

- **Modular system**
- **Up to 3 measurement variables with control functions in one housing**
- **Free combination of the measurement variables pH / Redox / temperature / conductivity / standard signal or Chlorine**
- **Automatic temperature compensation for each measurement variable**
- **Measuring and control behaviour simultaneously represented on illuminated display**
- **Optimal process adaptation due to free-adjustable 2-/3- point PID and Fuzzy control course for each measurement module**
- **Excellent interference immunity through galvanic separation of measurement modules and outputs**
- **Two switch outputs and one standard signal output per measurement module**
- **Free selection of control behaviour**
- **Bidirectional data transfer with MCT technology**
- **ProfibusDP technology**



The MULTRONIC measurement and control range comprises a comprehensive selection of measurement and control units appropriated to all types of applications in industrial and chemical process technology.

Each measurement and control task has its own individual equipment requirement. To meet this requirement, the modern modular

system of the MULTRONIC measurement and control range is designed to provide the ideal module for each individual situation.

MULTRONIC can operate as an independent measurement and control unit or can be integrated into a complete system. With MCT technology a software supported PC data transfer is possible.

Technical data:

Power supply optional	230 V 50/60 Hz, 115 V 50/60 Hz
Safety type	IP 65
Inputs	according to measurement module equipment
Outputs	max. 7 digital and 3 analogue
	RS232 interface
Power consumption	25 W
Accuracy of measurement	1 % of final value of measurement range
Permissible ambient temperature	0° C to + 45° C
Resistance	chemically resistant plastic housing (Noryl)
Display	illuminated graphic display
Accuracy of display	+/- 0.5 %
Languages on display	English, German, French (optional)
ProfibusDP	up to 12 Mbit/sec (autodetect)
Dimensions (h * w * d)	290 x 224 x 96 mm
Weight	2.5 kg

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

pH measurement*

Measuring ranges: 0 - 14 pH
2 - 12 pH
3 - 8 pH

Redox measurement*

Measuring ranges: 0 - 1 000 mV
-500 - 500 mV

Temperature measurement*

Measuring ranges: 0-100°C

Inductivity measurement*

Measuring ranges: 0 - 2 mS/cm
0 - 20 mS/cm
0 - 200 mS/cm
0 - 2000 mS/cm

Conductive conductivity measurement (contact conductivity)*

Measuring ranges: 0-2 µS/cm
0-20 µS/cm
0-200 µS/cm

Standard signal*

Measuring ranges: 0-20 mA
4-20 mA

Chlorine measurement*

Measuring range: 0-2 mg/l
0-20 mg/l

ClO₂ measurement

Measuring range (software C2xx): 0-2 mg/l

PAA measurement

Measuring range (software P2xx): 0-200 mg/l
0-2000 mg/l
(software P5xx): 0-500 mg/l
0-5000 mg/l

* Standard software S5xx

Outputs per measurement module

Switch outputs: 2 auxiliary contacts
230 V AC / 3 V
Analogue outputs: 0/4-20 mA

Settings

Signal unit

Nominal value (W): Measuring range of measurement module
Switch difference (XSD): 0 ... 30.0 %
Start delay: 0 ... 240 seconds
Switch-off delay: 0 ... 240 seconds
Switching point interval (LW): ± measurement range
Switch difference (X2SD): 0 ... 30.0 %

Two-position controller

Nominal value (W): Measuring range of measurement module
Proportioning band (XP1): 0 ... 999.9 %
Rate time (TV): 0 ... 1.200 seconds
Reset time (TN): 0 ... 3.600 seconds
Starting time (T_{min}): 0 ... 60 seconds
Switch. point interval (LW): ± measurement range
Switch difference (X2SD): 0 ... 30.0 %

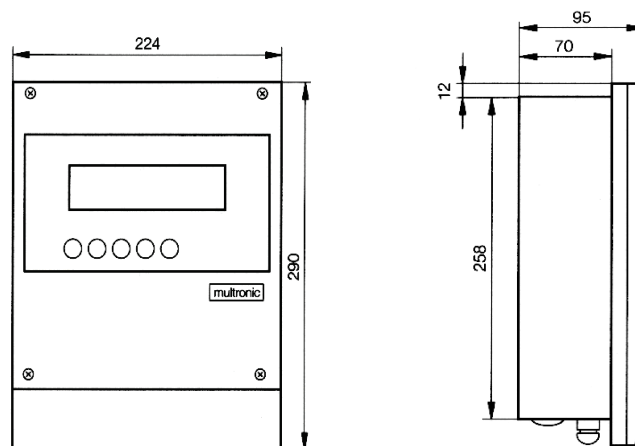
Three-level controller

Nominal value (W): Measuring range of measurement module
Proportioning band (XP1): 0 ... 999.9 %
Proportioning band (XP2): 0 ... 999.9 %
Rate time (TV): 0 ... 1.200 seconds
Reset time (TN): 0 ... 3.600 seconds
Switching point interval (XSH): 0 ... 20.0 %
Starting time (T_{min}): 0 ... 60 seconds

