IQ . . . 171
GF-ETG-SS-310-IQ . . . 171
GF-ETG-SS-605-IQ . . . 171
GF-ETG-SS-610-IQ . . . 171
GF-ETG-SS-630-IQ . . . 170
GF-ETG-SS-650-IQ . . . 170
GF-ETG-SS-710-SU . . . 171
GF-ETM-BR-402-IM . . . 171
GF-LB-BR-405-IQ . . . 170
GF-LB-BR-410-IQ . . . 170
GF-LB-BR-430-IQ . . . 170
GF-LB-BR-450-IQ . . . 170
GF-LB-BR-610-SD . . . 170
GF-LB-BR-610-SU . . . 170
GF-LB-BR-630-SD . . . 170
GF-LB-BR-810-SF . . . 170
GF-LB-SI-405-IQ . . . 170
GF-LB-SI-410-IQ . . . 170
GF-LB-SI-430-IQ . . . 170
GF-LB-SI-450-IQ . . . 170
GF-LB-SI-610-SD . . . 170
GF-LB-SI-610-SU . . . 170
GF-LB-SI-630-SD . . . 170
GF-LB-SI-810-SF . . . 170
GF-LB-SS-405-IQ . . . 170
GF-LB-SS-410-IQ . . . 170
GF-LB-SS-430-IQ . . . 170
GF-LB-SS-450-IQ . . . 170
GF-LB-SS-610-SD . . . 170
GF-LB-SS-610-SU . . . 170
GF-LB-SS-630-SD . . . 170
GF-LB-SS-810-SF . . . 170
GF-LB-SS-830-SM . . . 170
GK 14/24 L . . . 178
GK 14/24 L.2 . . . 178
GS 04M/N-30-S8 . . . 173
GS 04M/N-50-S8 . . . 173
GS 04M/N-80-S8 . . . 173
GS 04M/N-120-S8 . . . 173
GS 04M/N-220-S8 . . . 173
GS 04M/P-20-S8 . . . 173
GS 04M/P-30-S8 . . . 173
GS 04M/P-50-S8 . . . 173
GS 04M/P-80-S8 . . . 173
GS 04M/P-120-S8 . . . 173
GS 04M/P-220-S8 . . . 173
GS 61/6 . . . 175
GS 61/6.2 . . . 175
GS 61/6.2,200-S12 . . . 175
GS 61/6.2-S8 . . . 175
GS 61/6.2-S8.3 . . . 175
GS 61/6.2-S8V . . . 175
GS 61/6.3 . . . 175
GS 61/6.3,200-S12 . . . 175
GS 61/6,200-S12 . . . 175
GS 61/6D . . . 175
GS 61/6D.2 . . . 175
GS 61/6D.2,200-S12 . . . 175
GS 61/6D.2-S8 . . . 175
GS 61/6D.2-S8.3 . . . 175
GS 61/6D.2-S8V . . . 175
GS 61/6D,200-S12 . . . 175
GS 61/6D-S8 . . . 175
GS 61/6D-S8.3 . . . 175
GS 61/6D-S8V . . . 175
GS 61/6-S8 . . . 175
GS 61/6-S8.3 . . . 175

GS 61/6-S8V 175
GS 63B/6 176
GS 63B/6.01,200-S12. 176
GS 63B/6.3,200-S8 176
GS 63B/6.3-S8 176
GS 63B/6.3-S8V. 176
GS 63B/6,200-S12 176
GS 63B/6D 177
GS 63B/6D.3-S8. 176
GS 63B/6D.3-S8V. 176
GS 63B/6D,200-S8. 177
GS 63B/6D,200-S12. 177
GS 63B/6D-S8 176
GS 63B/6-S8 176
GS 63B/6-S8V 176
GS 754B/C4-27-S12. 268
GS 754B/C4-98-S12. 268
GS 754B/D3-27-S12. 268
GS 754B/D3-98-S12. 268
GS 754B/D24-27-S12. 268
GS 754B/D24-98-S12. 268
GS 754B/V4-27-S12. 268
GS 754B/V4-98-S12. 268
GSL 04M/N-30-S8 173
GSL 04M/P-30-S8 173
GSL 04M/P-50-S8 173
GSL 04M/P-80-S8 173
GSU 06/24-2 179
GSU 06/24-2-S8. 179
GSU 06/24D-2 179
GSU 06/24D-2-S8. 179
GSU 14D/66.3-S12. 180
GSU 14D/66D.3-S12. 180
GSU 14D/66D.31-S12. 180
HCR 6200 DPM 441
Holder for Z-3010 498
HRT 8/66.6-350-S12 43
HRT 25B/L6T.31-2500 60
HRT 25B/L6T.31-2500-S12. 59
HRT 25B/L6X.31-2500 60
HRT 25B/L6X.31-2500-S12 60
HRT 25B/L69.31-2500 60
HRT 25B/L69.31-2500-S12. 60
HRT 46B/7-S12 70
HRT 46B/66,200-S12 S-Ex n 115
HRT 55/44,200-S12 82
HRT 96K/P-1600.1-1200-41 92
HRT 96K/P-1600-1200-21 92
HRT 96K/P-1600-1200-41 92
HRT 96K/P-1600-1800-41 91
HRT 96K/P-1607-1200-49 92
HRT 96K/P-1630-800-21 91
HRT 96K/P-1630-800-41 91
HRT 96K/P-1631-800-47 91
HRT 96K/P-1640-800-41 91
HRT 96K/R-1680-1200-25 92
HRT 96K/R-1690-1200-25 92
HRT 96M/A-1660-1200-44 92
HRT 96M/A-1670-800-44 91
HRT 96M/N-1606-1200-27 92
HRT 96M/P-1600-2000-42 91
HRT 96M/P-1610-1200-21 92
HRT 96M/P-1610-1200-41 92
HRT 96M/P-1620-1200-21 92
HRT 96M/P-1620-1200-41 92
HRT 96M/P-1620-1800-41 91
HRT 96M/P-1630-800-41 91
HRT 96M/P-1636-800-41 91
HRT 96M/P-1639-800-21 Ex n 116
HRT 96M/P-1640-800-21 91
HRT 96M/P-1640-800-41 91
HRT 96M/P-1649-800-21 Ex n 116
HRT 96M/P-3604-2000-42 91
HRT 96M/R-1680-1200-25 92
HRT 96M/R-1690-1200-25 92
HRTIL 96BM/6.49.02S-S12. 93
HRTIL 96B M/66.01S-S12. 93
HRTIL 96B M/66.03S-S12. 93
HRTIL 96BM/66.04S-S12 93
HRTIL 96B M/C66.01S-S12 93
HRTIL 96BM/C66.02S-S12 93
HRTL 8/24-150-S12 43
HRTL 8/24-350-S12 43
HRTL 8/66.09-150-S12. 43
HRTL 8/66-150-S12 43
HRTL 8/66-350,5000 43
HRTL 8/66-350-S12 43
HRTL 46B/66,200-S12 S-Ex n. 114
HRTL 53/66,5000 78
HRTL 53/66.C2-XL-S8 78
HRTL 53/66-S8. 78
HRTL 55/66,200-S12 82
HRTL 55/66,5000 82
HRTL 55/66-S8. 82
HRTL 96B M/6.4.02S-S12. 92
HRTL 96B M/6.09.06S-S12. 92
HRTL 96B M/6.9S-S12 92
HRTL 96B M/6.49.02S-S12. 92
HRTL 96B M/66.01-S12 92
HRTL 96B M/66.01S-S12 92
HRTL 96B M/66.02S-S12 92
HRTL 96B M/66.04S-S12 92
HRTL 96B M/66.9.03S-S12. 92
HRTL 96B M/666.01S-S12 92
HRTL 96B M/C66.01.C1S-S12 93
HRTL 96B M/C66.01S-S12 92
HRTL 96B M/C66.03S-S12 93
HRTL 96B M/V66.01S-S12 93
HRTR 2/2-50F,150-S8.3 27
HRTR 2/42-15F. 28
HRTR 2/42-15F,150-S8. 27
HRTR 2/42-15F,150-S12. 27
HRTR 2/42-30F. 27
HRTR 2/42-30F,150-S8. 27
HRTR 2/42-30F,150-S12. 27
HRTR 2/42-50F. 27
HRTR 2/42-50F,150-S8. 27
HRTR 2/42-50F,150-S12. 27
HRTR 2/42D-15F 28
HRTR 2/42D-15F,150-S8 27
HRTR 2/42D-15F,150-S12 27
HRTR 2/42D-30F 27
HRTR 2/42D-30F,150-S8 27
HRTR 2/42D-30F,150-S12 27
HRTR 2/42D-50F 27
HRTR 2/42D-50F,150-S8 27
HRTR 2/42D-50F,150-S12 27
HRTR 8/44-350-S12 43
HRTR 8/66-350,5000 43
HRTR 8/66-350-S12 43
HRTR 25B/66-XL 60
HRTR 25B/66-XL,200-S8 60
HRTR 25B/66-XL,200-S12 60
HRTR 25B/66-XL-S12. 60
HRTR 46B/6.22,200-S12 70
HRTR 46B/6.22-S12 69
HRTR 46B/66,200-S12 S-Ex n 115
HRTR 46B/66-S-S12 70
HRTR 53/66,5000. 78
HRTR 53/66-S8 78
HRTR 53/66-S,5000 78
HRTR 53/66-S-S8. 78
HRTR 53/66-V-S8. 78
HRTR 53/66-VXL-S8 78
HRTR 53/66-XL-S8 78
HRTR 55/22-XL,5000 82
HRTR 55/44-XL,5000 82
HRTR 55/66,200-S12 82
HRTR 55/66,5000. 82
HRTR 55/66-S8 82
HRTR 55/66-S8 Ex 112
HRTR 55/66-S,200-S12 82
HRTR 55/66-S,5000 82
HRTR 55/66-S-S8. 82
HRTR 55/66-V,200-S12. 82
HRTR 55/66-XL,200-S12 82
HRTR 55/66-XL,5000 82
HRTR 55/66-XL-S8. 82
HRTR 318K/66-120 98
HRTR 318K/66-120-S12. 98
HRTR 318M/66-120 101
HRTR 318M/66-120-S12 101
HRTU 412/2NC.2-S12 157
HRTU 412/2NC.2-S-S12. 157
HRTU 412/2NO.2-S12 157
HRTU 412/2NO.2-S-S12. 157
HRTU 412/4NC.2-S12 157
HRTU 412/4NC.2-S-S12. 157
HRTU 412/4NO.2-S12 157
HRTU 412/4NO.2-S-S12. 157
HRTU 420/2NC.2-L-S8 152
HRTU 420/2NC.2-S8 152
HRTU 420/2NC.2-S-S8. 152
HRTU 420/2NO.2-L-S8. 152
HRTU 420/2NO.2-S8 152
HRTU 420/2NO.2-S-S8. 152
HRTU 420/4NC.2-L-S8. 152
HRTU 420/4NC.2-S8 152
HRTU 420/4NC.2-S-S8. 152
HRTU 420/4NO.2-L-S8. 152
HRTU 420/4NO.2-S8 152
HRTU 420/4NO.2-S-S8. 152
HS 6608 DPM. 441
HS 6678 DPM. 441
HT3C/2-M8.3 32
HT3C/2N-M8 32
HT3C/4-M8.3 32
HT3C/4P-M8 32
HT3C/4X-M8. 32
HT3C/6G-M8 32
HT3CI/4P-M8 32
HT3C/PX-M8 32
HT3C.S/2N-M8 32
HT3C.S/4-M8.3 32
HT3C.S/4P-M8 32
HT3C.S/6G-M8 32
HT3C.S/6-M8.3 32
HT3C.V/2N-M8 33
HT3C.V/4P-M8 33
HT3C.V/4X-M8 33
HT3C.VXL/6G-M8 33
HT3C.XL/2N-M8 32
HT3C.XL/4P-M8 32
HT5.1/2 39
HT5.1/2X-M8 39
HT5.1/4 39
HT5.1/4X-200-M12 39
HT5.1/4X-M8 39
HT5.1/P 39
HT10L1.3/L6T. 46
HT10L1.3/L6T,200-M12 45
HT10L1.3/L6T-M12. 45
HT10L1.3/L6T.P1-M12 45
HT10L1.3/L6X. 46
HT10L1.3/L6X,200-M12 45
HT10L1.3/L6X-M12. 45
HT10L1.3/L66. 46
HT10L1.3/L66,200-M12 45
HT10L1.3/L66-M12. 45
HT10L1.3/L69. 46
HT10L1.3/L69,200-M12 46
HT10L1.3/L69-M12. 45
HT10L1-25M.3/L69. 45
HT10L1-25M.3/L69,200-M12 45
HT10L1-25M.3/L69-M12. 45
HT15/2 49
HT15/2X-200-M12 49
HT15/2X-M12 49
HT15/4 49
HT15/4X-200-M12 49
HT15/4X-M12 49

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Type designation. . . Page no.

HT15I/2 . . . 49
HT15I/2X-200-M12 . . . 49
HT15I/2X-M12 . . . 49
HT15I/4 . . . 49
HT15I/4X-200-M12 . . . 49
HT15I/4X-M12 . . . 49
HT25C/2N . . . 59
HT25C/2N-200-M12 . . . 59
HT25C/2N-M8 . . . 59
HT25C/2N-M12 . . . 59
HT25C/4P . . . 59
HT25C/4P-200-M12 . . . 59
HT25C/4P-M8 . . . 59
HT25C/4P-M12 . . . 59
HT25CI/2N . . . 60
HT25CI/2N-200-M12 . . . 60
HT25CI/2N-M8 . . . 60
HT25CI/2N-M12 . . . 60
HT25CI/4P . . . 60
HT25CI/4P-200-M12 . . . 60
HT25CI/4P-M8 . . . 60
HT25CI/4P-M12 . . . 60
HT25C.S/2N . . . 60
HT25C.S/2N-200-M12 . . . 60
HT25C.S/2N-M8 . . . 60
HT25C.S/2N-M12 . . . 60
HT25C.S/4P . . . 60
HT25C.S/4P-200-M12 . . . 60
HT25C.S/4P-M8 . . . 60
HT25C.S/4P-M12 . . . 60
HT46C/2N . . . 69
HT46C/2N-M12 . . . 69
HT46C/4P . . . 69
HT46C/4P-200-M12 . . . 69
HT46C/4P-M12 . . . 69
HT46C/4W-M12 . . . 69
HT46C/4X-200-M12 . . . 69
HT46C/4X-M12 . . . 69
HT46C/48-M12 . . . 69
HT46C.E/4P-M12 . . . 69
HT46CI.01/4X-200-M12 . . . 70
HT46CI/2N . . . 70
HT46CI/2N-M12 . . . 70
HT46CI/4P . . . 70
HT46CI/4P-200-M12 . . . 70
HT46CI/4P-M12 . . . 70
HT46CI/4W-200-M12 . . . 70
HT46CI/4W-M12 . . . 70
HT46CI/4X-M12 . . . 70
HT46CI/48-M12 . . . 70
HT46CI.E/4P-M12 . . . 70
HT46CI/PX-200-M12 . . . 70
HT46CI/PX-M12 . . . 70
HT46CI.SL/4P-M12 . . . 70
HT46CI.SL/4X-200-M12 . . . 70
HT46CL1/2N-M12 . . . 69
HT46CL1/4P-200-M12 . . . 69
HT46CL1/4P-M12 . . . 69
HT46CL1/48-M12 . . . 69
HT46CL1/P9-M12 . . . 69
HT46CL2/2N-M12 . . . 69
HT46CL2/4P-200-M12 . . . 69
HT46CL2/4P-M12 . . . 69
HT46CL2/48-M12 . . . 69
HT46C/PX-200-M12 . . . 69
HT46C/PX-M12 . . . 69
HT46C.SL/4P-M12 . . . 70
HT46C.SL/4P-M12 . . . 70
HT46C.SL/4X-200-M12 . . . 70
HT46C.SL/4X-200-M12 . . . 70
HT49C/2N-TB . . . 74
HT49C/4P-TB . . . 74
HT49CI/4P-TB . . . 75
HT49CI.UCH/TS-TB . . . 75
HT49CI.UC/M4 . . . 75
HT49CI.UC/M4-TB . . . 75
HT49CI.UC/TS . . . 75
HT49CI.UC/TS-TB . . . 75
HT49C.UCH/TS-TB . . . 74
HT49C.UC/M4 . . . 74
HT49C.UC/M4-TB . . . 74
HT49C.UC/TS . . . 74
HT49C.UC/TS-TB . . . 74
HTK 82 . . . 511
HTK 82-24V . . . 511
HTU318-300/2T-M12 . . . 154
HTU318-300/4T-M12 . . . 154
HTU318-400.3/2NK-M12 . . . 154
HTU318-400.3/4PK-M12 . . . 154
HTU318-400.W3/2NK-M12 . . . 154
HTU318-400.W3/4PK-M12 . . . 154
HTU318-1200/2T-M12 . . . 154
HTU318-1200/4T-M12 . . . 154
HTU318-1600.3/2NK-M12 . . . 154
HTU318-1600.3/4PK-M12 . . . 154
HTU318-1600.W3/2NK-M12 . . . 155
HTU318-1600.W3/4PK-M12 . . . 154
HTU330-3500.3/2NK-M12 . . . 156
HTU330-3500.3/4PK-M12 . . . 156
HTU330-6000.3/4PK-M12 . . . 156
HTU418B-400/4T4-M12 . . . 158
HTU418B-400/4TX-M12 . . . 158
HTU418B-400/PTX-M12 . . . 158
HTU418B-400.W/4T4-M12 . . . 158
HTU418B-400.W/4TX-M12 . . . 158
HTU418B-400.X3/LT4-M12 . . . 158
HTU418B-700/4TX-M12 . . . 158
HTU418B-1000/4TX-M12 . . . 158
HTU418B-1000.W/4TX-M12 . . . 158
HTU418B-1300/4T4-M12 . . . 158
HTU418B-1300.W/4T4-M12 . . . 158
HTU418B-1300.X3/LT4-M12 . . . 158
HTU430B-3000.X3/LT4-M12 . . . 159
IGS 63B/6.3 . . . 176
IGS 63B/6.3,200-S12 . . . 176
IGS 63B/6D.3,200-S12 . . . 177
IGSU 14D/6.3G-S12 . . . 181
IGSU 14D/6.3-S12 . . . 181
IGSU 14D/6.3SD-S12 . . . 181
IGSU 14D/6.31-S12 . . . 181
IGSU 14D/6D.3-S12 . . . 181
IGSU 14DN/6.3G-S12 . . . 181
IGSU 14DN/6.3-S12 . . . 181
IHRT 8/4-100-S12 . . . 43
IHRT 8/4-200-S12 . . . 43
IHRT 46B/4,200-S12 S-Ex n . . . 115
ILS 95/44 E-L.1 . . . 85
ILSER 25B/4-S12 . . . 56
ILSER 25B/4-S12 . . . 56
ILSR 95/44 E-L.1 . . . 85
IPRK 8/A-S12 . . . 42
IPRK 18/4 DL.41 . . . 53
IPRK 18/A.1 L.4 . . . 54
IPRK 18/A L.4 . . . 54
IPRK 18/A L.46 . . . 54
IPRK 18/V L.03 . . . 54
IPRK 46B/4,200-S12 S-Ex n . . . 114
IPRK 95/44 L.2 . . . 85
IPRK 95/44 L.3 . . . 85
IPRK 95/44 L.5 . . . 85
IPRK 95/44 L.21 . . . 85
IPS 208i FIX-M3-102-I3 . . . 243
IRKR 95/44-250 L . . . 86
IS 204MP/4NC-1E5 . . . 139
IS 204MP/4NO-1E5 . . . 139
IS 205MM/4NC-1E5 . . . 140
IS 205MM/4NO-1E5 . . . 140
IS 205MM/4NO-1E5-S8.3 . . . 140
IS 206MP/4NO-2E0 . . . 141
IS 206MP/4NO-2E0,150-S8.3W . . . 141
IS 206MP/4NO-2E0,300-S8.3W . . . 141
IS 206MP/4NO-3E0 . . . 141
IS 208FM/2NO.5-2E0 . . . 132
IS 208FM/2NO.5-2E0 . . . 134
IS 208FM/2NO.5-2E0-S8.3 . . . 132
IS 208FM/2NO.5-2E0-S8.3 . . . 134
IS 208FM/4NO.5-2E0 . . . 132
IS 208FM/4NO.5-2E0 . . . 134
IS 208FM/4NO.5-2E0-S8.3 . . . 132
IS 208FM/4NO.5-2E0-S8.3 . . . 134
IS 208MM/2NC-1E5 . . . 125
IS 208MM/2NC-2E0 . . . 124
IS 208MM/2NC-4N0-S8.3 . . . 124
IS 208MM/2NO-1E5 . . . 125
IS 208MM/2NO-2E0 . . . 124
IS 208MM/2NO-2E0-S8.3 . . . 124
IS 208MM/2NO-2N5 . . . 124
IS 208MM/2NO-4N0 . . . 124
IS 208MM/2NO-4N0-S8.3 . . . 124
IS 208MM/4NC-1E5 . . . 125
IS 208MM/4NC-1E5-S8.3 . . . 125
IS 208MM/4NC-1E5-S12 . . . 125
IS 208MM/4NC-2E0 . . . 124
IS 208MM/4NC-2E0-S8.3 . . . 124
IS 208MM/4NC-2N5-S8.3 . . . 124
IS 208MM/4NC-4N0 . . . 124
IS 208MM/4NC-4N0-S8.3 . . . 124
IS 208MM/4NO-1E5 . . . 125
IS 208MM/4NO-1E5,5000 . . . 125
IS 208MM/4NO-1E5-S8.3 . . . 125
IS 208MM/4NO-1E5-S12 . . . 125
IS 208MM/4NO-2E0 . . . 124
IS 208MM/4NO-2E0,200-S8.3 . . . 124
IS 208MM/4NO-2E0-S8.3 . . . 124
IS 208MM/4NO-2N5 . . . 124
IS 208MM/4NO-2N5-S8.3 . . . 124
IS 208MM/4NO-2N5-S12 . . . 124
IS 208MM/4NO-4N0 . . . 124
IS 208MM/4NO-4N0-S8.3 . . . 124
IS 212FM/2NO.5-3E0 . . . 132
IS 212FM/2NO.5-3E0 . . . 135
IS 212FM/2NO.5-3E0-S12 . . . 132
IS 212FM/2NO.5-3E0-S12 . . . 135
IS 212FM/4NC.5-3E0-S12 . . . 132
IS 212FM/4NC.5-3E0-S12 . . . 135
IS 212FM/4NO.5-3E0 . . . 132
IS 212FM/4NO.5-3E0 . . . 135
IS 212FM/4NO.5-3E0-S12 . . . 132
IS 212FM/4NO.5-3E0-S12 . . . 135
IS 212FM/4NO.5F-6E0-S12 . . . 132
IS 212FM/4NO.5F-6E0-S12 . . . 135
IS 212FM/4NO.5F-10N-S12 . . . 132
IS 212FM/4NO.5F-10N-S12 . . . 135
IS 212MM/1NC.3-2E0 . . . 133
IS 212MM/1NO.3-2E0 . . . 133
IS 212MM/2NC-2E0 . . . 127
IS 212MM/2NC-4E0 . . . 127
IS 212MM/2NC-4E0-S12 . . . 127
IS 212MM/2NC-4N0 . . . 126
IS 212MM/2NC-4N0-S12 . . . 126
IS 212MM/2NC-8N0 . . . 126
IS 212MM/2NO-2E0 . . . 127
IS 212MM/2NO-4E0 . . . 127
IS 212MM/2NO-4E0-S12 . . . 127
IS 212MM/2NO-4N0 . . . 126
IS 212MM/2NO-4N0-S12 . . . 126
IS 212MM/2NO-6E0 . . . 126
IS 212MM/2NO-8N0 . . . 126
IS 212MM/2NO-8N0-S12 . . . 126
IS 212MM/2NO-10N . . . 126
IS 212MM/4NC-2E0 . . . 127
IS 212MM/4NC-2E0-S12 . . . 127
IS 212MM/4NC-4E0 . . . 126
IS 212MM/4NC-4E0-S12 . . . 126
IS 212MM/4NC-4N0 . . . 126
IS 212MM/4NC-4N0-S12 . . . 126
IS 212MM/4NC-8N0 . . . 126
IS 212MM/4NC-8N0-S12 . . . 126
IS 212MM/4NC-10N . . . 126
IS 212MM/4NC-10N-S12 . . . 126
IS 212MM/4NO-2E0 . . . 127

