

Probe holders - with pH/O.R.P. probes



- For many different types of installations and applications
- Large range of probe holder
- Versions for DN15 to DN200

Type 8200 with probe can be combined with...



Type S020

INSERTION fitting



Type 8205

Remote
pH transmitter



Type 8205

Remote
pH controller



Type 8206

Remote
O.R.P. transmitter



Type 8619

multiCELL
transmitter/controller

The pH or O.R.P. Bürkert sensor is a modular device designed for the measurement of:

- the pH in clean liquids or liquids containing solids, sulphides or proteins.
- or the oxidation-reduction potential in clean liquids or liquids containing solids, sulphides or proteins which may present low conductivity.

The complete sensor consists of a replaceable standard 120 mm pH or ORP probe, a Pt1000 temperature sensor or a liquid earth rod (in option and depending on sensor version) screwed in a probe holder Type 8200. The probe holders Type 8200 are available in a wide range of process connection for various fittings.

The probe holder Type 8200 can be installed into pipes or tanks by using

- G2" connection (using a Bürkert INSERTION fittings Type S020)
- G1" connection
- G1 1/4" connection
- Varivent connection
- Clamp connection
- Sanitary connection (according to DIN11851)
- fixing kit for immersion fitting.

General data

Materials

Fitting

Brass, Stainless steel 1.4404/316L, PVC, PP or PVDF

Probes holder

G2" connection

Stainless steel, PVC, PP, PVDF

G1" connection

PVC

G1 1/4" connection

Stainless steel (316L/DIN1.4435)

Varivent connection

Stainless steel (316L/DIN1.4435)

Sanitary connection

(according to DIN11851)

Clamp connection

Stainless steel (316Ti/1.4571), DN40, 50

Immersion fitting

Stainless steel (316L/DIN1.4404) or Stainless steel (316L/DIN1.4435)

Pt1000 or Liquid earth rod

PP

Seal

Stainless steel 1.4571 (316 Ti)

FKM (EPDM option)

Probe

Bürkert pH probe

Type PLASTRODE pH 120 mm

Type FLATRODE pH 120 mm

Type LOGOTRODE pH 120 mm

Type UNITRODE PLUS pH 120 mm

Type CERATRODE pH 120 mm

Bürkert ORP probe

Type FLATRODE O.R.P. 120 mm

Type LOGOTRODE O.R.P. 120 mm

Type UNITRODE PLUS O.R.P. 120 mm

or any combined 120 mm pH or ORP probe, without temperature sensor, with PG13.5 head, S7/S8 connector

Electrical connection

Coaxial shielded cables with connector for pH/O.R.P. and 4-wire cable for Pt1000/Liquid earth rod

Complete device data (holder + probe)	
Pipe diameter	DN15 to DN200
Measuring range	
Bürkert pH probe	0...14 pH
Bürkert ORP probe	-2000 mV...+2000 mV
Medium temperature*	
Probes holder	
G2" connection	with fitting in PVC: 0°C up to 50°C (32°F to 122°F), PP: 0°C up to 80°C (32°F to 176°F), PVDF, Metal: -20°C up to 130°C (5°F to 266°F)
G1" connection	0°C up to 50°C (32°F to 122°F)
G1 1/4" connection	0°C up to 135°C (32°F to 275°F)
Varivent connection	0°C up to 135°C (32°F to 275°F)
Sanitary connection	
(according to DIN 11851)	0°C up to 135°C (32°F to 275°F)
Clamp connection	0°C up to 135°C (32°F to 275°F)
Temperature limits may depend on the inserted probe. Refer to the relevant instruction manual or technical data on next page. If the temperature ranges given for the holder and the inserted probe are different, use the most restrictive range.	
Medium pressure*	
Probes holder	
G2" connection	with fitting in PVC, PP, PVDF: PN10 (145 PSI), metal: PN16 (232 PSI)
G1" connection	PN10 (145 PSI)
G1 1/4" connection	PN6 (87 PSI)
Varivent connection	PN6 (87 PSI)
Sanitary connection	
(according to DIN11851)	PN6 (87 PSI)
Clamp connection	PN6 (87 PSI)
Pressure limits may depend on the inserted probe. Refer to the relevant instruction manual or technical data on next page. If the pressure ranges given for the holder and the inserted probe are different, use the most restrictive range.	
For temperature compensation (option for pH measurement)	automatic (integrated Pt1000) or manual compensation reference temperature 25°C (77°F)
Electrical data	
Output	Analog signal, to be connected to remote pH transmitter or controller Type 8205, remote O.R.P transmitter Type 8206 or multiCELL transmitter/controller Type 8619
Environment	
Ambient temperature	Temperature limits may depend on the inserted probe. Refer to the relevant instruction manual or technical data for more details