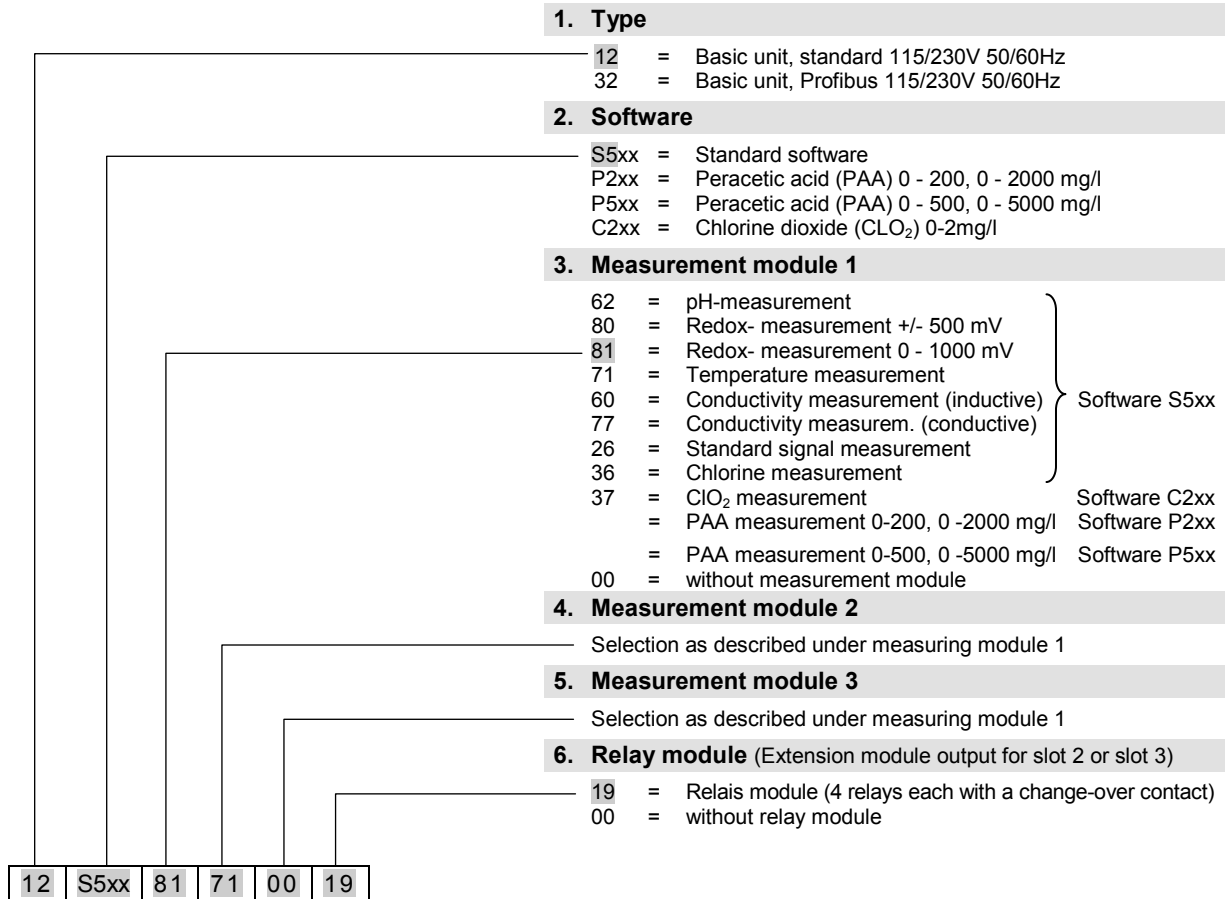
Limit contact

Limit contact (L-): Measuring range of measurement module
Limit contact (L+): Measuring range of measurement module
Switch difference (X2SD): 0 ... 30 %

Dimensions:



Multronic order code:



Remark on relay module:




In the standard Multronic device, only the digital switching outputs for alarm (relay 1) and for measuring module 1 (relay 2 = measuring module 1 switching point 1, relay 3 = measuring module 1 switching point 2) are integrated.