IS 212MM/4NO-2E0-S12 127
IS 212MM/4NO-4E0 127
IS 212MM/4NO-4E0-S12 127
IS 212MM/4NO-4N0 126
IS 212MM/4NO-4N0-S12 126
IS 212MM/4NO-6E0 126
IS 212MM/4NO-8N0 126
IS 212MM/4NO-8N0-S12 126
IS 212MM/4NO-10N 126
IS 218FM/2NO.5-5E0 132
IS 218FM/2NO.5-5E0 136
IS 218FM/2NO.5-5E0-S12 132
IS 218FM/2NO.5-5E0-S12 136
IS 218FM/4NO.5-5E0 132
IS 218FM/4NO.5-5E0 136
IS 218FM/4NO.5-5E0-S12 132
IS 218FM/4NO.5-5E0-S12 136
IS 218FM/4NO.5F-10E-S12. 132
IS 218FM/4NO.5F-10E-S12. 136
IS 218FM/4NO.5F-20N-S12 132
IS 218FM/4NO.5F-20N-S12 136
IS 218MM/1NC.3-5E0. 133
IS 218MM/1NO.3-5E0. 133
IS 218MM/2NC-8E0 129
IS 218MM/2NC-8E0-S12 128
IS 218MM/2NC-8N0 128
IS 218MM/2NC-8N0-S12 128
IS 218MM/2NO-5E0 129
IS 218MM/2NO-8E0 129
IS 218MM/2NO-8E0-S12 129
IS 218MM/2NO-8N0 128
IS 218MM/2NO-8N0-S12 128
IS 218MM/2NO-12E 128
IS 218MM/2NO-20N 128
IS 218MM/4NC-5E0 129
IS 218MM/4NC-5E0-S12 126
IS 218MM/4NC-5E0-S12 129
IS 218MM/4NC-8E0 128
IS 218MM/4NC-8E0-S12 128
IS 218MM/4NC-8N0 128
IS 218MM/4NC-8N0-S12 128
IS 218 mm/4NC-12E-S12 128
IS 218MM/4NC-12N-S12 128
IS 218MM/4NC-20N 128
IS 218MM/4NO-5E0 129
IS 218MM/4NO-5E0-S12 129
IS 218MM/4NO-8E0 128
IS 218MM/4NO-8E0-S12 128
IS 218MM/4NO-8N0 128
IS 218MM/4NO-8N0-S12 128
IS 218MM/4NO-12E 128
IS 218 mm/4NO-12E-S12 128
IS 218MM/4NO-12N-S12 128
IS 218MM/4NO-20N 128
IS 230FM/2NO.5-10E 132
IS 230FM/2NO.5-10E 137
IS 230FM/2NO.5-10E-S12 132
IS 230FM/2NO.5-10E-S12 137
IS 230FM/4NO.5-10E 132
IS 230FM/4NO.5-10E 137
IS 230FM/4NO.5-10E-S12 132
IS 230FM/4NO.5-10E-S12 137
IS 230FM/4NO.5F-20E-S12. 132
IS 230FM/4NO.5F-20E-S12. 137
IS 230FM/4NO.5F-40N-S12 132
IS 230FM/4NO.5F-40N-S12 137
IS 230MM/1NC.3-15N. 133
IS 230MM/1NO.3-15N 133
IS 230MM/2NC-15N 130
IS 230MM/2NO-10E 130
IS 230MM/2NO-15N 130
IS 230MM/2NO-15N-S12 130
IS 230MM/2NO-22E 130
IS 230MM/2NO-40N 130
IS 230MM/4NC-10E 130
IS 230MM/4NC-10E-S12 130
IS 230MM/4NC-15N 130
IS 230MM/4NC-15N-S12 130
IS 230MM/4NC-22E-S12 130
IS 230MM/4NO-10E 130
IS 230MM/4NO-10E-S12 130
IS 230MM/4NO-15N 130
IS 230MM/4NO-15N-S12 130
IS 230MM/4NO-22E 130
IS 230MM/4NO-22E-S12 130
IS 230MM/4NO-25N 130
IS 230MM/4NO-25N-S12 130
IS 230MM/4NO-40N 130
IS 230MM/4NO-40N-S12 130
IS 240PP/4NO-4E0-S8.3. 121
IS 240PP/22-4E0 121
IS 240PP/22-4E0-S8.4 121
IS 240PP/22-8N0 121
IS 240PP/22-8N0-S8.4 121
IS 240PP/44-4E0 121
IS 240PP/44-4E0-S8.4 121
IS 240PP/44-8N0 121
IS 240PP/44-8N0-S8.4 121
IS 244PP/22-20E-TB.4 122
IS 244PP/22-40N-TB.4 122
IS 244PP/44-20E-TB.4 122
IS 244PP/44-40N-TB.4 122
IS 255MP/2NO-1E5 139
IS 255MP/4NO-1E5 139
IS 255MP/4NO-1E5,200-S8.3 139
IS 288MP/2NO-1E5 120
IS 288MP/4NC-2E0. 120
IS 288MP/4NO-1E5 120
IS 288MP/4NO-1E5-S8.3 120
IS 288MP/4NO-2E0 120
IS 288MP/4NO-2E0-S8.3 120
IS 288MP/4NO-3E0 120
IS 288MP/4NO-3E0-S8.3 120
ISS 206MP/4NO-2E0-S8.3 141
ISS 208MM/4NC-2E0-S8.3 124
ISS 208MM/4NO-2E0,200-S8.3 124
ISS 208MM/4NO-2E0-S8.3 124
ISS 208MM/4NO-2N5-S8.3. 124
ISS 212MM/2NC-4E0-S12 127
ISS 212MM/2NO-4E0-S12 127
ISS 212MM/2NO-4N0 126
ISS 212MM/2NO-6E0-S12 126
ISS 212MM/4NC-4E0 126
ISS 212MM/4NC-4E0-S12 126
ISS 212MM/4NC-6E0-S12 126
ISS 212MM/4NO-4E0 127
ISS 212MM/4NO-4E0-S12 127
ISS 212MM/4NO-4N0-S12 126
ISS 212MM/4NO-6E0-S12 126
ISS 212MM/4NO-10N-S12 126
ISS 218MM/2NC-8E0-S12 129
ISS 218MM/2NO-8E0-S12 129
ISS 218MM/2NO-12E-S12 128
ISS 218MM/4NC-5E0-S12 129
ISS 218MM/4NC-8E0-200-S12. 128
ISS 218MM/4NC-8E0-S12 128
ISS 218MM/4NC-12E-S12 128
ISS 218MM/4NC-20N-S12 128
ISS 218MM/4NO-5E0 129
ISS 218MM/4NO-5E0-S12 129
ISS 218MM/4NO-8E0-200-S12. 128
ISS 218MM/4NO-8E0-S12 128
ISS 218MM/4NO-12E-S12 128
ISS 218MM/4NO-20N-S12 128
ISS 244PP.1/22-20E-S12 122
ISS 244PP.1/22-40N-S12 122
ISS 244PP.1/44-20E-S12 122
ISS 244PP.1/44-40N-S12 122
IT 1280i FR-3 427
IT 1300g-2 426
IT 1450g 1D-2. 426
IT 1452g 1D-2. 426
IT 1900g ER-2. 439
IT 1900g HD-2 439
IT 1900g SR-2 439
IT 1902g ER-2. 439
IT 1902g HD-2 439
IT 1902g SR-2 439
IT 1910i ER-3 440
IT 1911i ER-3 440
IT 1920i DPM 441
IT 1980i FR-3 440
IT 1981i FR-3 440
IT 3800 i SR030E 427
IT 3800 i SR050E 427
IT 3820i SRE. 427
IT 3820 SR0C0BE. 427
KB 008-3000 A. 242
KB 008-3000 A. 486
KB-008-3000 A-S 242
KB-008-3000 A-S 394
KB-008-3000 A-S 485
KB 008-10000 A-S 394
KB 008-10000 A-S 485
KB-014S- 5000-14 253
KB 232-1 f. FIS 6170 441
KB 301-3000 410
KB 301-3000 492
KB 301-3000-MA200 492
KB 301-10000 492
KB 307-3000 464
KB 307-3000 492
KB 900-500-MA 921-MA200i 422
KB 900-500-MA 921-MA200i 459
KB 900-1000 422
KB 900-1000 459
KB 900-3000 422
KB 900-3000 459
KB 900-5000 422
KB 900-5000 459
KB DN/CAN-1000 SBA 246
KB DN/CAN-1000 SBA 491
KB DN/CAN-2000 BA 246
KB DN/CAN-2000 BA 487
KB DN/CAN-2000 SA 246
KB DN/CAN-2000 SA 487
KB DN/CAN-2000 SBA 246
KB DN/CAN-2000 SBA 491
KB DN/CAN-5000 BA 236
KB DN/CAN-5000 BA 452
KB DN/CAN-5000 BA 487
KB DN/CAN-5000 SA 236
KB DN/CAN-5000 SA 452
KB DN/CAN-5000 SA 487
KB DN/CAN-5000 SBA 236
KB DN/CAN-5000 SBA 452
KB DN/CAN-5000 SBA 491
KB DN/CAN-10000 BA 487
KB DN/CAN-10000 SA 487
KB DN/CAN-10000 SBA 491
KB DN/CAN-20000 SBA 491
KB DN/CAN-30000 BA 487
KB DN/CAN-30000 SA 487
KB DSub-9P-3000 492
KB ET-30000-SSA. 491
KB IBS-2000-SA. 488
KB IBS-5000-SA. 236
KB IBS-5000-SA. 488
KB IBS-10000-SA. 488
KB IBS-15000-SA. 488
KB IBS-30000-SA. 488
KB JST-3000. 452
KB JST-HS-300. 426
KB JST-HS-300. 427
KB JST-HS-300. 427
KB JST-HS-300. 428
KB JST-HS-300. 439
KB JST-HS-300. 440
KB JST-HS-300. 441
KB JST-HS-300. 452
KB JST-M12A-5P-3000 452

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Type designation. . . Page no.

KB JST-M12A-5P-3000 . . . 492
KB JST-M12A-8P-3000 . . . 433
KB JST-M12A-8P-Y-3000 . . . 452
KB M12A-8P-USB-3000 . . . 433
KB-ROD4-CP-5000 . . . 253
KB-ROD4PC-3000 . . . 253
KB-ROD4 plus-5000 . . . 253
KB RS232/PIN9 IT4xxx . . . 428
KB-RS232-USB . . . 253
KB SSI/IBS-2000-BA. . . . 488
KB SSI/IBS-2000-BA. . . . 488
KB SSI/IBS-5000-BA. . . . 236
KB SSI/IBS-5000-BA. . . . 240
KB SSI/IBS-5000-BA. . . . 410
KB SSI/IBS-5000-BA. . . . 488
KB SSI/IBS-5000-BA. . . . 488
KB SSI/IBS-10000-BA. . . . 488
KB SSI/IBS-10000-BA. . . . 488
KB SSI/IBS-15000-BA. . . . 488
KB SSI/IBS-15000-BA. . . . 488
KB SSI/IBS-30000-BA. . . . 488
KB SSI/IBS-30000-BA. . . . 488
KB TTL-RS232/PIN9 IT4xxx . . . 428
KB USB-1 IT190x . . . 426
KB USB-1 IT190x . . . 427
KB USB-1 IT190x . . . 428
KB USB-1 IT190x . . . 439
KB USB-1 IT190x . . . 440
KB USB-2 IT190x . . . 426
KB USB-2 IT190x . . . 427
KB USB-2 IT190x . . . 428
KB USB-2 IT190x . . . 439
KB USB-2 IT190x . . . 440
KB USB A - USB A . . . 492
KB USB A - USB miniB . . . 378
KB USB A - USB miniB . . . 492
KB USB IT4xxx . . . 428
KD 01-5-BA . . . 237
KD 01-5-BA . . . 240
KD 01-5-BA . . . 242
KD 01-5-BA . . . 394
KD 01-5-BA . . . 492
KD 01-5-SA . . . 237
KD 01-5-SA . . . 493
KD 01-5-SR . . . 493
KD 01-8-BA . . . 493
KD 01-8-SA . . . 493
KD 02-5-BA . . . 237
KD 02-5-BA . . . 240
KD 02-5-BA . . . 266
KD 02-5-BA . . . 394
KD 02-5-BA . . . 410
KD 02-5-BA . . . 417
KD 02-5-BA . . . 421
KD 02-5-BA . . . 452
KD 02-5-BA . . . 492
KD 02-5-SA . . . 237
KD 02-5-SA . . . 240
KD 02-5-SA . . . 410
KD 02-5-SA . . . 417
KD 02-5-SA . . . 421
KD 02-5-SA . . . 452
KD 02-5-SA . . . 493
KD 095-4 . . . 493
KD 095-4A . . . 492
KD 095-5 . . . 182
KD 095-5 . . . 493
KD 095-5A . . . 182
KD 095-5A . . . 237
KD 095-5A . . . 240
KD 095-5A . . . 410
KD 095-5A . . . 417
KD 095-5A . . . 421
KD 095-5A . . . 464
KD 095-5A . . . 492
KD 095-5A-PG9 . . . 492
K-D M8A-4P-2m-FAB . . . 79
K-D M8A-4P-2m-FAB . . . 83
K-D M8A-4P-2m-FAB . . . 487
K-D M8A-4P-5m-FAB . . . 79
K-D M8A-4P-5m-FAB . . . 83
K-D M8A-4P-5m-FAB . . . 487
K-D M8A-4P-10m-FAB . . . 79
K-D M8A-4P-10m-FAB . . . 487
K-D M8W-4P-2m-FAB. . . . 79
K-D M8W-4P-2m-FAB. . . . 83
K-D M8W-4P-2m-FAB. . . . 486
K-D M8W-4P-5m-FAB. . . . 83
K-D M8W-4P-5m-FAB. . . . 487
K-D M8W-4P-10m-FAB. . . . 79
K-D M8W-4P-10m-FAB. . . . 487
K-D M12A-4P-2m-FAB . . . 485
K-D M12A-4P-5m-FAB . . . 486
K-D M12A-4P-10m-FAB . . . 486
K-D M12A-5P-2m-FAB . . . 486
K-D M12A-5P-5m-FAB . . . 486
K-D M12W-4P-2m-FAB. . . . 484
K-D M12W-4P-5m-FAB. . . . 485
K-D M12W-4P-10m-FAB. . . . 485
K-D M12W-5P-2m-FAB. . . . 485
K-D M12W-5P-5m-FAB. . . . 485
KD PB-M12-4A-P3-020 . . . 265
KD PB-M12-4A-P3-020 . . . 468
KD PB-M12-4A-P3-020 . . . 488
KD PB-M12-4A-P3-050 . . . 236
KD PB-M12-4A-P3-050 . . . 240
KD PB-M12-4A-P3-050 . . . 251
KD PB-M12-4A-P3-050 . . . 265
KD PB-M12-4A-P3-050 . . . 410
KD PB-M12-4A-P3-050 . . . 417
KD PB-M12-4A-P3-050 . . . 420
KD PB-M12-4A-P3-050 . . . 452
KD PB-M12-4A-P3-050 . . . 469
KD PB-M12-4A-P3-050 . . . 488
KD PB-M12-4A-P3-100 . . . 265
KD PB-M12-4A-P3-100 . . . 469
KD PB-M12-4A-P3-100 . . . 488
KD PB-M12-4A-P3-150 . . . 265
KD PB-M12-4A-P3-150 . . . 469
KD PB-M12-4A-P3-150 . . . 488
KD PB-M12-4A-P3-300 . . . 469
KD PB-M12-4A-P3-300 . . . 488
KDS BUS OUT M12-T-5P . . . 266
KDS DN-M12-5A-M12-5A-P3-010. . . . 191
KDS DN-M12-5A-M12-5A-P3-010. . . . 246
KDS DN-M12-5A-M12-5A-P3-010. . . . 265
KDS DN-M12-5A-M12-5A-P3-010. . . . 491
KDS DN-M12-5A-M12-5A-P3-010. . . . 491
KDS DN-M12-5A-M12-5A-P3-020. . . . 191
KDS DN-M12-5A-M12-5A-P3-020. . . . 246
KDS DN-M12-5A-M12-5A-P3-020. . . . 265
KDS DN-M12-5A-M12-5A-P3-020. . . . 491
KDS DN-M12-5A-M12-5A-P3-020. . . . 491
KDS DN-M12-5A-M12-5A-P3-050. . . . 191
KDS DN-M12-5A-M12-5A-P3-050. . . . 265
KDS DN-M12-5A-M12-5A-P3-050. . . . 491
KDS DN-M12-5A-M12-5A-P3-050. . . . 491
KDS DN-M12-5A-M12-5A-P3-100. . . . 191
KDS DN-M12-5A-M12-5A-P3-100. . . . 265
KDS DN-M12-5A-M12-5A-P3-100. . . . 491
KDS DN-M12-5A-M12-5A-P3-100. . . . 491
KDS DN-M12-5A-M12-5A-P3-200. . . . 191
KDS DN-M12-5A-M12-5A-P3-200. . . . 265
KDS DN-M12-5A-M12-5A-P3-200. . . . 491
KDS DN-M12-5A-M12-5A-P3-200. . . . 491
KDS ET-M12 / RJ45 W-4P. . . . 464
KDS HS-SUB-9A-RJ41-AA-T1-020 . . . 442
K-DS M8A-M12A-4P-0,3m-PVC . . . 490
KD S-M12-4A-P1-020. . . . 485
KD S-M12-4A-P1-050. . . . 289
KD S-M12-4A-P1-050. . . . 328
KD S-M12-4A-P1-050. . . . 486
KD S-M12-4A-P1-100. . . . 289
KD S-M12-4A-P1-100. . . . 328
KD S-M12-4A-P1-100. . . . 486
KD S-M12-4A-P1-250. . . . 289
KD S-M12-4A-P1-250. . . . 328
KD S-M12-4A-P1-250. . . . 486
KD S-M12-4A-V1-020. . . . 485
KD S-M12-4A-V1-050. . . . 486
KD S-M12-4A-V1-100. . . . 486
KD S-M12-4W-P1-020 . . . 484
KD S-M12-4W-P1-050 . . . 485
KD S-M12-4W-P1-100 . . . 485
KD S-M12-4W-P1-150 . . . 485
KD S-M12-5A-P1-050. . . . 289
KD S-M12-5A-P1-050. . . . 311
KD S-M12-5A-P1-050. . . . 317
KD S-M12-5A-P1-050. . . . 357
KD S-M12-5A-P1-050. . . . 486
KD S-M12-5A-P1-100. . . . 289
KD S-M12-5A-P1-100. . . . 311
KD S-M12-5A-P1-100. . . . 317
KD S-M12-5A-P1-100. . . . 357
KD S-M12-5A-P1-100. . . . 486
KD S-M12-5A-P1-250. . . . 289
KD S-M12-5A-P1-250. . . . 311
KD S-M12-8A-P1-020. . . . 208
KD S-M12-8A-P1-020. . . . 209
KD S-M12-8A-P1-050. . . . 208
KD S-M12-8A-P1-050. . . . 209
KD S-M12-8A-P1-050. . . . 289
KD S-M12-8A-P1-050. . . . 311
KD S-M12-8A-P1-050. . . . 318
KD S-M12-8A-P1-050. . . . 328
KD S-M12-8A-P1-050. . . . 333
KD S-M12-8A-P1-050. . . . 334
KD S-M12-8A-P1-050. . . . 336
KD S-M12-8A-P1-050. . . . 338
KD S-M12-8A-P1-050. . . . 340
KD S-M12-8A-P1-050. . . . 341
KD S-M12-8A-P1-050. . . . 343
KD S-M12-8A-P1-050. . . . 344
KD S-M12-8A-P1-050. . . . 349
KD S-M12-8A-P1-050. . . . 357
KD S-M12-8A-P1-050. . . . 486
KD S-M12-8A-P1-100. . . . 208
KD S-M12-8A-P1-100. . . . 209
KD S-M12-8A-P1-100. . . . 289
KD S-M12-8A-P1-100. . . . 311
KD S-M12-8A-P1-100. . . . 318
KD S-M12-8A-P1-100. . . . 328
KD S-M12-8A-P1-100. . . . 333
KD S-M12-8A-P1-100. . . . 334
KD S-M12-8A-P1-100. . . . 336
KD S-M12-8A-P1-100. . . . 338
KD S-M12-8A-P1-100. . . . 340
KD S-M12-8A-P1-100. . . . 341
KD S-M12-8A-P1-100. . . . 343
KD S-M12-8A-P1-100. . . . 344
KD S-M12-8A-P1-100. . . . 349
KD S-M12-8A-P1-100. . . . 357
KD S-M12-8A-P1-100. . . . 486
KD S-M12-8A-P1-150. . . . 289
KD S-M12-8A-P1-150. . . . 311
KD S-M12-8A-P1-150. . . . 318
KD S-M12-8A-P1-150. . . . 328
KD S-M12-8A-P1-150. . . . 333
KD S-M12-8A-P1-150. . . . 334
KD S-M12-8A-P1-150. . . . 336
KD S-M12-8A-P1-150. . . . 338
KD S-M12-8A-P1-150. . . . 340
KD S-M12-8A-P1-150. . . . 341
KD S-M12-8A-P1-150. . . . 343
KD S-M12-8A-P1-150. . . . 344
KD S-M12-8A-P1-150. . . . 349
KD S-M12-8A-P1-150. . . . 357
KD S-M12-8A-P1-150. . . . 486
KD S-M12-8A-P1-250. . . . 289
KD S-M12-8A-P1-250. . . . 311
KD S-M12-8A-P1-250. . . . 318

KD S-M12-8A-P1-250. 333
KD S-M12-8A-P1-250. 334
KD S-M12-8A-P1-250. 336
KD S-M12-8A-P1-250. 338
KD S-M12-8A-P1-250. 340
KD S-M12-8A-P1-250. 341
KD S-M12-8A-P1-250. 343
KD S-M12-8A-P1-250. 344
KD S-M12-8A-P1-250. 349
KD S-M12-8A-P1-250. 357
KD S-M12-8A-P1-250. 486
KD S-M12-8W-P1-050 208
KD S-M12-8W-P1-050 209
KD S-M12-8W-P1-100 208
KD S-M12-8W-P1-100 209
K-DS M12A-8P-0,75m-LxS36-CP 251
K-DS M12A-8P-4P-2m-L-PUR 191
K-DS M12A-8P-4P-2m-L-PUR 265
K-DS M12A-8P-4P-2m-L-PUR 490
K-DS M12A-8P-4P-5m-L-PUR 191
K-DS M12A-8P-4P-5m-L-PUR 265
K-DS M12A-8P-4P-5m-L-PUR 490
K-DS M12A-M8A-4P-0,3m-PVC 489
K-DS M12A-MA-5P-3m-S-PUR. 452
K-DS M12A-MA-5P-3m-S-PUR. 490
K-DS M12A-MA-8P-3m-S-PUR. 223
K-DS M12A-MA-8P-3m-S-PUR. 452
K-DS M12A-MA-8P-3m-S-PUR. 490
KD S-M12-CA-P1-020 244
KD S-M12-CA-P1-020 431
KD S-M12-CA-P1-020 486
KD S-M12-CA-P1-050 244
KD S-M12-CA-P1-050 431
KD S-M12-CA-P1-050 486
KD S-M12-CA-P1-100 486
KD S-M12-CW-P1-050 244
KD S-M12-CW-P1-050 431
KD S-M12-CW-P1-050 485
KD S-M30-16A-V1-050. 328
KD S-M30-16A-V1-100. 328
KD S-M30-16A-V1-250. 328
KD S-M30-30A-V1-050. 328
KD S-M30-30A-V1-100. 328
KD S-M30-30A-V1-250. 328
KDS PB-M12-4A-M12-4A-P3-010. 469
KDS PB-M12-4A-M12-4A-P3-010. 492
KDS PB-M12-4A-M12-4A-P3-020. 265
KDS PB-M12-4A-M12-4A-P3-020. 469
KDS PB-M12-4A-M12-4A-P3-020. 492
KDS PB-M12-4A-M12-4A-P3-050. 237
KDS PB-M12-4A-M12-4A-P3-050. 240
KDS PB-M12-4A-M12-4A-P3-050. 265
KDS PB-M12-4A-M12-4A-P3-050. 410
KDS PB-M12-4A-M12-4A-P3-050. 417
KDS PB-M12-4A-M12-4A-P3-050. 420
KDS PB-M12-4A-M12-4A-P3-050. 452
KDS PB-M12-4A-M12-4A-P3-050. 469
KDS PB-M12-4A-M12-4A-P3-050. 492
KDS PB-M12-4A-M12-4A-P3-100. 265
KDS PB-M12-4A-M12-4A-P3-100. 469
KDS PB-M12-4A-M12-4A-P3-100. 492
KDS PB-M12-4A-M12-4A-P3-150. 265
KDS PB-M12-4A-M12-4A-P3-150. 469
KDS PB-M12-4A-M12-4A-P3-150. 492
KDS PB-M12-4A-M12-4A-P3-300. 469
KDS PB-M12-4A-M12-4A-P3-300. 492
KDS S-M12-5A-M12-5A-P1-030. 242
KDS S-M12-5A-M12-5A-P1-030. 394
KDS S-M12-5A-M12-5W-P1-030 242
KDS S-M12-5A-M12-5W-P1-030 394
KDS S-M12-8A-M12-8A-P1-020. 289
KDS S-M12-8A-M12-8A-P1-020. 433
KDS S-M12-8A-M12-8A-P1-020. 490
KDS S-M12-8A-M12-8A-P1-050. 289
KDS S-M12-8A-M12-8A-P1-050. 490
KDS S-M12-CA-M12-CA-P1-020 244
KDS S-M12-CA-M12-CA-P1-020 432
KDS S-M12-CA-M12-CA-P1-020 490
KDS S-M12-CA-M12-CA-P1-050 244
KDS S-M12-CA-M12-CA-P1-050 432
KDS S-M12-CA-M12-CA-P1-050 490
KDS S-M12-CA-M12-CA-P1-100 490
KDS U-M8-3A-M8-3A-P1-003. 490
KDS U-M8-3A-M8-3A-P1-003-DP. 490
KDS U-M8-3A-M8-3A-P1-006. 490
KDS U-M8-3A-M8-3A-P1-006-DP. 490
KDS U-M8-3A-M8-3A-P1-010. 490
KDS U-M8-3A-M8-3A-P1-010-DP. 490
KDS U-M8-3A-M8-3A-P1-015. 490
KDS U-M8-3A-M8-3A-P1-015-DP. 490
KDS U-M8-3A-M8-3A-P1-020. 490
KDS U-M8-3A-M8-3A-P1-020-DP. 490
KDS U-M8-3A-M8-3A-P1-030. 490
KDS U-M8-3A-M8-3A-P1-050. 490
KDS U-M8-3A-M8-3A-V1-003. 490
KDS U-M8-3A-M8-3A-V1-006. 490
KDS U-M8-3A-M8-3A-V1-010. 490
KDS U-M8-3A-M8-3A-V1-020. 490
KDS U-M8-3A-M12-3A-P1-003. 490
KDS U-M8-3A-M12-3A-P1-006. 490
KDS U-M8-3A-M12-3A-P1-010. 490
KDS U-M8-3A-M12-3A-P1-015. 490
KDS U-M8-3A-M12-3A-P1-020. 490
KDS U-M8-3A-M12-3A-P1-050. 490
KDS U-M8-3A-M12-3A-V1-010. 490
KDS U-M8-3W-M8-3A-P1-003 490
KDS U-M8-3W-M8-3A-P1-003-DP 490
KDS U-M8-3W-M8-3A-P1-006 490
KDS U-M8-3W-M8-3A-P1-006-DP 490
KDS U-M8-3W-M8-3A-P1-010 490
KDS U-M8-3W-M8-3A-P1-010-DP 490
KDS U-M8-3W-M8-3A-P1-015-DP 490
KDS U-M8-3W-M8-3A-P1-020 490
KDS U-M8-3W-M8-3A-P1-020-DP 490
KDS U-M8-4A-M8-4A-P1-003. 490
KDS U-M8-4A-M8-4A-P1-006. 490
KDS U-M8-4A-M8-4A-P1-010. 490
KDS U-M8-4A-M8-4A-P1-020. 490
KDS U-M12-3A-M12-3A-P1-006. 489
KDS U-M12-3A-M12-3A-P1-010. 489
KDS U-M12-3A-M12-3A-P1-020. 489
KDS U-M12-3A-M12-3A-P1-030. 489
KDS U-M12-3A-M12-3A-P1-050. 489
KDS U-M12-3W-M12-3A-P1-006 489
KDS U-M12-3W-M12-3A-P1-006-DP 489
KDS U-M12-3W-M12-3A-P1-010 489
KDS U-M12-3W-M12-3A-P1-010-DP 489
KDS U-M12-3W-M12-3A-P1-020 489
KDS U-M12-3W-M12-3A-P1-020-DP 489
KDS U-M12-3W-M12-3A-P1-030 489
KDS U-M12-3W-M12-3A-P1-030-DP 489
KDS U-M12-3W-M12-3A-P1-050 489
KDS U-M12-3W-M12-3A-P1-050-DP 489
KDS U-M12-4A-M12-4A-P1-003. 489
KDS U-M12-4A-M12-4A-P1-003-DP. 489
KDS U-M12-4A-M12-4A-P1-006. 489
KDS U-M12-4A-M12-4A-P1-006-DP. 489
KDS U-M12-4A-M12-4A-P1-010. 489
KDS U-M12-4A-M12-4A-P1-010-DP. 489
KDS U-M12-4A-M12-4A-P1-015. 489
KDS U-M12-4A-M12-4A-P1-020. 481
KDS U-M12-4A-M12-4A-P1-020. 489
KDS U-M12-4A-M12-4A-P1-020-DP. 489
KDS U-M12-4A-M12-4A-P1-030. 490
KDS U-M12-4A-M12-4A-P1-030-DP. 490
KDS U-M12-4A-M12-4A-P1-050. 481
KDS U-M12-4A-M12-4A-P1-050. 490
KDS U-M12-4A-M12-4A-P1-050-DP. 490
KDS U-M12-4A-M12-4A-P1-100. 490
KDS U-M12-4A-M12-4A-V1-020. 489
KDS U-M12-4A-M12-4A-V1-050. 490
KDS U-M12-4A-M12-4W-P1-003 489
KDS U-M12-4A-M12-4W-P1-006 489
KDS U-M12-4A-M12-4W-P1-010 489
KDS U-M12-4A-M12-4W-P1-020 481
KDS U-M12-4A-M12-4W-P1-020 489
KDS U-M12-4A-M12-4W-P1-030 490
KDS U-M12-4A-M12-4W-P1-050 481
KDS U-M12-4A-M12-4W-P1-050 490
KDS U-M12-4A-M12-4W-V1-003 489
KDS U-M12-4A-M12-4W-V1-006 489
KDS U-M12-4A-M12-4W-V1-010 489
KDS U-M12-4A-M12-4W-V1-020 481
KDS U-M12-4A-M12-4W-V1-020 490
KDS U-M12-4A-M12-4W-V1-030 490
KDS U-M12-4A-M12-4W-V1-050 481
KDS U-M12-4A-M12-4W-V1-050 490
KDS U-M12-4W-M12-4A-P1-006-3DP 489
KDS U-M12-4W-M12-4A-P1-010-3DP 489
KDS U-M12-4W-M12-4A-P1-015-3DP 489
KDS U-M12-4W-M12-4A-P1-020-3DP 489
KDS U-M12-4W-M12-4A-P1-030-3DP 489
KDS U-M12-4W-M12-4A-P1-050-3DP 489
KD U-M8-3A-P1-020. 28
KD U-M8-3A-P1-020. 33
KD U-M8-3A-P1-020. 40
KD U-M8-3A-P1-020. 113
KD U-M8-3A-P1-020. 123
KD U-M8-3A-P1-020. 131
KD U-M8-3A-P1-020. 133
KD U-M8-3A-P1-020. 138
KD U-M8-3A-P1-020. 141
KD U-M8-3A-P1-020. 167
KD U-M8-3A-P1-020. 174
KD U-M8-3A-P1-020. 182
KD U-M8-3A-P1-020. 487
KD U-M8-3A-P1-020-DP. 487
KD U-M8-3A-P1-030. 487
KD U-M8-3A-P1-050. 28
KD U-M8-3A-P1-050. 33
KD U-M8-3A-P1-050. 40
KD U-M8-3A-P1-050. 113
KD U-M8-3A-P1-050. 123
KD U-M8-3A-P1-050. 131
KD U-M8-3A-P1-050. 133
KD U-M8-3A-P1-050. 138
KD U-M8-3A-P1-050. 141
KD U-M8-3A-P1-050. 167
KD U-M8-3A-P1-050. 174
KD U-M8-3A-P1-050. 182
KD U-M8-3A-P1-050. 487
KD U-M8-3A-P1-050-DP. 487
KD U-M8-3A-P1-100. 487
KD U-M8-3A-P1-100-DP. 487
KD U-M8-3A-P1-150. 487
KD U-M8-3A-P1-200. 487
KD U-M8-3A-V1-020. 28
KD U-M8-3A-V1-020. 33
KD U-M8-3A-V1-020. 40
KD U-M8-3A-V1-020. 113
KD U-M8-3A-V1-020. 123
KD U-M8-3A-V1-020. 131
KD U-M8-3A-V1-020. 133
KD U-M8-3A-V1-020. 138
KD U-M8-3A-V1-020. 141
KD U-M8-3A-V1-020. 167
KD U-M8-3A-V1-020. 174
KD U-M8-3A-V1-020. 182
KD U-M8-3A-V1-020. 487
KD U-M8-3A-V1-020-DP. 487
KD U-M8-3A-V1-030. 487
KD U-M8-3A-V1-050. 28
KD U-M8-3A-V1-050. 34
KD U-M8-3A-V1-050. 40
KD U-M8-3A-V1-050. 113
KD U-M8-3A-V1-050. 123
KD U-M8-3A-V1-050. 131
KD U-M8-3A-V1-050. 133
KD U-M8-3A-V1-050. 138
KD U-M8-3A-V1-050. 141
KD U-M8-3A-V1-050. 167

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Type designation. . . Page no.