Probe specific technical data

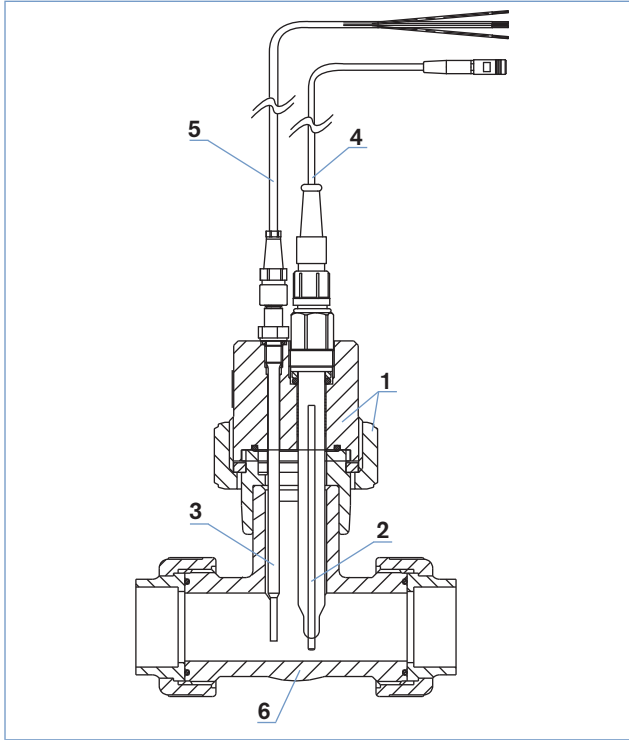
Probe	PLASTRODE pH 120	FLATRODE pH 120	LOGOTRODE pH 120	UNITRODE PLUS pH 120	CERATRODE pH 120
Fluids	- cost effective probe for drinking water, aquarium, swimming-pool...	- Contaminated (viscous, suspended solids, small volumes, paints, cosmetics, food stuffs)	- Clean (drinking water, cooling-water, aquarium, swimming-pool...)	- Contaminated (effluent rinse water, cooling water, electro-plating, paints, cosmetics...) - containing sulfides/proteins (tannery, animal breeding, effluent, food-stuffs, cosmetics, biotechnology)	- High pressure, high flow rate applications
Measuring range	0 ... 14 pH	0 ... 14 pH	0 ... 14 pH	0 ... 14 pH	0 ... 14 pH
Fluid pressure¹⁾	0 - 6 bar (0 - 87 PSI)	0 - 6 bar (0 - 87 PSI)	0 - 6 bar (0 - 87 PSI)	0 - 6 bar (0 - 87 PSI)	0 - 16 bar (0 - 232 PSI)
Fluid temperature	-10°C to +40°C (14°F to 140°F)	0°C to +80°C (32°F to 176°F)	-10°C to +60°C (14°F to 140°F)	0°C to +130°C (32°F to 266°F)	0°C to +130°C (32°F to 266°F)
Ambient temperature					
Operation	0°C to +60°C (32°F to 140°F)	0°C to +60°C (32°F to 140°F)	0°C to +60°C (32°F to 140°F)	0°C to +60°C (32°F to 140°F)	0°C to +60°C (32°F to 140°F)
Storage	4°C to +30°C (39.2°F to 86°F)	4°C to +30°C (39.2°F to 86°F)	4°C to +30°C (39.2°F to 86°F)	4°C to +30°C (39.2°F to 86°F)	4°C to +30°C (39.2°F to 86°F)
Minimal conductivity	50 µS/cm	50 µS/cm	2 µS/cm	2 µS/cm	50 µS/cm
Max. pressure at max. temperature	6 bar (87 PSI)	4 bar (58 PSI)	6 bar (87 PSI)	6 bar (87 PSI)	6 bar (87 PSI)
No. of diaphragms	1	1	1	2	3
Diaphragm	"single pore™"	Double Junction	"single pore™"	"single pore™"	HP ceramics
Reference electrolyte	polymer	Acrylamide gel KNO ₃ /3.5M KCl-AgCl	polymer	polymer	gel