If the device is also provided with measuring modules on slot 2 or 3 and if switching outputs are required for this measurement, an extension of the switching outputs with an additional relay is possible (4 relays, 2 pcs for measuring module 2 and 2 pcs for measuring module 3).

Inductive conductivity measurement probes with integrated temperature sensor

Construction:	Oval spherical cap, streamline-shaped with 8 mm meter flume diameter
Material:	PP (polypropylene)
Dimensions:	39 x 50 (Ø * h)
Pressure resistance:	PN = 10 bar at 20° C
Temperature resistance:	max. 90° C
Temperature sensor:	NTC resistor (R25 = 10 kΩ)
Time of response of temperature 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, possible extension with terminal box 288101
Type of lead:	6-pin special measurement lead
Measuring lead connection:	- sensor side: permanent connection - unit side: plug-in screw-type terminals

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

	Article	Material No.
	<p>Conductivity measuring probe as above, with adapter for PP flow fitting or PVC flow fitting</p> <p>Measuring probe material: PP Adapter material: PP</p>	287422
	<p>Conductivity measuring probe as described, with adapter for VA tank welding fitting and VA flow fitting, DN 50</p> <p>Measuring probe material: PP Adapter material: PP</p>	287423
	<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: PP</p>	287428



Article

Material No.

Conductivity measuring probe as described, but in immersion probe version

287424

Immersion depth as desired adjustable up to 1000 mm

Housing material measuring probe: PP
 Material immersion tube: PP
 Immersion tube Ø: 32 mm



Calibration box for conductivity measurement (inductive) with simulation resistances for the measurement ranges 0 ... 2 mS/cm (shielded probe) 0 ...2, 0 ... 20, 0 ... 200 mS/cm (not shielded probe)

