bürkert
FLUID CONTROL SYSTEMS

pH or oxidation-reduction potential (ORP) transmitter, ELEMENT design

- Compact measuring device for direct connection to the control level (PLC) via analogue 4...20 mA signal or digital IO-Link or Bürkert system bus (büS)/CANopen communication
- Parametrisation, calibration and transfer of parametrisation data all possible thanks to a removable display/configuration module
- Fast and easy adaptation of the device between pH and ORP measurement
- Use of 120 mm standard PG 13.5 pH/ORP probes with S8 connection. (Type 8203 recommended)
- Simple one- or two-point calibration can be carried out directly on the device; simulation of process values and diagnostic functions

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

Type 8203
pH and oxidation-reduction potential (ORP) probes

Type 8611
eCONTROL – Universal controller

Type 8619
multiCELL – multi-channel/ multi-function transmitter/ controller

Type 8693
Digital electropneumatic process controller for integrated mounting on process control valves

Type 8802
ELEMENT continuous control valve systems – overview

Type S022
Insertion adapter/fitting for ELEMENT analytical measurement devices

Type description

The transmitter Type 8202 is a compact device for measuring the pH value in clean, dirty, sulphide- or protein-containing liquids or for measuring the oxidation-reduction potential (ORP) value in clean, dirty, sulphide- or protein-containing liquids as well as liquids that have a low conductivity.
Thus, due to the measuring device's design, Bürkert has simplified installation and maintenance work.

The device Type 8202 is available in two variants.
The first one, the so-called ELEMENT standard, is proposed with either three adjustable outputs (two digital outputs and one analogue output) or four adjustable outputs (two digital and two analogue), and can be equipped with a display. The display is only required for start-up, configuration (e.g. selection of pH/ORP measurement, measuring range, units, calibration, limit values) and for process value display.
The second variant, the so-called ELEMENT neutrino, is a 2-wire device without a display, equipped either with a 4...20 mA current output or with a digital communication mode via IO-Link or büS (Bürkert system bus based on CANopen).

The Type 8202 device converts the measurement signal and calculates the output signals, which are provided via one or two M12 plug connections for the ELEMENT standard variant as well as via one M12 plug connection or on a terminal strip via a cable gland for the ELEMENT neutrino variant. The device in the ELEMENT standard variant shows several values in different measuring units (if a display is mounted).

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Visit product website

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1. General technical data

1.1. About the device

The complete measurement device consists of a replaceable standard 120 mm pH or ORP probe, Type 8203, available in several models and the pH or ORP transmitter Type 8202.

See **data sheet Type 8203** ▶ for more information.

The transmitter is available in an ELEMENT standard variant or in an ELEMENT neutrino variant. The process connection of both variants is made via a G 1½" nut in PVC or PVDF.

The ELEMENT standard variant is available with up to two 4...20 mA analogue outputs or with up to two transistor outputs.
The ELEMENT neutrino variant is available with a 4...20 mA analogue output or with digital communication.

The device with digital communication is distinguished by a status indicator on the cover, and is offered with a housing in metal (so-called metallic variant) or in plastic (so-called all-plastic variant for corrosive environmental conditions like in the electronic & semiconductor industry market).
The metallic variant is provided with a digital IO-Link and büS (Bürkert system bus, CANopen protocol) communication, the all-plastic variant with a digital IO-Link communication (büS available only for service activities such as configuration or calibration).

1.2. All variants

Note:

- The following data applies to all variants mentioned above.
- If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Product properties	
Material	
Make sure the device materials are compatible with the fluid you are using. Further information can be found in chapter "3.1. Bürkert resistApp" on page 11.	
Further information on the materials can be found in chapter "3.2. Material specifications" on page 11.	
Wetted parts	
Probe holder	PVDF, stainless steel 1.4571 (316Ti)
Compatibility	• Adapter: – Any pipe which is fitted with Bürkert S022 adapter, see **data sheet Type S022** ▶ for more information. • Probe: – 120 mm Bürkert pH or ORP probe with S7/S8 connector, Type 8203 (recommended), see **data sheet Type 8203** ▶ for more information. – Any combined 120 mm pH or ORP probe, without temperature sensor, with PG13.5 head, S7/S8 connector
Pipe diameter	DN 25...DN 110 (DN 15...DN 20 under specific conditions)
Dimensions	Further information can be found in chapter "4. Dimensions" on page 13.
Temperature sensor	Pt1000 integrated within the holder
Temperature compensation	Automatic, reference temperature 25 °C (77 °F)
Performance data	
4...20 mA output uncertainty	± 1 % of current range
Electrical data	
Power source (not supplied)	Limited power source according to UL/EN 62368-1 standards or limited energy circuit according to UL/EN 61010-1 paragraph 9.4
DC reverse polarity protection	Yes
Overvoltage protection	Yes

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Medium data	
Fluid temperature [1.]	Device with • PVC union nut: 0...+ 50 °C (+ 32...+ 122 °F) restricted by the used probe • PVDF union nut (on request): - 20...+ 130 °C (- 4...+ 266 °F) restricted by the used probe or adapter Restriction with adapter S022 in: – PVC: 0...+ 50 °C (+ 32...+ 122 °F) – PP: 0...+ 80 °C (+ 32...+ 176 °F) – Metal: - 20...+ 130 °C (- 4...+ 266 °F)
Fluid pressure [1.] [2.]	Max. PN 16 (232 PSI) Further information can be found in chapter "5.1. Pressure temperature diagram" on page 15 (depends on selected probe).
Product connections	
Process connection	G 1½" internal thread for use with Type S022 adapter See **data sheet Type S022** ▶ for more information.
Approvals and conformities	
Directives	
CE directive	Further information on the CE directive can be found in chapter "2.3. Standards" on page 10.
Pressure equipment directive	Complying with article 4, paragraph 1 of 2014/68/EU directive Further information on the pressure equipment directive can be found in chapter "2.4. Pressure Equipment Directive (PED)" on page 10.
North America (USA/Canada)	UL Recognized for the USA and Canada
Environment and installation	
Ambient temperature	Operation and storage: - 10...+ 60 °C (+ 14...+ 140 °F)
Relative air humidity	≤ 85 %, without condensation
Height above sea level	Max. 2000 m
Operating condition	Continuous
Equipment mobility	Fixed
Application range	Indoor and outdoor Protect the device against electromagnetic interference, ultraviolet rays and, when installed outdoors, against the effects of climatic conditions.
Installation category	Category I according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

