

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

A paperless recorder (optional) is able to record all measured values 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

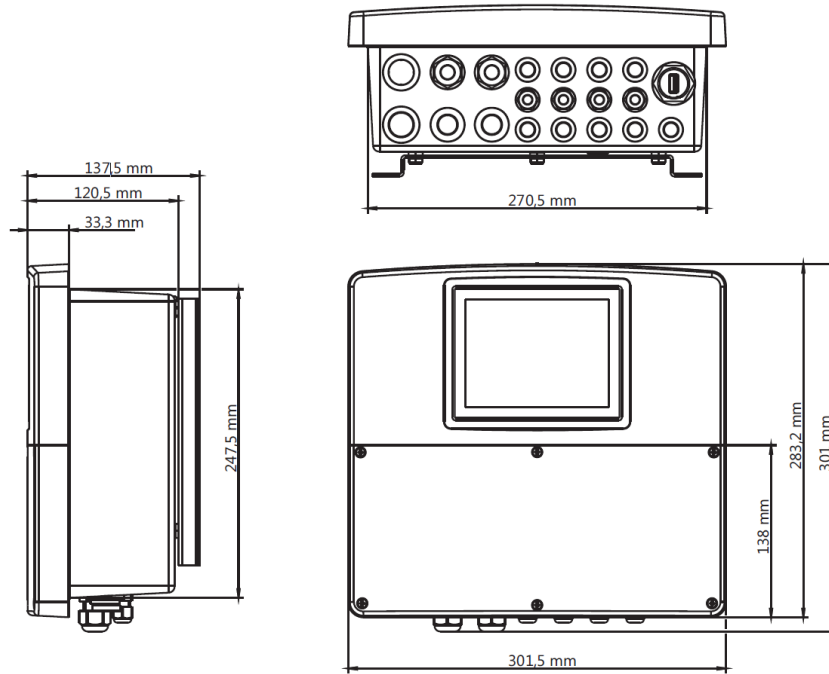
Limit alarm settings

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 , ...)

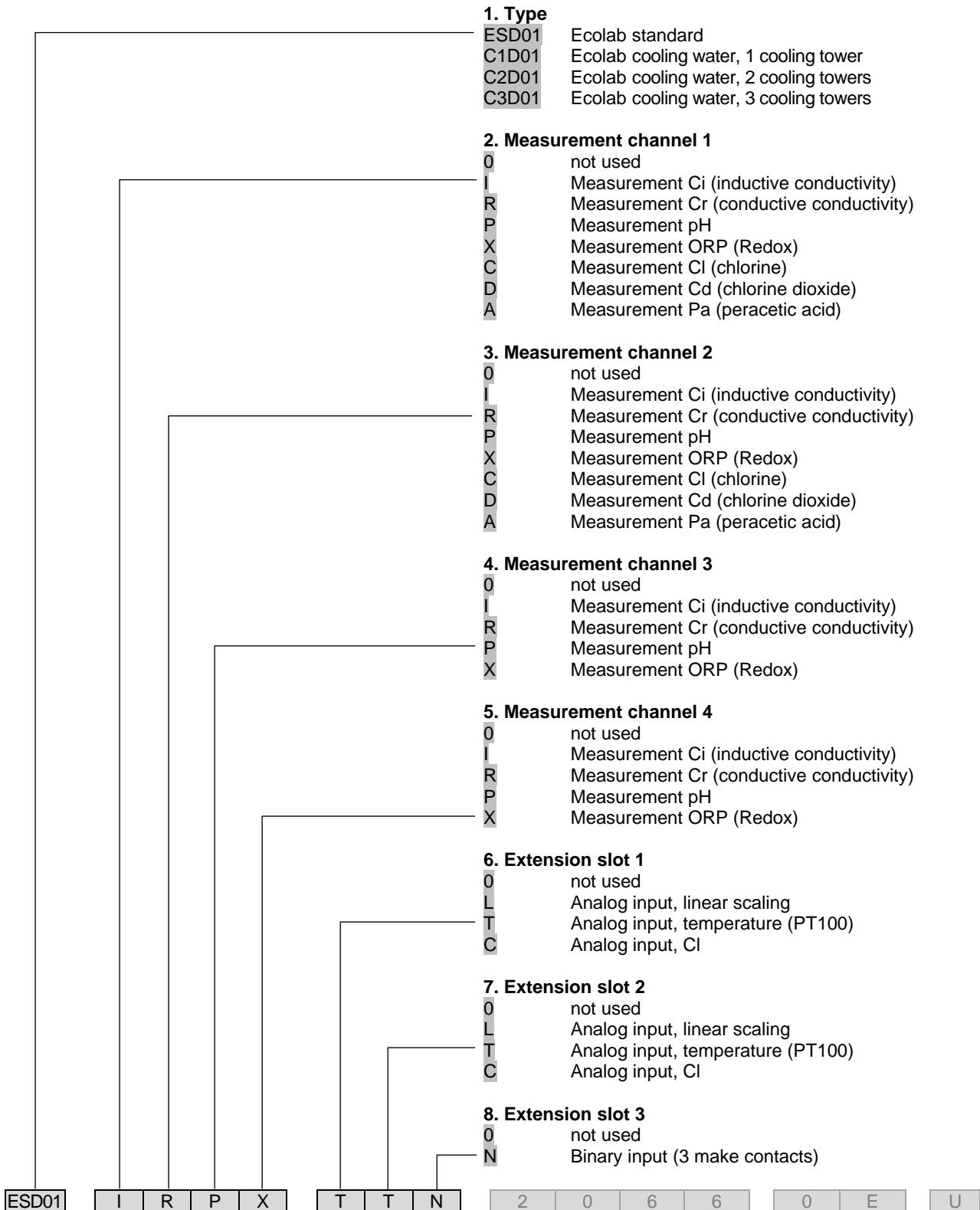
Dimensions:





Order code (Pos. 1 - 8):

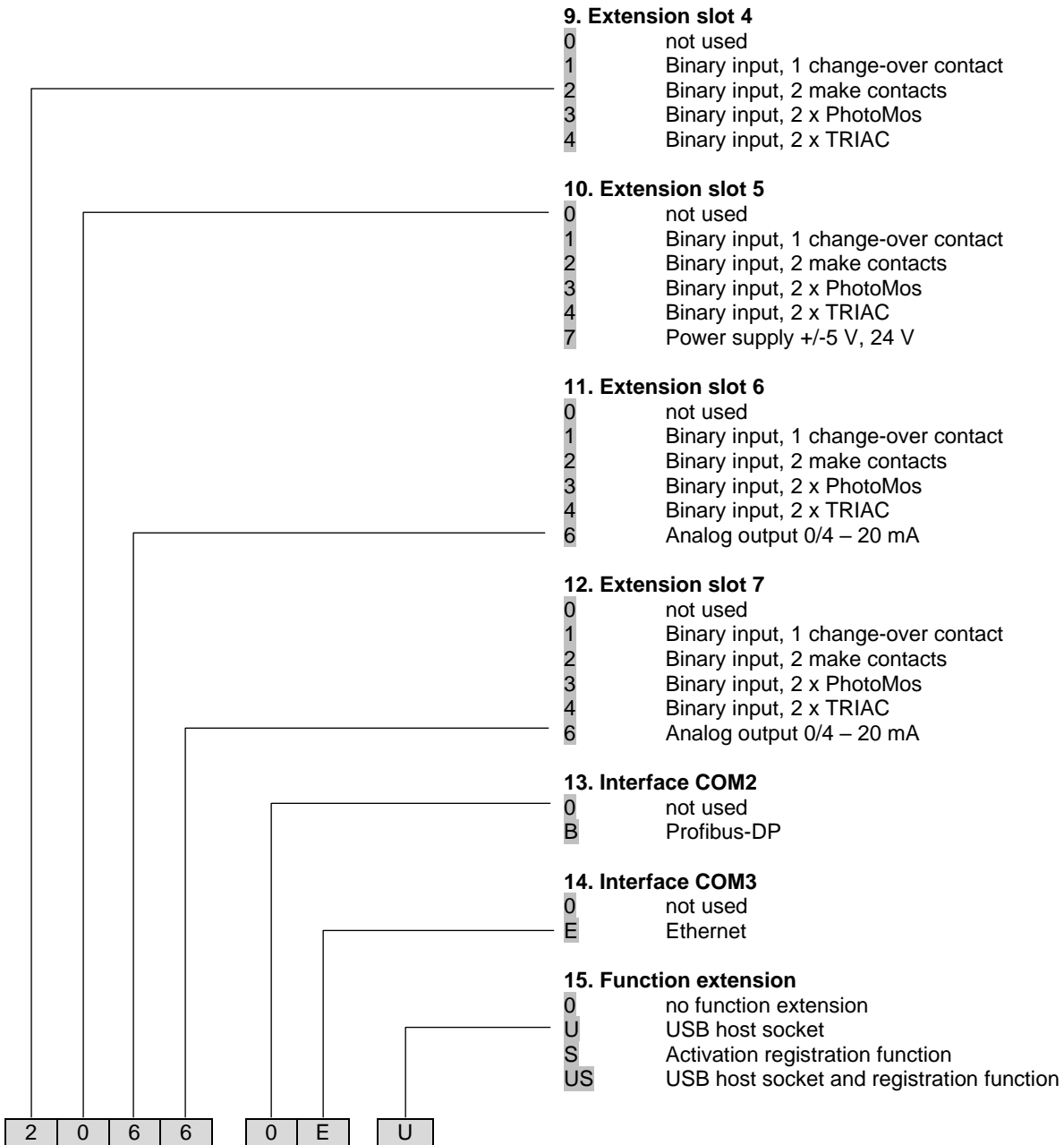
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Type	Measur. channel				Extension slot			Extension slot		Extension slot		Interface		Fct.-ext.
	1	2	3	4	1	2	3	4	5	6	7	COM2	COM3	






