

4-channel measurement and control device in modular design

- ▲ Chemical-resistant housing for wall mounting or control cabinet installation
- ▲ 5.5" TFT-colored touch screen
- ▲ Large clamping space
- ▲ Acquisition and processing of up to 4 measured variables (Conductivity, pH, Redox, Cl, ClO₂, PAA, ...)
- ▲ Features per channel:
 - 1 analysis input
 - 1 temperature input
 - 1 release input
 - 1 freely programmable controller
 - 1 or more control outputs
 - 1 standard signal output (0/2 - 10 V or 0/4 - 20 mA)
- ▲ PC configuration software for device configuration via prearranged setup screens
- ▲ Bi-directional data transfer via RS 485 or USB interface (standard), alternatively via Ethernet (LAN) interface or USB data stick (optional)



The measurement and control device Versatronic provides, in addition to the simultaneous processing of up to 4 measurement and control channels, also various communication interfaces such as RS 485, Profibus, USB, Ethernet.

System statuses can be called-up via remote access at any time by an integrated web server.

A paperless recorder (optional) is able to record the measured-value trends and switching states during a period of up to one year. By using an extensive evaluation software, the recorded data can be analyzed and visualized comfortably.

Technical data:

Power supply	110 - 240 V (+10/-15 %) 48 - 63 Hz
Safety type	IP 67
Inputs	max. 6 binary and 5 analog inputs
Outputs	max. 7 (11) binary and 4 analog outputs
Interfaces	RS 422/485, USB, Profibus DP, Ethernet
Power consumption	54 VA
Resistance	chemically resistant plastic housing (ABS)
Permissible ambient temperature	-5 °C to +50 °C
Display	colored touch screen
Dimensions (w * h * d)	301,5 x 301 x 137,5 mm
Weight	3.4 kg

Note: To guarantee the newest state of our products, we reserve the rights for single technical changes.

pH measurement

Measuring range: -2 to +16 pH
Measurement accuracy: $\leq 0.5\%$

Redox measurement

Measuring range: -1500 to +1000 mV
Measurement accuracy: $\leq 0.5\%$

Temperature measurement

Measuring range: -200 to +850 °C
Measurement accuracy: $\leq 0.1\%$

Conductive conductivity measurement (Cr)

Units: $\mu\text{S/cm}$, mS/cm
Measuring range: 0 - 99999 *
0 - 99.999 *
0 - 999.99 *
0 - 9999.9 *
Cell constant: 4.00 to 8.00 cm^{-1}
Measurement accuracy: $\leq 1\%$

Inductive conductivity measurement (Ci)

Units: $\mu\text{S/cm}$, mS/cm
Measuring range: 0 - 99999 *
0 - 99.999 *
0 - 999.99 *
0 - 9999.9 *
Cell constant: 0.01 to 10 cm^{-1}
Measurement accuracy:
0 to 999 $\mu\text{S/cm}$ $\leq 1.5\%$
1 to 500 mS/cm $\leq 1.0\%$
500.1 to 2000 mS/cm $\leq 1.5\%$

Universal input

Measuring range: 0(4) - 20 mA
Measurement accuracy: $\leq 0.1\%$

Outputs per measurement channel

Switch outputs: 1 or 2
control outputs
Analog outputs: 1 or 2
analog outputs
0(4) - 20 mA

Controller types

Two-point controller
Three-point controller
Coarse and precise controller
Continuous controller

Controller output types

Pulse width output
Pulse width output
Continuous output

Control parameter

Nominal value (W):	Measuring range of measurement module
Proportioning band (Xp):	0 - 9999.9 %
Rate time (Tv):	0 - 9999 s
Reset time (Tn):	0 - 9999 s
Switching period (Cy):	0 - 9999 s
Contact gap (Xsh):	0 - 999.9 **
Switching hysteresis (Xd):	0 - 999.9 **
Operating point (Y0):	-100 to +100 %
Max. degree of operation (Y):	0 - 100 %
Min. relay activation time (Tk):	0 - 60 s
Max. pulse rate:	0 - 240 min^{-1}
Start-up delay:	0 - 999.9 s
Switch-off delay:	0 - 999.9 s
Alarm tolerance:	0 - 999.9 **
Alarm delay:	0 - 9999 s