KD U-M8-3A-V1-050. 174
KD U-M8-3A-V1-050. 182
KD U-M8-3A-V1-050. 487
KD U-M8-3A-V1-050-DP. 487
KD U-M8-3A-V1-100. 487
KD U-M8-3A-V1-100-DP. 487
KD U-M8-3A-V1-150. 487
KD U-M8-3A-V1-200. 487
KD U-M8-3W-P1-020 28
KD U-M8-3W-P1-020 33
KD U-M8-3W-P1-020 39
KD U-M8-3W-P1-020 123
KD U-M8-3W-P1-020 131
KD U-M8-3W-P1-020 133
KD U-M8-3W-P1-020 138
KD U-M8-3W-P1-020 141
KD U-M8-3W-P1-020 167
KD U-M8-3W-P1-020 174
KD U-M8-3W-P1-020 182
KD U-M8-3W-P1-020 486
KD U-M8-3W-P1-020-DP 486
KD U-M8-3W-P1-030 486
KD U-M8-3W-P1-030-DP 486
KD U-M8-3W-P1-050 28
KD U-M8-3W-P1-050 33
KD U-M8-3W-P1-050 39
KD U-M8-3W-P1-050 123
KD U-M8-3W-P1-050 131
KD U-M8-3W-P1-050 133
KD U-M8-3W-P1-050 138
KD U-M8-3W-P1-050 141
KD U-M8-3W-P1-050 167
KD U-M8-3W-P1-050 174
KD U-M8-3W-P1-050 182
KD U-M8-3W-P1-050 486
KD U-M8-3W-P1-050-DP 486
KD U-M8-3W-P1-100 486
KD U-M8-3W-P1-100-DP 486
KD U-M8-3W-P1-200 486
KD U-M8-3W-V1-020 28
KD U-M8-3W-V1-020 33
KD U-M8-3W-V1-020 39
KD U-M8-3W-V1-020 123
KD U-M8-3W-V1-020 131
KD U-M8-3W-V1-020 133
KD U-M8-3W-V1-020 138
KD U-M8-3W-V1-020 141
KD U-M8-3W-V1-020 167
KD U-M8-3W-V1-020 174
KD U-M8-3W-V1-020 182
KD U-M8-3W-V1-020 486
KD U-M8-3W-V1-020-DP 486
KD U-M8-3W-V1-030 486
KD U-M8-3W-V1-030-DP 486
KD U-M8-3W-V1-050 28
KD U-M8-3W-V1-050 33
KD U-M8-3W-V1-050 39
KD U-M8-3W-V1-050 123
KD U-M8-3W-V1-050 131
KD U-M8-3W-V1-050 133
KD U-M8-3W-V1-050 138
KD U-M8-3W-V1-050 141
KD U-M8-3W-V1-050 167
KD U-M8-3W-V1-050 174
KD U-M8-3W-V1-050 182
KD U-M8-3W-V1-050 486
KD U-M8-3W-V1-050-DP 486
KD U-M8-3W-V1-100 486
KD U-M8-3W-V1-100-DP 486
KD U-M8-3W-V1-200 486
KD U-M8-4A-P1-020. 28
KD U-M8-4A-P1-020. 34
KD U-M8-4A-P1-020. 40
KD U-M8-4A-P1-020. 50
KD U-M8-4A-P1-020. 61
KD U-M8-4A-P1-020. 83
KD U-M8-4A-P1-020. 113
KD U-M8-4A-P1-020. 123
KD U-M8-4A-P1-020. 153
KD U-M8-4A-P1-020. 167
KD U-M8-4A-P1-020. 182
KD U-M8-4A-P1-020. 187
KD U-M8-4A-P1-020. 196
KD U-M8-4A-P1-020. 200
KD U-M8-4A-P1-020. 322
KD U-M8-4A-P1-020. 355
KD U-M8-4A-P1-020. 487
KD U-M8-4A-P1-030. 487
KD U-M8-4A-P1-050. 28
KD U-M8-4A-P1-050. 34
KD U-M8-4A-P1-050. 40
KD U-M8-4A-P1-050. 50
KD U-M8-4A-P1-050. 61
KD U-M8-4A-P1-050. 83
KD U-M8-4A-P1-050. 113
KD U-M8-4A-P1-050. 123
KD U-M8-4A-P1-050. 153
KD U-M8-4A-P1-050. 167
KD U-M8-4A-P1-050. 182
KD U-M8-4A-P1-050. 187
KD U-M8-4A-P1-050. 196
KD U-M8-4A-P1-050. 200
KD U-M8-4A-P1-050. 322
KD U-M8-4A-P1-050. 355
KD U-M8-4A-P1-050. 487
KD U-M8-4A-P1-100. 322
KD U-M8-4A-P1-100. 355
KD U-M8-4A-P1-100. 487
KD U-M8-4A-P1-150. 487
KD U-M8-4A-P1-200. 487
KD U-M8-4A-V1-020. 28
KD U-M8-4A-V1-020. 34
KD U-M8-4A-V1-020. 40
KD U-M8-4A-V1-020. 50
KD U-M8-4A-V1-020. 61
KD U-M8-4A-V1-020. 83
KD U-M8-4A-V1-020. 113
KD U-M8-4A-V1-020. 123
KD U-M8-4A-V1-020. 153
KD U-M8-4A-V1-020. 167
KD U-M8-4A-V1-020. 182
KD U-M8-4A-V1-020. 187
KD U-M8-4A-V1-020. 196
KD U-M8-4A-V1-020. 200
KD U-M8-4A-V1-020. 487
KD U-M8-4A-V1-030. 487
KD U-M8-4A-V1-050. 28
KD U-M8-4A-V1-050. 34
KD U-M8-4A-V1-050. 40
KD U-M8-4A-V1-050. 50
KD U-M8-4A-V1-050. 61
KD U-M8-4A-V1-050. 83
KD U-M8-4A-V1-050. 113
KD U-M8-4A-V1-050. 123
KD U-M8-4A-V1-050. 153
KD U-M8-4A-V1-050. 167
KD U-M8-4A-V1-050. 182
KD U-M8-4A-V1-050. 187
KD U-M8-4A-V1-050. 196
KD U-M8-4A-V1-050. 200
KD U-M8-4A-V1-050. 487
KD U-M8-4A-V1-100. 487
KD U-M8-4A-V1-150. 487
KD U-M8-4A-V1-200. 487
KD U-M8-4W-P1-020 28
KD U-M8-4W-P1-020 33
KD U-M8-4W-P1-020 39
KD U-M8-4W-P1-020 50
KD U-M8-4W-P1-020 61
KD U-M8-4W-P1-020 83
KD U-M8-4W-P1-020 123
KD U-M8-4W-P1-020 153
KD U-M8-4W-P1-020 167
KD U-M8-4W-P1-020 182
KD U-M8-4W-P1-020 187
KD U-M8-4W-P1-020 196
KD U-M8-4W-P1-020 200
KD U-M8-4W-P1-020 486
KD U-M8-4W-P1-020-DP 486
KD U-M8-4W-P1-030 486
KD U-M8-4W-P1-050 28
KD U-M8-4W-P1-050 33
KD U-M8-4W-P1-050 39
KD U-M8-4W-P1-050 50
KD U-M8-4W-P1-050 61
KD U-M8-4W-P1-050 83
KD U-M8-4W-P1-050 123
KD U-M8-4W-P1-050 153
KD U-M8-4W-P1-050 167
KD U-M8-4W-P1-050 182
KD U-M8-4W-P1-050 187
KD U-M8-4W-P1-050 196
KD U-M8-4W-P1-050 200
KD U-M8-4W-P1-050 487
KD U-M8-4W-P1-050-DP 487
KD U-M8-4W-P1-100 487
KD U-M8-4W-P1-100-DP 487
KD U-M8-4W-V1-020 28
KD U-M8-4W-V1-020 33
KD U-M8-4W-V1-020 39
KD U-M8-4W-V1-020 50
KD U-M8-4W-V1-020 61
KD U-M8-4W-V1-020 83
KD U-M8-4W-V1-020 123
KD U-M8-4W-V1-020 153
KD U-M8-4W-V1-020 167
KD U-M8-4W-V1-020 182
KD U-M8-4W-V1-020 187
KD U-M8-4W-V1-020 196
KD U-M8-4W-V1-020 200
KD U-M8-4W-V1-020 486
KD U-M8-4W-V1-020-DP 486
KD U-M8-4W-V1-030 486
KD U-M8-4W-V1-050 28
KD U-M8-4W-V1-050 33
KD U-M8-4W-V1-050 40
KD U-M8-4W-V1-050 50
KD U-M8-4W-V1-050 61
KD U-M8-4W-V1-050 83
KD U-M8-4W-V1-050 123
KD U-M8-4W-V1-050 153
KD U-M8-4W-V1-050 167
KD U-M8-4W-V1-050 182
KD U-M8-4W-V1-050 187
KD U-M8-4W-V1-050 196
KD U-M8-4W-V1-050 200
KD U-M8-4W-V1-050 487
KD U-M8-4W-V1-050-DP 487
KD U-M8-4W-V1-100 487
KD U-M8-4W-V1-100-DP 487
KD U-M12-3A-P1-020. 485
KD U-M12-3A-P1-020-DP. 485
KD U-M12-3A-P1-030. 485
KD U-M12-3A-P1-030-DP. 485
KD U-M12-3A-P1-050. 485
KD U-M12-3A-P1-050-DP. 485
KD U-M12-3A-P1-100. 485
KD U-M12-3A-P1-100-DP. 485
KD U-M12-3A-P1-150. 485
KD U-M12-3A-V1-020. 485
KD U-M12-3A-V1-020-DP. 485
KD U-M12-3A-V1-030. 485
KD U-M12-3A-V1-030-DP. 485
KD U-M12-3A-V1-050. 485
KD U-M12-3A-V1-050-DP. 485
KD U-M12-3A-V1-100. 485
KD U-M12-3A-V1-100-DP. 485
KD U-M12-3W-P1-020 484
KD U-M12-3W-P1-020-DP 484
KD U-M12-3W-P1-030 484
KD U-M12-3W-P1-030-DP 484

KD U-M12-3W-P1-050 484
KD U-M12-3W-P1-050-DP 484
KD U-M12-3W-P1-100 484
KD U-M12-3W-P1-100-DP 484
KD U-M12-3W-P1-150-DP 484
KD U-M12-3W-V1-020 484
KD U-M12-3W-V1-020-DP 484
KD U-M12-3W-V1-030 484
KD U-M12-3W-V1-030-DP 484
KD U-M12-3W-V1-050 484
KD U-M12-3W-V1-050-DP 484
KD U-M12-3W-V1-100 484
KD U-M12-3W-V1-100-DP 484
KD U-M12-3W-V1-150-DP 484
KD U-M12-4A-P1-020. 28
KD U-M12-4A-P1-020. 39
KD U-M12-4A-P1-020. 44
KD U-M12-4A-P1-020. 50
KD U-M12-4A-P1-020. 54
KD U-M12-4A-P1-020. 61
KD U-M12-4A-P1-020. 65
KD U-M12-4A-P1-020. 71
KD U-M12-4A-P1-020. 83
KD U-M12-4A-P1-020. 87
KD U-M12-4A-P1-020. 94
KD U-M12-4A-P1-020. 99
KD U-M12-4A-P1-020. 102
KD U-M12-4A-P1-020. 106
KD U-M12-4A-P1-020. 108
KD U-M12-4A-P1-020. 110
KD U-M12-4A-P1-020. 113
KD U-M12-4A-P1-020. 115
KD U-M12-4A-P1-020. 123
KD U-M12-4A-P1-020. 131
KD U-M12-4A-P1-020. 132
KD U-M12-4A-P1-020. 138
KD U-M12-4A-P1-020. 160
KD U-M12-4A-P1-020. 167
KD U-M12-4A-P1-020. 196
KD U-M12-4A-P1-020. 200
KD U-M12-4A-P1-020. 204
KD U-M12-4A-P1-020. 226
KD U-M12-4A-P1-020. 314
KD U-M12-4A-P1-020. 321
KD U-M12-4A-P1-020. 322
KD U-M12-4A-P1-020. 324
KD U-M12-4A-P1-020. 481
KD U-M12-4A-P1-020. 485
KD U-M12-4A-P1-020-DP. 485
KD U-M12-4A-P1-030. 486
KD U-M12-4A-P1-030-DP. 486
KD U-M12-4A-P1-050. 28
KD U-M12-4A-P1-050. 39
KD U-M12-4A-P1-050. 44
KD U-M12-4A-P1-050. 50
KD U-M12-4A-P1-050. 54
KD U-M12-4A-P1-050. 61
KD U-M12-4A-P1-050. 65
KD U-M12-4A-P1-050. 71
KD U-M12-4A-P1-050. 83
KD U-M12-4A-P1-050. 87
KD U-M12-4A-P1-050. 94
KD U-M12-4A-P1-050. 99
KD U-M12-4A-P1-050. 102
KD U-M12-4A-P1-050. 106
KD U-M12-4A-P1-050. 108
KD U-M12-4A-P1-050. 110
KD U-M12-4A-P1-050. 113
KD U-M12-4A-P1-050. 115
KD U-M12-4A-P1-050. 123
KD U-M12-4A-P1-050. 131
KD U-M12-4A-P1-050. 132
KD U-M12-4A-P1-050. 138
KD U-M12-4A-P1-050. 160
KD U-M12-4A-P1-050. 167
KD U-M12-4A-P1-050. 196
KD U-M12-4A-P1-050. 200
KD U-M12-4A-P1-050. 204
KD U-M12-4A-P1-050. 226
KD U-M12-4A-P1-050. 314
KD U-M12-4A-P1-050. 321
KD U-M12-4A-P1-050. 322
KD U-M12-4A-P1-050. 324
KD U-M12-4A-P1-050. 481
KD U-M12-4A-P1-050. 486
KD U-M12-4A-P1-050-DP. 486
KD U-M12-4A-P1-100. 314
KD U-M12-4A-P1-100. 321
KD U-M12-4A-P1-100. 322
KD U-M12-4A-P1-100. 324
KD U-M12-4A-P1-100. 486
KD U-M12-4A-P1-100-DP. 486
KD U-M12-4A-V1-020. 28
KD U-M12-4A-V1-020. 39
KD U-M12-4A-V1-020. 44
KD U-M12-4A-V1-020. 50
KD U-M12-4A-V1-020. 54
KD U-M12-4A-V1-020. 61
KD U-M12-4A-V1-020. 65
KD U-M12-4A-V1-020. 71
KD U-M12-4A-V1-020. 83
KD U-M12-4A-V1-020. 87
KD U-M12-4A-V1-020. 94
KD U-M12-4A-V1-020. 99
KD U-M12-4A-V1-020. 102
KD U-M12-4A-V1-020. 106
KD U-M12-4A-V1-020. 108
KD U-M12-4A-V1-020. 110
KD U-M12-4A-V1-020. 113
KD U-M12-4A-V1-020. 115
KD U-M12-4A-V1-020. 123
KD U-M12-4A-V1-020. 131
KD U-M12-4A-V1-020. 133
KD U-M12-4A-V1-020. 138
KD U-M12-4A-V1-020. 160
KD U-M12-4A-V1-020. 167
KD U-M12-4A-V1-020. 196
KD U-M12-4A-V1-020. 200
KD U-M12-4A-V1-020. 204
KD U-M12-4A-V1-020. 226
KD U-M12-4A-V1-020. 319
KD U-M12-4A-V1-020. 321
KD U-M12-4A-V1-020. 481
KD U-M12-4A-V1-020. 485
KD U-M12-4A-V1-020-DP. 485
KD U-M12-4A-V1-030. 319
KD U-M12-4A-V1-030. 486
KD U-M12-4A-V1-030-DP. 486
KD U-M12-4A-V1-050. 28
KD U-M12-4A-V1-050. 39
KD U-M12-4A-V1-050. 44
KD U-M12-4A-V1-050. 50
KD U-M12-4A-V1-050. 54
KD U-M12-4A-V1-050. 61
KD U-M12-4A-V1-050. 65
KD U-M12-4A-V1-050. 71
KD U-M12-4A-V1-050. 83
KD U-M12-4A-V1-050. 87
KD U-M12-4A-V1-050. 94
KD U-M12-4A-V1-050. 99
KD U-M12-4A-V1-050. 102
KD U-M12-4A-V1-050. 106
KD U-M12-4A-V1-050. 108
KD U-M12-4A-V1-050. 110
KD U-M12-4A-V1-050. 113
KD U-M12-4A-V1-050. 115
KD U-M12-4A-V1-050. 123
KD U-M12-4A-V1-050. 131
KD U-M12-4A-V1-050. 133
KD U-M12-4A-V1-050. 138
KD U-M12-4A-V1-050. 160
KD U-M12-4A-V1-050. 167
KD U-M12-4A-V1-050. 196
KD U-M12-4A-V1-050. 200
KD U-M12-4A-V1-050. 204
KD U-M12-4A-V1-050. 226
KD U-M12-4A-V1-050. 319
KD U-M12-4A-V1-050. 321
KD U-M12-4A-V1-050. 481
KD U-M12-4A-V1-050. 486
KD U-M12-4A-V1-050-DP. 486
KD U-M12-4A-V1-100. 319
KD U-M12-4A-V1-100. 486
KD U-M12-4A-V1-100-DP. 486
KD U-M12-4A-V1-200. 319
KD U-M12-4A-V1-200. 321
KD U-M12-4A-V1-300. 321
KD U-M12-4W-P1-020 28
KD U-M12-4W-P1-020 39
KD U-M12-4W-P1-020 43
KD U-M12-4W-P1-020 50
KD U-M12-4W-P1-020 54
KD U-M12-4W-P1-020 61
KD U-M12-4W-P1-020 65
KD U-M12-4W-P1-020 71
KD U-M12-4W-P1-020 83
KD U-M12-4W-P1-020 87
KD U-M12-4W-P1-020 94
KD U-M12-4W-P1-020 99
KD U-M12-4W-P1-020 102
KD U-M12-4W-P1-020 106
KD U-M12-4W-P1-020 108
KD U-M12-4W-P1-020 110
KD U-M12-4W-P1-020 113
KD U-M12-4W-P1-020 115
KD U-M12-4W-P1-020 123
KD U-M12-4W-P1-020 131
KD U-M12-4W-P1-020 132
KD U-M12-4W-P1-020 138
KD U-M12-4W-P1-020 160
KD U-M12-4W-P1-020 167
KD U-M12-4W-P1-020 196
KD U-M12-4W-P1-020 200
KD U-M12-4W-P1-020 204
KD U-M12-4W-P1-020 226
KD U-M12-4W-P1-020 481
KD U-M12-4W-P1-020 484
KD U-M12-4W-P1-020-3DP 484
KD U-M12-4W-P1-020-DP 484
KD U-M12-4W-P1-030 485
KD U-M12-4W-P1-030-3DP 485
KD U-M12-4W-P1-030-DP 485
KD U-M12-4W-P1-050 28
KD U-M12-4W-P1-050 39
KD U-M12-4W-P1-050 43
KD U-M12-4W-P1-050 50
KD U-M12-4W-P1-050 54
KD U-M12-4W-P1-050 61
KD U-M12-4W-P1-050 65
KD U-M12-4W-P1-050 71
KD U-M12-4W-P1-050 83
KD U-M12-4W-P1-050 87
KD U-M12-4W-P1-050 94
KD U-M12-4W-P1-050 99
KD U-M12-4W-P1-050 102
KD U-M12-4W-P1-050 106
KD U-M12-4W-P1-050 108
KD U-M12-4W-P1-050 110
KD U-M12-4W-P1-050 113
KD U-M12-4W-P1-050 115
KD U-M12-4W-P1-050 123
KD U-M12-4W-P1-050 131
KD U-M12-4W-P1-050 132
KD U-M12-4W-P1-050 138
KD U-M12-4W-P1-050 160
KD U-M12-4W-P1-050 167
KD U-M12-4W-P1-050 196
KD U-M12-4W-P1-050 200
KD U-M12-4W-P1-050 204
KD U-M12-4W-P1-050 226
KD U-M12-4W-P1-050 481

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Type designation. . . Page no.

KD U-M12-4W-P1-050 485
KD U-M12-4W-P1-050-3DP 485
KD U-M12-4W-P1-050-DP 485
KD U-M12-4W-P1-100 485
KD U-M12-4W-P1-100-3DP 485
KD U-M12-4W-P1-100-DP 485
KD U-M12-4W-P1-150 485
KD U-M12-4W-P1-150-3DP 485
KD U-M12-4W-V1-020 28
KD U-M12-4W-V1-020 39
KD U-M12-4W-V1-020 43
KD U-M12-4W-V1-020 50
KD U-M12-4W-V1-020 54
KD U-M12-4W-V1-020 61
KD U-M12-4W-V1-020 65
KD U-M12-4W-V1-020 71
KD U-M12-4W-V1-020 83
KD U-M12-4W-V1-020 87
KD U-M12-4W-V1-020 94
KD U-M12-4W-V1-020 99
KD U-M12-4W-V1-020 102
KD U-M12-4W-V1-020 106
KD U-M12-4W-V1-020 108
KD U-M12-4W-V1-020 110
KD U-M12-4W-V1-020 113
KD U-M12-4W-V1-020 115
KD U-M12-4W-V1-020 123
KD U-M12-4W-V1-020 131
KD U-M12-4W-V1-020 132
KD U-M12-4W-V1-020 138
KD U-M12-4W-V1-020 160
KD U-M12-4W-V1-020 167
KD U-M12-4W-V1-020 196
KD U-M12-4W-V1-020 200
KD U-M12-4W-V1-020 204
KD U-M12-4W-V1-020 226
KD U-M12-4W-V1-020 481
KD U-M12-4W-V1-020 484
KD U-M12-4W-V1-020-3DP 485
KD U-M12-4W-V1-020-DP 485
KD U-M12-4W-V1-030 485
KD U-M12-4W-V1-030-DP 485
KD U-M12-4W-V1-050 28
KD U-M12-4W-V1-050 39
KD U-M12-4W-V1-050 43
KD U-M12-4W-V1-050 50
KD U-M12-4W-V1-050 54
KD U-M12-4W-V1-050 61
KD U-M12-4W-V1-050 65
KD U-M12-4W-V1-050 71
KD U-M12-4W-V1-050 83
KD U-M12-4W-V1-050 87
KD U-M12-4W-V1-050 94
KD U-M12-4W-V1-050 99
KD U-M12-4W-V1-050 102
KD U-M12-4W-V1-050 106
KD U-M12-4W-V1-050 108
KD U-M12-4W-V1-050 110
KD U-M12-4W-V1-050 113
KD U-M12-4W-V1-050 115
KD U-M12-4W-V1-050 123
KD U-M12-4W-V1-050 131
KD U-M12-4W-V1-050 132
KD U-M12-4W-V1-050 138
KD U-M12-4W-V1-050 160
KD U-M12-4W-V1-050 167
KD U-M12-4W-V1-050 196
KD U-M12-4W-V1-050 200
KD U-M12-4W-V1-050 204
KD U-M12-4W-V1-050 226
KD U-M12-4W-V1-050 481
KD U-M12-4W-V1-050 485
KD U-M12-4W-V1-050-3DP 485
KD U-M12-4W-V1-050-DP 485
KD U-M12-4W-V1-100 485
KD U-M12-4W-V1-100-3DP 485
KD U-M12-4W-V1-100-DP 485
KD U-M12-5A-P1-020. 44
KD U-M12-5A-P1-020. 47
KD U-M12-5A-P1-020. 55
KD U-M12-5A-P1-020. 87
KD U-M12-5A-P1-020. 94
KD U-M12-5A-P1-020. 153
KD U-M12-5A-P1-020. 160
KD U-M12-5A-P1-020. 167
KD U-M12-5A-P1-020. 182
KD U-M12-5A-P1-020. 193
KD U-M12-5A-P1-020. 198
KD U-M12-5A-P1-020. 202
KD U-M12-5A-P1-020. 206
KD U-M12-5A-P1-020. 208
KD U-M12-5A-P1-020. 214
KD U-M12-5A-P1-020. 216
KD U-M12-5A-P1-020. 218
KD U-M12-5A-P1-020. 221
KD U-M12-5A-P1-020. 226
KD U-M12-5A-P1-020. 228
KD U-M12-5A-P1-020. 229
KD U-M12-5A-P1-020. 231
KD U-M12-5A-P1-020. 264
KD U-M12-5A-P1-020. 269
KD U-M12-5A-P1-020. 468
KD U-M12-5A-P1-050. 44
KD U-M12-5A-P1-050. 47
KD U-M12-5A-P1-050. 55
KD U-M12-5A-P1-050. 87
KD U-M12-5A-P1-050. 94
KD U-M12-5A-P1-050. 153
KD U-M12-5A-P1-050. 160
KD U-M12-5A-P1-050. 167
KD U-M12-5A-P1-050. 182
KD U-M12-5A-P1-050. 193
KD U-M12-5A-P1-050. 198
KD U-M12-5A-P1-050. 202
KD U-M12-5A-P1-050. 206
KD U-M12-5A-P1-050. 208
KD U-M12-5A-P1-050. 214
KD U-M12-5A-P1-050. 216
KD U-M12-5A-P1-050. 218
KD U-M12-5A-P1-050. 221
KD U-M12-5A-P1-050. 226
KD U-M12-5A-P1-050. 228
KD U-M12-5A-P1-050. 229
KD U-M12-5A-P1-050. 231
KD U-M12-5A-P1-050. 236
KD U-M12-5A-P1-050. 240
KD U-M12-5A-P1-050. 264
KD U-M12-5A-P1-050. 269
KD U-M12-5A-P1-050. 289
KD U-M12-5A-P1-050. 464
KD U-M12-5A-P1-050. 468
KD U-M12-5A-P1-100. 289
KD U-M12-5A-V1-020. 44
KD U-M12-5A-V1-020. 47
KD U-M12-5A-V1-020. 55
KD U-M12-5A-V1-020. 87
KD U-M12-5A-V1-020. 94
KD U-M12-5A-V1-020. 153
KD U-M12-5A-V1-020. 160
KD U-M12-5A-V1-020. 167
KD U-M12-5A-V1-020. 182
KD U-M12-5A-V1-020. 193
KD U-M12-5A-V1-020. 198
KD U-M12-5A-V1-020. 202
KD U-M12-5A-V1-020. 206
KD U-M12-5A-V1-020. 208
KD U-M12-5A-V1-020. 214
KD U-M12-5A-V1-020. 216
KD U-M12-5A-V1-020. 218
KD U-M12-5A-V1-020. 221
KD U-M12-5A-V1-020. 226
KD U-M12-5A-V1-020. 228
KD U-M12-5A-V1-020. 229
KD U-M12-5A-V1-020. 231
KD U-M12-5A-V1-020. 264
KD U-M12-5A-V1-020. 269
KD U-M12-5A-V1-050. 44
KD U-M12-5A-V1-050. 47
KD U-M12-5A-V1-050. 55
KD U-M12-5A-V1-050. 87
KD U-M12-5A-V1-050. 94
KD U-M12-5A-V1-050. 153
KD U-M12-5A-V1-050. 160
KD U-M12-5A-V1-050. 167
KD U-M12-5A-V1-050. 182
KD U-M12-5A-V1-050. 193
KD U-M12-5A-V1-050. 198
KD U-M12-5A-V1-050. 202
KD U-M12-5A-V1-050. 206
KD U-M12-5A-V1-050. 208
KD U-M12-5A-V1-050. 214
KD U-M12-5A-V1-050. 216
KD U-M12-5A-V1-050. 218
KD U-M12-5A-V1-050. 221
KD U-M12-5A-V1-050. 226
KD U-M12-5A-V1-050. 228
KD U-M12-5A-V1-050. 229
KD U-M12-5A-V1-050. 231
KD U-M12-5A-V1-050. 265
KD U-M12-5A-V1-050. 269
KD U-M12-5A-V1-050. 410
KD U-M12-5A-V1-050. 417
KD U-M12-5A-V1-050. 420
KD U-M12-5A-V1-050. 452
KD U-M12-5A-V1-100. 464
KD U-M12-5A-V1-100. 468
KD U-M12-5W-P1-020 43
KD U-M12-5W-P1-020 47
KD U-M12-5W-P1-020 54
KD U-M12-5W-P1-020 87
KD U-M12-5W-P1-020 94
KD U-M12-5W-P1-020 153
KD U-M12-5W-P1-020 160
KD U-M12-5W-P1-020 167
KD U-M12-5W-P1-020 182
KD U-M12-5W-P1-020 193
KD U-M12-5W-P1-020 198
KD U-M12-5W-P1-020 202
KD U-M12-5W-P1-020 206
KD U-M12-5W-P1-020 208
KD U-M12-5W-P1-020 214
KD U-M12-5W-P1-020 216
KD U-M12-5W-P1-020 218
KD U-M12-5W-P1-020 221
KD U-M12-5W-P1-020 226
KD U-M12-5W-P1-020 228
KD U-M12-5W-P1-020 229
KD U-M12-5W-P1-020 231
KD U-M12-5W-P1-020 264
KD U-M12-5W-P1-020 269
KD U-M12-5W-P1-050 43
KD U-M12-5W-P1-050 47
KD U-M12-5W-P1-050 54
KD U-M12-5W-P1-050 87
KD U-M12-5W-P1-050 94
KD U-M12-5W-P1-050 153
KD U-M12-5W-P1-050 160
KD U-M12-5W-P1-050 167
KD U-M12-5W-P1-050 182
KD U-M12-5W-P1-050 193
KD U-M12-5W-P1-050 198
KD U-M12-5W-P1-050 202
KD U-M12-5W-P1-050 206
KD U-M12-5W-P1-050 208
KD U-M12-5W-P1-050 214
KD U-M12-5W-P1-050 216
KD U-M12-5W-P1-050 218
KD U-M12-5W-P1-050 221
KD U-M12-5W-P1-050 226
KD U-M12-5W-P1-050 228
KD U-M12-5W-P1-050 229