1.) If the specific temperature limits for the probe used and the temperature limits as stated above are different, the narrower temperature limits are valid (see corresponding data sheet).
2.) Not evaluated by UL

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1.3. ELEMENT standard variant

Product properties	
Material	
Further information on the materials can be found in chapter "3.2. Material specifications" on page 11.	
Non wetted parts	
Cover	Polycarbonate (PC), transparent (opaque on request)
Housing	Stainless steel 1.4404 (316L), PPS
Screw	Stainless steel 1.4401 (316 (A4))
Grounding terminal and screw	Stainless steel 1.4301 (304 (A2))
Union nut	PVC or PVDF
Display/configuration module	PC
Navigation key	PBT
Seal	EPDM, silicone
Fixed connector holder	PPS CF30
Fixed connector	Nickel-plated brass
Wetted parts	
Probe holder	PVDF, stainless steel 1.4571 (316Ti)
Measuring range	
pH measurement	- 2...16 pH or - 580...+ 580 mV
ORP measurement	- 2000...+ 2000 mV
Temperature measurement	- 20...+ 130 °C (- 4...266 °F)
Product accessory	
Display/configuration module	Grey dot matrix 128 × 64 with backlighting
Performance data	
pH measurement	
Measurement deviation	± 0.02 pH or 0.5 mV
Measuring range resolution	0.001 pH or 0.1 mV
Minimal scale	0.5 pH or 30 mV (i.e 6.7...7.2 pH or - 20...+ 10 mV corresponds to 4...20 mA current output)
ORP measurement	
Measurement deviation	± 3 mV
Measuring range resolution	1 mV
Minimal scale	50 mV (i.e 1550...600 mV corresponds to 4...20 mA current output)
Temperature measurement	
Measurement deviation	± 1 °C
Measuring range resolution	0.1 °C
Minimal scale	10 °C (i.e + 10...+ 20 °C corresponds to 4...20 mA current output)
Electrical data	
Operating voltage	• 3 outputs transmitter (2-wire) variant: 14...36 V DC, filtered and regulated • 4 outputs transmitter (3-wire) variant: 12...36 V DC, filtered and regulated Connection to main supply: permanent (through external SELV (Safety Extra Low Voltage) and LPS (Limited Power Source) power supply
Current consumption	With sensor • ≤ 1 A (with transistors load) • 3 outputs transmitter (2-wire) variant: ≤ 25 mA (at 14 V DC without transistors load, with current loop) • 4 outputs transmitter (3-wire) variant: ≤ 5 mA (at 12 V DC without transistors load, without current loop)

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Output	
Digital output	Transistor: • Adjustable as sourcing or sinking (respectively both as PNP or NPN), open collector • Max. 700 mA • 0.5 A max. per transistor if the 2 transistor outputs are wired • NPN-output: 0.2...36 V DC • PNP-output: Power supply • Protected against overvoltage, polarity reversals and short circuit
Analogue output	Current • 4...20 mA adjustable as sourcing or sinking (in the same mode as transistor) • Response time (10 %...90 %): 150 ms (standard) • 1 current output (3 outputs transmitter (2-wire) variant) Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 180 Ω at 14 V DC • 2 current outputs (4 outputs transmitter (3-wire) variant) Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 100 Ω at 12 V DC
Voltage supply cable	The female M12 connector and/or the male M12 connector are not included in the delivery and must be ordered separately, see chapter "11.5. Ordering chart accessories" on page 21). For these connectors, use a shielded cable with: • diameter: 3...6.5 mm • cross section of wires: max. 0.75 mm²
Product connections	
Electrical connection	• 3 outputs transmitter (2-wire) variant: 1 × 5-pin M12 male connector • 4 outputs transmitter (3-wire) variant: 1 × 5-pin M12 male and 1 × 5-pin M12 female connectors
Approvals and conformities	
Foods and beverages/Hygiene	FDA declaration of conformity
Environment and installation	
Degree of protection [1.] according to IEC/EN 60529	IP65, IP67 under the following simultaneous conditions: • device wired • cover screwed tight • M12 connector mounted and tightened

1.) Not evaluated by UL

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1.4. ELEMENT neutrino variant

Product properties	
Material	
Further information on the materials can be found in chapter "3.2. Material specifications" on page 11.	
Non wetted parts	
Cover	PPS
Light guide	Digital communication variant: PC, PMMA and NBR88
Housing	• Analogue output variant: stainless steel 1.4404 (316L), PPS • Digital communication variant: – stainless steel 1.4404 (316L), PPS (metallic variant) – PPS (all-plastic variant)
Grounding terminal	Nickel-plated brass (only metallic variant)
Union nut	PVC (PVDF on request)
Seal	EPDM
Fixed connector	• Analogue output variant: PA66 • Digital communication variant: – nickel-plated brass (metallic variant) – PA66 (all-plastic variant)
Cable gland	Analogue output variant: PA66
Measuring range	
pH measurement	0...14 pH
ORP measurement	- 2000...+ 2000 mV
Temperature measurement	- 20...+ 130 °C (- 4...266 °F)
Performance data	
pH measurement	
Measurement deviation	± 0.05 pH
ORP measurement	
Measurement deviation	± 3 mV
Temperature measurement	
Measurement deviation	± 1 °C
Electrical data	
Operating voltage	12...36 V DC, filtered and regulated Connection to main supply: permanent (through external SELV (Safety Extra Low Voltage) and LPS (Limited Power Source) power supply
Current consumption	4...20 mA output variant: ≤ 25 mA (with sensor)
Power consumption	≤ 1 W
Input/Output	
Digital input/output	Digital communication variants: through the communication interface • Bürkert system bus (büS)/CANopen • IO-Link
Analogue output	Analogue output variant: • current of 4...20 mA • response time (10 %...90 %): 5 s (standard) • max. loop impedance: 1100 Ω at 36 V DC, 610 Ω at 24 V DC, 100 Ω at 12 V DC