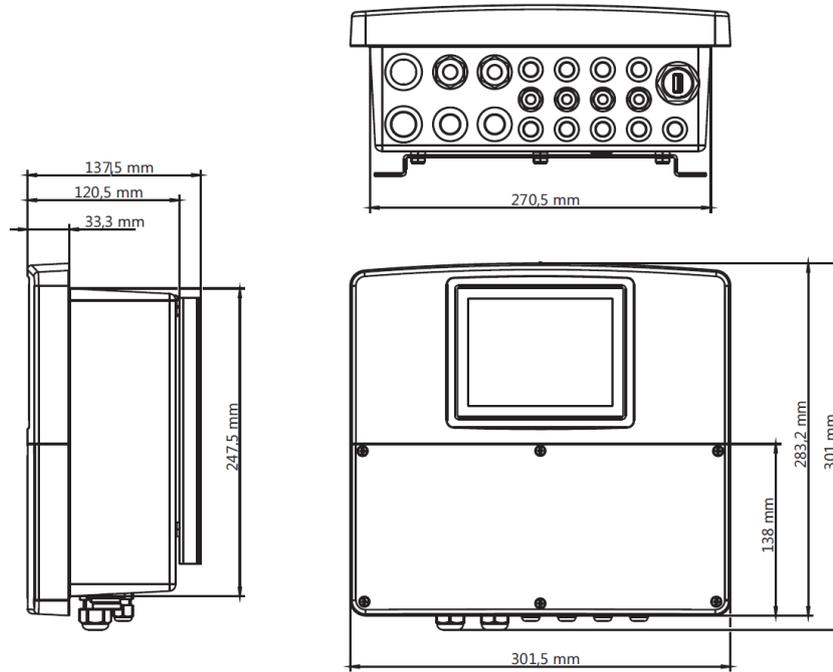
Limit alarm settings

Alarm type :	min. alarm, max. alarm, alarm window, inverse alarm window invertiert
Limit value:	0 - 99999 **
Hysteresis:	0 - 99999 **
Window width:	0 - 99999 **
Start-up delay:	0 - 999 s
Switch-off delay:	0 - 999 s

* Unit varies depending on selection for „Unit for calculation“ ($\mu\text{S/cm}$ or mS/cm)