KD U-M12-5W-P1-050 231
KD U-M12-5W-P1-050 264
KD U-M12-5W-P1-050 269
KD U-M12-5W-V1-020 43
KD U-M12-5W-V1-020 47
KD U-M12-5W-V1-020 54
KD U-M12-5W-V1-020 87
KD U-M12-5W-V1-020 94
KD U-M12-5W-V1-020 153
KD U-M12-5W-V1-020 160
KD U-M12-5W-V1-020 167
KD U-M12-5W-V1-020 182
KD U-M12-5W-V1-020 193
KD U-M12-5W-V1-020 198
KD U-M12-5W-V1-020 202
KD U-M12-5W-V1-020 206
KD U-M12-5W-V1-020 208
KD U-M12-5W-V1-020 214
KD U-M12-5W-V1-020 216
KD U-M12-5W-V1-020 218
KD U-M12-5W-V1-020 221
KD U-M12-5W-V1-020 226
KD U-M12-5W-V1-020 228
KD U-M12-5W-V1-020 229
KD U-M12-5W-V1-020 231
KD U-M12-5W-V1-020 264
KD U-M12-5W-V1-020 269
KD U-M12-5W-V1-050 44
KD U-M12-5W-V1-050 47
KD U-M12-5W-V1-050 54
KD U-M12-5W-V1-050 87
KD U-M12-5W-V1-050 94
KD U-M12-5W-V1-050 153
KD U-M12-5W-V1-050 160
KD U-M12-5W-V1-050 167
KD U-M12-5W-V1-050 182
KD U-M12-5W-V1-050 193
KD U-M12-5W-V1-050 198
KD U-M12-5W-V1-050 202
KD U-M12-5W-V1-050 206
KD U-M12-5W-V1-050 208
KD U-M12-5W-V1-050 214
KD U-M12-5W-V1-050 216
KD U-M12-5W-V1-050 218
KD U-M12-5W-V1-050 221
KD U-M12-5W-V1-050 226
KD U-M12-5W-V1-050 228
KD U-M12-5W-V1-050 229
KD U-M12-5W-V1-050 231
KD U-M12-5W-V1-050 264
KD U-M12-5W-V1-050 269
KD U-M12-8A-P1-010. 246
KD U-M12-8A-P1-020. 191
KD U-M12-8A-P1-020. 208
KD U-M12-8A-P1-020. 209
KD U-M12-8A-P1-020. 223
KD U-M12-8A-P1-020. 246
KD U-M12-8A-P1-020. 265
KD U-M12-8A-P1-050. 191
KD U-M12-8A-P1-050. 208
KD U-M12-8A-P1-050. 209
KD U-M12-8A-P1-050. 223
KD U-M12-8A-P1-050. 251
KD U-M12-8A-P1-050. 253
KD U-M12-8A-P1-050. 265
KD U-M12-8A-P1-050. 435
KD U-M12-8A-P1-050. 477
KD U-M12-8A-P1-100. 191
KD U-M12-8A-P1-100. 208
KD U-M12-8A-P1-100. 209
KD U-M12-8A-P1-100. 223
KD U-M12-8A-P1-100. 265
KF-ET-10ML-20 169
KF-ET-15MLD-20 169
KF-ET-20MLS-20 169
KF-ET-30ML-20 169
KF-ET-50ML-20 169
KF-ET-620 168
KF-ETB-38V-20. 169
KF-ETC-420 168
KF-ETE-220 169
KF-ETH-38H-20 169
KF-ETW-FU31-20 169
KF-ETW-FU47-20 169
KF-ETW-K10-20 169
KF-ETY-20MLSD-20 169
KF-L-10ML-10 169
KF-L-10MLD-20 169
KF-L-15MLD-10 169
KF-L-30ML-20 169
KF-L-50ML-20 169
KF-L-320 168
KF-L-320-D-T14L 168
KF-L-420 168
KF-LC32-12 168
KF-LD-210-32. 168
KF-LE-220 168
KF-LH-305-D 168
KF-LH-320-D 168
KF-LP-FU92-520-Q. 168
KF-LP-FU96-520-Q. 168
KF-LW-FU53-20 169
KF-LW-FU57-20 169
KF-LY-77TZ-20 168
KF-LY-U09-20 169
KFX-ET-20ML-20 169
KFX-ET-605 169
KFX-ET-620 169
KFX-ETA-320 169
KFX-ETA-420 169
KFX-ETC7-120 169
KFX-ETC-320 169
KFX-ETC-320-Q 169
KFX-ETC-420 169
KFX-ETC-620 169
KFX-ETD-320 169
KFX-ETD-320-Q 169
KFX-ETD-420 169
KFX-ETH-620 169
KFX-ETY-67TZ-20. 169
KFX-L-20ML-20 169
KFX-L-320 168
KFX-L-320-Q 168
KFX-L-420 168
KFX-LA-220 168
KFX-LD-120 168
KFX-LD-320 168
KFX-LD-320-Q 168
KFX-LD-420 168
KFX-LH-320 168
KFX-LH-420 168
KFX-LY-320. 168
KFX-LY-420. 168
KRT18BM.H2/G6T-M12 197
KRT18BM.H2/GCT-M12 197
KRT18BM.H3/G6X-M12 197
KRT18BM.H5/L6T-M12 197
KRT18BM.HS5/L6T-M12. 197
KRT18BM.HT5/L6T-M12. 197
KRT18BM.V2/G6T-M12. 197
KRT18BM.V2/GC1T-M12 197
KRT18BM.V2/GCT-M12 197
KRT18BM.V2/GV1T-M12. 197
KRT18BM.V3/G6X-M12 197
KRT18BM.V5/L6T-M12 197
KRT18BM.VS5/L6T-M12 197
KRT18BM.VT5/L6T-M12 197
KRT21M-09.PL3/42-M12 203
KRTL 3B/2.3111,200-S12. 195
KRTL 3B/2.3111-S8 195
KRTL 3B/4.3111 195
KRTL 3B/4.3111,200-S12. 195
KRTL 3B/4.3111-S8 195
KRTL 3B/6.3111-S8 195
KRTM 3B/2.1121,200-S12 195
KRTM 3B/2.1121-S8. 195
KRTM 3B/2.1221,200-S12 195
KRTM 3B/2.1221-S8. 195
KRTM 3B/4.1121,200-S12 195
KRTM 3B/4.1121-S8. 195
KRTM 3B/4.1221,200-S12 195
KRTM 3B/4.1221-S8. 195
KRTM 3B/4.2121-S8. 195
KRTM 3B/6.1121-S8. 195
KRTM 3B/6.1221-S8. 195
KRTM 3B/6.2121-S8. 195
KRTM 3B/L6.1121-S8. 195
KRTM 20M/C-20-6526-S12 201
KRTM 20M/C-20-6626-S12 201
KRTM 20M/N-20-3320-S12 201
KRTM 20M/N-20-6320-S12 201
KRTM 20M/P-12-6420-S12. 201
KRTM 20M/P-20-3320-S12. 201
KRTM 20M/P-20-6320-S12. 201
KRTM 20M/P-50-6320-S12. 201
KRTM 20M/V-12-0004-S12. 201
KRTM 20M/V-20-0001-S12. 201
KRTM 20M/V-20-0004-S12. 201
KRTM 55/2.1121,200-S12 199
KRTM 55/2.1121-S8. 199
KRTM 55/2.1221,200-S12 199
KRTM 55/2.1221-S8. 199
KRTM 55/4.1121,200-S12 199
KRTM 55/4.1121,5000 199
KRTM 55/4.1121-S8. 199
KRTM 55/4.1221,200-S12 199
KRTM 55/4.1221-S8. 199
KRTM 55/6.1121-S8. 199
KRTM 55/L6.1121,200-S12 199
KRTW 3B/2.1110-S8 195
KRTW 3B/2.1121,200-S12 195
KRTW 3B/2.1121-S8 195
KRTW 3B/2.1321,200-S12 195
KRTW 3B/2.1321-S8 195
KRTW 3B/4.1110-S8 195
KRTW 3B/4.1121,200-S12 195
KRTW 3B/4.1121-S8 195
KRTW 3B/4.1321,200-S12 195
KRTW 3B/4.1321-S8 195
KRTW 3B/4.2121-S8 195
KRTW 3B/6.1121-S8 195
KRTW 3B/6.1321-S8 195
KRTW 55/2.1121,200-S12 199
KRTW 55/2.1121-S8. 199
KRTW 55/4.1121,200-S12 199
KRTW 55/4.1121,5000 199
KRTW 55/4.1121-S8. 199
KS 095-4A 417
KS 095-4A 493
KS 095-5A 493
KS ET-M12-4A-P7-020 464
KS ET-M12-4A-P7-020 468
KS ET-M12-4A-P7-020 488
KS ET-M12-4A-P7-050 236
KS ET-M12-4A-P7-050 464
KS ET-M12-4A-P7-050 468
KS ET-M12-4A-P7-050 477
KS ET-M12-4A-P7-050 488
KS ET-M12-4A-P7-100 464
KS ET-M12-4A-P7-100 468
KS ET-M12-4A-P7-100 488
KS ET-M12-4A-P7-150 464
KS ET-M12-4A-P7-150 468
KS ET-M12-4A-P7-150 488
KS ET-M12-4A-P7-300 468
KS ET-M12-4A-P7-300 488
KS ET-M12-4W-P7-050. 464
KS ET-M12-4W-P7-050. 488
KS PB-M12-4A-P3-020. 265
KS PB-M12-4A-P3-020. 468
KS PB-M12-4A-P3-020. 488

© Leuze electronic GmbH + Co. KG

Type designation. . . Page no.

KS PB-M12-4A-P3-050. 236
KS PB-M12-4A-P3-050. 240
KS PB-M12-4A-P3-050. 251
KS PB-M12-4A-P3-050. 265
KS PB-M12-4A-P3-050. 410
KS PB-M12-4A-P3-050. 417
KS PB-M12-4A-P3-050. 420
KS PB-M12-4A-P3-050. 452
KS PB-M12-4A-P3-050. 468
KS PB-M12-4A-P3-050. 488
KS PB-M12-4A-P3-100. 265
KS PB-M12-4A-P3-100. 468
KS PB-M12-4A-P3-100. 488
KS PB-M12-4A-P3-150. 265
KS PB-M12-4A-P3-150. 468
KS PB-M12-4A-P3-150. 488
KS PB-M12-4A-P3-300. 468
KS PB-M12-4A-P3-300. 488
KSS CR-USB-AA-RJ41-A-T0-018 441
KSS ET-M12-4A-M12-4A-P7-010 236
KSS ET-M12-4A-M12-4A-P7-010 240
KSS ET-M12-4A-M12-4A-P7-010 410
KSS ET-M12-4A-M12-4A-P7-010 417
KSS ET-M12-4A-M12-4A-P7-010 420
KSS ET-M12-4A-M12-4A-P7-010 435
KSS ET-M12-4A-M12-4A-P7-010 452
KSS ET-M12-4A-M12-4A-P7-010 477
KSS ET-M12-4A-M12-4A-P7-010 491
KSS ET-M12-4A-M12-4A-P7-020 237
KSS ET-M12-4A-M12-4A-P7-020 240
KSS ET-M12-4A-M12-4A-P7-020 410
KSS ET-M12-4A-M12-4A-P7-020 417
KSS ET-M12-4A-M12-4A-P7-020 420
KSS ET-M12-4A-M12-4A-P7-020 435
KSS ET-M12-4A-M12-4A-P7-020 452
KSS ET-M12-4A-M12-4A-P7-020 477
KSS ET-M12-4A-M12-4A-P7-020 491
KSS ET-M12-4A-M12-4A-P7-050 237
KSS ET-M12-4A-M12-4A-P7-050 240
KSS ET-M12-4A-M12-4A-P7-050 410
KSS ET-M12-4A-M12-4A-P7-050 417
KSS ET-M12-4A-M12-4A-P7-050 420
KSS ET-M12-4A-M12-4A-P7-050 435
KSS ET-M12-4A-M12-4A-P7-050 452
KSS ET-M12-4A-M12-4A-P7-050 477
KSS ET-M12-4A-M12-4A-P7-050 491
KSS ET-M12-4A-M12-4A-P7-100 237
KSS ET-M12-4A-M12-4A-P7-100 240
KSS ET-M12-4A-M12-4A-P7-100 410
KSS ET-M12-4A-M12-4A-P7-100 417
KSS ET-M12-4A-M12-4A-P7-100 420
KSS ET-M12-4A-M12-4A-P7-100 435
KSS ET-M12-4A-M12-4A-P7-100 452
KSS ET-M12-4A-M12-4A-P7-100 477
KSS ET-M12-4A-M12-4A-P7-100 491
KSS ET-M12-4A-M12-4A-P7-150 237
KSS ET-M12-4A-M12-4A-P7-150 240
KSS ET-M12-4A-M12-4A-P7-150 410
KSS ET-M12-4A-M12-4A-P7-150 417
KSS ET-M12-4A-M12-4A-P7-150 420
KSS ET-M12-4A-M12-4A-P7-150 435
KSS ET-M12-4A-M12-4A-P7-150 452
KSS ET-M12-4A-M12-4A-P7-150 477
KSS ET-M12-4A-M12-4A-P7-150 491
KSS ET-M12-4A-RJ45-A-P7-006. 491
KSS ET-M12-4A-RJ45-A-P7-010. 236
KSS ET-M12-4A-RJ45-A-P7-010. 240
KSS ET-M12-4A-RJ45-A-P7-010. 251
KSS ET-M12-4A-RJ45-A-P7-010. 253
KSS ET-M12-4A-RJ45-A-P7-010. 410
KSS ET-M12-4A-RJ45-A-P7-010. 417
KSS ET-M12-4A-RJ45-A-P7-010. 420
KSS ET-M12-4A-RJ45-A-P7-010. 435
KSS ET-M12-4A-RJ45-A-P7-010. 452
KSS ET-M12-4A-RJ45-A-P7-010. 464
KSS ET-M12-4A-RJ45-A-P7-010. 477
KSS ET-M12-4A-RJ45-A-P7-010. 491
KSS ET-M12-4A-RJ45-A-P7-020. 328
KSS ET-M12-4A-RJ45-A-P7-020. 464
KSS ET-M12-4A-RJ45-A-P7-020. 491
KSS ET-M12-4A-RJ45-A-P7-050. 237
KSS ET-M12-4A-RJ45-A-P7-050. 240
KSS ET-M12-4A-RJ45-A-P7-050. 251
KSS ET-M12-4A-RJ45-A-P7-050. 253
KSS ET-M12-4A-RJ45-A-P7-050. 328
KSS ET-M12-4A-RJ45-A-P7-050. 410
KSS ET-M12-4A-RJ45-A-P7-050. 417
KSS ET-M12-4A-RJ45-A-P7-050. 420
KSS ET-M12-4A-RJ45-A-P7-050. 452
KSS ET-M12-4A-RJ45-A-P7-050. 464
KSS ET-M12-4A-RJ45-A-P7-050. 477
KSS ET-M12-4A-RJ45-A-P7-050. 491
KSS ET-M12-4A-RJ45-A-P7-100. 328
KSS ET-M12-4A-RJ45-A-P7-100. 464
KSS ET-M12-4A-RJ45-A-P7-100. 491
KSS ET-M12-4A-RJ45-A-P7-150. 328
KSS ET-M12-4A-RJ45-A-P7-150. 464
KSS ET-M12-4A-RJ45-A-P7-150. 491
KSS ET-M12-4A-RJ45-A-P7-300. 328
KSS ET-M12-4A-RJ45-A-P7-300. 464
KSS ET-M12-4A-RJ45-A-P7-300. 491
KSS ET-M12-4W-RJ45-A-P7-050 491
KSS ET-M12-4W-RJ45-A-P7-150 491
KSS ET-M12-8A-RJ45-A-P7-050. 481
KSS ET-M12-8A-RJ45-A-P7-050. 491
KSS HS-USB-4A-RJ41-AA-T1-020 442
KS S-M12-8A-P1-050. 251
KS S-M12-8A-P1-050. 435
KS S-M12-8A-P1-050. 477
KS S-M12-8A-P1-100. 311
KS S-M12-8A-P1-150. 311
KS S-M12-8A-P1-300. 311
K-SSPB M12A-M12A-2P-0,3m-S-PUR 266
KS U-M8-3A-P1-020. 487
KS U-M8-3A-P1-050. 487
KS U-M8-3A-P1-100. 487
KS U-M8-4A-P1-020. 487
KS U-M8-4A-P1-050. 487
KS U-M8-4A-P1-100. 487
KS U-M12-4A-V1-020. 321
KS U-M12-4A-V1-020. 485
KS U-M12-4A-V1-050. 321
KS U-M12-4A-V1-050. 485
K-Y1 M12A-2m-M12A-S-PUR. 265
K-Y1 M12A-5m-M12A-S-PUR. 265
K-Y1 M12A-10m-M12A-S-PUR. 265
K-Y1 M12A-20m-M12A-S-PUR. 265
K-YCN M12A-5m-M12A-S-PUR 246
K-YCN M12A-5m-M12A-S-PUR 265
K-YCN M12A-M12A-S-PUR 246
K-YCN M12A-M12A-S-PUR 265
K-YPB M12A-5m-M12A-S-PUR. 265
K-YPB M12A-M12A-S-PUR. 265
L10-M2C1-M20-SB20. 342
L10-M3C1-M20-K0. 342
L10-M3C1-M20-SB20. 342
L10-P2C1-M20-SB20 342
L10-P3C1-M20-K0 342
L10-P3C1-M20-LB10 342
L10-P3C1-M20-LB20 342
L10-P3C1-M20-SB20 342
L100-P3C3-M20-MLM24 344
L100-P3C3-M20-SLM24. 344
L100-P4C3-M20-SLM24. 344
L200-M0C3-SLM24-L2G. 345
L200-M1C3-MLM24-L2G 345
L200-M1C3-SLM24-L2G. 345
L200-M1C3-SLM24-PB-L2G. 345
L300-M31C3-SLM24-KYPB-SCA 347
L300-M31C3-SLM24-KYPB-UCA 347
L300-M31C3-SLM24-PB-SCA 347
L300-M31C3-SLM24-PB-UCA 347
L300-M31C3-SLM24-SCA 347
L300-M31C3-SLM24-UCA 347
L300-M31M12B8-SLM24-KYPB-SCA 348
L300-M31M12B8-SLM24-KYPB-UCA 347
L300-M31M12B8-SLM24-PB-SCA 348
L300-M31M12B8-SLM24-PB-UCA 347
L300-M31M12B8-SLM24-SCA 347
L300-M31M12B8-SLM24-UCA 347
L300-M31M12B8Y-SLM24-SCA 347
L300-M31M12L8-SLM24-KYPB-SCA 348
L300-M31M12L8-SLM24-KYPB-UCA 347
L300-M31M12L8-SLM24-PB-SCA 348
L300-M31M12L8-SLM24-PB-UCA 347
L300-M31M12L8-SLM24-SCA 347
L300-M31M12L8-SLM24-UCA 347
L300-M31M12R8-SLM24-KYPB-SCA 348
L300-M31M12R8-SLM24-KYPB-UCA 347
L300-M31M12R8-SLM24-PB-SCA 348
L300-M31M12R8-SLM24-PB-UCA 347
L300-M31M12R8-SLM24-SCA 347
L300-M31M12R8-SLM24-UCA 347
L300-M32M12B8-MLM24-SCA. 348
L300-M41C3-SLM24-KYPB-UCA 347
L300-M41C3-SLM24-PB-UCA 347
L300-M41C3-SLM24-UCA 347
L300-M41M12B8-MLM24-PB-UCA. 347
L300-M41M12B8-MLM24-UCA. 347
L300-M41M12B8-SLM24-KYPB-UCA 347
L300-M41M12B8-SLM24-PB-UCA 347
L300-M41M12B8-SLM24-UCA 347
L300-M41M12L8-SLM24-KYPB-UCA 347
L300-M41M12L8-SLM24-PB-UCA 347
L300-M41M12L8-SLM24-UCA 347
L300-M41M12R8-SLM24-KYPB-UCA 347
L300-M41M12R8-SLM24-PB-UCA 347
L300-M41M12R8-SLM24-UCA 347
LA-78 513
LA-78M 513
LA-78M-UDC 513
LA-78U. 513
LA-78UDC 513
LCAM 408i C7F-XX 480
LCS-1M12M-F04NNC-K020P 144
LCS-1M12M-F04NNC-M12. 144
LCS-1M12M-F04NNO-K020P 144
LCS-1M12M-F04NNO-M12. 144
LCS-1M12M-F04PNC-K020P 144
LCS-1M12M-F04PNC-M12 144
LCS-1M12M-F04PNO-K020P 144
LCS-1M12M-F04PNO-M12 144
LCS-1M12M-N08NNC-K020P. 143
LCS-1M12M-N08NNC-M12 143
LCS-1M12M-N08NNO-K020P. 143
LCS-1M12M-N08NNO-M12 143
LCS-1M12M-N08PNC-K020P. 143
LCS-1M12M-N08PNC-M12. 143
LCS-1M12M-N08PNO-K020P. 143
LCS-1M12M-N08PNO-M12 143
LCS-1M12P-F04NNC-K020P 144
LCS-1M12P-F04NNC-M12 144
LCS-1M12P-F04NNO-K020P 144
LCS-1M12P-F04NNO-M12 144
LCS-1M12P-F04PNC-K020P 144
LCS-1M12P-F04PNC-M12 144
LCS-1M12P-F04PNO-K020P 144
LCS-1M12P-F04PNO-M12 144
LCS-1M12P-N08NNC-K020P 143
LCS-1M12P-N08NNC-M12. 143
LCS-1M12P-N08NNO-K020P 143
LCS-1M12P-N08NNO-M12. 143
LCS-1M12P-N08PNC-K020P 143
LCS-1M12P-N08PNC-M12 143
LCS-1M12P-N08PNO-K020P 143
LCS-1M12P-N08PNO-M12 143
LCS-1M12T-N08NNC-K020T 143
LCS-1M12T-N08NNC-K020T 148
LCS-1M12T-N08NNO-K020T 143
LCS-1M12T-N08NNO-K020T 148
LCS-1M12T-N08PNC-K020T. 143