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Voltage supply cable	• For connector: The female M12 connector is not included in the delivery and must be ordered separately, see chapter "11.5. Ordering chart accessories" on page 21). For this connector, use according to the output of the device: – a shielded cable with: – diameter of 3...6.5 mm – cross section of wires: max. 0.75 mm² – a Canopen standard cable for Bürkert system bus (büS)/CANopen communication, max. 50 m length – a standardised industrial cable (unshielded 3- or 4-wire cable) for IO-Link communication, max. 20 m length • For terminal strip via a cable gland (measuring data acc. to CEI 664-1/VDE 0110 (4.97 use a cable): – solid H05(07) V-U: 0.25...1.5 mm² – flexible H05(07) V-K: 0.25...1.5 mm² – with wire end ferrule: 0.25...1.5 mm² – with plastic collar ferrule: 0.25...0.75 mm² – diameter: 4...8 mm
Product connections	
Electrical connection	• 1 × 5-pin free positionable M12 male connector or • Terminal strip via 1x cable gland M16 × 1.5
Data transfer	
Digital communication: büS	
External communication	Through büS (Bürkert system bus, CANopen protocol)
Digital communication: IO-Link	
Communication interface	IO-Link device V1.1.2
SIO mode	No
Baud rate (data transfer rate)	COM 3 (230.4 kBaud)
Type of ports	Class A
Cycle time	Min. 5 ms
Process data width	48 Input bits, 8 Output bits
IO-Link data storage	Yes
Block configuration	Yes
IO device description (IODD)	The device description is available in the operating instructions which can be found on our website under the "User Manuals" heading for **Type 8202** ▶. Alternatively, see "Device Description Files" under the "Software" heading for **Type 8202** ▶ or at **https://ioddfinder.io-link.com**
Environment and installation	
Degree of protection	• IP65 [1)], IP67 [1)] (according to IEC/EN 60529) • NEMA 4X and NEMA 6P (according to NEMA250) (with device installed on the fitting) • UL50E under the following simultaneous conditions: • device wired • cover screwed tight • M12 connector or glands mounted and tightened • with blind plug on unused cable glands

1.) Not evaluated by UL

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2. Approvals and conformities

2.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available variants of the device can be supplied with the below mentioned approvals or conformities.

2.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

2.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

2.4. Pressure Equipment Directive (PED)

The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions:

Device used on a pipe

Note:

- The data in the table is independent of the chemical compatibility of the material and the fluid.
- PS = maximum admissible pressure, DN = nominal diameter of the pipe

Type of fluid	Conditions
Fluid group 1, Article 4, Paragraph 1.c.i	DN ≤ 25
Fluid group 2, Article 4, Paragraph 1.c.i	DN ≤ 32 or PS*DN ≤ 1000
Fluid group 1, Article 4, Paragraph 1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, Article 4, Paragraph 1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

2.5. North America (USA/Canada)

Approval	Description
c UL us	**Optional: UL Recognized for the USA and Canada** The products are UL Recognized for the USA and Canada according to: • UL 61010-1 • CAN/CSA-C22.2 No. 61010-1

2.6. Foods and beverages/Hygiene

Conformity	Description
FDA	**FDA – Code of Federal Regulations (valid for the variable code PL02, PL03)** The devices are compliant with the Code of Federal Regulations published by the FDA (Food and Drug Administration, USA) according to the manufacturer's declaration.

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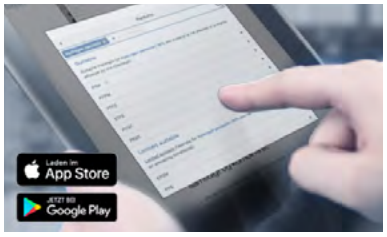
3. Materials

3.1. Bürkert resistApp



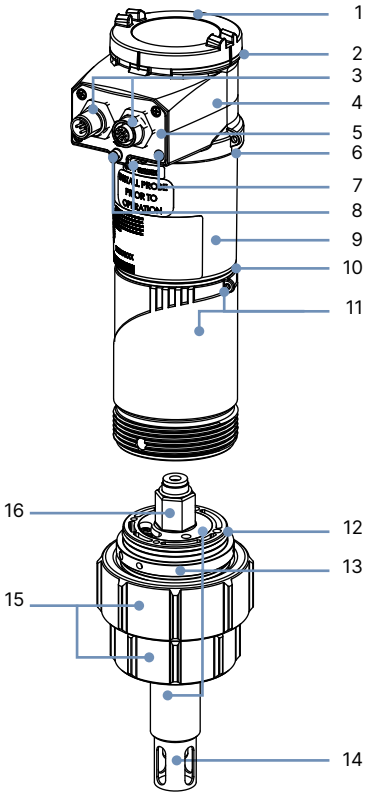
Bürkert resistApp – Chemical resistance chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

Start chemical resistance check

3.2. Material specifications

ELEMENT standard variant



No.	Element	Material
1	Cover	PC
2	Seal	Silicone
3	M12 fixed connector (female/ male)	Nickel-plated brass
4	Housing (top)	PPS
5	Connector holder	PPS CF30
6	Seal	EPDM
7	Screws	Stainless steel 1.4301 (304 (A2))
8	Grounding terminal and screw	Stainless steel 1.4401 (316 (A4))
9	Housing (body)	Stainless steel 1.4404 (316L)
10	Seal	EPDM
11	Housing (base)	PPS
12	Seal	EPDM
13	Probe holder	PVDF
14	Probe holder	Stainless steel 1.4571 (316 Ti)
15	Union nuts	PVC or PVDF
16	Probe	According to the used probe See **data sheet Type 8203** ▶ or specific data sheet

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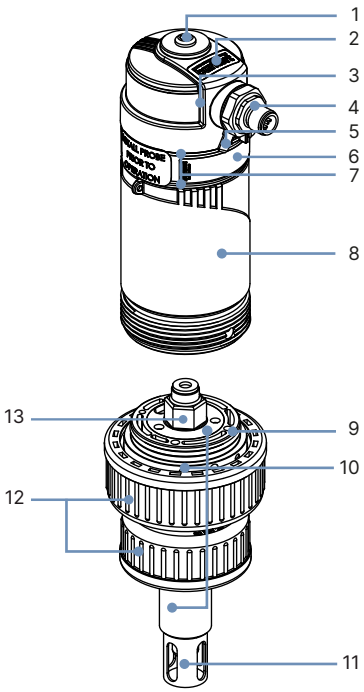
ELEMENT neutrino variant