** Unit depends on the type of measurement (pH, mV, $\mu\text{S/cm}$, mS/cm , ...)

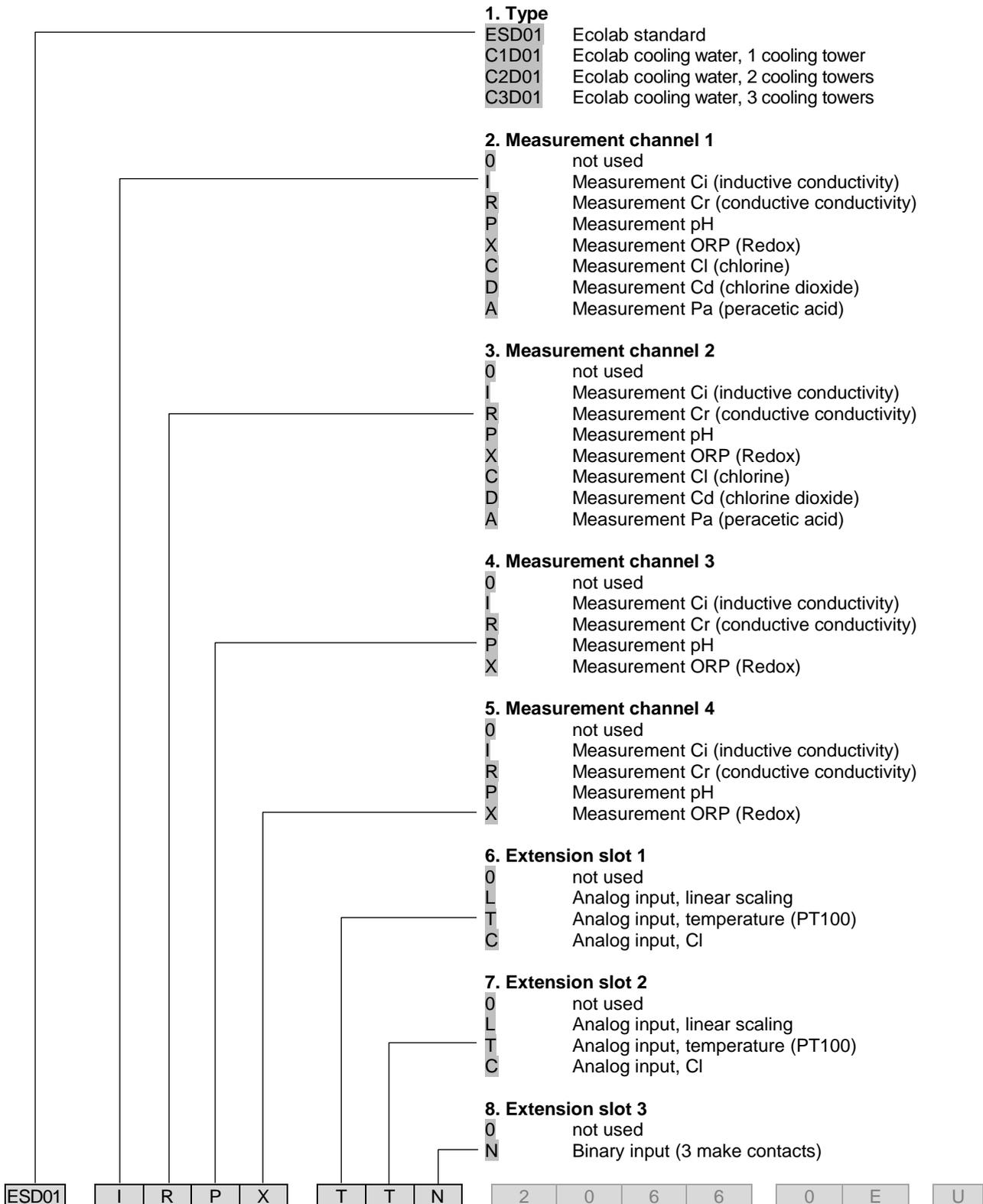
Dimensions:





Order code (Pos. 1 - 8):