LCS-1M12T-N08PNC-K020T. 148
LCS-1M12T-N08PNO-K020T. 143
LCS-1M12T-N08PNO-K020T. 148
LCS-1M18M-F08NNC-K020P 144
LCS-1M18M-F08NNC-M12. 144
LCS-1M18M-F08NNO-K020P 144
LCS-1M18M-F08NNO-M12. 144
LCS-1M18M-F08PNC-K020P 144
LCS-1M18M-F08PNC-M12 144
LCS-1M18M-F08PNO-K020P 144
LCS-1M18M-F08PNO-M12. 144
LCS-1M18M-N15NNC-K020P. 143
LCS-1M18M-N15NNC-M12 143
LCS-1M18M-N15NNO-K020P. 143
LCS-1M18M-N15NNO-M12 143
LCS-1M18M-N15PNC-K020P. 144
LCS-1M18M-N15PNC-M12. 143
LCS-1M18M-N15PNO-K020P. 144
LCS-1M18M-N15PNO-M12 143
LCS-1M18P-F05NNP-M12-LT. 149
LCS-1M18P-F05PNP-M12-LT. 149
LCS-1M18P-F08NNC-K020P 144
LCS-1M18P-F08NNC-M12 144
LCS-1M18P-F08NNO-K020P 144
LCS-1M18P-F08NNO-M12 144
LCS-1M18P-F08PNC-K020P 144
LCS-1M18P-F08PNC-M12 144
LCS-1M18P-F08PNO-K020P 144
LCS-1M18P-F08PNO-M12 144
LCS-1M18P-N15NNC-K020P 143
LCS-1M18P-N15NNC-M12. 143
LCS-1M18P-N15NNO-K020P 143
LCS-1M18P-N15NNO-M12. 143
LCS-1M18P-N15PNC-K020P 143
LCS-1M18P-N15PNC-M12 143
LCS-1M18P-N15PNO-K020P 143
LCS-1M18P-N15PNO-M12 143
LCS-1M18T-N15NNC-K020T 143
LCS-1M18T-N15NNC-K020T 148
LCS-1M18T-N15NNO-K020T 143
LCS-1M18T-N15NNO-K020T 148
LCS-1M18T-N15PNC-K020T. 143
LCS-1M18T-N15PNC-K020T. 148
LCS-1M18T-N15PNO-K020T. 143
LCS-1M18T-N15PNO-K020T. 148
LCS-1M30M-F15NNC-K020P 144
LCS-1M30M-F15NNC-M12. 144
LCS-1M30M-F15NNO-K020P 144
LCS-1M30M-F15NNO-M12. 144
LCS-1M30M-F15PNC-K020P 144
LCS-1M30M-F15PNC-M12 144
LCS-1M30M-F15PNO-K020P 144
LCS-1M30M-F15PNO-M12. 144
LCS-1M30M-N25NNC-K020P. 144
LCS-1M30M-N25NNC-M12 143
LCS-1M30M-N25NNO-K020P. 144
LCS-1M30M-N25NNO-M12 143
LCS-1M30M-N25PNC-K020P. 144
LCS-1M30M-N25PNC-M12. 143
LCS-1M30M-N25PNO-K020P. 144
LCS-1M30M-N25PNO-M12 143
LCS-1M30P-F10NNP-M12-LT. 149
LCS-1M30P-F10PNP-M12-LT. 149
LCS-1M30P-F15NNC-K020P 144
LCS-1M30P-F15NNC-M12 144
LCS-1M30P-F15NNO-K020P 144
LCS-1M30P-F15NNO-M12 144
LCS-1M30P-F15PNC-K020P 144
LCS-1M30P-F15PNC-M12 144
LCS-1M30P-F15PNO-K020P 144
LCS-1M30P-F15PNO-M12 144
LCS-1M30P-N25NNC-K020P 143
LCS-1M30P-N25NNC-M12. 143
LCS-1M30P-N25NNO-K020P 143
LCS-1M30P-N25NNO-M12. 143
LCS-1M30P-N25PNC-K020P 143
LCS-1M30P-N25PNC-M12 143
LCS-1M30P-N25PNO-K020P 143
LCS-1M30P-N25PNO-M12 143
LCS-1M30T-N30NNC-K020T 143
LCS-1M30T-N30NNC-K020T 148
LCS-1M30T-N30NNO-K020T 143
LCS-1M30T-N30NNO-K020T 148
LCS-1M30T-N30PNC-K020T. 143
LCS-1M30T-N30PNC-K020T. 148
LCS-1M30T-N30PNO-K020T. 143
LCS-1M30T-N30PNO-K020T. 148
LCS-1Q40P-F20BNP-K020P. 147
LCS-1Q40P-F20PNC-K003PM08 147
LCS-1Q40P-F20PNO-K003PM08 147
LCS-1Q54P-F10NNC-K020P 147
LCS-1Q54P-F10NNO-K020P 147
LCS-1Q54P-F10PNC-K020P. 147
LCS-1Q54P-F10PNO-K020P 147
LCS-2M12B-F03NNC-K020V 145
LCS-2M12B-F03NNC-M12 145
LCS-2M12B-F03NNO-K020V 145
LCS-2M12B-F03NNO-M12 145
LCS-2M12B-F03PNC-K020V 145
LCS-2M12B-F03PNC-M12 145
LCS-2M12B-F03PNO-K020V 145
LCS-2M12B-F03PNO-M12 145
LCS-2M12B-N06NNC-K020V 145
LCS-2M12B-N06NNC-M12. 144
LCS-2M12B-N06NNO-K020V 145
LCS-2M12B-N06NNO-M12. 144
LCS-2M12B-N06PNC-K020V 145
LCS-2M12B-N06PNC-M12 144
LCS-2M12B-N06PNO-K020V 145
LCS-2M12B-N06PNO-M12. 144
LCS-2M12P-F03NNC-K020V 145
LCS-2M12P-F03NNC-M12 145
LCS-2M12P-F03NNO-K020V 145
LCS-2M12P-F03NNO-M12 145
LCS-2M12P-F03PNC-K020V 145
LCS-2M12P-F03PNC-M12 145
LCS-2M12P-F03PNO-K020V 145
LCS-2M12P-F03PNO-M12 145
LCS-2M12P-N06NNC-K020V 145
LCS-2M12P-N06NNC-M12. 144
LCS-2M12P-N06NNO-K020V 145
LCS-2M12P-N06NNO-M12. 144
LCS-2M12P-N06PNC-K020V 145
LCS-2M12P-N06PNC-M12 144
LCS-2M12P-N06PNO-K020V 145
LCS-2M12P-N06PNO-M12 144
LCS-2M18B-F08NNC-K020V 145
LCS-2M18B-F08NNC-M12 145
LCS-2M18B-F08NNO-K020V 145
LCS-2M18B-F08NNO-M12 145
LCS-2M18B-F08PNC-K020V 145
LCS-2M18B-F08PNC-M12 145
LCS-2M18B-F08PNO-K020V 145
LCS-2M18B-F08PNO-M12 145
LCS-2M18B-N15NNC-K020V 145
LCS-2M18B-N15NNC-M12. 144
LCS-2M18B-N15NNO-K020V 145
LCS-2M18B-N15NNO-M12. 144
LCS-2M18B-N15PNC-K020V 145
LCS-2M18B-N15PNC-M12 144
LCS-2M18B-N15PNO-K020V 145
LCS-2M18B-N15PNO-M12. 144
LCS-2M18P-F08NNC-K020V 146
LCS-2M18P-F08NNC-M12 145
LCS-2M18P-F08NNO-K020V 146
LCS-2M18P-F08NNO-M12 145
LCS-2M18P-F08PNC-K020V 146
LCS-2M18P-F08PNC-M12 145
LCS-2M18P-F08PNO-K020V 146
LCS-2M18P-F08PNO-M12 145
LCS-2M18P-N15NNC-K020V 145
LCS-2M18P-N15NNC-M12. 144
LCS-2M18P-N15NNO-K020V 145
LCS-2M18P-N15NNO-M12. 145
LCS-2M18P-N15PNC-K020V 145
LCS-2M18P-N15PNC-M12 145
LCS-2M18P-N15PNO-K020V 145
LCS-2M18P-N15PNO-M12 145
LCS-2M30B-F20NNC-K020V 145
LCS-2M30B-F20NNC-M12 145
LCS-2M30B-F20NNO-K020V 145
LCS-2M30B-F20NNO-M12 145
LCS-2M30B-F20PNC-K020V 145
LCS-2M30B-F20PNC-M12 145
LCS-2M30B-F20PNO-K020V 145
LCS-2M30B-F20PNO-M12 145
LCS-2M30B-N30NNC-K020V 145
LCS-2M30B-N30NNC-M12. 144
LCS-2M30B-N30NNO-K020V 145
LCS-2M30B-N30NNO-M12. 144
LCS-2M30B-N30PNC-K020V 145
LCS-2M30B-N30PNC-M12 144
LCS-2M30B-N30PNO-K020V 145
LCS-2M30B-N30PNO-M12. 144
LCS-2M30P-F20NNC-K020V 146
LCS-2M30P-F20NNC-M12 145
LCS-2M30P-F20NNO-K020V 146
LCS-2M30P-F20NNO-M12 145
LCS-2M30P-F20PNC-K020V 146
LCS-2M30P-F20PNC-M12 145
LCS-2M30P-F20PNO-K020V 146
LCS-2M30P-F20PNO-M12 145
LCS-2M30P-N30NNC-K020V 145
LCS-2M30P-N30NNC-M12. 145
LCS-2M30P-N30NNO-K020V 145
LCS-2M30P-N30NNO-M12. 145
LCS-2M30P-N30PNC-K020V 145
LCS-2M30P-N30PNC-M12 145
LCS-2M30P-N30PNO-K020V 145
LCS-2M30P-N30PNO-M12. 145
LE3C/4W-M8 30
LE3C/4W-M8 30
LE3C/6G-M8 30
LE3C/6G-M8 30
LE3CL1.1/4W-M8. 29
LE3CL1.1/4W-M8. 30
LE3CL1.1/6G-M8 29
LE3CL1.1/6G-M8 30
LE3CL1.1/LP-M8 29
LE3CL1.1/LP-M8 30
LE3C/LP-M8. 30
LE3C/LP-M8. 30
LE5/2 36
LE5/2 36
LE5/2-M8.3. 35
LE5/2-M8.3. 35
LE5/2-M8.3. 35
LE5/2N 36
LE5/2N 36
LE5/2N 36
LE5/2N-200-M12 36
LE5/2N-M8. 35
LE5/2N-M8. 35
LE5/2N-M8. 35
LE5/2X-200-M12 36
LE5/2X-M8 35
LE5/2X-M8 35
LE5/2X-M8 35
LE5/4 36
LE5/4 36
LE5/4-M8.3. 35
LE5/4-M8.3. 35
LE5/4-M8.3. 35
LE5/4P 36
LE5/4P 36
LE5/4P 36
LE5/4P-200-M12 36
LE5/4P-M8 35
LE5/4P-M8 35
LE5/4P-M8 35
LE5/4X-200-M12 36

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Type designation. . . Page no.

LE5/4X-M8 . . . 35
LE5/4X-M8 . . . 35
LE5/4X-M8 . . . 35
LE5/N . . . 36
LE5/N . . . 36
LE5/N . . . 36
LE5/P . . . 36
LE5/P . . . 36
LE5/P . . . 36
LE28/2N . . . 63
LE28/2N-M12 . . . 63
LE28/4P . . . 63
LE28/4P-M12 . . . 63
LE46C.1/4P-200-M12 . . . 67
LE46C.1/4P-M12 . . . 66
LE46C.1/4P-M12 . . . 67
LE46C/2N-M12 . . . 66
LE46C/2N-M12 . . . 67
LE46C/4P . . . 67
LE46C/4P-200-M12 . . . 67
LE46C/4P-M12 . . . 66
LE46C/4P-M12 . . . 67
LE46C/4W-M12 . . . 66
LE46C/4W-M12 . . . 67
LE46CI.1/4P-M12 . . . 67
LE46C.P/2N-M12 . . . 66
LE46C.P/4P-M12 . . . 66
LE46C/PX-200-M12 . . . 67
LE49C.1/4P-TB . . . 72
LE49C.1/4P-TB . . . 73
LE49C/2N-TB . . . 72
LE49C/2N-TB . . . 73
LE49C/4P-TB . . . 72
LE49C/4P-TB . . . 73
LE49C/4W-TB . . . 72
LE49C/4W-TB . . . 73
LE49CI.1/2N-TB . . . 73
LE49CI.1/2N-TB . . . 73
LE49CI.1/4P-TB . . . 73
LE49CI.1/4P-TB . . . 73
LE49CI/4W-TB . . . 73
LE49CI/4W-TB . . . 73
LE49CI.UC1/M4 . . . 73
LE49CI.UC1/M4-TB . . . 73
LE49CI.UCH1/M4-TB . . . 73
LE49CI.UCH/TS-TB . . . 73
LE49CI.UC/TS . . . 73
LE49CI.UC/TS-TB . . . 73
LE49C.UC1/M4 . . . 72
LE49C.UC1/M4-TB . . . 73
LE49C.UCH1/M4-TB . . . 73
LE49C.UCH/TS-TB . . . 73
LE49C.UC/TS . . . 72
LE49C.UC/TS-TB . . . 73
LE318B/2N . . . 96
LE318B/2N . . . 96
LE318B/2N . . . 96
LE318B/2N-M12 . . . 96
LE318B/2N-M12 . . . 96
LE318B/2N-M12 . . . 96
LE318B/2N-M12 . . . 96
LE318B/4P . . . 96
LE318B/4P . . . 96
LE318B/4P . . . 96
LE318B/4P-M12 . . . 96
LE318B/4P-M12 . . . 96
LE318B/4P-M12 . . . 96
LE318B/4P-M12 . . . 96
LE318B.W/2N . . . 96
LE318B.W/2N-M12 . . . 96
LE318B.W/4P . . . 96
LE318B.W/4P-M12 . . . 96
LE328/2N . . . 103
LE328/2N-M12 . . . 103
LE328/4P . . . 103
LE328/4P-M12 . . . 103
LE328.W/2N . . . 103
LE328.W/2N-M12 . . . 103
LE328.W/4P . . . 103
LE328.W/4P-M12 . . . 103
LES 36HI/PB . . . 249
LES 36HI/VC6 . . . 249
LES 36HI/VC6.10 . . . 249
LES 36/PB . . . 249
LES 36/VC6 . . . 249
LPS 36 . . . 248
LPS 36/EN . . . 248
LPS 36HI/EN . . . 248
LPS 36HI/EN.10 . . . 248
LRS 36/6 . . . 250
LRS 36/6.10 . . . 250
LRS 36/PB . . . 250
LRT 8/24.04-50-S12 . . . 205
LRT 8/24.04-100-S12 . . . 205
LRT 8/24.10-150-S12 . . . 205
LRT 8/24.14-150-S12 . . . 205
LRT 8/24.16-80-S12 . . . 205
LRT 8/44.14-150-S12 . . . 205
LS3C/8X-M8 . . . 30
LS3CL1/8X-M8 . . . 30
LS3CL1/XX-M8 . . . 29
LS3C/XX-M8 . . . 30
LS5 . . . 36
LS5/9D . . . 36
LS5/9D-200-M12 . . . 36
LS5/9D-M8 . . . 35
LS5I/9D-P1 . . . 36
LS5/X-M8.3 . . . 35
LS5/XX-M8 . . . 35
LS28/9D . . . 63
LS28/9D-M12 . . . 63
LS46C . . . 67
LS46C.8-M12 . . . 67
LS46C-200-M12 . . . 67
LS46CI-M12 . . . 67
LS46C-M12 . . . 66
LS49C.8-TB . . . 73
LS49CI.8-TB . . . 73
LS49CI-TB . . . 73
LS49CI.UC . . . 73
LS49CI.UCH/TB . . . 73
LS49CI.UC-TB . . . 73
LS49C-TB . . . 72
LS49C.UC . . . 72
LS49C.UCH/TB . . . 73
LS49C.UC-TB . . . 73
LS 95/2.8 SE-L.1 . . . 85
LS318B/9D . . . 96
LS318B/9D-M12 . . . 96
LS318BI/9D . . . 96
LS318BI/9D-M12 . . . 96
LS318B.W/9D . . . 96
LS318B.W/9D-M12 . . . 96
LS318B.Y1 . . . 96
LS328/9D . . . 103
LS328/9D-M12 . . . 103
LS328.W/9D . . . 103
LS328.W/9D-M12 . . . 103
LS328/XX-M12 . . . 103
LS 412M/P . . . 107
LSE 25B/22.2 . . . 57
LSE 25B/22.2-S8 . . . 57
LSE 25B/22.2-S12 . . . 56
LSE 25B/44.2 . . . 57
LSE 25B/44.2-S8 . . . 57
LSE 25B/44.2-S12 . . . 56
LSE 55/44.H2O,200-S12 . . . 80
LSE 55/441.H2O,200-S12 . . . 80
LSE 96K/P-1140-21 . . . 88
LSE 96M/A-182W-44 . . . 88
LSE 96M/N-1010-27 . . . 89
LSE 96M/P-181W-41 . . . 88
LSE 96M/P-1040-42 . . . 89
LSE 96M/P-1130-22 . . . 89
LSE 96M/P-1170-22 . . . 89
LSE 96M/P-1170-42 . . . 88
LSE 96M/P-1816-41 . . . 88
LSE 96M/P-3010-21 . . . 89
LSE 96M/P-3010-41 . . . 89
LSE 96M/P-3012-21 . . . 89
LSE 96M/P-3012-21 . . . 89
LSE 96M/P-3012-41 . . . 89
LSE 96M/P-3019-21 Ex n . . . 116
LSE 96M/R-176W-25 . . . 88
LSE 96M/R-1310-25 . . . 89
LSE 96M/R-3310-25 . . . 89
LSEL 318M/P . . . 100
LSEL 318M/P-B5 . . . 100
LSEL 318M/P-B5-S12 . . . 100
LSEL 318M/P-S12 . . . 100
LSER 2/4,150-S8.3 . . . 26
LSER 2/42 . . . 26
LSER 2/42,150-S8 . . . 26
LSER 2/42,150-S12 . . . 26
LSER 2/42D . . . 26
LSER 2/42D,150-S8 . . . 26
LSER 2/42D,150-S12 . . . 26
LSER 8/44-S12 . . . 41
LSER 25B/4,200-S8.1 . . . 56
LSER 25B/4,200-S12 . . . 56
LSER 25B/6-S12 . . . 56
LSER 25B/6-S12 . . . 56
LSER 25B/66 . . . 56
LSER 25B/66.1-S12 . . . 56
LSER 25B/66-S8 . . . 56
LSER 25B/66-S12 . . . 56
LSER 25B/66-S12 . . . 56
LSER 46B/66,200-S12 S-Ex n . . . 114
LSER 53/66-S8 . . . 76
LSER 55/66,200-S12 . . . 80
LSER 55/66,300-S12 Ex . . . 80
LSER 55/66,300-S12 Ex . . . 112
LSER 55/66,5000 . . . 80
LSER 55/66-S8 . . . 80
LSERL 8/24.01-S12 . . . 41
LSERL 8/24.01-S12 . . . 41
LSERL 8/44.01-S12 . . . 41
LSERL 8/44.01-S12 . . . 41
LSEU 18/24-S12 . . . 151
LSIS 222 M5M-R1 . . . 432
LSIS 223 M5M-R1 . . . 432
LSIS 412i M43-I1 . . . 475
LSIS 412i M43-I1-01 . . . 475
LSIS 412i M43-M1 . . . 475
LSIS 412i M43-M1-01 . . . 475
LSIS 412i M43-W1 . . . 475
LSIS 412i M43-W1-01 . . . 475
LSIS 412i M45-I1 . . . 475
LSIS 412i M45-I1-01 . . . 475
LSIS 412i M45-M1 . . . 475
LSIS 412i M45-M1-01 . . . 475
LSIS 412i M45-W1 . . . 475
LSIS 412i M45-W1-01 . . . 475
LSIS 412i M49-X9 . . . 475
LSIS 412i M49-X9-01 . . . 475
LSIS 422i M43-I1 . . . 434
LSIS 422i M43-I1-01 . . . 434
LSIS 422i M43-M1 . . . 434
LSIS 422i M43-M1-01 . . . 434
LSIS 422i M43-W1 . . . 434
LSIS 422i M43-W1-01 . . . 434
LSIS 422i M45-I1 . . . 434
LSIS 422i M45-I1-01 . . . 434
LSIS 422i M45-M1 . . . 434
LSIS 422i M45-M1-01 . . . 434
LSIS 422i M45-W1 . . . 434
LSIS 422i M45-W1-01 . . . 434
LSIS 422i M49-X9 . . . 434
LSIS 462i M43-I1 . . . 475
LSIS 462i M43-I1-01 . . . 475
LSIS 462i M43-M1 . . . 475

LSIS 462i M43-M1-01 . . . 475
LSIS 462i M43-W1 . . . 475
LSIS 462i M43-W1-01 . . . 476
LSIS 462i M45-I1 . . . 476
LSIS 462i M45-I1-01 . . . 476
LSIS 462i M45-M1 . . . 476
LSIS 462i M45-M1-01 . . . 476
LSIS 462i M45-W1 . . . 476
LSIS 462i M45-W1-01 . . . 476
LSIS 462i M49-X9 . . . 476
LSIS 472i M43-I1 . . . 476
LSIS 472i M43-I1-H . . . 476
LSIS 472i M45-I1 . . . 476
LSIS 472i M45-I1-H . . . 476
LSR 95/2.8 SE-L.1 . . . 85
LSS 25B.2 . . . 57
LSS 25B.2-S8 . . . 57
LSS 25B.2-S12 . . . 56
LSS 55.H2O,200-S12 . . . 80
LSS 96K-1213-24 . . . 88
LSS 96M-120W-43 . . . 88
LSS 96M-175W-26 . . . 88
LSS 96M-180W-44 . . . 88
LSS 96M-1070-23 . . . 89
LSS 96M-1070-43 . . . 89
LSS 96M-1079-23 Ex n . . . 116
LSS 96M-1090-24 . . . 89
LSS 96M-1090-43 . . . 89
LSS 96M-1093-24 . . . 89
LSS 96M-1200-23 . . . 89
LSS 96M-1206-43 . . . 88
LSS 96M-1350-26 . . . 89
LSSL 318M . . . 100
LSSL 318M-S12 . . . 100
LSSR 2 . . . 26
LSSR 2.8,150-S8.3 . . . 26
LSSR 2,150-S8 . . . 26
LSSR 2,150-S12 . . . 26
LSSR 8-S12 . . . 41
LSSR 25B.8 . . . 56
LSSR 25B.8-S8 . . . 56
LSSR 25B.8-S12 . . . 56
LSSR 25B,200-S8.1 . . . 56
LSSR 25B,200-S12 . . . 56
LSSR 25B-S12 . . . 56
LSSR 46B,200-S12 S-Ex n . . . 114
LSSR 53.8-S8 . . . 76
LSSR 55.8,200-S12 . . . 80
LSSR 55.8,5000 . . . 80
LSSR 55.8-S8 . . . 80
LSSR 55,300-S12 Ex . . . 80
LSSR 55,300-S12 Ex . . . 112
LSSRL 8.9-S12 . . . 41
LSSRL 8.98-S12 . . . 41
LSSU 18-S12 . . . 151
LV461.1/P2 . . . 163
LV461.1/P2-150-M8 . . . 163
LV462.4/2 . . . 164
LV462.4/2X-150-M8 . . . 164
LV462.4/4 . . . 164
LV462.4/4X-150-M8 . . . 164
LV463.7/2-150-M8.3 . . . 165
LV463.7/2T . . . 165
LV463.7/2T-150-M8 . . . 165
LV463.7/2T-150-M12 . . . 165
LV463.7/2T-M8 . . . 165
LV463.7/4-150-M8.3 . . . 165
LV463.7/4T . . . 165
LV463.7/4T-150-M8 . . . 165
LV463.7/4T-150-M12 . . . 165
LV463.7/4T-M8 . . . 165
LV463.7/L4 . . . 166
LV463.7/L4-150-M8 . . . 166
LV463.7/L4-150-M12 . . . 166
LV463.7/L4-M8 . . . 166
LV463I.XR7/4T . . . 165
LV463I.XR7/4T4 . . . 165
LV463I.XR7/4T4-150-M12 . . . 165
LV463I.XR7/4T-150-M12 . . . 165
LV463I.XR7/4TC . . . 165
LV463I.XR7/4TC-150-M12 . . . 165
LV463I.XR7/4TV . . . 165
LV463I.XR7/4TV-150-M12 . . . 165
LV463.XR7/2T . . . 165
LV463.XR7/2T2 . . . 165
LV463.XR7/2T2-150-M12 . . . 165
LV463.XR7/2T-150-M12 . . . 165
LV463.XR7/2TC . . . 165
LV463.XR7/2TC-150-M12 . . . 165
LV463.XR7/2T-M8 . . . 165
LV463.XR7/2TV . . . 165
LV463.XR7/2TV-150-M12 . . . 165
LV463.XR7/4T . . . 165
LV463.XR7/4T4 . . . 165
LV463.XR7/4T4-150-M12 . . . 165
LV463.XR7/4T-150-M12 . . . 165
LV463.XR7/4TC . . . 165
LV463.XR7/4TC-150-M12 . . . 165
LV463.XR7/4T-M8 . . . 165
LV463.XR7/4TV . . . 165
LV463.XR7/4TV-150-M12 . . . 165
LV463.XR7/L4 . . . 166
LV463.XR7/L4-150-M12 . . . 166
LV463.XR7/L4-M8 . . . 166
LV463.XV7/2T . . . 166
LV463.XV7/2T-150-M12 . . . 165
LV463.XV7/2T-M8 . . . 165
LV463.XV7/4T . . . 165
LV463.XV7/4T-150-M12 . . . 165
LV463.XV7/4T-M8 . . . 165
LV463.XV7/L4 . . . 166
LV463.XV7/L4-150-M12 . . . 166
LV463.XV7/L4-M8 . . . 166
M4-V1-MW3-DS-C-T-M12 . . . 508
M7-V1-MW3-DS-C-T-M12-200 . . . 508
MA 2 . . . 454
MA 4 . . . 456
MA 4.7 . . . 457
MA 4 D.7 . . . 457
MA 8-01 . . . 242
MA 8-01 . . . 394
MA 8-01 . . . 458
MA 8.1 . . . 394
MA 8.1 . . . 458
MA 8-02 . . . 458
MA 21 100 . . . 454
MA 21 100.2 . . . 454
MA 31 100 . . . 455
MA 31 110 . . . 455
MA 31 130 . . . 455
MA 100 . . . 409
MA 100 . . . 453
MA 204i Profibus gateway . . . 451
MA 208i Ethernet gateway . . . 451
MA 235i CANopen gateway . . . 451
MA 238i EtherCAT gateway . . . 451
MA 248i PROFINET gateway . . . 451
MA 255i DeviceNet gateway . . . 451
MA 258i EtherNet/IP gateway . . . 451
MA 900 . . . 422
MA 900 . . . 458
MA-CR . . . 436
MA-CR . . . 437
MA-CR . . . 438
MC 003K . . . 497
MC 004K . . . 497
MC 005K . . . 498
MC 006K . . . 498
MC 008K . . . 498
MC 008K-LS . . . 498
MC 012K . . . 498
MC 012K-LS . . . 498
MC 018K . . . 498
MC 018K-LS . . . 498
MC 030K . . . 498
MC 030K-LS . . . 498
MC330-S1-A . . . 355
MC330-S1C2-A . . . 353
MC330-S1-C02M12-A . . . 354
MC330-S1C5-A . . . 353
MC330-S1C10-A . . . 354
MC330-S1M8-A . . . 354
MC330-S1R2-A . . . 353
MC330-S1R5-A . . . 353
MC330-S1R10-A . . . 354
MC330-S2-A . . . 355
MC330-S2C2-A . . . 353
MC330-S2-C02M12-A . . . 353
MC330-S2C5-A . . . 353
MC330-S2M8-A . . . 353
MC336-S1-A . . . 355
MC336-S1C2-A . . . 353
MC336-S1-C02M12-A . . . 353
MC336-S1C5-A . . . 353
MC336-S1C10-A . . . 353
MC336-S1M8-A . . . 353
MC336-S1R2-A . . . 353
MC336-S1R5-A . . . 353
MC336-S1R10-A . . . 353
MC336-S2-A . . . 355
MC336-S2C2-A . . . 353
MC336-S2-C02M12-A . . . 353
MC336-S2C5-A . . . 353
MC336-S2M8-A . . . 353
MC336-SP-8 . . . 355
MC388-S1-A . . . 355
MC388-S1C2-A . . . 353
MC388-S1-C02M12-A . . . 353
MC388-S1C5-A . . . 353
MC388-S1C10-A . . . 353
MC388-S1M8-A . . . 353
MC388-S1R2-A . . . 353
MC388-S1R5-A . . . 353
MC388-S1R10-A . . . 353
MC388-S2-A . . . 355
MC388-S2C2-A . . . 353
MC388-S2C2-AL . . . 353
MC388-S2-C02M12-A . . . 353
MC388-S2C5-A . . . 353
MC388-S2C5-AL . . . 353
MC388-S2C5-AL-F . . . 353
MC388-S2M8-A . . . 353
MC388-S2R10-A . . . 353
MC388-SP-8 . . . 355
MD 7XXP-11-42IO5-12 . . . 493
MD 7XXP-11-42IO5-13 . . . 493
MD 7XXP-11-48IO3-12 . . . 493
MD 7XXP-11-48IO3-K030 . . . 493
MD 7XXP-11-48IO3-K050 . . . 493
MD 7XXP-11-48IO3-K100 . . . 493
MD 7XXP-11-68IO3-12 . . . 493
MD 7XXP-11-82IO4-12 . . . 493
MD 7XXP-11-82IO4-13 . . . 493
MD 7XXP-11-82IO4-K030 . . . 493
MD 7XXP-11-82IO4-K050 . . . 493
MD 7XXP-11-82IO4-K100 . . . 493
MD 7XXP-11-82IO5-13 . . . 493
MD 7XXP-11-82IO5-FK . . . 493
MD 7XXP-11-82IO5-K030 . . . 493
MD 7XXP-11-82IO5-K050 . . . 493
MD 7XXP-11-82IO5-K100 . . . 493
MD 7XXP-11-88IO3-12 . . . 493
MD 7XXP-11-88IO3-K030 . . . 493
MD 7XXP-11-88IO3-K050 . . . 493
MD 7XXP-11-88IO3-K100 . . . 493
MD 7XXP-11-108IO3-12 . . . 493
MD 248i-12-8K/L4-2R2K . . . 453
MD 258i-12-8K/L4-2R2K . . . 453
MD 708-21-42/D4-12 . . . 453
MD 708-21-82/D4-12 . . . 453
MD 748i-11-42/L5-2222 . . . 453

© Leuze electronic GmbH + Co. KG

Type designation. . . Page no.