No.	Element	Material
1	Light guide	PC, PMMA and NBR88 (only digital communication variant)
2	Cover	PPS
3	Seal	EPDM
4	M12 male fixed connector	• PA66 (4...20 mA output variant and digital communication all-plastic variant) • Nickel-plated brass (digital communication metallic variant)
	or cable gland	PA66 (only 4...20 mA output variant)
5	Grounding terminal	Nickel-plated brass (only digital communication metallic variant)
6	Housing (top)	• PPS (digital communication all-plastic variant) • Stainless steel 1.4404 (316 L), PPS (4...20 mA output variant and digital communication metallic variant)
7	Seal	EPDM
8	Housing (body)	PPS
9	Seal	EPDM
10	Probe holder	PVDF
11	Probe holder	Stainless steel 1.4571 (316 Ti)
12	Union nut	PVC (or PVDF on request)
13	Probe	According to the used probe See **data sheet Type 8203** ▶ or specific data sheet

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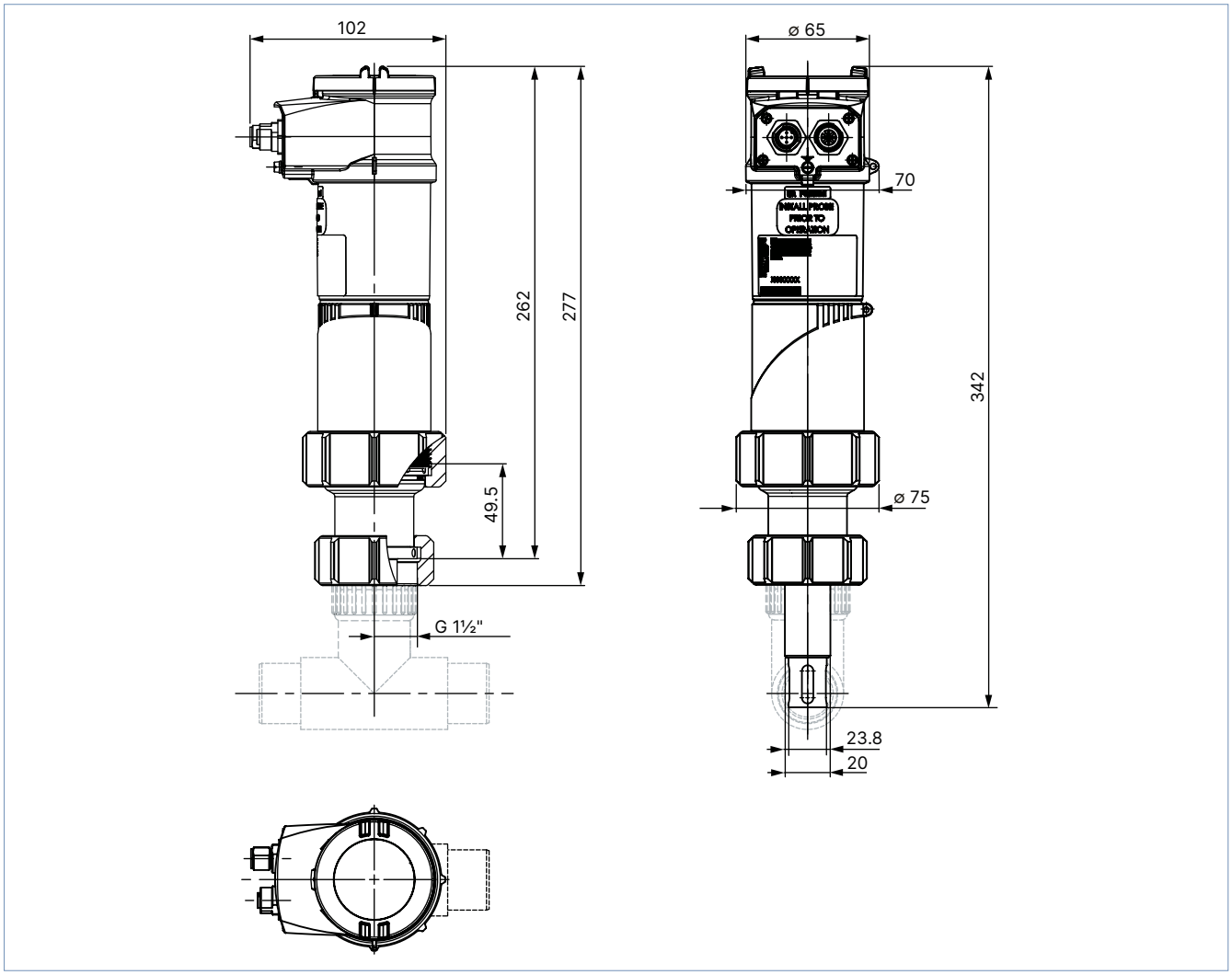
4. Dimensions

4.1. ELEMENT standard variant

Note:
Dimensions in mm, unless otherwise stated



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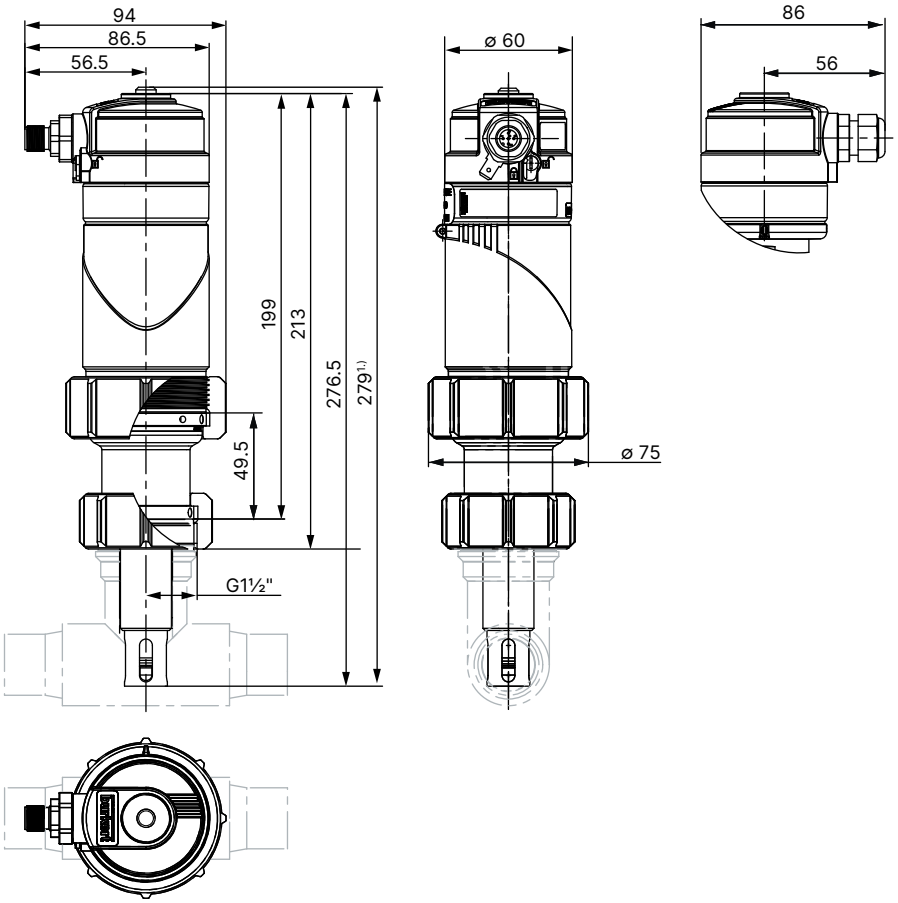
4.2. ELEMENT neutrino variant