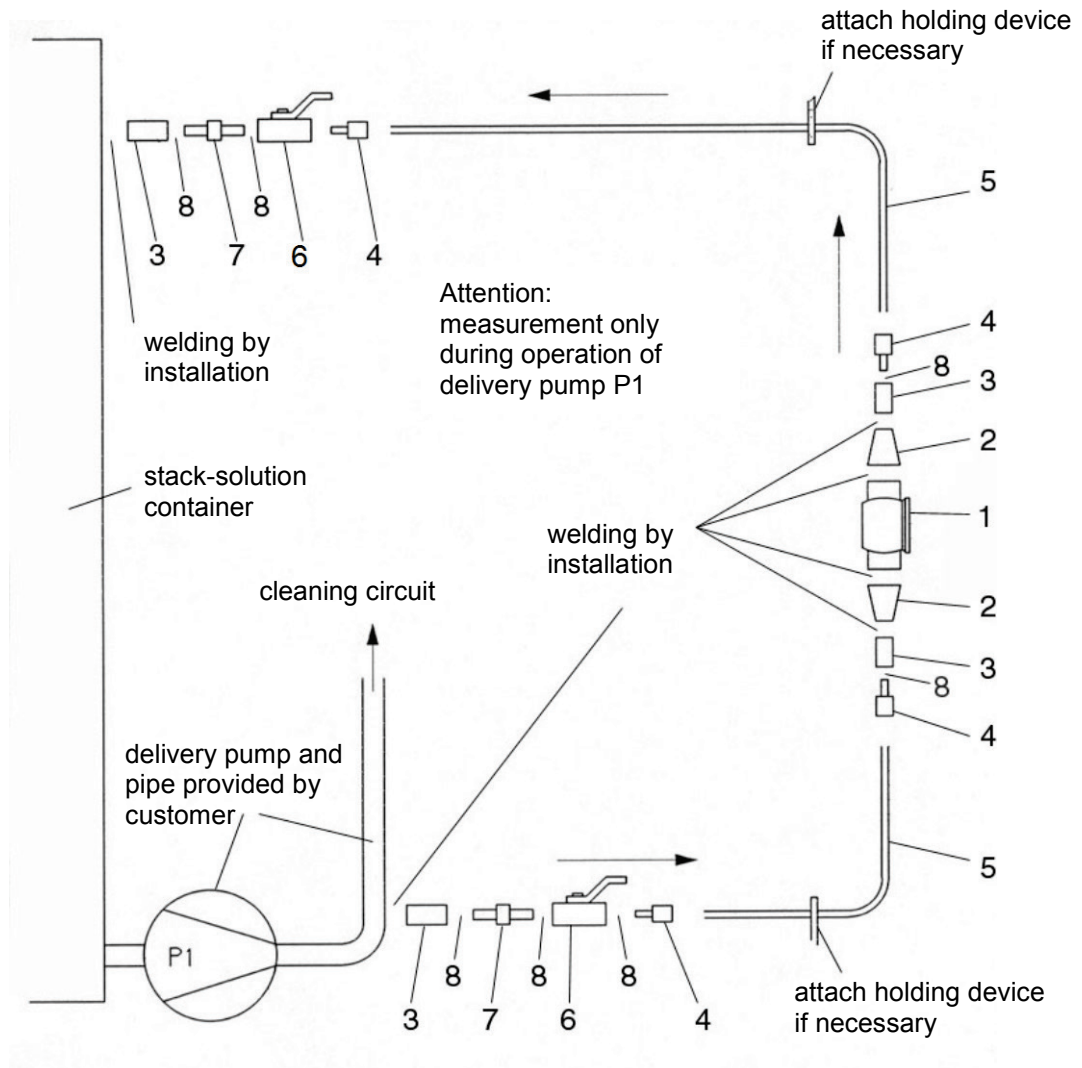
255195

Calibration resistance for conductivity measurement for the measurement range 0 - 2000 mS/cm

on request

Article	Material No.	
	<p>Tank welding fitting Material: stainless steel 304 (1.4301) To be used with probe 287503</p>	287505
	<p>Flow fitting Material: PP Temperature resistance: up to 80° C Connections: G 1/2"i To be used with probe 287502 or 287521</p>	287506
	<p>Flow fitting Material: PVC Temperature resistance: up to 50° C Connections: d50 adhesive muffs To be used with probe 287502 or 287521</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) To be used with probe 287503</p>	287507
	<p>Terminal box for interference-free extension of the sensor cable</p> <p>Measurement lead extension LIYY - LIYCY, 4 x 0.5 (please indicate the desired length)</p> <p>Note: With a measuring range of 0-2 mS/cm, an extension of the measuring cable to more than 10 m is not recommended.</p>	288101 418437041

Suggested solution: Measurement system configuration in by-pass to a circulation pump with short return to tank.



Article		Material No.	Pc.
Pos. 1	Flow fitting DN 50	287507	1
Pos. 2	Concentric d 50 - 25 reducer seamless stainless steel 304	415508873	2
Pos. 3	Weld-on sleeve G 1/2", stainless steel 304	415203424	4
Pos. 4	Cutting-ring screw connection G 1/2" for 12 x 1.5 mm tube	415101885	4
Pos. 5	12 x 1.5 mm tube, stainless steel 304	415031164	4 m
Pos. 6	Ball stop cock G 1/2", stainless steel 304	415502024	2
Pos. 7	Double nipple, G 1/2", stainless steel 304	415203604	2
Pos. 8	Teflon sealing tape (roll)	417100813	1

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

Material 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	Material 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 $\mu\text{S}/\text{cm}$	255196
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Terminal box for interference-free extension of the sensor cable	288101
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Measurement lead extension LIYY - LIYCY , 4 x 0.5 (please indicate the desired length)	418437041
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Note:
With a measuring range of 0-2 $\mu\text{S}/\text{cm}$, an extension of the measuring cable to more than 10 m is not recommended.



Article	Material 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: 0..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: 0..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

Material No.



Impedance converter

418853005

We recommend the installation of the impedance converter in order to prevent negative influences to 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 an 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

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

Length 10 m

on request



Article **Material 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
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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

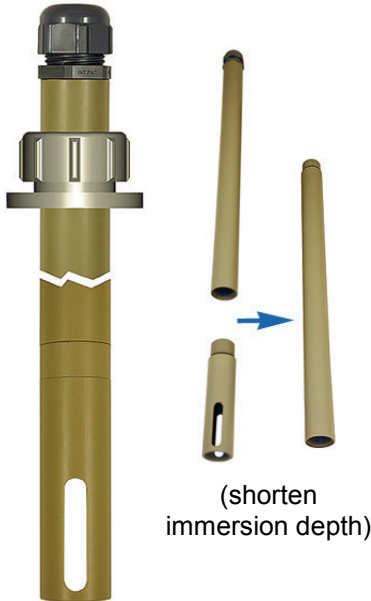


Flow fitting 418853213
for 3 measuring probes

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)

Article

Material 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



Manual armature for Combination ORP/Redox Electrodes (alternative)

on request

The armature enables the sensor installation and removal as the check or calibration without interruption of the process-control.