MD 758i-11-42/L5-2222 453
ME 308 103 409
ME 308 104 409
ME 338 103 409
ME 338 104 409
ME 338 214 409
ME 348 103 239
ME 348 103 409
ME 348 104 409
ME 348 214 409
MK 300. 409
MK 301. 409
MK 304. 239
MK 304. 409
MK 307. 239
MK 308. 409
MK 338. 239
MK 338. 409
MK 348. 239
MK 348. 409
MK 358. 409
MLC300T20-150. 287
MLC300T20-150. 288
MLC300T20-225. 287
MLC300T20-225. 288
MLC300T20-300. 287
MLC300T20-300. 288
MLC300T20-450. 287
MLC300T20-450. 288
MLC300T20-600. 287
MLC300T20-600. 288
MLC300T20-750. 287
MLC300T20-750. 288
MLC300T20-900. 287
MLC300T20-900. 288
MLC300T20-1050. 287
MLC300T20-1050. 288
MLC300T20-1200. 287
MLC300T20-1200. 288
MLC300T20-1350. 287
MLC300T20-1350. 288
MLC300T20-1500. 287
MLC300T20-1500. 288
MLC300T20-1650. 287
MLC300T20-1650. 288
MLC300T20-1800. 287
MLC300T20-1800. 288
MLC301T40-300. 287
MLC301T40-450. 287
MLC301T40-600. 287
MLC301T40-750. 287
MLC301T40-900. 287
MLC301T40-1050. 288
MLC301T40-1200. 288
MLC310R20-150 287
MLC310R20-225 287
MLC310R20-300 287
MLC310R20-450 287
MLC310R20-600 287
MLC310R20-750 287
MLC310R20-900 287
MLC310R20-1050 287
MLC310R20-1200 287
MLC310R20-1350 287
MLC310R20-1500 287
MLC310R20-1650 287
MLC310R20-1800 287
MLC311R40-300 287
MLC311R40-450 287
MLC311R40-600 287
MLC311R40-750 287
MLC311R40-900 287
MLC311R40-1050 288
MLC311R40-1200 288
MLC320R20-150 288
MLC320R20-225 288
MLC320R20-300 288
MLC320R20-450 288
MLC320R20-600 288
MLC320R20-750 288
MLC320R20-900 288
MLC320R20-1050 288
MLC320R20-1200 288
MLC320R20-1350 288
MLC320R20-1500 288
MLC320R20-1650 288
MLC320R20-1800 288
MLC500T14-150. 274
MLC500T14-150. 276
MLC500T14-150. 279
MLC500T14-150/A 274
MLC500T14-150G 283
MLC500T14-150/V 276
MLC500T14-300. 274
MLC500T14-300. 276
MLC500T14-300. 279
MLC500T14-300/A 274
MLC500T14-300G 283
MLC500T14-300H 281
MLC500T14-300H/A. 281
MLC500T14-300-IP 274
MLC500T14-300MG 282
MLC500T14-300/V 274
MLC500T14-300/V 276
MLC500T14-300/V 279
MLC500T14-450. 274
MLC500T14-450. 277
MLC500T14-450. 279
MLC500T14-450/A 274
MLC500T14-450G 283
MLC500T14-450H 281
MLC500T14-450H/A. 281
MLC500T14-450-IP 274
MLC500T14-450MG 282
MLC500T14-450/V 274
MLC500T14-450/V 277
MLC500T14-450/V 279
MLC500T14-600. 274
MLC500T14-600. 277
MLC500T14-600. 279
MLC500T14-600/A 274
MLC500T14-600G 283
MLC500T14-600H 281
MLC500T14-600H/A. 281
MLC500T14-600-IP 274
MLC500T14-600MG 282
MLC500T14-600/V 274
MLC500T14-600/V 277
MLC500T14-600/V 279
MLC500T14-750. 274
MLC500T14-750. 277
MLC500T14-750. 279
MLC500T14-750/A 274
MLC500T14-750G 283
MLC500T14-750H 281
MLC500T14-750H/A. 281
MLC500T14-750-IP 274
MLC500T14-750MG 282
MLC500T14-750/V 274
MLC500T14-750/V 277
MLC500T14-750/V 279
MLC500T14-900. 274
MLC500T14-900. 277
MLC500T14-900. 279
MLC500T14-900/A 274
MLC500T14-900G 283
MLC500T14-900H 281
MLC500T14-900H/A. 281
MLC500T14-900-IP 275
MLC500T14-900MG 282
MLC500T14-900/V 274
MLC500T14-900/V 277
MLC500T14-900/V 279
MLC500T14-1050. 275
MLC500T14-1050. 277
MLC500T14-1050. 279
MLC500T14-1050/A 275
MLC500T14-1050G 283
MLC500T14-1050H 281
MLC500T14-1050H/A. 281
MLC500T14-1050-IP 275
MLC500T14-1050MG 282
MLC500T14-1200. 275
MLC500T14-1200. 277
MLC500T14-1200. 279
MLC500T14-1200/A 275
MLC500T14-1200G 283
MLC500T14-1200H 282
MLC500T14-1200H/A. 282
MLC500T14-1200-IP 275
MLC500T14-1200MG 283
MLC500T14-1350. 275
MLC500T14-1350. 277
MLC500T14-1350. 279
MLC500T14-1350/A 275
MLC500T14-1350G 283
MLC500T14-1350H 282
MLC500T14-1350H/A. 282
MLC500T14-1350MG 283
MLC500T14-1500. 275
MLC500T14-1500. 277
MLC500T14-1500. 279
MLC500T14-1500/A 275
MLC500T14-1500G 283
MLC500T14-1500H 282
MLC500T14-1500H/A. 282
MLC500T14-1500MG 283
MLC500T14-1650. 275
MLC500T14-1650. 277
MLC500T14-1650. 279
MLC500T14-1650/A 275
MLC500T14-1650G 283
MLC500T14-1650H 282
MLC500T14-1650H/A. 282
MLC500T14-1650MG 283
MLC500T14-1800. 275
MLC500T14-1800. 277
MLC500T14-1800. 279
MLC500T14-1800/A 275
MLC500T14-1800G 283
MLC500T14-1800H 282
MLC500T14-1800H/A. 282
MLC500T14-1800MG 283
MLC500T14-1950. 275
MLC500T14-1950. 277
MLC500T14-1950. 279
MLC500T14-2100. 275
MLC500T14-2100. 277
MLC500T14-2100. 279
MLC500T14-2250. 275
MLC500T14-2250. 277
MLC500T14-2250. 279
MLC500T14-2400. 275
MLC500T14-2400. 277
MLC500T14-2400. 280
MLC500T14-2550. 275
MLC500T14-2550. 277
MLC500T14-2550. 280
MLC500T14-2700. 275
MLC500T14-2700. 277
MLC500T14-2700. 280
MLC500T14-2850. 275
MLC500T14-2850. 277
MLC500T14-2850. 280
MLC500T14-3000. 275
MLC500T14-3000. 277
MLC500T14-3000. 280
MLC500T20-600-EX2 284
MLC500T20-750-EX2 284
MLC500T20-900-EX2 284
MLC500T20-1050-EX2 284

MLC500T20-1200-EX2 284
MLC500T20-1350-EX2 284
MLC500T20-1500-EX2 284
MLC500T30-150. 280
MLC500T30-225. 280
MLC500T30-300. 280
MLC500T30-450. 280
MLC500T30-600. 280
MLC500T30-750. 280
MLC500T30-900. 280
MLC500T30-1050. 280
MLC500T30-1200. 280
MLC500T30-1350. 280
MLC500T30-1500. 280
MLC500T30-1650. 280
MLC500T30-1800. 280
MLC500T30-1950. 280
MLC500T30-2100. 280
MLC500T30-2250. 280
MLC500T30-2400. 280
MLC500T30-2550. 281
MLC500T30-2700. 281
MLC500T30-2850. 281
MLC500T30-3000. 281
MLC501T14-300. 276
MLC501T14-450. 276
MLC501T14-600. 276
MLC501T14-750. 276
MLC501T14-900. 276
MLC501T14-1050. 276
MLC501T14-1200. 276
MLC501T14-1350. 276
MLC501T14-1500. 276
MLC501T14-1650. 276
MLC501T14-1800. 276
MLC502T14-150. 274
MLC502T14-300. 274
MLC502T14-450. 274
MLC502T14-600. 274
MLC502T14-750. 274
MLC502T14-900. 274
MLC502T14-1050. 275
MLC502T14-1200. 275
MLC502T14-1350. 275
MLC502T14-1500. 275
MLC502T14-1650. 275
MLC502T14-1800. 275
MLC510R14-150 274
MLC510R14-150/A. 274
MLC510R14-300 274
MLC510R14-300/A. 274
MLC510R14-300H/A. 281
MLC510R14-300-IP 274
MLC510R14-300/V. 274
MLC510R14-450 274
MLC510R14-450/A. 274
MLC510R14-450H/A. 281
MLC510R14-450-IP 274
MLC510R14-450/V. 274
MLC510R14-600 274
MLC510R14-600/A. 274
MLC510R14-600H/A. 281
MLC510R14-600-IP 274
MLC510R14-600/V. 274
MLC510R14-750 274
MLC510R14-750/A. 274
MLC510R14-750H/A. 281
MLC510R14-750-IP 274
MLC510R14-750/V. 274
MLC510R14-900 274
MLC510R14-900/A. 274
MLC510R14-900H/A. 281
MLC510R14-900-IP 275
MLC510R14-900/V. 274
MLC510R14-1050 275
MLC510R14-1050/A. 275
MLC510R14-1050H/A. 281
MLC510R14-1050-IP 275
MLC510R14-1200 275
MLC510R14-1200/A. 275
MLC510R14-1200H/A. 282
MLC510R14-1200-IP 275
MLC510R14-1350 275
MLC510R14-1350/A. 275
MLC510R14-1350H/A. 282
MLC510R14-1500 275
MLC510R14-1500/A. 275
MLC510R14-1500H/A. 282
MLC510R14-1650 275
MLC510R14-1650/A. 275
MLC510R14-1650H/A. 282
MLC510R14-1800 275
MLC510R14-1800/A. 275
MLC510R14-1800H/A. 282
MLC510R14-1950 275
MLC510R14-2100 275
MLC510R14-2250 275
MLC510R14-2400 275
MLC510R14-2550 275
MLC510R14-2700 275
MLC510R14-2850 275
MLC510R14-3000 275
MLC511R14-300 276
MLC511R14-450 276
MLC511R14-600 276
MLC511R14-750 276
MLC511R14-900 276
MLC511R14-1050 276
MLC511R14-1200 276
MLC511R14-1350 276
MLC511R14-1500 276
MLC511R14-1650 276
MLC511R14-1800 276
MLC520R14-150 276
MLC520R14-150G 283
MLC520R14-150/V. 276
MLC520R14-300 276
MLC520R14-300G 283
MLC520R14-300H 281
MLC520R14-300MG. 282
MLC520R14-300/V. 276
MLC520R14-450 277
MLC520R14-450G 283
MLC520R14-450H 281
MLC520R14-450MG. 282
MLC520R14-450/V. 277
MLC520R14-600 277
MLC520R14-600G 283
MLC520R14-600H 281
MLC520R14-600MG. 282
MLC520R14-600/V. 277
MLC520R14-750 277
MLC520R14-750G 283
MLC520R14-750H 281
MLC520R14-750MG. 282
MLC520R14-750/V. 277
MLC520R14-900 277
MLC520R14-900G 283
MLC520R14-900H 281
MLC520R14-900MG. 282
MLC520R14-900/V. 277
MLC520R14-1050 277
MLC520R14-1050G 283
MLC520R14-1050H 281
MLC520R14-1050MG. 282
MLC520R14-1200 277
MLC520R14-1200G 283
MLC520R14-1200H 282
MLC520R14-1200MG. 283
MLC520R14-1350 277
MLC520R14-1350G 283
MLC520R14-1350H 282
MLC520R14-1350MG. 283
MLC520R14-1500 277
MLC520R14-1500G 283
MLC520R14-1500H 282
MLC520R14-1500MG. 283
MLC520R14-1650 277
MLC520R14-1650G 283
MLC520R14-1650H 282
MLC520R14-1650MG. 283
MLC520R14-1800 277
MLC520R14-1800G 283
MLC520R14-1800H 282
MLC520R14-1800MG. 283
MLC520R14-1950 277
MLC520R14-2100 277
MLC520R14-2250 277
MLC520R14-2400 277
MLC520R14-2550 277
MLC520R14-2700 277
MLC520R14-2850 277
MLC520R14-3000 277
MLC520R20-600-EX2. 284
MLC520R20-750-EX2. 284
MLC520R20-900-EX2. 284
MLC520R20-1050-EX2. 284
MLC520R20-1200-EX2. 284
MLC520R20-1350-EX2. 284
MLC520R20-1500-EX2. 284
MLC520-S-14-150 278
MLC520-S-14-210 278
MLC520-S-14-270 278
MLC520-S-14-300 278
MLC520-S-14-330 278
MLC520-S-14-360 278
MLC520-S-14-390 278
MLC520-S-14-420 278
MLC520-S-14-450 278
MLC520-S-14-480 278
MLC520-S-14-510 278
MLC520-S-14-540 278
MLC520-S-14-570 278
MLC520-S-14-600 278
MLC520-S-14-630 278
MLC520-S-14-660 278
MLC520-S-14-690 278
MLC520-S-14-720 278
MLC520-S-14-750 278
MLC520-S-14-780 278
MLC520-S-14-810 278
MLC520-S-14-840 278
MLC520-S-14-870 278
MLC520-S-14-900 278
MLC520-S-14-930 278
MLC520-S-14-960 278
MLC520-S-14-990 278
MLC520-S-14-1020 278
MLC520-S-14-1050 278
MLC520-S-14-1080 278
MLC520-S-14-1110 278
MLC520-S-14-1140 278
MLC520-S-14-1170 279
MLC520-S-14-1200 279
MLC530R14-150 279
MLC530R14-300 279
MLC530R14-300/V. 279
MLC530R14-450 279
MLC530R14-450/V. 279
MLC530R14-600 279
MLC530R14-600/V. 279
MLC530R14-750 279
MLC530R14-750/V. 279
MLC530R14-900 279
MLC530R14-900/V. 279
MLC530R14-1050 279
MLC530R14-1200 279
MLC530R14-1350 279
MLC530R14-1500 279
MLC530R14-1650 279
MLC530R14-1800 279

© Leuze electronic GmbH + Co. KG

Type designation. . . Page no.

MLC530R14-1950 279
MLC530R14-2100 279
MLC530R14-2250 279
MLC530R14-2400 280
MLC530R14-2550 280
MLC530R14-2700 280
MLC530R14-2850 280
MLC530R14-3000 280
MLC530R30-150-SPG 280
MLC530R30-225-SPG 280
MLC530R30-300-SPG 280
MLC530R30-450-SPG 280
MLC530R30-600-SPG 280
MLC530R30-750-SPG 280
MLC530R30-900-SPG 280
MLC530R30-1050-SPG 280
MLC530R30-1200-SPG 280
MLC530R30-1350-SPG 280
MLC530R30-1500-SPG 280
MLC530R30-1650-SPG 280
MLC530R30-1800-SPG 280
MLC530R30-1950-SPG 280
MLC530R30-2100-SPG 280
MLC530R30-2250-SPG 280
MLC530R30-2400-SPG 280
MLC530R30-2550-SPG 281
MLC530R30-2700-SPG 281
MLC530R30-2850-SPG 281
MLC530R30-3000-SPG 281
MLC-PS150 504
MLC-PS225 504
MLC-PS300 504
MLC-PS450 504
MLC-PS600 504
MLC-PS750 504
MLC-PS900 504
MLC-PS1050 504
MLC-PS1200 504
MLC-PS1350 504
MLC-PS1500 504
MLC-PS1650 504
MLC-PS1800 504
MLD300-T2 302
MLD300-T2 303
MLD300-T2 304
MLD300-T2 304
MLD300-T2 305
MLD300-T2 305
MLD300-T2 306
MLD300-T2 306
MLD300-T2L. 303
MLD300-T2L. 303
MLD300-T2L. 304
MLD300-T2L. 304
MLD300-T2L. 305
MLD300-T2L. 305
MLD300-T2L. 306
MLD300-T2L. 306
MLD300-T3 303
MLD300-T3 303
MLD300-T3 304
MLD300-T3 304
MLD300-T3 305
MLD300-T3 305
MLD300-T3 306
MLD300-T3 306
MLD300-T3L. 303
MLD300-T3L. 303
MLD300-T3L. 304
MLD300-T3L. 304
MLD300-T3L. 305
MLD300-T3L. 305
MLD300-T3L. 306
MLD300-T3L. 306
MLD300-T4 303
MLD300-T4 303
MLD300-T4 304
MLD300-T4 304
MLD300-T4 305
MLD300-T4 305
MLD300-T4 306
MLD300-T4 306
MLD300-T4L. 303
MLD300-T4L. 303
MLD300-T4L. 304
MLD300-T4L. 304
MLD300-T4L. 305
MLD300-T4L. 305
MLD300-T4L. 306
MLD300-T4L. 306
MLD300-XT2 302
MLD300-XT2 303
MLD300-XT2 304
MLD300-XT2 304
MLD300-XT2 305
MLD300-XT2 306
MLD300-XT2L. 303
MLD300-XT2L. 303
MLD300-XT2L. 304
MLD300-XT2L. 304
MLD300-XT2L. 305
MLD300-XT2L. 306
MLD300-XT3 303
MLD300-XT3 303
MLD300-XT3 304
MLD300-XT3 304
MLD300-XT3 305
MLD300-XT3 306
MLD300-XT3L. 303
MLD300-XT3L. 303
MLD300-XT3L. 304
MLD300-XT3L. 304
MLD300-XT3L. 305
MLD300-XT3L. 306
MLD300-XT4 303
MLD300-XT4 303
MLD300-XT4 304
MLD300-XT4 304
MLD300-XT4 305
MLD300-XT4 306
MLD300-XT4L. 303
MLD300-XT4L. 303
MLD300-XT4L. 304
MLD300-XT4L. 304
MLD300-XT4L. 305
MLD300-XT4L. 306
MLD310-R2 302
MLD310-R2L 303
MLD310-R3 303
MLD310-R3L 303
MLD310-R4 303
MLD310-R4L 303
MLD310-RT2 308
MLD310-RT3 308
MLD310-XR2 302
MLD310-XR2L 303
MLD310-XR3 303
MLD310-XR3L 303
MLD310-XR4 303
MLD310-XR4L 303
MLD312-R2 303
MLD312-R2L 303
MLD312-R3 303
MLD312-R3L 303
MLD312-R4 303
MLD312-R4L 303
MLD312-RT2 309
MLD312-RT3 309
MLD312-XR2 303
MLD312-XR2L 303
MLD312-XR3 303
MLD312-XR3L 303
MLD312-XR4 303
MLD312-XR4L 303
MLD320-R2 304
MLD320-R2L 304
MLD320-R2LM 304
MLD320-R2M 304
MLD320-R3 304
MLD320-R3L 304
MLD320-R3LM 304
MLD320-R3M 304
MLD320-R4 304
MLD320-R4L 304
MLD320-R4LM 304
MLD320-R4M 304
MLD320-RT2 309
MLD320-RT2M 309
MLD320-RT3 309
MLD320-RT3M 309
MLD320-XR2 304
MLD320-XR2L 304
MLD320-XR2LM 304
MLD320-XR2M 304
MLD320-XR3 304
MLD320-XR3L 304
MLD320-XR3LM 304
MLD320-XR3M 304
MLD320-XR4 304
MLD320-XR4L 304
MLD320-XR4LM 304
MLD320-XR4M 304
MLD330-R2 305
MLD330-R2L 305
MLD330-R2LM 305
MLD330-R2M 305
MLD330-R3 305
MLD330-R3L 305
MLD330-R3LM 305
MLD330-R3M 305
MLD330-R4 305
MLD330-R4L 305
MLD330-R4LM 305
MLD330-R4M 305
MLD330-RT2 309
MLD330-RT2M 309
MLD330-RT3 309
MLD330-RT3M 309
MLD330-XR2 305
MLD330-XR2L 305
MLD330-XR3 305
MLD330-XR3L 305
MLD330-XR4 305
MLD330-XR4L 305
MLD335-R2 306
MLD335-R2L 306
MLD335-R2LM 306
MLD335-R2M 306
MLD335-R3 306
MLD335-R3L 306
MLD335-R3LM 306
MLD335-R3M 306
MLD335-R4 306
MLD335-R4L 306
MLD335-R4LM 306
MLD335-R4M 306
MLD335-RT2 310
MLD335-RT2M 310
MLD335-RT3 310
MLD335-RT3M 310
MLD335-XR2 306
MLD335-XR2L 306
MLD335-XR3 306
MLD335-XR3L 306
MLD335-XR4 306
MLD335-XR4L 306
MLD500-T1 315
MLD500-T1 316
MLD500-T1 317
MLD500-T1/A 315
MLD500-T1/A 315

MLD500-T1L. 315
MLD500-T1L. 316
MLD500-T1L. 317
MLD500-T1L/A. 315
MLD500-T1L/A. 315
MLD500-T2 292
MLD500-T2 294
MLD500-T2 294
MLD500-T2 295
MLD500-T2 295
MLD500-T2 296
MLD500-T2 296
MLD500-T2/A. 292
MLD500-T2/A. 292
MLD500-T2/A. 292
MLD500-T2L. 292
MLD500-T2L. 294
MLD500-T2L. 294
MLD500-T2L. 295
MLD500-T2L. 295
MLD500-T2L. 296
MLD500-T2L. 296
MLD500-T2L/A. 292
MLD500-T2L/A. 292
MLD500-T2L/A. 292
MLD500-T2L-UDC-1000-S2 330
MLD500-T2L-UDC-1000-S2 330
MLD500-T2L-UDC-1000-S2 330
MLD500-T2-UDC-1000-S2-P 330
MLD500-T3 292
MLD500-T3 294
MLD500-T3 294
MLD500-T3 295
MLD500-T3 295
MLD500-T3 296
MLD500-T3 296
MLD500-T3/A. 292
MLD500-T3/A. 292
MLD500-T3/A. 292
MLD500-T3L. 293
MLD500-T3L. 294
MLD500-T3L. 294
MLD500-T3L. 295
MLD500-T3L. 295
MLD500-T3L. 296
MLD500-T3L. 296
MLD500-T3L/A. 292
MLD500-T3L/A. 292
MLD500-T3L/A. 293
MLD500-T3L-UDC-1300-S2 330
MLD500-T3L-UDC-1300-S2 330
MLD500-T3L-UDC-1300-S2 330
MLD500-T4 293
MLD500-T4 294
MLD500-T4 294
MLD500-T4 295
MLD500-T4 295
MLD500-T4 296
MLD500-T4 296
MLD500-T4/A. 293
MLD500-T4/A. 293
MLD500-T4/A. 293
MLD500-T4L. 293
MLD500-T4L. 294
MLD500-T4L. 294
MLD500-T4L. 295
MLD500-T4L. 295
MLD500-T4L. 296
MLD500-T4L. 296
MLD500-T4L/A. 293
MLD500-T4L/A. 293
MLD500-T4L/A. 293
MLD500-XT1 315
MLD500-XT1 316
MLD500-XT1 317
MLD500-XT1/A. 315
MLD500-XT1/A. 315
MLD500-XT2 292
MLD500-XT2 294
MLD500-XT2 294
MLD500-XT2 295
MLD500-XT2 296
MLD500-XT2/A. 292
MLD500-XT2/A. 292
MLD500-XT2L. 292
MLD500-XT2L. 294
MLD500-XT2L. 294
MLD500-XT2L. 295
MLD500-XT2L. 296
MLD500-XT2L/A. 292
MLD500-XT2L/A. 292
MLD500-XT3 292
MLD500-XT3 294
MLD500-XT3 294
MLD500-XT3 295
MLD500-XT3 296
MLD500-XT3/A. 292
MLD500-XT3/A. 292
MLD500-XT3L. 293
MLD500-XT3L. 294
MLD500-XT3L. 294
MLD500-XT3L. 295
MLD500-XT3L. 296
MLD500-XT3L/A. 292
MLD500-XT3L/A. 293
MLD500-XT4 293
MLD500-XT4 294
MLD500-XT4 294
MLD500-XT4 295
MLD500-XT4 296
MLD500-XT4/A. 293
MLD500-XT4/A. 293
MLD500-XT4L. 293
MLD500-XT4L. 294
MLD500-XT4L. 294
MLD500-XT4L. 295
MLD500-XT4L. 296
MLD500-XT4L/A. 293
MLD500-XT4L/A. 293
MLD510-R1 315
MLD510-R1/A. 315
MLD510-R1E/A. 315
MLD510-R1L 315
MLD510-R1L/A. 315
MLD510-R1LE/A. 315
MLD510-R2 292
MLD510-R2/A. 292
MLD510-R2E/A. 292
MLD510-R2L 292
MLD510-R2L/A. 292
MLD510-R2LE/A. 292
MLD510-R2LM/A 292
MLD510-R2L-UDC-1000-S2 330
MLD510-R2M/A 292
MLD510-R2-UDC-1000-S2-P 330
MLD510-R3 292
MLD510-R3/A. 292
MLD510-R3E/A. 292
MLD510-R3L 293
MLD510-R3L/A. 292
MLD510-R3LE/A. 293
MLD510-R3LM/A 292
MLD510-R3L-UDC-1300-S2 330
MLD510-R3M/A 292
MLD510-R4 293
MLD510-R4/A. 293
MLD510-R4E/A. 293
MLD510-R4L 293
MLD510-R4L/A. 293
MLD510-R4LE/A. 293
MLD510-R4LM/A 293
MLD510-R4M/A 293
MLD510-RT2 299
MLD510-RT2/A. 299
MLD510-RT2E/A. 299
MLD510-RT2M/A 299
MLD510-RT2ME/A 299
MLD510-RT3 299
MLD510-RT3/A. 299
MLD510-RT3E/A. 299
MLD510-RT3M/A 299
MLD510-RT3ME/A 299
MLD510-XR1 315
MLD510-XR1/A. 315
MLD510-XR1E/A. 315
MLD510-XR2 292
MLD510-XR2/A. 292
MLD510-XR2E/A. 292
MLD510-XR2L 292
MLD510-XR2L/A. 292
MLD510-XR2LE/A. 292
MLD510-XR3 292
MLD510-XR3/A. 292
MLD510-XR3E/A. 292
MLD510-XR3L 293
MLD510-XR3L/A. 292
MLD510-XR3LE/A. 293
MLD510-XR4 293
MLD510-XR4/A. 293
MLD510-XR4E/A. 293
MLD510-XR4L 293
MLD510-XR4L/A. 293
MLD510-XR4LE/A. 293
MLD520-R1 316
MLD520-R1L 316
MLD520-R2 294
MLD520-R2L 294
MLD520-R2LM 294
MLD520-R2L-UDC-1000-S2 330
MLD520-R2M 294
MLD520-R3 294
MLD520-R3L 294
MLD520-R3LM 294
MLD520-R3L-UDC-1300-S2 330
MLD520-R3M 294
MLD520-R4 294
MLD520-R4L 294
MLD520-R4LM 294
MLD520-R4M 294
MLD520-RT2 299
MLD520-RT2M 299
MLD520-RT3 299
MLD520-RT3M 299
MLD520-XR1 316
MLD520-XR2 294
MLD520-XR2L 294
MLD520-XR2LM 294
MLD520-XR2M 294
MLD520-XR3 294
MLD520-XR3L 294
MLD520-XR3LM 294
MLD520-XR3M 294
MLD520-XR4 294
MLD520-XR4L 294
MLD520-XR4LM 294
MLD520-XR4M 294
MLD530-R1 317
MLD530-R1L 317
MLD530-R2 295
MLD530-R2L 295
MLD530-R2LM 295
MLD530-R2LM-UDC-1000-S2 330
MLD530-R2M 295
MLD530-R3 295
MLD530-R3L 295
MLD530-R3LM 295
MLD530-R3LM-UDC-1300-S2 330
MLD530-R3M 295
MLD530-R4 295
MLD530-R4L 295
MLD530-R4LM 295

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Type designation. . . Page no.