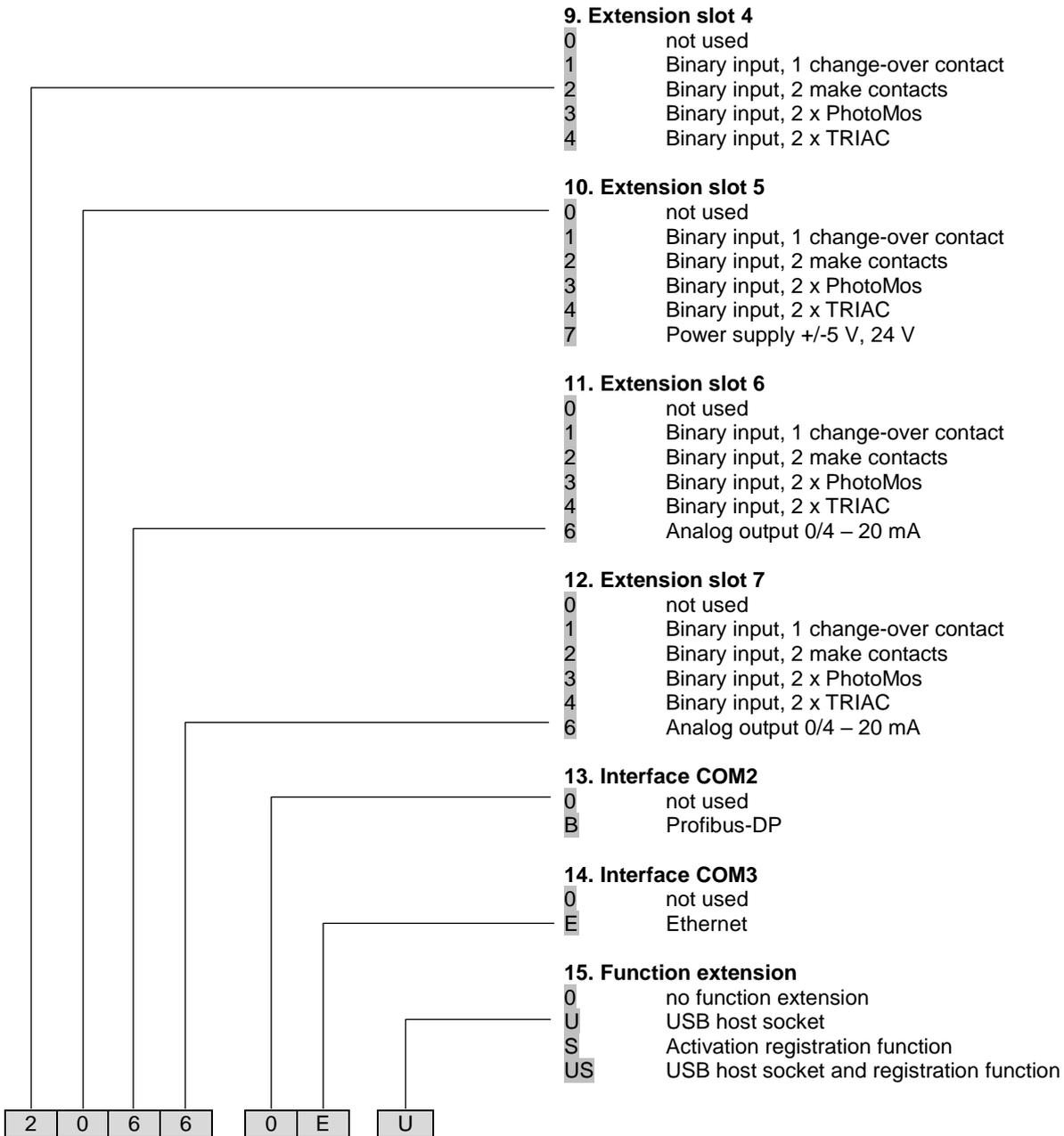
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Type	Measur. channel				Extension slot			Extension slot		Extension slot		Interface		Fct.-ext.
	1	2	3	4	1	2	3	4	5	6	7	COM2	COM3	





Order code (Pos. 9 - 15):

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Type	Measur. channel				Extension slot			Extension slot		Extension slot		Interface		Fct.-ext.
	1	2	3	4	1	2	3	4	5	6	7	COM2	COM3	



Example code (4 channel device): **Versatronic ESD01-IRPX-TTN-2066-0E-U**

Order data



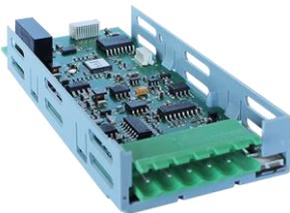
Article

Article no.

Basic unit

Versatronic basic unit
incl. operating instructions

155201



Measuring module

Measuring module Plug-in card Ci (inductive conductivity)
Measuring module Plug-in card Cr (conductive conductivity)
Measuring module Plug-in card pH/Redox

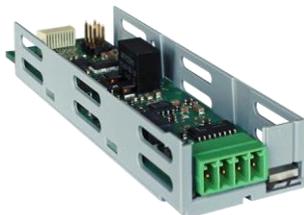
255250
255251
255252



Input Plug-in card

Plug-in card, universal input
Plug-in card, binary input (3 make contacts)

255253
255254



Output Plug-in card

Plug-in card, analog output (0/4 - 20 mA)
Plug-in card, binary output (1 change-over contact)
Plug-in card, binary output (2 make contacts)
Plug-in card, binary output (2 x PhotoMOS)
Plug-in card, binary output (1 x TRIAC)
Plug-in card, power supply +/-5 V, 24 V

255255
255256
255257
255258
255259
255260



Interface Plug-in card

Plug-in card, Profibus-DP interface
Plug-in card, Ethernet interface

255261
255262

**Accessories**

Article	Article no.
USB host socket	255263
Ethernet RJ-45 plug for self-assembly	255266
Panel mounting set	255267
Cable gland set Versatronic	255268
Resistor box for Ci basic adjustment/calibration adapter	255269
USB cable with plug USB/A - USB/B, length: 3 m	255273
Software	
Setup software Versatronic (CD)	255264
Software PCA 3000	255270
Software PCC	255271
Function extension	
Unlock code for registration function	255265