Probe	FLATRODE ORP 120	LOGOTRODE ORP 120	UNITRODE PLUS ORP 120
Fluids	- Contaminated (viscous, suspended solids, small volumes, paints, cosmetics, food stuffs)	- Clean (cooling-water, waste water or slightly contaminated) - with low conductivity (pure and rainwater...>2 µS/cm)	- Clean (drinking water, aquarium, swimming-pool...) - Contaminated (effluent rinse water, cooling water, electro-plating, paints...) - with low conductivity (pure and rainwater...>2 µS/cm) - containing sulfides/proteins (tannery, animal breeding, effluent, food stuffs, cosmetics, biotechnology...)
Measuring range	-2000 ... +2000 mV	-2000 ... +2000 mV	-2000 ... +2000 mV
Fluid pressure¹⁾	0 - 6 bar (0 - 87 PSI)	0 - 6 bar (0 - 87 PSI)	0 - 6 bar (0 - 87 PSI)
Fluid temperature	0°C to +80°C (32°F to 176°F)	-10°C to +50°C (14°F to 122°F)	0°C to +130°C (32°F to 266°F)
Ambient temperature			
Operation	0°C to +60°C (32°F to 140°F)	0°C to +60°C (32°F to 140°F)	0°C to +60°C (32°F to 140°F)
Storage	4°C to +30°C (39.2°F to 86°F)	4°C to +30°C (39.2°F to 86°F)	4°C to +30°C (39.2°F to 86°F)
Minimal conductivity	50 µS/cm	2 µS/cm	2 µS/cm
Max. pressure at max. temperature	4 bar (58 PSI)	6 bar (87 PSI)	6 bar (87 PSI)
No. of diaphragms	1	1	2
Diaphragm	Double Junction	"single pore™"	"single pore™"
Reference electrolyte	Acrylamide gel KNO ₃ /3.5M KCl-AgCl	polymer	polymer

¹⁾ only 0-3 bar (0 to 43.53 PSI) if used with holder Type 8200 with Clamp or sanitary connection and with protection tube

Installation example of Type 8200

Probes holder Type 8200 for installation with a Bürkert fitting S020



A complete pH/O.R.P. sensor consists of

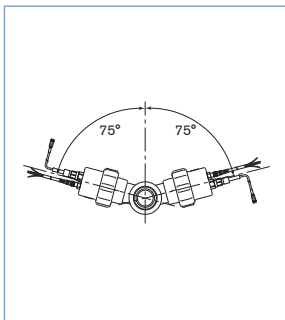
1. Complete probes holder Type 8200 with nut and seals
2. pH/O.R.P. probe
3. Pt1000/liquid earth rod (option)
4. Shielded cable for pH /O.R.P
5. Shielded cable for Pt1000/liquid earth rod (option)
6. Bürkert Fitting S020 (G2" connection)

Principle of operation

The 8200 device can be used as a pH or a ORP sensor according to the probe version mounted into the holder. The pH or redox probe is a glass membrane with variable selectivity according to the pH or the redox, which must be connected to the transmitter Type 8205, 8206 or 8619 and calibrated with buffer solution before the installation of the sensor 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).
- ▶ When a redox probe is immersed into the solution an ion exchange occurs between the oxidised and the reduced state of an electrolyte. The generated cell voltage is the oxidation-reduction potential that is directly proportional to the redox value. The ORP sensor can only be calibrated in 1-point (Offset).