MLD530-R4M . . . 295
MLD530-RT2 . . . 300
MLD530-RT2M . . . 300
MLD530-RT2M-UDC-1000-S2 . . . 330
MLD530-RT3 . . . 300
MLD530-RT3M . . . 300
MLD530-XR1 . . . 317
MLD530-XR2 . . . 295
MLD530-XR2L . . . 295
MLD530-XR3 . . . 295
MLD530-XR3L . . . 295
MLD530-XR4 . . . 295
MLD530-XR4L . . . 295
MLD535-R2 . . . 296
MLD535-R2L . . . 296
MLD535-R2LM . . . 296
MLD535-R2M . . . 296
MLD535-R3 . . . 296
MLD535-R3L . . . 296
MLD535-R3LM . . . 296
MLD535-R3M . . . 296
MLD535-R4 . . . 296
MLD535-R4L . . . 296
MLD535-R4LM . . . 296
MLD535-R4M . . . 296
MLD535-RT2 . . . 300
MLD535-RT2M . . . 300
MLD535-RT3 . . . 300
MLD535-RT3M . . . 300
MLD535-XR2 . . . 296
MLD535-XR2L . . . 296
MLD535-XR3 . . . 296
MLD535-XR3L . . . 296
MLD535-XR4 . . . 296
MLD535-XR4L . . . 296
MLD-M002 . . . 299
MLD-M002 . . . 299
MLD-M002 . . . 299
MLD-M002 . . . 299
MLD-M002 . . . 299
MLD-M002 . . . 299
MLD-M002 . . . 299
MLD-M002 . . . 300
MLD-M002 . . . 300
MLD-M002 . . . 300
MLD-M002 . . . 300
MLD-M002 . . . 308
MLD-M002 . . . 309
MLD-M002 . . . 309
MLD-M002 . . . 309
MLD-M002 . . . 309
MLD-M002 . . . 310
MLD-M002 . . . 310
MLD-M002-UDC-1000-S2 . . . 330
MLD-M003 . . . 299
MLD-M003 . . . 299
MLD-M003 . . . 299
MLD-M003 . . . 299
MLD-M003 . . . 299
MLD-M003 . . . 299
MLD-M003 . . . 299
MLD-M003 . . . 300
MLD-M003 . . . 300
MLD-M003 . . . 300
MLD-M003 . . . 300
MLD-M003 . . . 308
MLD-M003 . . . 309
MLD-M003 . . . 309
MLD-M003 . . . 309
MLD-M003 . . . 309
MLD-M003 . . . 310
MLD-M003 . . . 310
MLDSET-M1-1300L . . . 329
MLDSET-M1-1300T . . . 329
MLDSET-M1-1600L . . . 329
MLDSET-M1-1600T . . . 329
MLDSET-M1-1600T4 . . . 329
MLDSET-M2-1300L . . . 329
MLDSET-M2-1300T . . . 329
MLDSET-M2-1600L . . . 329
MLDSET-M2-1600T . . . 329
MLDSET-M2-1600T4 . . . 329
MLD-XM03 . . . 299
MLD-XM03 . . . 299
MLD-XM03 . . . 299
MLD-XM03 . . . 299
MLD-XM03 . . . 299
MLD-XM03 . . . 299
MLD-XM03 . . . 299
MLD-XM03 . . . 300
MLD-XM03 . . . 300
MLD-XM03 . . . 300
MLD-XM03 . . . 300
MLD-XM03 . . . 308
MLD-XM03 . . . 309
MLD-XM03 . . . 309
MLD-XM03 . . . 309
MLD-XM03 . . . 309
MLD-XM03 . . . 309
MLD-XM03 . . . 310
MLD-XM03 . . . 310
MMS-A-2N55 . . . 496
MMS-AP-N60 . . . 496
MOD-BA-I2/20-O2/40A-24V . . . 471
MOD-BD-I2/20-O2/40A-24V . . . 471
MOD-EAC-I2-O4/06A-24V . . . 471
MOD-EAC-I2-O4/10A-24V . . . 471
MS 300 . . . 409
MS 301 . . . 409
MS 304 . . . 239
MS 304 . . . 409
MS 307 . . . 239
MS 308 . . . 409
MS 338 . . . 239
MS 338 . . . 409
MS 348 . . . 239
MS 348 . . . 409
MS 358 . . . 409
MSC 900-1000 . . . 458
MSI101 . . . 379
MSI102 . . . 379
MSI201 . . . 379
MSI202 . . . 379
MSI 410-01 . . . 376
MSI 410-03 . . . 376
MSI 410.F50-01 . . . 376
MSI 410.F50-03 . . . 376
MSI 420-01 . . . 376
MSI 420-03 . . . 376
MSI 420.F50-01 . . . 376
MSI 420.F50-03 . . . 376
MSI 430-01 . . . 376
MSI 430-03 . . . 376
MSI 430.F50-01 . . . 376
MSI 430.F50-03 . . . 376
MSI-CM52B-01 . . . 374
MSI-CM52B-02 . . . 374
MSI-DT30B-01 . . . 370
MSI-DT30B-02 . . . 370
MSI-EM201-4RO . . . 381
MSI-EM201-8I4IO . . . 381
MSI-EM202-4RO . . . 381
MSI-EM202-8I4IO . . . 381
MSI-EM-I8-01 . . . 378
MSI-EM-I8-03 . . . 378
MSI-EM-IO84-01 . . . 378
MSI-EM-IO84-03 . . . 378
MSI-EM-IO84NP-01 . . . 378
MSI-EM-IO84NP-03 . . . 378
MSI-FB-CANOPEN . . . 377
MSI-FB-ETHERCAT . . . 377
MSI-FB-PB101 . . . 380
MSI-FB-PROFIBUS . . . 377
MSI-MC310 . . . 362
MSI-MC311 . . . 362
MSI-MD-FB . . . 369
MSI-RM2B-01 . . . 371
MSI-RM2B-02 . . . 371
MSI-SD-CARD . . . 378
MSI-SD-COVER . . . 378
MSI-SR-2H1-01 . . . 361
MSI-SR-2H1-03 . . . 361
MSI-SR-2H21-01 . . . 360
MSI-SR-2H21-03 . . . 360
MSI-SR4B-01 . . . 365
MSI-SR4B-02 . . . 365
MSI-SR5B-01 . . . 366
MSI-SR5B-02 . . . 366
MSI-SR-CM32-01 . . . 372
MSI-SR-CM32-03 . . . 372
MSI-SR-CM42R-01 . . . 372
MSI-SR-CM42R-03 . . . 372
MSI-SR-CM43-01 . . . 373
MSI-SR-CM43-03 . . . 373
MSI-SR-CM43DT03-01 . . . 373
MSI-SR-CM43DT03-03 . . . 373
MSI-SR-ES20-01 . . . 359
MSI-SR-ES20-03 . . . 359
MSI-SR-ES31-01 . . . 360
MSI-SR-ES31-03 . . . 360
MSI-SR-LC21-01 . . . 362
MSI-SR-LC21-03 . . . 362
MSI-SR-LC21DT03-01 . . . 369
MSI-SR-LC21DT03-03 . . . 369
MSI-SR-LC21DT30-01 . . . 369
MSI-SR-LC21DT30-03 . . . 369
MSI-SR-LC21M-01 . . . 363
MSI-SR-LC21M-03 . . . 363
MSI-SR-LC31AR-01 . . . 364
MSI-SR-LC31AR-03 . . . 364
MSI-SR-LC31MR-01 . . . 364
MSI-SR-LC31MR-03 . . . 364
MSI-SR-SM42OS-01 . . . 375
MSI-SR-SM42OS-03 . . . 375
MSI-SWC1 . . . 381
MSI-TR1B-01 . . . 368
MSI-TR1B-02 . . . 368
MSI-TR2B-01 . . . 368
MSI-TR2B-02 . . . 368
MSI-TRMB-01 . . . 367
MSI-TRMB-02 . . . 367
MSI-TSB-01 . . . 368
MSI-TSB-02 . . . 368
MSP 290i - 511 F 00 . . . 425
MSP 290i - 511 L 00 . . . 425
MSP 290i - 511 M 00 . . . 425
MSP 290i - 511 N 00 . . . 425
MSP 290i - 520 F 00 . . . 425
MSP 290i - 520 F 88 . . . 425
MSP 290i - 520 F 4848 . . . 425
MSP 290i - 520 L 00 . . . 425
MSP 290i - 520 M 00 . . . 425
MSP 290i - 520 M 88 . . . 425
MSP 290i - 520 N 00 . . . 425
MSP 290i - 620 F 88 . . . 425
MSP 290i - 620 F 4848 . . . 425
MSP 290i - 620 M 88 . . . 425
MSP 290i - 920 M 88 . . . 425
MSP 290i - 920 M 88 MSC . . . 425
MSP 290i - 920 N 88 . . . 425
MSP 290i - 920 N 88 MSC . . . 425
MSP 360i - 530 F 01 . . . 425
MSP 490i - 540 M 01 . . . 425
MTK 20 . . . 510
MTKS 7x7M.5 . . . 511
MTKS 12x20M.5 . . . 511
MTKS 14x23 . . . 510
MTKS 14x23.P . . . 79
MTKS 14x23.P . . . 511

MTKS 20x20 . . . 62
MTKS 20x20 . . . 510
MTKS 20x30 . . . 34
MTKS 20x30 . . . 510
MTKS 20x30.1 . . . 510
MTKS 20x40.1 . . . 79
MTKS 20x40.1 . . . 84
MTKS 20x40.1 . . . 114
MTKS 20x40.1 . . . 510
MTKS 30x50.1 . . . 510
MTKS 40x60.1 . . . 510
MTKS 50x50.1 . . . 34
MTKS 50x50.1 . . . 44
MTKS 50x50.1 . . . 51
MTKS 50x50.1 . . . 55
MTKS 50x50.1 . . . 62
MTKS 50x50.1 . . . 72
MTKS 50x50.1 . . . 76
MTKS 50x50.1 . . . 79
MTKS 50x50.1 . . . 84
MTKS 50x50.1 . . . 102
MTKS 50x50.1 . . . 114
MTKS 50x50.1 . . . 510
MTKZ 13-30 SET . . . 244
MTKZ 15-30 SET . . . 244
MTKZ 15-30 SET . . . 478
MW OMS/AMS 01 . . . 498
NT Base IT1911-EU . . . 440
NT f. IT 1900+Base-EU . . . 426
NT f. IT 1900+Base-EU . . . 427
NT f. IT 1900+Base-EU . . . 428
NT f. IT 1900+Base-EU . . . 439
NT f. IT 1900+Base-EU . . . 440
NT HCR 6200 . . . 441
NT HS66x8-Schuko . . . 442
NT IT4x2x/ST2020 . . . 428
NT ITxx0x . . . 428
OCS 110x80mm-M reflector . . . 193
OCS 450x80mm-M reflector . . . 193
ODKL 96B M/C6-S12 . . . 220
ODKL 96B M/D26-S12 . . . 220
ODKL 96B M/D36-S12 . . . 220
ODKL 96B M/L-S12 . . . 220
ODKL 96B M/V6-S12 . . . 220
ODS10L1.8/L6X-M12 . . . 217
ODS10L1.8/LA6 . . . 217
ODS10L1.8/LA6,200-M12 . . . 217
ODS10L1.8/LA6-M12 . . . 217
ODS10L1.8/LAK . . . 217
ODS10L1.8/LAK,200-M12 . . . 217
ODS10L1.8/LAK-M12 . . . 217
ODS10L1-25M.8/LAK . . . 217
ODS10L1-25M.8/LAK,200-M12 . . . 217
ODS10L1-25M.8/LAK-M12 . . . 217
ODS 96B M/C6-600-S12 . . . 219
ODS 96B M/C66.01-1400-S12 . . . 218
ODS 96B M/V6-600-S12 . . . 219
ODS 96B M/V6-1400-S12 . . . 218
ODSIL 96B M/C6-S12 . . . 220
ODSIL 96B M/L-S12 . . . 220
ODSIL 96B M/V6-S12 . . . 220
ODSL 8/66-500-S12 . . . 213
ODSL 8/C66-45-S12 . . . 213
ODSL 8/C66-200-S12 . . . 213
ODSL 8/C66-500-S12 . . . 213
ODSL 8/V66.01-500-S12 . . . 213
ODSL 8/V66-45-S12 . . . 213
ODSL 8/V66-200-S12 . . . 213
ODSL 8/V66-500-S12 . . . 213
ODSL 9/C6-100-S12 . . . 215
ODSL 9/C6-200-S12 . . . 215
ODSL 9/C6-450-S12 . . . 214
ODSL 9/C6-650-S12 . . . 214
ODSL 9/C6.C1-450-S12 . . . 215
ODSL 9/C66-100-S12 . . . 215
ODSL 9/C66-450-S12 . . . 214
ODSL 9/D26-100-S12 . . . 215
ODSL 9/D26-450-S12 . . . 214
ODSL 9/D36-100-S12 . . . 215
ODSL 9/D36-450-S12 . . . 215
ODSL 9/D36-650-S12 . . . 214
ODSL 9/L-100-S12 . . . 215
ODSL 9/L-450-S12 . . . 215
ODSL 9/L-650-S12 . . . 214
ODSL 9/V6-100-S12 . . . 215
ODSL 9/V6-200-S12 . . . 215
ODSL 9/V6-450-S12 . . . 215
ODSL 9/V6-650-S12 . . . 214
ODSL 9/V6.C1-450-S12 . . . 215
ODSL 9/V66-100-S12 . . . 215
ODSL 9/V66-450-S12 . . . 215
ODSL 30/24-30M-S12 . . . 222
ODSL 30/D232-30M-S12 . . . 222
ODSL 30/D485-30M-S12 . . . 222
ODSL 30/V-30M Ex d . . . 222
ODSL 30/V-30M-S12 . . . 222
ODSL 96B M/66-2000-S12 . . . 219
ODSL 96B M/C6-2000 Ex d . . . 219
ODSL 96B M/C6-2000-S12 . . . 219
ODSL 96B M/C6.C1S-1500-S12 . . . 219
ODSL 96B M/C6-S12 . . . 220
ODSL 96B M/C6.S-800-S12 . . . 219
ODSL 96B M/C6.XL-1200-S12 . . . 219
ODSL 96B M/C66-S12 . . . 220
ODSL 96B M/D26-2000-S12 . . . 219
ODSL 96B M/D26-S12 . . . 220
ODSL 96B M/D26.S-800-S12 . . . 219
ODSL 96B M/D36-2000-S12 . . . 219
ODSL 96B M/D36-S12 . . . 220
ODSL 96B M/D36.S-800-S12 . . . 219
ODSL 96B M/L-2000 Ex d . . . 219
ODSL 96B M/L-2000-S12 . . . 219
ODSL 96B M/L-S12 . . . 220
ODSL 96B M/V6-2000-S12 . . . 219
ODSL 96B M/V6.C1S-1500-S12 . . . 219
ODSL 96B M/V6-S12 . . . 220
ODSL 96B M/V6.S-800-S12 . . . 219
ODSL 96B M/V6.XL-1200-S12 . . . 219
ODSL 96K/66-2300-S12 . . . 220
ODSL 96K/V66-2300-S12 . . . 220
ODSLR 96B M/C6-2000-S12 . . . 219
ODSLR 96B M/V6-2000-S12 . . . 219
ODSR 96B M/C6-600-S12 . . . 218
ODSR 96B M/V6-600-S12 . . . 218
OGS 600-140/CN-M12 . . . 245
OGS 600-140/D2-M12.8 . . . 245
OGS 600-140/D3-M12.8 . . . 245
OGS 600-280/CN-M12 . . . 245
OGS 600-280/D2-M12.8 . . . 245
OGS 600-280/D3-M12.8 . . . 245
OTB 30/100-BK/WH250 . . . 246
OTB 40-BK250 . . . 246
OTB 40-GN250 . . . 246
OTB 40-WH250 . . . 246
OTB SET-GN/BK/WH003 . . . 246
P30-V1-B-DS-B . . . 508
P30-V1-B-DS-C . . . 508
P30-V1-B-DS-G . . . 508
P30-V1-B-DS-O . . . 508
P30-V1-B-DS-R . . . 508
P30-V1-B-DS-Y . . . 508
P30-V1-B-DV . . . 508
P45-V1-B-DS-B . . . 508
P45-V1-B-DS-C . . . 508
P45-V1-B-DS-G . . . 508
P45-V1-B-DS-O . . . 508
P45-V1-B-DS-O-BZ-098 . . . 507
P45-V1-B-DS-R . . . 508
P45-V1-B-DS-R-BZ-098 . . . 507
P45-V1-B-DS-Y . . . 508
P45-V1-B-DV . . . 508
P65-V1-B-DS-B . . . 508
P65-V1-B-DS-C . . . 508
P65-V1-B-DS-G . . . 508
P65-V1-B-DS-O . . . 508
P65-V1-B-DS-O-BZ-103 . . . 507
P65-V1-B-DS-R . . . 508
P65-V1-B-DS-R-BZ-103 . . . 507
P65-V1-B-DS-Y . . . 508
P65-V1-B-DV . . . 508
P65-V1-B-DW . . . 508
PBZ-V1-065 . . . 508
PBZ-V1-085 . . . 508
PRK 2/42 . . . 27
PRK 2/42,150-S8 . . . 27
PRK 2/42,150-S12 . . . 27
PRK 2/42D . . . 27
PRK 2/42D,150-S8 . . . 27
PRK 2/42D,150-S12 . . . 27
PRK3C/6G-M8 . . . 30
PRK3C/6-M8.3 . . . 30
PRK3C.A3/2N-M8 . . . 30
PRK3C.A3/4-M8.3 . . . 30
PRK3C.A3/4P-M8 . . . 30
PRK3C.A3/4T-M8 . . . 30
PRK3C.A3/LP-M8 . . . 30
PRK3CL1.A3/2-M8.3 . . . 30
PRK3CL1.A3/4-M8.3 . . . 30
PRK3CL1.A3/4P-M8 . . . 30
PRK3CL1.A3/4T-M8 . . . 30
PRK3CL1.A3/LP-M8 . . . 30
PRK3CL1.A3/P-M8.3 . . . 30
PRK3CL1.A3/PT-M8 . . . 30
PRK3CL1.T3/2N-M8 . . . 31
PRK3CL1.T3/4-M8.3 . . . 31
PRK3CL1.T3/4P-M8 . . . 31
PRK3CL1.T3/4T-M8 . . . 31
PRK3CL1.T3/LP-M8 . . . 31
PRK3CL1.TT3/4P-M8 . . . 31
PRK3CL1.TT3/4T-M8 . . . 31
PRK3CL1.TT3/LP-M8 . . . 31
PRK3C/LP-M8 . . . 30
PRK3C.T3/2N-M8 . . . 31
PRK3C.T3/2T-M8 . . . 31
PRK3C.T3/4P-M8 . . . 31
PRK3C.T3/4T-M8 . . . 31
PRK3C.T3/6T-M8 . . . 31
PRK3C.T3/LP-M8 . . . 31
PRK3C.T3/P-M8.3 . . . 31
PRK3C.T3/PT-M8 . . . 31
PRK3C.TT3/4P-M8 . . . 31
PRK3C.TT3/4T-M8 . . . 31
PRK3C.TT3/LP-M8 . . . 31
PRK5/2 . . . 37
PRK5/2-M8.3 . . . 37
PRK5/2N . . . 37
PRK5/2N-200-M12 . . . 37
PRK5/2N-M8 . . . 37
PRK5/2X-M8 . . . 37
PRK5/4 . . . 37
PRK5/4-200-M8.3 . . . 37
PRK5/4-M8.3 . . . 37
PRK5/4P . . . 37
PRK5/4P-200-M8 . . . 37
PRK5/4P-200-M12 . . . 37
PRK5/4P-350-M12 . . . 37
PRK5/4P-800-M12 . . . 37
PRK5/4P-M8 . . . 37
PRK5/4X-200-M8.1 . . . 37
PRK5/4X-200-M12 . . . 37
PRK5/4X-M8 . . . 37
PRK5.M3/2N . . . 37
PRK5.M3/2N-M8 . . . 37
PRK5.M3/4P . . . 37
PRK5.M3/4P-M8 . . . 37
PRK5/N . . . 37
PRK5/P . . . 37
PRK 8/44-S12 . . . 42
PRK 8/66 . . . 42
PRK 8/66.11-S12 . . . 42
PRK 8/66.41-S12 . . . 42

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Type designation. . . Page no.

PRK 8/66.42-S12 . . . 42
PRK 8/66-S12 . . . 42
PRK15/2 . . . 48
PRK15/2X-200-M12 . . . 48
PRK15/2X-M12 . . . 48
PRK15/4 . . . 48
PRK15/4X-200-M12 . . . 48
PRK15/4X-M12 . . . 48
PRK15.D1/2 . . . 49
PRK15.D1/2X-200-M12 . . . 49
PRK15.D1/2X-M12 . . . 48
PRK15.D1/4 . . . 49
PRK15.D1/4X-200-M12 . . . 49
PRK15.D1/4X-M12 . . . 48
PRK15.D1/N . . . 49
PRK15.D1/NX-M12 . . . 48
PRK15.D1/P . . . 49
PRK15.D1/PX-200-M12 . . . 49
PRK15.D1/PX-M12 . . . 48
PRK15.D/2 . . . 49
PRK15.D/2X-200-M12 . . . 48
PRK15.D/2X-M12 . . . 48
PRK15.D/4 . . . 49
PRK15.D/4X-200-M12 . . . 49
PRK15.D/4X-M12 . . . 48
PRK15.D/N . . . 49
PRK15.D/NX-M12 . . . 48
PRK15.D/P . . . 49
PRK15.D/PX-M12 . . . 48
PRK15.D/XP-M12 . . . 48
PRK15/N . . . 48
PRK15/NX-M12 . . . 48
PRK15/P . . . 48
PRK15/PX-M12 . . . 48
PRK 18/24 DL.42 . . . 53
PRK 18/24 DL.46 . . . 53
PRK 18/44 L.43 . . . 53
PRK18B.1/2N-6000 . . . 52
PRK18B.1/2N-M12 . . . 52
PRK18B.1/4P-6000 . . . 52
PRK18B.1/4P-M12 . . . 52
PRK18B.FXT3/2N-6000 . . . 53
PRK18B.FXT3/2N-M12 . . . 53
PRK18B.FXT3/2T-6000 . . . 53
PRK18B.FXT3/4P-6000 . . . 53
PRK18B.FXT3/4P-M12 . . . 53
PRK18B.T2/2N-6000 . . . 53
PRK18B.T2/4P-6000 . . . 53
PRK18B.T2/4P-M12 . . . 52
PRK18B.T2/4X-M12 . . . 52
PRK18B.T2/NX-M12 . . . 52
PRK18B.T2/PX-M12 . . . 52
PRK18B.T3/2N-M12 . . . 53
PRK18B.T3/4P-M12 . . . 53
PRK18B.TT3/2N-6000 . . . 54
PRK18B.TT3/2N-M12 . . . 53
PRK18B.TT3/4P-6000 . . . 54
PRK18B.TT3/4P-M12 . . . 53
PRK18B.TT3/6G-M12 . . . 53
PRK18B.TT3/LP-M12 . . . 53
PRK18B.TT3/P4-M12 . . . 53
PRK18B.XT2/4P-M12 . . . 53
PRK18B.XT3/4P-M12 . . . 53
PRK18B.XT3/P4-M12 . . . 53
PRK18B.XTT3/4P-M12 . . . 53
PRK25C/2N . . . 57
PRK25C/2N-200-M12 . . . 57
PRK25C/2N-M8 . . . 57
PRK25C/2N-M12 . . . 57
PRK25C/4P . . . 57
PRK25C/4P-200-M12 . . . 57
PRK25C/4P-M8 . . . 57
PRK25C/4P-M12 . . . 57
PRK25C/4W-M12 . . . 57
PRK25C.A2/2N . . . 58
PRK25C.A2/2N-200-M12 . . . 58
PRK25C.A2/2N-M8 . . . 58
PRK25C.A2/2N-M12 . . . 58
PRK25C.A2/4P . . . 58
PRK25C.A2/4P-200-M12 . . . 58
PRK25C.A2/4P-M8 . . . 58
PRK25C.A2/4P-M12 . . . 58
PRK25C.A/2N . . . 58
PRK25C.A/2N-200-M12 . . . 58
PRK25C.A/2N-M8 . . . 58
PRK25C.A/2N-M12 . . . 58
PRK25C.A/4P . . . 58
PRK25C.A/4P-200-M12 . . . 58
PRK25C.A/4P-M8 . . . 58
PRK25C.A/4P-M12 . . . 58
PRK25C.D1/2N . . . 59
PRK25C.D1/2N-200-M12 . . . 59
PRK25C.D1/2N-M8 . . . 59
PRK25C.D1/2N-M12 . . . 59
PRK25C.D1/4P . . . 59
PRK25C.D1/4P-200-M12 . . . 59
PRK25C.D1/4P-M8 . . . 59
PRK25C.D1/4P-M12 . . . 59
PRK25C.D/2N . . . 59
PRK25C.D/2N-200-M12 . . . 59
PRK25C.D/2N-M8 . . . 59
PRK25C.D/2N-M12 . . . 59
PRK25C.D/4P . . . 59
PRK25C.D/4P-200-M12 . . . 59
PRK25C.D/4P-M8 . . . 59
PRK25C.D/4P-M12 . . . 59
PRK25C.XA2/2N . . . 58
PRK25C.XA2/2N-M12 . . . 58
PRK25C.XA2/4P . . . 58
PRK25C.XA2/4P-M12 . . . 58
PRK28/2N . . . 64
PRK28/2N-200-M12 . . . 63
PRK28/2N-M12 . . . 63
PRK28.3/2N . . . 64
PRK28.3/2N-200-M12 . . . 63
PRK28.3/2N-M12 . . . 63
PRK28.3/4P . . . 64
PRK28.3/4P-200-M12 . . . 63
PRK28.3/4P-M12 . . . 63
PRK28/4P . . . 64
PRK28/4P-200-M12 . . . 63
PRK28/4P-M12 . . . 63
PRK 46B/7D,5000 . . . 68
PRK 46B/7D-S12 . . . 68
PRK 46B/66.01,200-S12 S-Ex n . . . 115
PRK 46B/66,200-S12 S-Ex n . . . 115
PRK46C.1/4P-M12 . . . 68
PRK46C/2N . . . 68
PRK46C/2N-M12 . . . 68
PRK46C/4P . . . 68
PRK46C/4P-200-M12 . . . 68
PRK46C/4P-M12 . . . 68
PRK46C/4W-M12 . . . 68
PRK46C/48-M12 . . . 68
PRK46C.D1/4P-M12 . . . 68
PRK46C.D1/PX-M12 . . . 69
PRK46C.D/2N-M12 . . . 68
PRK46C.D/4P . . . 69
PRK46C.D/4P-200-M12 . . . 69
PRK46C.D/4P-M12 . . . 68
PRK46C.D/4W-M12 . . . 68
PRK46C.D/4X-M12 . . . 68
PRK46C.D/4X-M12 . . . 68
PRK46C.D/48-M12 . . . 68
PRK46C.D/PX-200-M12 . . . 69
PRK46C.D/PX-M12 . . . 68
PRK46C/LP-M12 . . . 68
PRK46C/PX-200-M12 . . . 68
PRK49C.1/2N-TB . . . 74
PRK49C.1/4P-TB . . . 74
PRK49C/4P-TB . . . 74
PRK49C.UC1/M4 . . . 74
PRK49C.UC1/M4-TB . . . 74
PRK49C.UC1/TS . . . 74
PRK49C.UC1/TS-TB . . . 74
PRK49C.UCD1/TS . . . 74
PRK49C.UCD1/TS-TB . . . 74
PRK49C.UCH/M4-TB . . . 74
PRK49C.UCH/TS-TB . . . 74
PRK49C.UC/M4-TB . . . 74
PRK49C.UC/TS-TB . . . 74
PRK 53/6.22,5000 . . . 77
PRK 53/6.22-S8 . . . 77
PRK 53/6.42-S8 . . . 77
PRK 55/6.22,200-S12 . . . 81
PRK 55/6.22,5000 . . . 81
PRK 55/6.22-S8 . . . 81
PRK 55/6.42,200-S12 . . . 81
PRK 55/6.42,5000 . . . 81
PRK 55/6.42-S8 . . . 81
PRK 55/6.42-S8 Ex . . . 112
PRK 55/6D.42,200-S12 . . . 81
PRK 55/6D.42-S8 . . . 81
PRK 55/6D.42-S8.3 Ex . . . 112
PRK 55/66,200-S12 . . . 81
PRK 55/66,5000 . . . 81
PRK 55/66-S8 . . . 81
PRK 92/3 L Ex . . . 111
PRK 95/4 L.2 . . . 85
PRK 95/44 L . . . 85
PRK 95/44 L.4 . . . 86
PRK 95/A L.4 . . . 86
PRK 96K/N-1380-46 . . . 89
PRK 96K/P-1360.1-41 . . . 90
PRK 96K/P-1360-21 . . . 90
PRK 96K/P-1360-41 . . . 90
PRK 96K/P-1361-29 . . . 90
PRK 96K/P-1380-41 . . . 90
PRK 96K/P-3368-41 . . . 89
PRK 96K/R-1420.1-25 . . . 90
PRK 96K/R-1420-25 . . . 90
PRK 96K/R-1430-25 . . . 90
PRK 96K/R-3428.1-25 . . . 89
PRK 96K/R-3428-25 . . . 89
PRK 96M/A-3410-44 . . . 89
PRK 96M/N-3366-27 . . . 89
PRK 96M/P-1361.1-47 . . . 90
PRK 96M/P-1361-47 . . . 90
PRK 96M/P-1362-47 . . . 90
PRK 96M/P-1370-22 . . . 90
PRK 96M/P-1370-42 . . . 90
PRK 96M/P-1375-22 . . . 90
PRK 96M/P-1400-22 . . . 90
PRK 96M/P-1400-42 . . . 90
PRK 96M/P-1830-21 . . . 90
PRK 96M/P-1830-41 . . . 90
PRK 96M/P-1832-41 . . . 90
PRK 96M/P-1838-21 . . . 90
PRK 96M/P-1838-41 . . . 90
PRK 96M/P-2838-28 . . . 90
PRK 96M/P-2838-28 Ex n . . . 116
PRK 96M/P-3360-21 . . . 89
PRK 96M/P-3369-21 Ex n . . . 116
PRK 96M/P-3380-41 . . . 89
PRK 96M/R-1850-25 . . . 90
PRK 96M/R-1858-25 . . . 90
PRK 96M/R-3420-25 . . . 89
PRK 96M/R-3430-25 . . . 89
PRK318B/2N . . . 96
PRK318B/2N-M12 . . . 96
PRK318B/4P . . . 96
PRK318B/4P-M12 . . . 96
PRK318B/PX-M12 . . . 96
PRK318B.W/2N . . . 96
PRK318B.W/2N-M12 . . . 96
PRK318B.W/4P . . . 96
PRK318B.W/4P-M12 . . . 96
PRK328.3/2N . . . 104
PRK328.3/2N-M12 . . . 104
PRK328.3/4P . . . 104
PRK328.3/4P-M12 . . . 104