Inductive conductivity measurement probes with integrated temperature sensor

Construction:	Oval spherical cap, streamline-shaped with 8 mm meter flume diameter
Material:	PVDF
Dimensions:	39 x 50 (Ø * h)
Pressure resistance:	PN = 10 bar at °C
Temperature resistance:	max. 90 °C
Temperature sensor:	PT100
Time of response of temp. sensor in measurement cell:	approx. 30 s (90 %-value) with stainless steel sensor
Material sensor's protecting tube:	Stainless steel, 1.4571
Sealing element:	O-ring, EPDM 281
Length connection cable:	10 m
Type of lead:	7-pin special measurement lead
Measuring lead connection:	prefabricated for terminal connection

Inductive conductivity measurement probes for measuring ranges 0 – 2, 0 – 20, 0 – 200, 0 – 2.000 mS/cm

Article	Article no.
 <p>Conductivity measuring probe as above, with adapter for PP flow fitting or PVC flow fitting</p> <p>Measuring probe material: PVDF Adapter material: PVDF</p>	255202
 <p>Conductivity measuring probe as above, with adapter for VA tank welding fitting and VA flow fitting, DN 50</p> <p>Measuring probe material: PVDF Adapter material: PVDF</p>	255203
 <p>Conductivity measuring probe as described, with bulkhead screw connection for tank wall installation, 21 mm bore-diameter required</p> <p>Housing material measuring probe: PVDF</p>	255204

Article	Article no.
	<p>Conductivity measuring probe as described, but in immersion probe version Immersion depth as desired adjustable up to 1000 mm</p> <p>Housing material measuring probe: PVDF Material immersion tube: PP immersion tube Ø: 32 mm</p>
	<p>Conductivity measuring probe as described, but in stainless steel immersion probe version with clamping flange and weld-on fitting with union nut Immersion depth as desired adjustable up to 1000 mm</p> <p>Housing material measuring probe: PVDF Material immersion tube: stainless steel (1.4571) Material clamping flange and weld-on fitting: stainless steel (1.4301/1.4305)</p>
	<p>Calibration adaptor for conductivity basic adjustment with simulation resistances for five measuring ranges</p>

Article	Material No.	
	<p>Tank welding fitting Material: stainless steel 304 (1.4301)</p>	287505
	<p>Flow fitting Material: PP Temperature resistance: up to 80 °C Connections: G 1/2"i</p>	287506
	<p>Flow fitting Material: PVC Temperature resistance: up to 50 °C Connections: d50 adhesive muffs</p>	287514
	<p>Flow fitting with weld-on end Nominal diameter: DN 50 (int. Ø/ext. Ø = 49/52 mm) Material: Stainless steel 304 (1.4301)</p>	287507

Conductivity measurement probes with integrated temperature sensor PT 100

Material probe: PVC / 1.4571
 Material temperature sensor: 1.4571
 Pressure resistance: 10 bar (at 20 °C)
 Temperature resistance: 50° C
 Cell constant: K = 0.1
 Cable length: 10 m

Ready-made complete unit with housing:



Article

Article no.

Conductive conductivity measurement probe as described above

255143

installed in PVC-flow fitting seat
 Temperature: max. 55 °C
 Connections: d 32 adhesive muffs



Conductive conductivity measurement probe as described above

255144

installed in PVC immersion fitting
 Temperature: max. 50 °C
 Tube diameter: ext. 32 mm
 Length: 1000 mm



Conductive conductivity measurement probe as described above

255145

with PVC bulkhead screw connection for tank wall installation
 G = ext. 3/4"
 L = 16 mm
 Flat seal: EPDM
 Cable length: 10 m

Conductive conductivity measurement probe

on request

Hot water version up to 120 °C, stainless steel/PVDF
 G = ext. 3/4"
 Flat seal: EPDM
 Cable length: 10 m



Article	Article no.
Conductivity measurement probe without PVC flow fitting and without connection cable	418811358
Conductivity measurement probe without PVC immersion fitting and without connection cable	35514403
Conductivity measurement probe without bulkhead screw connection and without connection cable	418811357



Calibration box for conductivity measurement (conductive) with simulation resistances for the measurement ranges 0 - 2, 0 - 20, 0 - 200 μ S/cm	255196
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Terminal box for interference-free extension of the sensor cable	288101
Measurement lead extension LIYY - LIYCY, 4 x 0.5 (please indicate the desired length)	418437041

Note:
With a measuring range of 0 - 2 μ S/cm, an extension of the measuring cable to more than 10 m is not recommended.