Note:
Dimensions in mm, unless otherwise stated

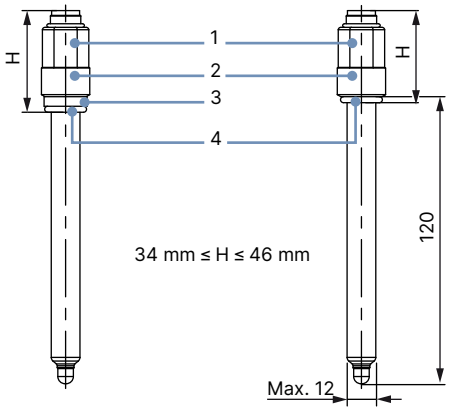


1.) Only valid for digital communication variants

4.3. Probe

Note:

- Dimensions in mm, unless otherwise stated
- It is recommended to use Bürkert Type 8203 pH or ORP probes. The probes are not included in the scope of delivery. The following dimensions are for information. See **data sheet Type 8203** ▸ for more information.

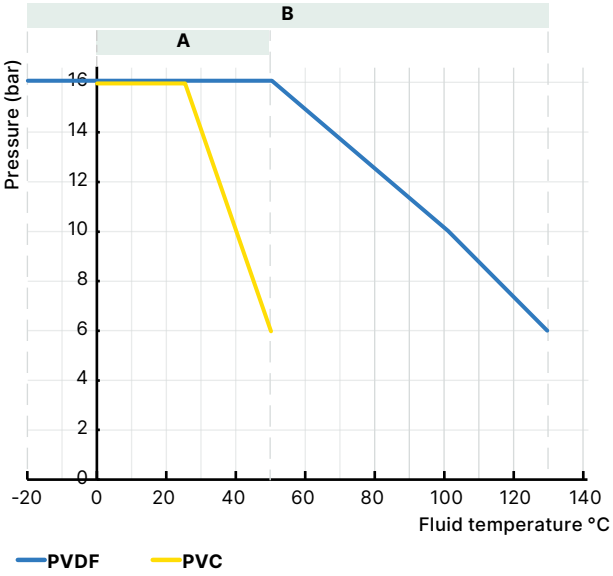


No.	Element
1	Probe head
2	PG 13.5
3	Compression washer (its height has to be adjusted if the H dimension on the probe is not between 34 and 46 mm.)
4	Seal

5. Performance specifications

5.1. Pressure temperature diagram

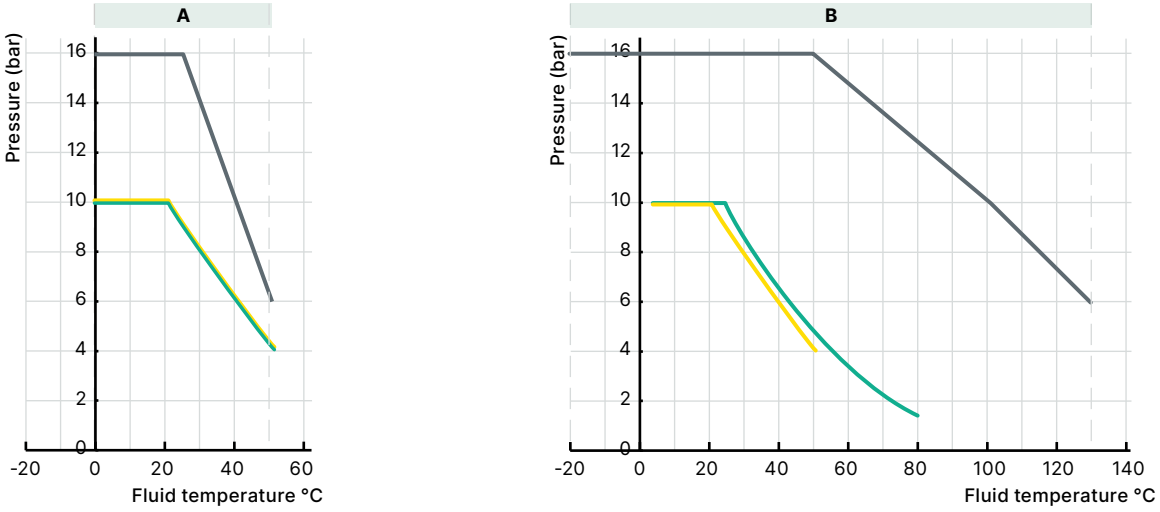
ELEMENT standard and ELEMENT neutrino variants



Application range of Type 8202 ELEMENT standard variant and ELEMENT neutrino variant
A: device with PVC union nut
B: device with PVDF union nut
(on request for ELEMENT neutrino variant)

The measures have been made without probe at an ambient temperature of 60 °C

ELEMENT standard and ELEMENT neutrino variants installed with an S022 adapter



Application range of Type 8202 device ELEMENT standard variant and ELEMENT neutrino variant with Type S022 adapter,
A: device with PVC union nut
B: device with PVDF union nut (on request for ELEMENT neutrino variant)

PVC PP Metal

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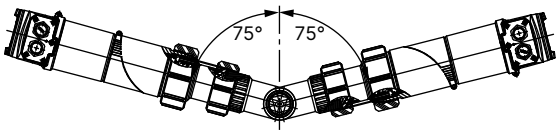
6. Product installation

6.1. Installation notes

Note:
If a suitable 120 mm pH probe or 120 mm ORP probe from a manufacturer other than Bürkert is used, the manufacturer's specific pipeline installation instructions for this probe must be observed.