PRK328.W3/2N 104
PRK328.W3/2N-M12 104
PRK328.W3/4P. 104
PRK328.W3/4P-M12. 104
PRK 412M/P. 107
PRK 412M/P-S12 107
PRK 618/4-S12. 109
PRKL 8/24.91 41
PRKL 8/24.91-S12 41
PRKL 8/24.99-S12 41
PRKL 8/44.91-S12 41
PRKL 25B/4.1,200-S12. 57
PRKL 25B/4D.1-S12 57
PRKL 25B/6.81-S12 57
PRKL 25B/66.1. 57
PRKL 25B/66.1-S8 57
PRKL 25B/66.1-S12 57
PRKL 25B/66.P-S12 57
PRKL 53/6.22,5000 77
PRKL 53/6.22-S8 77
PRKL 53/6.42-S8 77
PRKL 55/6.22,200-S12. 81
PRKL 55/6.22,5000 81
PRKL 55/6.22-S8 81
PRKL 318M/P. 100
PRKL 318M/P-S12 100
PSC-900-S2 504
PSC-1000-S2 504
PSC-1300-S2 504
PSC-1600-S2 504
PSC-1900-S2 504
PSC-2500-S2 504
PSU-02A-1P-24V-S. 471
PSU-05A-1P-24V-H 471
PSU-05A-1P-24V-S. 471
PSU-05A-3P-24V-H 471
PSU-10A-1P-24V-H 471
PSU-10A-1P-24V-S. 471
PSU-10A-3P-24V-H 471
PSU-20A-1P-24V-H 471
PSU-20A-3P-24V-H 471
PSU-40A-3P-24V-H 471
RD800-MP-M12L 356
RD800-MP-M12R 356
RD800-MSCA-CB2-L 356
RD800-MSCA-CB2-R 356
RD800-MSCA-M12L 356
RD800-MSCA-M12R. 356
RD800-MUCA-CB2-L 356
RD800-MUCA-CB2-R 356
RD800-MUCA-M12L 356
RD800-MUCA-M12R. 356
RD800-SSCA-CB2-L. 356
RD800-SSCA-CB2-R 356
RD800-SSCA-M12L 356
RD800-SSCA-M12R 356
RD800-SUCA-CB2-L 356
RD800-SUCA-CB2-R 356
RD800-SUCA-M12L 356
RD800-SUCA-M12R 356
RD800-x-SCA. 357
RD800-x-UCA. 357
REF 4-A-20x20 512
REF 4-A-25X1000 512
REF 4-A-25x22800 512
REF 4-A-50x50 29
REF 4-A-50x50 34
REF 4-A-50x50 40
REF 4-A-50x50 51
REF 4-A-50x50 62
REF 4-A-50x50 66
REF 4-A-50x50 72
REF 4-A-50x50 76
REF 4-A-50x50 79
REF 4-A-50x50 84
REF 4-A-50x50 99
REF 4-A-50x50 106
REF 4-A-50x50 114
REF 4-A-50x50 512
REF 4-A-50X1000. 512
REF 4-A-50x45700 512
REF 4-A-100x100 44
REF 4-A-100x100 55
REF 4-A-100x100 62
REF 4-A-100x100 72
REF 4-A-100x100 76
REF 4-A-100x100 88
REF 4-A-100x100 94
REF 4-A-100x100 102
REF 4-A-100x100 512
REF 4-A-100x45700 512
REF 4-A-920x749 512
REF 6-A-9x9 34
REF 6-A-9x9 44
REF 6-A-9x9 62
REF 6-A-9x9 79
REF 6-A-9x9 84
REF 6-A-9x9 102
REF 6-A-9x9 114
REF 6-A-9x9 512
REF 6-A-14x45 44
REF 6-A-14x45 62
REF 6-A-14x45 79
REF 6-A-14x45 84
REF 6-A-14x45 102
REF 6-A-14x45 114
REF 6-A-14x45 512
REF 6-A-25x25 34
REF 6-A-25x25 512
REF 6-A-50x50 34
REF 6-A-50x50 44
REF 6-A-50x50 55
REF 6-A-50x50 79
REF 6-A-50x50 84
REF 6-A-50x50 114
REF 6-A-50x50 512
REF 6-A-77x77 512
REF 6-S-20x40 44
REF 6-S-20x40 510
REF 6-S-20x40.P 511
REF 6-S-26x280 510
REF 7-A-15-30 SET 244
REF 7-A-15-30 SET 478
REF 7-A-100x100 47
REF 7-A-100x100 94
REF 7-A-100x100 218
REF 7-A-100x100 221
REF 7-A-100x100 512
REF 7-A-200x300 512
REF 7-A-1000x600 512
Reflective tape 200x200mm-H. 511
Reflective tape 200x200mm-M 237
Reflective tape 200x200mm-M 510
Reflective tape 200x200mm-S. 237
Reflective tape 200x200mm-S. 512
Reflective tape 500x500mm-H. 511
Reflective tape 500x500mm-M 237
Reflective tape 500x500mm-M 510
Reflective tape 500x500mm-S. 237
Reflective tape 500x500mm-S. 512
Reflective tape 749x914mm-S. 512
Reflective tape 914x914mm-H. 511
Reflective tape 914x914mm-M 237
Reflective tape 914x914mm-M 510
Reflective tape 914x914mm-S. 237
Reflective tape 914x914mm-S. 512
RFI 32 L 120. 444
RFM 12 SL 200. 445
RFM 32 SL 200. 445
RFM 32 SL 200 Ex-n. 445
RFM 62 SL 200. 445
RK18B.1/2N-6000 52
RK18B.1/2N-M12 52
RK18B.1/4P-6000. 52
RK18B.1/4P-M12 52
RK18B.T2/2N-M12 53
RK18B.T2/4P-M12 53
RK46C.DXL3/2N-M12. 67
RK46C.DXL3/4P 68
RK46C.DXL3/4P-200-M12 67
RK46C.DXL3/4P-M12 67
RK46C.DXL3/LP-M12 67
RK46C.DXL3P2/4P-200-M12 68
RK46C.DXL3P2/4P-M12 67
RK46C.DXL3/PX-200-M12 67
RK46C.DXL3/PX-M12 67
RK 96M/P-1440-21. 90
RKR 55/6.42,200-S12. 81
RKR 55/6.42-S8 81
RKU318-300/2T-M12 155
RKU318-300/4T-M12 155
RKU318-400.3/2X-M12. 155
RKU318-400.3/4X-M12. 155
RKU318-800/2T-M12 155
RKU318-800/4T-M12 155
RKU318-1600.3/2X-M12. 155
RKU318-1600.3/4X-M12. 155
RKU 420/2NC.2-S8. 152
ROD4-08 plus. 252
ROD4-30 252
ROD4-36 252
ROD4-38 252
ROD4-50 plus. 252
ROD4-56 plus. 252
ROD4-58 plus. 252
ROD4-MS. 253
ROD4 plus 252
RS4-clean-Set1. 328
RS4-clean-Set2. 328
RSL400 M12 adapter 328
RSL410-L/CU405-2M12 325
RSL410-L/CU408-M12 325
RSL410-L/CU411-RS4 325
RSL410-M/CU405-2M12 325
RSL410-M/CU408-M12 325
RSL410-M/CU411-RS4. 325
RSL410-S/CU405-2M12 325
RSL410-S/CU408-M12 325
RSL410-S/CU411-RS4 325
RSL410-XL/CU405-2M12 325
RSL410-XL/CU408-M12 325
RSL420-L/CU411-RS4 326
RSL420-L/CU416-5 326
RSL420-L/CU416-10 326
RSL420-L/CU416-25 326
RSL420-L/CU416-300-WPU 326
RSL420-M/CU411-RS4. 326
RSL420-M/CU416-5 326
RSL420-M/CU416-10 326
RSL420-M/CU416-25 326
RSL420-M/CU416-300-WPU 326
RSL420-S/CU411-RS4 326
RSL420-S/CU416-5 326
RSL420-S/CU416-10 326
RSL420-S/CU416-25 326
RSL420-S/CU416-300-WPU. 326
RSL420-XL/CU416-5 326
RSL420-XL/CU416-10 326
RSL420-XL/CU416-25 326
RSL420-XL/CU416-300-WPU 326
RSL430-L/CU429-5 326
RSL430-L/CU429-10 326
RSL430-L/CU429-25 326
RSL430-L/CU429-300-WPU 326
RSL430-M/CU429-5 326
RSL430-M/CU429-10 326
RSL430-M/CU429-25 326
RSL430-M/CU429-300-WPU 326
RSL430-S/CU429-5 326
RSL430-S/CU429-10 326
RSL430-S/CU429-25 326

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Type designation. . . Page no.

RSL430-S/CU429-300-WPU . . . 326
RSL430-XL/CU429-5 . . . 326
RSL430-XL/CU429-10 . . . 326
RSL430-XL/CU429-25 . . . 326
RSL430-XL/CU429-300-WPU . . . 326
RSL440-L/CU429-5 . . . 327
RSL440-L/CU429-10 . . . 327
RSL440-L/CU429-25 . . . 327
RSL440-L/CU429-300-WPU . . . 327
RSL440-M/CU429-5 . . . 327
RSL440-M/CU429-10 . . . 327
RSL440-M/CU429-25 . . . 327
RSL440-M/CU429-300-WPU . . . 327
RSL440-S/CU429-5 . . . 327
RSL440-S/CU429-10 . . . 327
RSL440-S/CU429-25 . . . 327
RSL440-S/CU429-300-WPU . . . 327
RSL440-XL/CU429-5 . . . 327
RSL440-XL/CU429-10 . . . 327
RSL440-XL/CU429-25 . . . 327
RSL440-XL/CU429-300-WPU . . . 327
RT 96M/P-1474-800-42 . . . 91
RT 96M/R-1574-800-25 . . . 91
RT 412M/P-200 . . . 107
RT 412M/P-200-S12 . . . 107
RT 618/4-200-S12 . . . 109
RTL 318M/P-300-S12 . . . 101
S20-P1C1-M20-FH . . . 332
S20-P1C3-M20-LH . . . 332
S20-P3C1-M20-FH . . . 332
S20-P4C1-M12-FH . . . 332
S20-P4C1-M20-FH . . . 332
S20-P4C1-M20-FH30 . . . 332
S20-P4C3-M20-LH . . . 332
S200-M1C1-M20 . . . 333
S200-M3C1-M20 . . . 333
S200-M4C1-M12 . . . 333
S200-M4C1-M20 . . . 333
S300-M0C3-M20-15 . . . 335
S300-M0C3-M20-31 . . . 335
S300-M13C3-M20-15 . . . 335
S300-M13C3-M20-31 . . . 335
S300-M13C3-M20-CB . . . 335
S300-M13C3-M20-SB . . . 335
S300-P0C1-M20-CB . . . 335
S300-P13C1-M12-CB . . . 335
S300-P13C1-M12-SB . . . 335
S300-P13C1-M20-CB . . . 335
S300-P13C1-M20-SB . . . 335
S400-M1-CB02M12-W . . . 337
S400-M4CB2-B . . . 337
S400-M4-CB02M12-W . . . 337
S400-M4-CB2PUR-W . . . 337
S400-M4CB2-T . . . 337
S400-M4M12-B . . . 337
S400-M4M12-T . . . 337
S410-M1CB2-B . . . 339
S410-M1CB2-T . . . 339
S410-M1M12-B . . . 339
S410-M1M12-T . . . 339
S410-M4-CB02M12-W . . . 339
S410-M4-CB2PUR-W . . . 339
S420-9CB2-LW . . . 340
S420-9-CB02M12-LW . . . 340
S420-9CB5-LW . . . 340
S420-OS-CB2-LW . . . 340
S420-OS-CB02M12-LW . . . 340
SAT 5 . . . 314
SAT 5 . . . 320
SAT 5 . . . 321
SAT 5 . . . 323
SAT 5 . . . 513
Set-AC-ML-2SA . . . 312
Set-AC-ML-2SA . . . 515
Set-AC-ML-2SB . . . 312
Set-AC-ML-2SB . . . 515
Set-AC-MLX.2-2SA . . . 515
Set-AC-MLX.2-2SB . . . 515
Set-AC-MLX-2SA . . . 312
Set-AC-MLX-2SA . . . 515
Set-AC-MLX-2SB . . . 312
Set-AC-MLX-2SB . . . 515
Set-AC-MT-2S . . . 515
Set-AC-MT-4S . . . 312
Set-AC-MT-4S . . . 515
Set-AC-MTX.2-1S . . . 515
Set-AC-MTX.2-2S . . . 515
Set-AC-MTX.2-4S . . . 515
Set-AC-MTX-2S . . . 515
Set-AC-MTX-4S . . . 312
Set-AC-MTX-4S . . . 515
SET LS 412M/P-S12 . . . 107
SET LS 618/4-S12 . . . 109
SET MD12-US2-IL1.1 + acc. . . . 191
SET MD12-US2-IL1.1 + acc. . . . 266
SLE46C-40.K2/4P . . . 320
SLE46C-40.K2/4P-M12 . . . 320
SLE46C-40.K4/4P . . . 313
SLE46C-40.K4/4P-M12 . . . 313
SLE46C-70.K2/4P . . . 320
SLE46C-70.K2/4P-M12 . . . 320
SLE46C-70.K4/4P . . . 313
SLE46C-70.K4/4P-M12 . . . 313
SLE46CI-40.K2/4P . . . 320
SLE46CI-40.K2/4P-M12 . . . 320
SLE46CI-40.K4/4P . . . 313
SLE46CI-40.K4/4P-M12 . . . 313
SLE46CI-70.K2/4P . . . 320
SLE46CI-70.K2/4P-M12 . . . 320
SLE46CI-70.K4/4P . . . 313
SLE46CI-70.K4/4P-M12 . . . 313
SLE518I-K4/4-M12 . . . 318
SLE518L1-K4/4-M12 . . . 318
SLS46C-40.K28 . . . 320
SLS46C-40.K28-M12 . . . 320
SLS46C-40.K48 . . . 313
SLS46C-40.K48-M12 . . . 313
SLS46C-70.K28 . . . 320
SLS46C-70.K28-M12 . . . 320
SLS46C-70.K48 . . . 313
SLS46C-70.K48-M12 . . . 313
SLS46CI-40.K28 . . . 320
SLS46CI-40.K28-M12 . . . 320
SLS46CI-40.K48 . . . 313
SLS46CI-40.K48-M12 . . . 313
SLS46CI-70.K28 . . . 320
SLS46CI-70.K28-M12 . . . 320
SLS46CI-70.K48 . . . 313
SLS46CI-70.K48-M12 . . . 313
SLS518I-K48-M12 . . . 318
SLS518L1-K48-M12 . . . 318
SLSE 318K/P . . . 323
SLSE 318K/P-S12 . . . 323
SLSE 318M/P-S12 . . . 323
SLSER 25B/66 . . . 322
SLSER 25B/66,200-S12 . . . 322
SLSER 25B/66-S8 . . . 322
SLSER 25B/66-S12 . . . 322
SLSS 318K . . . 323
SLSS 318K-S12 . . . 323
SLSS 318M-S12 . . . 323
SLSSR 25B.8 . . . 322
SLSSR 25B.8,200-S12 . . . 322
SLSSR 25B.8-S8 . . . 322
SLSSR 25B.8-S12 . . . 322
S-M12A-ET . . . 410
S-M12A-ET . . . 417
S-M12A-ET . . . 421
S-M12A-ET . . . 464
S-M12A-ET . . . 493
ST 2020-5BE . . . 428
TFI 03 1101.120 . . . 446
TFI 03 1601.120 . . . 446
TFI 05 1101.120 . . . 446
TFI 05 1601.120 . . . 446
TFM 02 1125.220 . . . 447
TFM 02 2210.210 . . . 447
TFM 03 1110.210 . . . 447
TFM 03 1510.210 . . . 447
TFM 03 5125.220 . . . 447
TFM 04 1190.230 . . . 447
TFM 05 1110.210 . . . 447
TFM 05 1110.Ex . . . 447
TFM 05 1510.210 . . . 447
TFM 05 2210.210 . . . 447
TFM 06 1110.210 . . . 447
TFM 08 1110.210 . . . 447
TFM 08 1610.210 . . . 447
TFM 08 2125.220 . . . 447
TG 29 . . . 55
TK 10.P . . . 511
TK 20.1 . . . 510
TK 20x75 . . . 509
TK 25.1 . . . 510
TK 30x50 . . . 509
TK 35.1 . . . 510
TK 40x180 . . . 509
TK 40 x180.1-Set . . . 509
TK 45.1 . . . 510
TK 50x100 . . . 509
TK 50 x100-Set . . . 509
TK 60 . . . 112
TK 60 . . . 510
TK 82.2 . . . 34
TK 82.2 . . . 40
TK 82.2 . . . 51
TK 82.2 . . . 62
TK 82.2 . . . 66
TK 82.2 . . . 71
TK 82.2 . . . 76
TK 82.2 . . . 99
TK 82.2 . . . 106
TK 82.2 . . . 116
TK 82.2 . . . 510
TK 82.AF . . . 510
TK 100x100 . . . 510
TK 100 x100-Set . . . 510
TKA 30X46 . . . 509
TKA 30X60 . . . 509
TK BR 53 . . . 511
TKS 10x32 . . . 509
TKS 20.P . . . 511
TKS 20x20 . . . 509
TKS 20X40 . . . 29
TKS 20X40 . . . 34
TKS 20X40 . . . 40
TKS 20X40 . . . 44
TKS 20X40 . . . 51
TKS 20X40 . . . 55
TKS 20X40 . . . 62
TKS 20X40 . . . 66
TKS 20X40 . . . 71
TKS 20X40 . . . 76
TKS 20X40 . . . 79
TKS 20X40 . . . 84
TKS 20X40 . . . 88
TKS 20X40 . . . 94
TKS 20X40 . . . 99
TKS 20X40 . . . 102
TKS 20X40 . . . 106
TKS 20X40 . . . 108
TKS 20X40 . . . 110
TKS 20X40 . . . 114
TKS 20X40 . . . 116
TKS 20X40 . . . 117
TKS 20X40 . . . 509
TKS 20X40.1 . . . 509
TKS 20x40.P . . . 79
TKS 20x40.P . . . 511
TKS 25 . . . 510
TKS 30x45 . . . 509

TKS 30X50 34
TKS 30X50 40
TKS 30X50 44
TKS 30X50 55
TKS 30X50 62
TKS 30X50 66
TKS 30X50 72
TKS 30X50 76
TKS 30X50 88
TKS 30X50 94
TKS 30X50 99
TKS 30X50 102
TKS 30X50 106
TKS 30X50 108
TKS 30X50 110
TKS 30X50 112
TKS 30X50 116
TKS 30X50 117
TKS 30X50 509
TKS 30X60 509
TKS 30X500 509
TKS 40X60 29
TKS 40X60 34
TKS 40X60 40
TKS 40X60 51
TKS 40X60 55
TKS 40X60 62
TKS 40X60 66
TKS 40X60 72
TKS 40X60 79
TKS 40X60 84
TKS 40X60 99
TKS 40X60 102
TKS 40X60 106
TKS 40X60 114
TKS 40X60 116
TKS 40X60 509
TKS 40x60.1 509
TKS 40x60.1.AF 509
TKS 40x60.Chem 79
TKS 40x60.Chem 511
TKS 40x60.P 79
TKS 40x60.P 511
TKS 50X50 72
TKS 50X50 88
TKS 50X50 94
TKS 50X50 116
TKS 50X50 509
TKS 50X50.1 509
TKS 50x50.1.HT 509
TKS 50X100 509
TKS 85x85 509
TKS 100X100 29
TKS 100X100 34
TKS 100X100 40
TKS 100X100 44
TKS 100X100 51
TKS 100X100 55
TKS 100X100 62
TKS 100X100 66
TKS 100X100 72
TKS 100X100 76
TKS 100X100 79
TKS 100X100 84
TKS 100X100 88
TKS 100X100 94
TKS 100X100 99
TKS 100X100 102
TKS 100X100 106
TKS 100X100 108
TKS 100X100 110
TKS 100X100 114
TKS 100X100 116
TKS 100X100 117
TKS 100X100 209
TKS 100X100 510
TS 01-5-SA 266
TS 02-4-SA 266
TS 02-4-SA 469
UDC-900-S2 499
UDC-1000-S2 499
UDC-1000-S2-R 499
UDC-1140-S2 499
UDC-1300-S2 499
UDC-1300-S2-R 499
UDC-1600-S2 499
UDC-1600-S2-R 499
UDC-1900-S2 499
UDC-1900-S2-R 499
UDC-2100-S2 499
UDC-2500-S2 499
UDC-2500-S2-R 499
UDC-3100-S2 499
UDC-3100-S2-R 499
UM60-150 503
UM60-225 503
UM60-300 503
UM60-450 503
UM60-600 503
UM60-750 503
UM60-900 503
UM60-1050 503
UM60-1200 503
UM60-1350 503
UM60-1500 503
UM60-1650 503
UM60-1800 503
UMC-902-S2 502
UMC-1000-S2 501
UMC-1002-S2 502
UMC-1143-S2 502
UMC-1300-S2 501
UMC-1303-S2 502
UMC-1304-S2 502
UMC-1600-S2 501
UMC-1603-S2 502
UMC-1900-S2 501
UMS 96 94
UMS 96 221
UMS 96 496
UMS 96-82 496
UMS 96-95 496
VRTR 8/66-250-S12 42
VRTU 430M/P-1110-6000-S12 159
VRTU 430M/V-1710-6000-S12 230
Z-3110 + KB-USB 426

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GLOSSARY

***a*beam**	Calibrated ***a***beam optics system (precise beam alignment max. ±0.25 ° spread) eliminates complicated alignment of the sensor after mounting
***A*LC**	Automatic switching-threshold correction for maximum function reserve
Alignment mode	A command can be used to activate the bar code reader to read and output the decoding capability on the interface
AOPD	**A**ctive **O**ptoelectronic **P**rotective **D**evice
AOPDDR	**A**ctive **O**ptoelectronic **P**rotective **D**evice responsive to **D**iffuse **R**eflection
AS-Interface Safety at Work	For economical, complete solutions including sensor and safety monitor
AutoReflAct (reflector polling)	A stationary bar code reader with this function facilitates control of the reading gate without an external, triggering photoelectric sensor
***availability*control**	Function which outputs a warning message even before contamination-related failure of a sensor occurs
***A*²LS**	**A**ctive **A**mbient **L**ight **S**uppression for reliable detection
Blanking	A function with which one or more areas of the protective field of an ESPE is/ are made ineffective so that work pieces in the ESPE's protective field do not cause the protective device to switch off. Blanking can be stationary or floating
***bright*vision®**	Simplifies the handling and commissioning of sensors by means of a bright, highly visible light spot
CDRH	Laser products which are imported into the USA are to be specified by the manufacturer to the CDRH (Center for Devices and Radiological Health), a branch of the FDA
CE	The CE certification certifies conformity with the applicable guideline(s)
Contactor monitoring (EDM)	The contactor monitoring monitors the NC contacts of downstream positive-guided contactors and relays
CRT	Code reconstruction technology (CRT) – enables reliable detection, even with soiled or damaged codes
c UL us	Products with this certification have been tested by Underwriters Laboratory Inc. (UL) in compliance with the relevant regulations for USA and Canada
c SP us	Products with this certification have been tested by the Canadian Standards Association (CSA) in compliance with the relevant regulations for Canada
c TÜV us	Products with this certification are components tested by Underwriters Laboratory Inc. (UL) and comply with the relevant regulations for USA and Canada.
Cycle time	Sum of the response times of all beams of a light curtain plus the internal evaluation
Dark switching	With dark switching optical sensors, the transistor is disabled if the light path is free and switched through if the light path is interrupted

***easy*handling**	Sophisticated fastening concepts enable simple and robust mounting of the devices. Should replacement be necessary, the devices can be exchanged position-neutral, i.e., without realigning.
ECOLAB+	Under the ECOLAB+ designation, the products are subjected to an entire series of additional aggressive cleaning agents at temperatures of 50 °C before being forced to demonstrate their leak-proofness under the mechanical load of a steam-jet cleaner
EDM	**E**xternal **D**evice **M**onitoring
ESPE	Electro Sensitive Protective Equipment (German: BWS)
ESPE	**E**lectro-**S**ensitive **P**rotective **E**quipment (ESPE) offers protection by telling the machine to move into a safe operating state before a person can get into a dangerous situation
Fieldbus gateways	For field use for connection of bar code readers and identification systems
Function reserve	Receivers of optical sensors require a minimum amount of light to be able to switch (switching threshold). All light over and above this minimum amount is designated as “function reserve”
HI	LPS HI – High resolution versions (HI) with laser line 60 … 170 mm
HYGIENE design	For the pharmaceutical test, the 53 series sensors are tested against H^2O^2 and 70 % alcohol to ensure that they satisfy these special requirements as well
***integrated*connectivity**	The devices can be integrated problem-free in all common fieldbus systems and configured directly via the control
***integrated*laseralignment**	Convenient alignment function for large distances
Interfaces	Variety of interfaces for the common industrial interface systems – among others, PROFIBUS, PROFINET, EtherNet TCP/IP and INTERBUS
IO-Link	Standardized interface for the lowest field level for quick and convenient configuration and inspection of sensors directly via the control
	In order to make the protection of housings against foreign objects and water comparable, the degrees of protection have been defined in DIN 40050
Light switching	With light switching optical sensors, the transistor is switched through if the light path is free and disabled if the light path is interrupted
Machine Safety Services	Our “machine safety” service package
Muting	Temporary safety-related automatic suspension of the ESPE’s protective function during the material transport through the ESPE (see also IEC TS 62046)
Muting override	Manual activation of the muting function by actuating a command device. Moving material out of the muting area (at least one muting sensor must be activated for this, see also IEC TS 62046)
NPN transistor output	The NPN transistor output is a high-impedance switching output. It switches GND to the connected load
***omni*mount**	Integrated mounting and alignment concept without additional components
Operating range	The range recommended for typical installation situations for a sensor with corresponding function reserve
Operating range	Distance between transmitter and receiver, and with reflex systems between sensor and reflector (with light curtains also called protective field width)
Operating range limit	Describes the maximum possible range of the sensor

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Operating range Sa (inductive switches)	Also assured operating distance. Value that is guaranteed under all specified operating conditions.
OSSD	**O**utput **S**ignal **S**witching **D**evice
PNP transistor outputs	The PNP transistor output is a high-impedance switching output. It switches positive potential to the connected load
Point to Point multiNet slave	For easy wiring and configuration
Potentially explosive area	Potentially explosive environments
Protective field	The area in which the defined test object is detected by the ESPE
Protective field height	Height of the active protective field with safety light curtains
Readiness delay	The delay before start-up suppresses sensor operation until all device-internal preparations have been concluded
Reproducibility	The deviation in measurement distance in the case of repeated measurement using an identical object under identical environmental conditions
RES	Start/restart interlock, prevents the automatic restarting of the machine after addressing a safety sensor, after switching on the supply voltage or changing the machine's operating or actuation mode
Response time	Time between penetration/entry into the active protective field and the actual switching off of the OSSDs. Time from entry of an object into the light path to switching of the output.
Sensitivity adjustment	The electrical gain is adjusted using an operational control, e.g. potentiometer or teach button. This adapts the function reserve to the application
***slim*line-design**	Slimline-design of an optical forked sensor for installation directly on the dispensing edge
System integration	Clever and simple with protective sensor sets
Teach-in	For optimum sensitivity adjustment
***think*modular**	Freely selectable range of functions
Tracking	Automatic contamination compensation (tracking function). It compensates the gradual fouling of the sensor, determines the current reception level and compares this with the initial reference value
Typ. operating range limit	Maximum possible operating range of a sensor. If the sensor is used at this operating range limit, the sensor functions without function reserve
Typ. operating range limit Sn (inductive switches)	Also: "rated switching distance". The switching distance for which a sensor is configured
User guidance	User guidance is used to configure detection of highly transparent objects reliably without an object
WASH-DOWN design	For the pharmaceutical test, the 53 series sensors are tested against H_2O_2 and 70 % alcohol to ensure that they satisfy these special requirements as well
***web*Config**	Browser-based software solution for convenient, computer-independent sensor configuration via Ethernet

NOTES

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