Article	Article no.
<p>pH-Combination Electrode with screw-in thread PG 13.5 and plug-in screw connection, glass shaft = 120 mm, Ø = 12 mm, collector Ag/AgCl, sintered.</p>	
<p>pH-Combination Electrode with dirt-repelling PTFE-circular diaphragm pH range: 1 - 12 Temperature range: -5 °C - +80 °C Pressure: up to 6 bar Minimum conductivity: 100 µS/cm</p>	418853008
<p>pH-Combination Electrode with integrated temperature sensor Pt 100 with dirt-repelling PTFE-circular diaphragm pH range: 1 - 12 Temperature range: -5 °C - +80 °C Pressure: up to 10 bar Minimum conductivity: 100 µS/cm Note: 5-wired connection cable is required</p>	on request
<p>pH-Combination Electrode with 3 ceramic diaphragms pH range: 0 - 12 Temperature range: -5 °C - +80 °C Pressure: up to 3 bar Minimum conductivity: 100 µS/cm</p>	418853011
<p>pH-Combination Electrode with ceramic diaphragm pH range: 1 - 14 Temperature range: +10 °C - +130 °C Pressure: up to 3 bar Minimum conductivity: 100 µS/cm</p>	418853016
<p>ORP/Redox Combination Electrode with screw-in thread PG 13.5 and plug-in screw connection, glass shaft Ø = 12 mm, L = 120 mm, platinum electrode, Ag/AgCl sintered collector, in KCl gel, ceramic diaphragm Temperature up to approx. 80 °C</p>	418853010
<p>Temperature sensor Pt 100 with PG 13.5 screw-in thread and screw connection glass shaft Ø = 12 mm, L = 120 mm Temperature up to 100 °C</p>	418853004



Article **Article no.**



Impedance converter

418853005

We recommend the installation of the impedance converter in order to prevent negative influences on the measurement signal of pH-measurement due to electrical fields of near live wires, dirt or moistures.

The impedance converter is also used to short-out higher distances (more than 10 m) between measurement chain and measurement unit.

The impedance converter is screwed onto the measurement chain directly.

The delivery performance includes also a battery (live approx. 5 years).

Internal resistance: $R_i \leq 5 \Omega$
 Permitted surrounding temp.: -10 - +50 °C
 Permitted storing temp.: -10 - +60 °C
 Housing: PVC
 Length: 108 mm
 Weight: 0.09 kg



Connection cable with rotating matching plug for Redox-measurement

Length 2 m	418853101
Length 5 m	418853102
Length 10 m	418853103
Length 20 m	418853104

Connection cable (doubly shielded) with rotating matching plug for pH measurement

Length 5 m	418853106
Length 10 m	418853107
Length 15 m	418853108
Length 20 m	418853109

Connection cable (3-conductor connection) with rotating matching plug for temperature-measurement

Length 10 m	255197
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Connection cable (doubly shielded) with rotating matching plug for pH electrode with integrated temperature sensor Pt 100

Length 10 m	on request
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Broadband line filter

on request

For high-frequency interference suppression with integrated overvoltage fuse
 with terminal strip in protected housing
 Installation directly in the supply line in front of the Versatronic

Blocking damping: 40 dB
 Shock resistance: up to 4500 A
 Dimensions (l/w/h): 114/63/36 mm



Article **Article no.**



Buffer solutions

pH 4.01	20 ml	418853125
pH 7.00	20 ml	418853126
pH 9.21	20 ml	418853127

pH 4.01	1 l	418853121
pH 7.00	1 l	418853122
pH 9.21	1 l	418853123

Redox-buffer solution 468 mV	250 ml	418853124
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Detergent for combination pH and ORP/Redox electrodes 418853128