The ELEMENT pH/ORP transmitter Type 8202 can be installed into any adapter with G 1½" external threaded sensor connection by just fixing the union nut. Select the appropriate adapter, taking into account the specific requirements of the measuring device and the adapter material (temperature and pressure), and install it in a vertical position or with an angle of ± 75° max. relative to the vertical on a horizontal pipe.

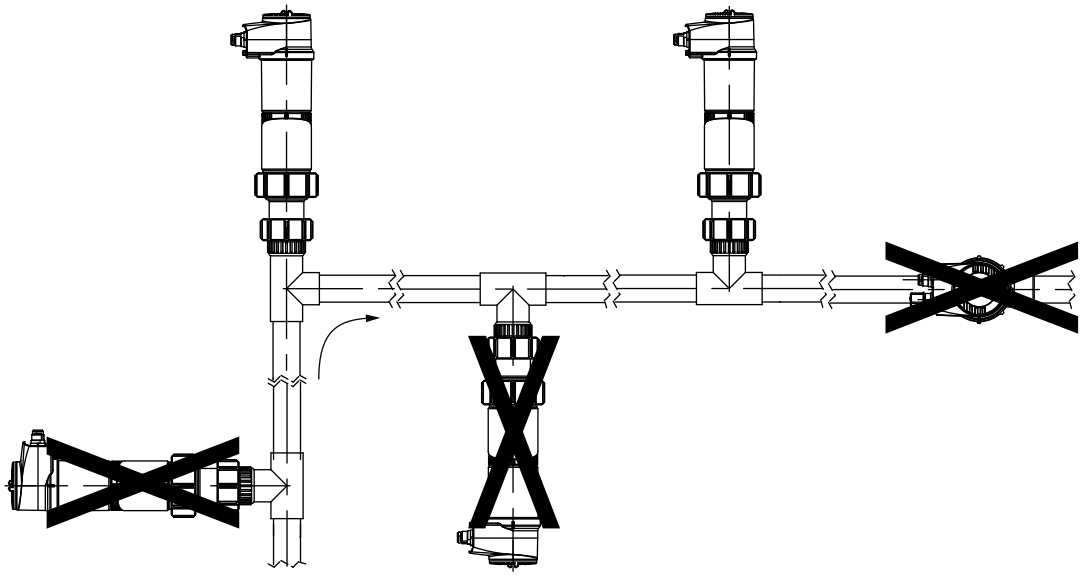


For direct installation in a pipeline (DN 100 or DN 110), an adapter with a G 1½" external threaded sensor connection must be used.

The use of our Type S022 analysis measurement chamber, specifically designed to enable the installation of the ELEMENT pH/ORP transmitter in all pipe systems, either directly in the main stream or in a by-pass line, represents an alternative.

See **data sheet Type S022** ▸ for more information about adapter.

After having connected the pH or ORP probe to the Type 8202 transmitter and having calibrated the unit, carefully install the unit on the fitting. In order obtain reliable measurements air bubbles must be avoided.
Please ensure that the mounting location provides a continuous and complete immersion of the probe in the flow stream.



The probe must be continuously immersed into the measuring fluid in order to protect it from drying out.
The device must be protected from constant heat radiation and other environmental influences, such as direct exposure to sunlight.

7. Product operation

7.1. Measuring principle

The Type 8202 ELEMENT device can be used as a pH or an ORP meter according to the Type 8203 probe variant mounted into the holder. The Type 8203 pH or ORP probe is a glass membrane with variable selectivity according to the pH or the ORP, which must be calibrated with a buffer solution before the installation of the device into the pipe.

- When a pH probe is immersed into the solution a difference in potential is formed due to ions (H+) between the glass membrane and the solution. This difference in potential measured in relation to a reference electrode is directly proportional to the pH value (59.16 mV per pH unit at 25 °C).
  The pH sensor can be calibrated in 1-point (Offset at pH 7) or in 2-points (Offset at pH 7 and Span at pH 4 or pH 10).

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- When a ORP probe is immersed in a solution, an exchange of electrons occurs based on the oxidizing and reducing effects of an electrolyte. The resulting voltage is the oxidation reduction potential. The ORP sensor can only be calibrated in 1-point (Offset).

The meter is either a two wire device (3 outputs transmitter ELEMENT standard variant or ELEMENT neutrino variant) or a three wire device (4 outputs transmitter ELEMENT standard variant) which requires a power supply of 14 V DC (3 outputs transmitter ELEMENT standard variant) or 12 V DC (4 outputs transmitter ELEMENT standard variant or ELEMENT neutrino variant) up to 36 V DC and delivers a 4...20 mA standard signal proportional to the pH or to the ORP potential as output signal.

The electrical connection is provided via one or two M12 connectors for the ELEMENT standard variant or via one free positionable M12 male connector or terminal strip through cable gland for the ELEMENT neutrino variant.