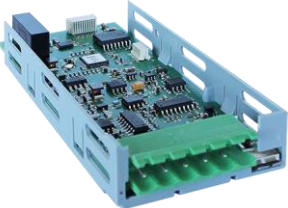
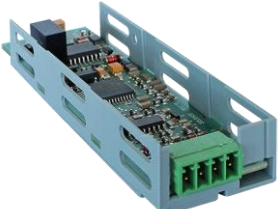
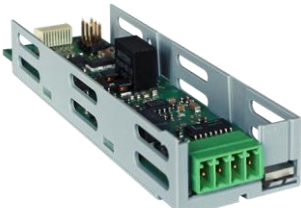

Order code (Pos. 9 - 15):

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.
	<p>Basic unit Versatronic basic unit incl. operating instructions</p>	155201
	<p>Measuring module Measuring module Plug-in card Ci (inductive conductivity)</p>	255250
	<p>Measuring module Plug-in card Cr (conductive conductivity)</p>	255251
	<p>Measuring module Plug-in card pH/Redox</p>	255252
	<p>Input Plug-in card Plug-in card, universal input Plug-in card, binary input (3 make contacts)</p>	255253
		255254
	<p>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</p>	<p>255255 255256 255257 255258 255259 255260</p>
	<p>Interface Plug-in card Plug-in card, Profibus-DP interface Plug-in card, Ethernet interface</p>	<p>255261 255262</p>




**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 20 °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 255202</p> <p>Measuring probe material: PVDF Adapter material: PVDF</p>
	<p>Conductivity measuring probe as above, with adapter for VA tank welding fitting and VA flow fitting, DN 50 255203</p> <p>Measuring probe material: PVDF Adapter material: PVDF</p>
	<p>Conductivity measuring probe as described, with bulkhead screw connection 255204</p> <p>for tank wall installation, 21 mm bore-diameter required</p> <p>Housing material measuring probe: PVDF</p>



Article

Article no.

Conductivity measuring probe as described, but in immersion probe version

255205

Immersion depth as desired adjustable up to 1000 mm

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



Conductivity measuring probe as described, but in stainless steel immersion probe version

255206

with clamping flange and weld-on fitting with union nut
Immersion depth as desired adjustable up to 1000 mm

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)



Calibration adaptor for conductivity basic adjustment
with simulation resistances for five measuring ranges

255269



Extension set for Ci or CR measurement
consisting of:

1 terminal box for cable extension

288101

1 measuring cable 5 x 0.25, pre-assembled on both sides
Length 10 m

on request

or

1 measuring cable 5 x 0.25, pre-assembled on both sides
Length 20 m

on request

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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Extension set for Ci or CR measurement consisting of:	
1 terminal box for cable extension	288101
1 measuring cable 5 x 0.25, pre-assembled on both sides Length 10 m	on request
or	
1 measuring cable 5 x 0.25, pre-assembled on both sides Length 20 m	on request

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.

Delivery includes built-in 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

255197

Length 10 m

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

Pepsin-hydrochloric acid solution	250 ml	418853128
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Angle seat flow fitting

for combination pH or ORP/Redox electrodes 418853202



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

for 3 measuring probes 418853213

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

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



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.