Pepsin-hydrochloric acid solution 250 ml

Angle seat flow fitting 418853202
for combination pH or ORP/Redox electrodes



Material:	transparent PVC
Operational temperature:	max. 60 °C
Pressure resistance:	10 bar (at 20 °C) 5 bar (at 40 °C) 1 bar (at 60 °C)
Nominal diameter:	DN 25, 1" (d = 32)
Connections:	d32 adhesive muffs



Flow fitting 418853213
for 3 measuring probes

Material:	PP
Angle support:	stainless steel
Operational temperature:	max. 80 °C
Pressure resistance:	10 bar (at 20 °C)
Connection thread:	G1/2
Hose connection:	6/12 mm (int. Ø/ext. Ø)



(shorten immersion depth)

Article

Article no.

Immersion fitting including fixing flange

287430

for combination pH or ORP/Redox electrodes

Immersion depth can be shortened by taking out pipe section.

Material:	PP
Operational temperature:	max 80 °C
Pipe diameter:	32 mm
Usable immersion depth max.:	980 mm*
Usable shortened immersion depth:	525 mm
Fixing flange Ø:	70 mm

* optional elongation (accessories on request)



Keep-wet-tray

287523

for pH-immersion fitting

The electrode is automatically kept damp when the tank fluid level drops

Material:	PP
Operational temperature:	max. 60 °C
Suitable for pipe diameter:	32 mm



Article

Article no.



**PVC Chlorine dioxide measurement cell
CD7HUp**

on request

temperature compensated
(not for Multronic water treatment)
with 4-pin screw and plug connection

Measuring range: 0 - 2 ppm
 Ø: 25 mm
 L: 175 mm
 Power supply: 12 V DC
 Output signal: 1000 mV per mg/l chlorine
 dioxide
 Operational temperature: 0 - 55 °C



**PVC Chlorine measurement cell
CL4.1Up (previous name CL6.0)**

on request

for the measurement of inorganic Chlorine up to 20 mg/l,
Chlorine Dioxide, ozone
with 4-pin screw and plug connection

Ø: 25 mm
 L: 175 mm
 Power supply: 12 V DC
 Output signal: 100 mV per mg/l chlorine
 Operational temperature: 0 - 40 °C
 Measuring range: 0 - 20 mg/l

4-pin measurement cable

418853014

unbalanced with screw-type locking connector
Length: 2 m

Article

Article no.



PVC PAA measurement cell

PES7Up

on request

PES7Up5000

on request

temperature compensated
(not for Versatronic water treatment)
with 4-pin screw and plug connection



PEEK PAA measurement cell

P9.2Up2000

on request

P9.2Up5000

on request

temperature compensated
(not for Versatronic water treatment)
with 4-pin screw and plug connection

	PES7Up	PES7Up5000	P9.2Up2000	P9.2Up5000
Measuring range:	0 – 2000 ppm	0 – 5000 ppm	0 – 2000 ppm	0 – 5000 ppm
Ø:	25 mm		25 mm	
Length:	175 mm		175 mm	
Output signal per mg/l PAA:	1 mV	0.4 mV	1 mV	0.4 mV
Operational temperature:	>0 – 50 °C	>0 – 50 °C	>0 – 60 °C	>0 – 60 °C
t ₉₀ :	approx. 3 min	approx. 3 min	approx. 3.5 min (at 10 °C) approx. 45 s (at 50 °C)	
pH range:	0 - 7		1 - 6	
Pressure:	max. 1 bar, no pressure shocks		max. 1 bar, no pressure shocks	
Measuring water flow:	30 l/h - 100 l/h		30 l/h - 100 l/h	

Spare parts for measuring cells:



Article	Article no.
<p>Diaphragm cap - Type M7N for chlorine dioxide (CD7HUp) and PAA measurement cell (PES7UP) liquid stored in transport box, incl. special emery for sensor head cleaning</p>	418853021