8. Product design and assembly

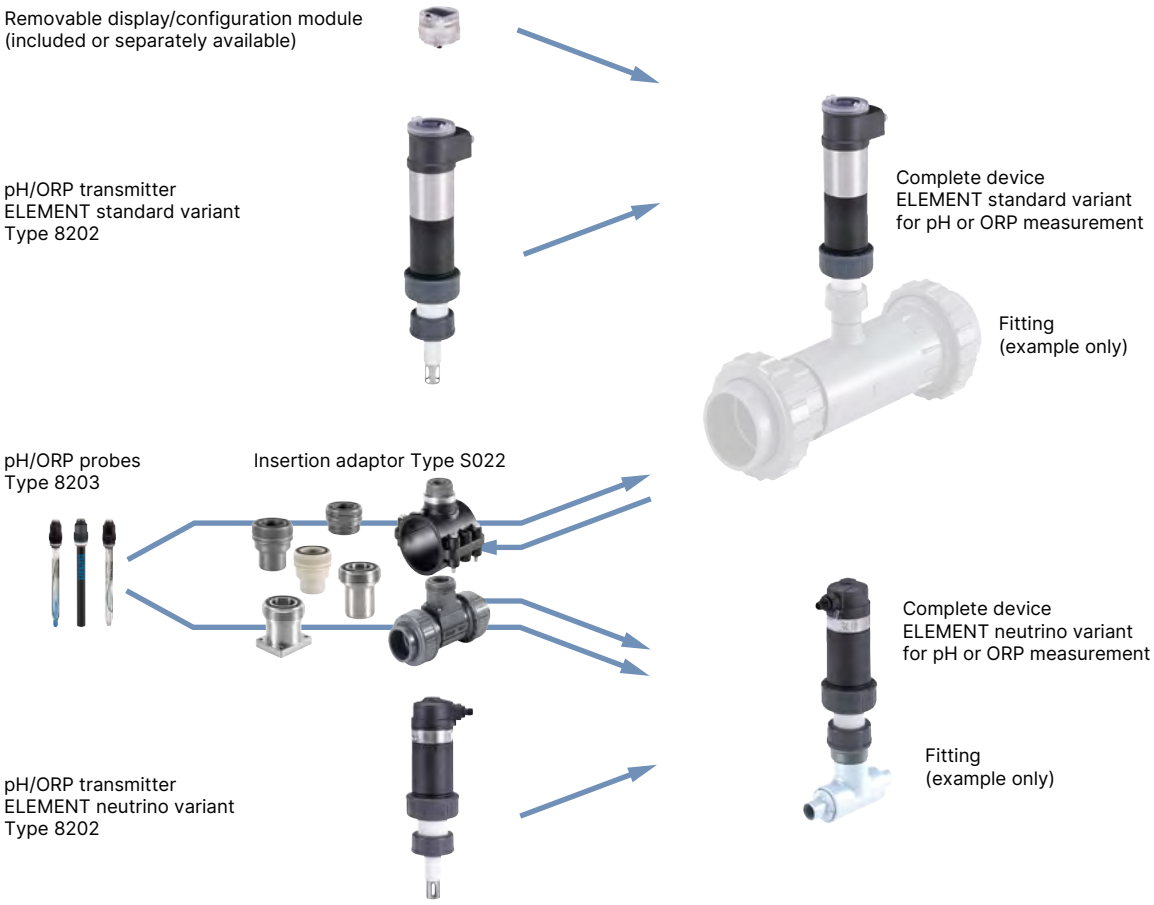
8.1. Product assembly

Note:
The Type 8202 device can be installed with the help of the Type S022 adapter or fitting with G 1½" external threaded sensor connection into pipe systems.

The pH/ORP meter consists of a replaceable 120 mm pH or ORP probe,Type 8203, which is screwed in a probe holder with integrated Pt1000 temperature sensor. This ensemble is plugged-in and screwed with a union nut to an enclosure with cover containing the electronic module.

See **data sheet Type S022** ▶ and **data sheet Type 8203** ▶ for more information.

A removable display/configuration module complements the ELEMENT standard transmitter variant. The pH/ORP meter can operate independently of this module, but it will be required for configuration of the device (i.e. set parameters, restore default parameters, configure information to be displayed, enter access codes, adjust 4...20 mA output(s) ...) and also for visualizing continuously the measured and processed data.



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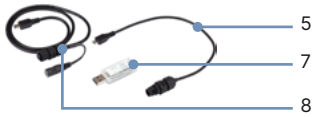
9. Product accessories

Note:
To configure a device with a digital communication, use the USB-büS-Interface set Type 8923 and the Bürkert Communicator software Type 8920.

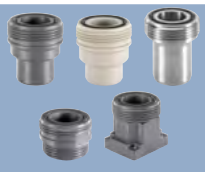
See "11.5. Ordering chart accessories" on page 21 for ordering information and **Software manual Type 8920** ▶ for more information.

Accessories	No.	Description
USB-büS-Interface set 1 	**1**	Quick-Start
	2	Power supply: 100...240 V AC/24 V DC 1 A and adapters for power supply worldwide use
	3	büS terminating resistor on büS Y-splitter
	4	5-pin M12 male connector wired on free end cable, cable length: 0.2 m
	5	büS connection cable with 5-pin M12 male connector, micro USB B plug, cable length: 0.3 m
	6	büS adapter with 5-pin M12 male connector, A-coded to 5-pin M12 male connector, A-coded
	7	büS stick (USB to büS/CANopen adapter)
	8	büS service cable with 5-pin M12 female connector, mini USB plug and circular female connector for power supply, cable length: 0.7 m
	9	Magnetic key
USB-büS-Interface set 2  		The Bürkert Communicator software can be downloaded from our website under the "Software" heading of **Type 8920** ▶.

10. Networking and combination with other Bürkert products

Example:

Type 8202



Type S022 ▶
Insertion adapter/fitting for ELEMENT analytical measurement devices

Type 8802 ▶
ELEMENT continuous control valve systems

Type 8611 ▶
eCONTROL - Universal controller

Type 8619 ▶
multiCELL - transmitter/controller

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11. Ordering information

11.1. Bürkert eShop

Bürkert eShop – Easy ordering and quick delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

Order online now

11.2. Recommendation regarding product selection

Note:
When only ordering devices without a display/configuration module, make sure that you have a display/configuration module at least for parameterising the device. Otherwise you must also order one (see chapter "11.5. Ordering chart accessories" on page 21).

A complete pH or ORP measurement equipment consists of a pH or ORP transmitter Type 8202 (ELEMENT standard or ELEMENT neutrino variant), a removable display/configuration module (only for ELEMENT standard variant), a 8203 pH or ORP probe and a Bürkert Insertion adapter Type S022.

See **data sheet Type 8203** ▶ and **data sheet Type S022** ▶ for more information.

Three or four different components must be ordered to obtain a complete device. The following information is required:

- **Article no.** of the desired pH or ORP transmitter Type 8202 in the ELEMENT standard variant without display/configuration module or i the ELEMENT neutrino variant (see chapter "11.4. Ordering chart" on page 20)
- **Article no.** of the removable display/configuration module, if necessary (see chapter "11.5. Ordering chart accessories" on page 21)
- **Article no.** of the desired 8203 pH or ORP probe (see **data sheet Type 8203** ▶)
- **Article no.** of the selected S022 Insertion adapter with G 1½" external threaded sensor connection (see **data sheet Type S022** ▶)

11.3. Bürkert product filter

Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements?
Use the Bürkert product filter and find suitable articles for your application quickly and easily.

Try out our product filter

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11.4. Ordering chart

ELEMENT standard variant

Note:

- All settings as well as the digital output have to be configured with the display/configuration module (must be ordered separately).
- The following article nos. have a transparent cover as standard and an integrated Pt1000.