Material:	stainless steel 1.4571/PP
Connection thread:	3/4"
Mounting:	tank or container wall or in pipes as shown (do not install electrode head over)
Installation:	90° off-axis angle (pipe axis) at least 10° sloping



Article

Material No.



Screw-in fitting for pH electrodes

on request

The screw-in fitting enables a simple and low priced installation of combination pH or ORP/Redox electrodes with a length of 120 mm in pipes or container walls.
 Condition: bushing with 3/4" inside thread

Material: stainless steel 1.4571/PP
 Connection thread: 3/4"
 Mounting: tank or container wall or in pipes
 Installation: as shown (do not install electrode head over)
 90° off-axis angle (pipe axis) at least 10° slopping

Article **Material No.**



**PVC Chlorine dioxide measurement cell
 CD7HUp**

418853017

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)**

418853012

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
Material No.

PVC PAA measurement cell
PES7Up

418853018

PES7Up5000

418853024

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

PEEK PAA measurement cell
P9.2Up2000

418853044

P9.2Up5000

418853045

 temperature compensated
 (not for Multronic 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:



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

418853021

Diaphragm cap - Type M7L
for PAA measurement cell (**PES7Up5000**)
liquid stored in transport box, incl. special emery for sensor head cleaning

418853025

Diaphragm cap - Type M9G
for PAA measurement cell (**P9Up...**)
liquid stored in transport box, incl. special emery for sensor head cleaning

418853036

Diaphragm cap - Type M9N
for PAA measurement cell (**P9.2Up...**)
liquid stored in transport box, incl. special emery for sensor head cleaning

418853046



Diaphragm cap - Type MK2.0
for chlorine measurement cell, incl. special emery for sensor head cleaning

418853013



Electrolyte Type ECD7/W
for chlorine dioxide measurement cell (**CD7HUp**), 100 ml

418853022

Electrolyte Type EPS7/W
for PAA measurement cell (**PES7UP** and **P9Up...**), 100 ml

418853023

Electrolyte Type EPS9H/W
for PAA measurement cell (**P9.2Up...**), 100 ml

418853043

Electrolyte Type EPS7L/W
for PAA measurement cell (**PES7Up5000**), 100 ml

418853026

Electrolyte Type ECL1
for chlorine measurement cell (**CL4.1Up/CL6.0**), 100 ml

418853027

Article

Material 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

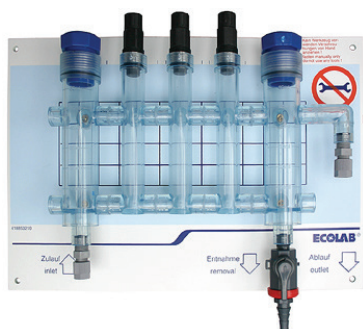


Flow fitting 1 x G 1", 3 x PG 13.5

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

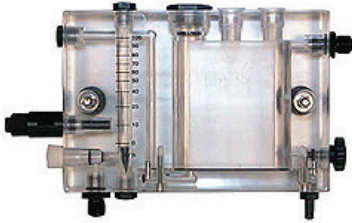
3 pressure-resistant sealing plugs for Pg 13.5 probes,
2 pressure-resistant sealing plugs for 1",
installation of a preliminary filter is possible,
2 safety assembly sets for chlorine measurement cell,
2 hose connections 1/4" for 6/8 mm hose,
1 test portion cock 1/4", 3 Viton flat seals

Article

Material 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



General accessories:



Article	Material No.
<p>MCT CD Software for configuration and data transfer via RS232 interface</p>	255152
<p>Connection cable 5 m for data exchange of Multronic and PC</p>	255157

Spare parts:

Article

Material No.



Multronic basic device

Standard
ProfibusDP

255112
255132



Measuring modules

pH with TK
Redox -500 to 500 mV
Redox 0 -1000 mV
Temperature
Conductivity (inductive)
Conductivity (conductive)
Standard signal
Chlorine
ClO₂ (with ClO₂ software 35512064)
Peracetic acid (with PAA software 35512065)

35516210
255180
255181
255171
255160
255177
255126
255136
255137
255137

Relay board (4 change-over)

Required for Multronic with more than one measuring module

255119