Chlorine measurement cell CL4.2

incl. tweezers, emery S1 and electrolyte ECL1 with 5-pin screw and plug connection

Material: PVC
 Ø: 25 mm
 L: 175 mm
 Power supply: 12 – 30 V DC
 Resolution: 100 mV per mg/l chlorine
 Output signal: 4 – 20 mA
 Operational temperature: 0 - 45 °C
 pH range: 6 – 8 pH
 Pressure range: up to 1 bar
 Flow range: 30 – 100 l/h

Chlorine measurement cell CL4.2MA-20-M12

10240235

Measuring range: 0 – 20 mg/l

Chlorine measurement cell CL4.2MA-100-M12

10240236

Measuring range: 0 – 100 mg/l



Chlorine dioxide measurement cell CD4.2

incl. tweezers, emery S1 and electrolyte ECD7/W with 5-pin screw and plug connection

Material: PVC
 Ø: 25 mm
 L: 175 mm
 Power supply: 12 - 30 V DC
 Resolution: 1000 mV per mg/l chlorine dioxide
 Output signal: 4 – 20 mA
 Operational temperature: 0 – 45 °C
 pH range: 1 – 12 pH
 Pressure range: up to 1 bar
 Flow range: 30 – 100 l/h

Chlorine dioxide measurement cell CD4.2MA-2-M12

10240237

Measuring range: 0 – 2 mg/l

Chlorine dioxide measurement cell CD4.2MA-5-M12

10240238

Measuring range: 0 – 5 mg/l

Article

Article no.



PAA measurement cell P10

incl. tweezers, emery S2 and electrolyte EPS9H/W with 5-pin screw and plug connection

Material: PVC
 Ø: 25 mm
 L: 175 mm
 Power supply: 12 - 30 V DC
 Output signal: 4 – 20 mA
 Operational temperature: 0 – 45 °C
 pH range: 0 – 7 pH
 Pressure range: up to 1 bar
 Flow range: 30 – 100 l/h

PAA measurement cell P10MA-2000-M12

10240069

Measuring range: 0 – 2000 mg/l
 Resolution: 1 mV per mg/l PAA

PAA measurement cell P10MA-5000-M12

10240070

Measuring range: 0 – 5000 mg/l
 Resolution: 0.4 mV per mg/l PAA



PAA measurement cell P9.2

incl. tweezers, emery S2 and electrolyte EPS9L/W with 5-pin screw and plug connection

Material: Peek
 Ø: 25 mm
 L: 175 mm
 Power supply: 12 - 30 V DC
 Output signal: 4 – 20 mA
 Operational temperature: 0 – 60 °C
 pH range: 1 – 6 pH
 Pressure range: up to 1 bar
 Flow range: 30 – 100 l/h

PAA measurement cell P9.2MA-2000-M12

10240072

Measuring range: 0 – 2000 mg/l
 Resolution: 1 mV per mg/l PAA

PAA measurement cell P9.2MA-5000-M12

10240073

Measuring range: 0 – 5000 mg/l
 Resolution: 0.4 mV per mg/l PAA






Connection cable for CL-, CD-, PAA measurement cell





418439007

5-pin, with screw plug M12 on one side
 Length: 5 m

Spare parts for chlorine and chlorine dioxide measuring cells:

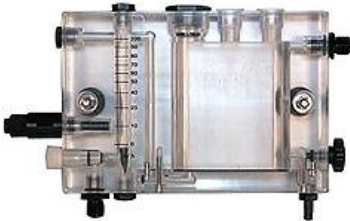
	Article	Article no.
	<p>Diaphragm cap type M20 for chlorine measurement cell CL4.2 and chlorine dioxide measurement cell CD4.2 liquid stored in transport box, incl. tweezers, o-ring and special emery for sensor head cleaning</p>	418853013
	<p>Electrolyte type ECL1 for chlorine measurement cell CL4.2, 100 ml</p>	418853027
	<p>Electrolyte type ECD7/W for chlorine dioxide measurement cell CD4.2, 100 ml</p>	418853022

Spare parts for PAA measuring cells:

	<p>Diaphragm cap type M10.1N for PAA measurement cell P10 liquid stored in transport box, incl. tweezers, o-ring and special emery for sensor head cleaning</p>	10240071
	<p>Diaphragm cap type M9N for PAA measurement cell P9.2 liquid stored in transport box, incl. tweezers, o-ring and special emery for sensor head cleaning</p>	418853046
	<p>Electrolyte type EPS9H/W for PAA measurement cell P10, 100 ml</p>	418853043
	<p>Electrolyte type EPS9L/W for PAA measurement cell P9.2, 100 ml</p>	10240074

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

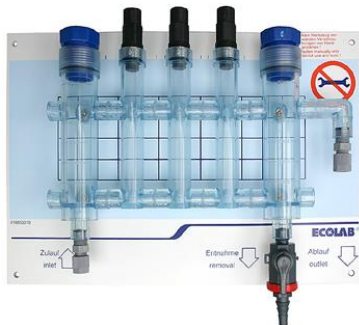


Flow fitting 1 x G 1", 2 x PG 13.5

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 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.



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