Operating voltage	Probe	Output	Nut material	UL approval	Electrical connection [1.)]	Article no.
14...36 V DC	None	3 outputs: 2 x transistors NPN/PNP + 1 × 4...20 mA (2 wires)	PVC	–	5-pin M12 male connector	559630
				UL Recognized		559634
			PVDF	–		559632
				UL Recognized		559636
12...36 V DC	None	4 outputs: 2 x transistors NPN/PNP + 2 × 4...20 mA (3 wires)	PVC	–	5-pin M12 male and 5-pin M12 female connectors	559631
				UL Recognized		559635
			PVDF	–		559633
				UL Recognized		559637

1.) Must be ordered separately (see chapter "11.5. Ordering chart accessories" on page 21): M12 male/female connectors (only female for the variant with one 4...20 mA output, 1 male + 1 female for the variant with two 4...20 mA outputs of the device)

ELEMENT neutrino variant with a 4...20 mA output

Operating voltage	Probe	Output	Nut material	UL approval	Electrical connection [1.)]	Article no.
12...36 V DC	None	1 × 4...20 mA (2 wires)	PVC	–	5-pin M12 male connector	561685
				UL Recognized		562557
				–	Cable gland	561686
				UL Recognized		562558
			PVDF	–	5-pin M12 male connector	562868
				UL Recognized		568866
				–	Cable gland	563518
				UL Recognized		On request

1.) Must be ordered separately (see chapter "11.5. Ordering chart accessories" on page 21): M12 female connector

ELEMENT neutrino variant with digital communication

Note:
The communication protocol is selected automatically by the device depending on the master controlling it.

Operating voltage	Probe	Output	Nut material	UL approval	Electrical connection [1.)]	Article no.
Metallic variant						
12...36 V DC	None	Digital IO-Link and büS/ CANopen communication	PVC	–	5-pin M12 male connector	574240
				UL Recognized		574241
			PVDF	–		574242
				UL Recognized		574243
All-plastic variant						
12...36 V DC	None	Digital IO-Link communication	PVC	–	5-pin M12 male connector	574244
				UL Recognized		574245
			PVDF	–		574246
				UL Recognized		574247

1.) Must be ordered separately (see chapter "11.5. Ordering chart accessories" on page 21): M12 female connector

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11.5. Ordering chart accessories

Description	Article no.
Probe holder	
For all variants	
Probe holder with PVC union nut	560947
Probe holder with PVDF union nut	561476
Seals	
For all variants	
One Ø 46 × 2 mm EPDM seal for 120 mm probe holder (with instruction sheet)	559169
For ELEMENT neutrino variant	
EPDM seal for cover/housing sealing	561752
Spare part	
For ELEMENT standard variant	
Opaque cover with seal (1 screw cover with EPDM seal + 1 quarter turn closing cover with silicone seal)	560948
Transparent cover with seal (1 screw cover with EPDM seal + 1 quarter turn closing cover with silicone seal)	561843
Electrical connection	
For all variants	
M12 female connector with plastic threaded clamping ring, 5-pin, straight, to be wired	917116
M12 female connector with moulded cable (shielded), 5-pin, straight, cable length: 2 m	438680
For ELEMENT standard variant	
M12 male connector with plastic threaded clamping ring, 5-pin, straight, to be wired	560946
M12 male connector with moulded cable (shielded), 5-pin, straight, cable length: 2 m	559177
Configuration accessory	
For ELEMENT standard variant	
Removable display/configuration module (with instruction sheet)	559168
System Connect	
Type ME43 Gateway/Interface	
Industrial Ethernet gateway (PROFINET IO, EtherNet/IP, Modbus TCP, EtherCAT®)	307390
PROFIBUS gateway (PROFIBUS DPV1)	307393
Type ME61 Display	
FieldConnect 3.5" display (8.9 cm)	368544
EDIP Accessories	
USB-büS-Interface set	
USB-büS-Interface set 1 (Type 8923) Further information can be found in chapter "9. Product accessories" on page 18.	772426
USB-büS-Interface set 2 (Type 8923) Further information can be found in chapter "9. Product accessories" on page 18.	772551
Connectors	
büS M12 female connector [1.], 5-pin, straight, A-coded	772416
büS M12 male connector [1.], 5-pin, straight, A-coded	772417
büS M12 female connector [1.], 5-pin, angled, A-coded	772418
büS M12 male connector [1.], 5-pin, angled, A-coded	772419
büS Y-distributor [2.] (M12 female connector, 5-pin to M12 male and female connectors, 5-pin)	772420
büS Y-distributor [2.] with power interrupt (M12 female connector, 5-pin to M12 male and female connectors, 5-pin)	772421
büS adapter [2.] (M12 male connector, 5-pin, A-coded to M12 male connector, 5-pin, A-coded)	772867
büS terminating resistor [2.] 120 ohms, M12 male connector, 5-pin	772424
büS terminating resistor [2.] 120 ohms, M12 female connector, 5-pin	772425

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Description		Article no.
Connectors with cable		
Adaptor cable with M12 female connector, 8-pin to M12 male connector, 5-pin	0.5 m	773286
M12 female connector [2.], 5-pin, angled, moulded on büS cable, with open leads	0.7 m	772626
M12 female connector [2.], 5-pin, straight, moulded on büS cable, with open leads	1 m	772409
	3 m	772410
	5 m	772411
	10 m	772412
M12 male connector [2.], 5-pin straight and micro USB connector, moulded on büS cable	0.3 m	773254
M12 female connector, 8-pin, straight, moulded on büS cable, with open leads	2 m	919061
Extensions		
M12 female and male connectors [2.], 5-pin, straight, moulded on büS cable, shielded	0.1 m	772492
	0.2 m	772402
	0.5 m	772403
	1 m	772404
	3 m	772405
	5 m	772406
	10 m	772407
	20 m	772408
Power supply unit for standard rail Type 1573		
100...240 V AC / 24 V DC, 1 A (Class 2 according to NEC)		772361
100...240 V AC / 24 V DC, 2 A (Class 2 according to NEC)		772362
100...240 V AC / 24 V DC, 3.8 A (Class 2 according to NEC)		772898
100...240 V AC / 24 V DC, 10 A		772698

1.) The connector is also suitable for IO-Link communication.
2.) The accessory is not suitable for IO-Link communication.

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