<p>Diaphragm cap - Type M7L for PAA measurement cell (PES7Up5000) liquid stored in transport box, incl. special emery for sensor head cleaning</p>	418853025
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<p>Diaphragm cap - Type M9G for PAA measurement cell (P9Up...) liquid stored in transport box, incl. special emery for sensor head cleaning</p>	418853036
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<p>Diaphragm cap - Type M9N for PAA measurement cell (P9.2Up...) liquid stored in transport box, incl. special emery for sensor head cleaning</p>	418853046
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<p>Diaphragm cap - Type MK2.0 for chlorine measurement cell, incl. special emery for sensor head cleaning</p>	418853013
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<p>Electrolyte Type ECD7/W for chlorine dioxide measurement cell (CD7HUp), 100 ml</p>	418853022
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<p>Electrolyte Type EPS7/W for PAA measurement cell (PES7UP and P9Up...), 100 ml</p>	418853023
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<p>Electrolyte Type EPS9H/W for PAA measurement cell (P9.2Up...), 100 ml</p>	418853043
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<p>Electrolyte Type EPS7L/W for PAA measurement cell (PES7Up5000), 100 ml</p>	418853026
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<p>Electrolyte Type ECL1 for chlorine measurement cell (CL4.1Up/CL6.0), 100 ml</p>	418853027
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Article

Article no.



Flow fitting 2 x PG 13.5

418853207

Material: ABS
Operating pressure: 3 bar
Max. operating temperature: 50 °C

2 pressure-resistant sealing plugs for Pg 13.5 probes,
2 hose connections 1/4" for 6/8 mm hose,
1 test portion cock 1/4", 3 Viton flat seals



Flow fitting 1 x G 1", 2 x PG 13.5

418853208

Material: ABS
Operating pressure: 3 bar
Max. operating temperature: 50 °C

2 pressure-resistant sealing plugs for Pg 13.5 probes,
1 pressure-resistant sealing plug for 1",
installation of a preliminary filter is possible,
1 safety assembly set for chlorine measurement cell,
2 hose connections 1/4" for 6/8 mm hose,
1 test portion cock 1/4", 3 Viton flat seals

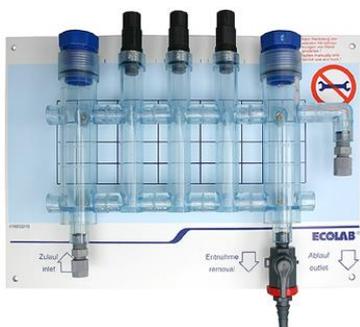


Flow fitting 1 x G 1", 3 x PG 13.5

418853209

Material: ABS
Operating pressure: 3 bar
Max. operating temperature: 50 °C

3 pressure-resistant sealing plugs for Pg 13.5 probes,
1 pressure-resistant sealing plug for 1",
installation of a preliminary filter is possible,
1 safety assembly set for chlorine measurement cell,
2 hose connections 1/4" for 6/8 mm hose,
1 test portion cock 1/4", 3 Viton flat seals



Flow fitting 2 x G 1", 3 x PG 13.5

on request

Material: ABS
Operating pressure: 3 bar
Max. operating temperature: 50 °C

3 pressure-resistant sealing plugs for Pg 13.5 probes,
2 pressure-resistant sealing plugs for 1",
installation of a preliminary filter is possible,
2 safety assembly sets for chlorine measurement cell,
2 hose connections 1/4" for 6/8 mm hose,
1 test portion cock 1/4", 3 Viton flat seals

Article

Article no.



Acrylic flow fitting

283120

with integrated flow control, test portion cock, and adjusting cock for flow.

Flow fitting can be opened for cleaning.

Dimensions (h * w * d) : 200 x 300 x 50 mm

for the connection of one:

- pH probe with PG 13.5
- Redox probe with PG 13.5
- Chlorine dioxide or PAA or Chlorine measurement cell with 1"
- Connector cable flow control, length: 1m



Electronic flow control

418853211

Electronic scanning with „open collector“ output for processing of the signal.

Probe incl. 2 m connection cable with 4-pin plug, optical flow indication

Power supply: 6 - 24 V DC



Preliminary filter 1"

418853212

For screwing into the 1" flow fittings

housing material: ABS
filter material: PE
mesh size: 120 filaments per inch



P3 photometer for Cl and ClO₂

415711161

in plastic case complete with 1 set of reagent chemicals