Installation of the sensor



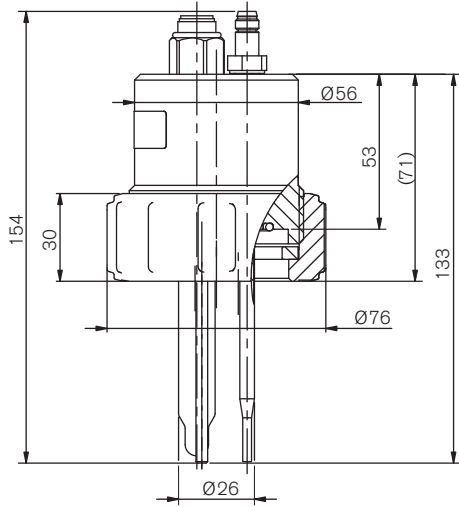
The sensor has to be installed with a maximum angle of 75 degrees against the vertical onto an horizontal pipe. Select and install the required fitting onto the pipe, according to specific requirements of the sensor and fitting material (temperature and pressure). After having connected the sensor to the Type 8205 (pH), 8206 (O.R.P) or 8619 (pH/O.R.P) transmitter and having calibrated the unit, cautiously install the complete pH/O.R.P. sensor on the fitting. In order to get reliable measurement air bubbles must be avoided.

Please ensure that the mounting location provides a continuous and complete immersion of the probe in the flow stream.

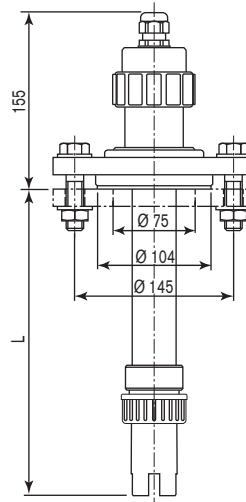
The probe must continuously be immersed into the measuring fluid in order to protect it from drying out. The transmitter must be protected from constant heat radiation and other environmental influences, such as direct exposure to sunlight.

Dimensions [mm]

Type 8200* for G 2" connection for installation on Bürkert Fitting S020 - PVC, PP, PVDF, Stainless steel



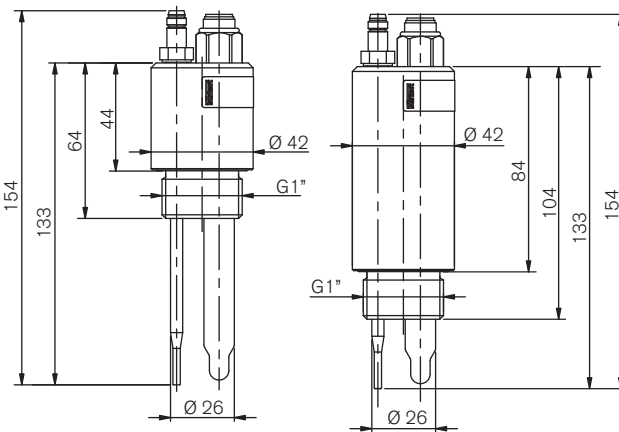
Type 8200* for connection with fixing kit



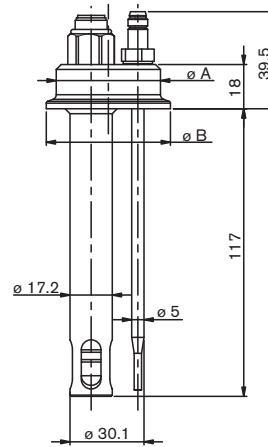
L
500
1000
1500
2000

Type 8200* for G 1" connection - PVC

short holder version long holder version



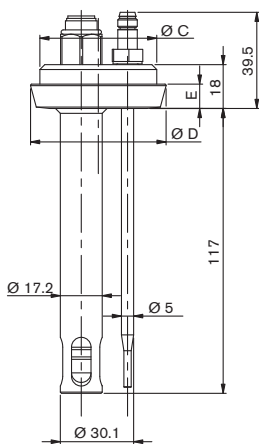
Type 8200* for Clamp connection - Stainless steel 316L



Long immersion depth

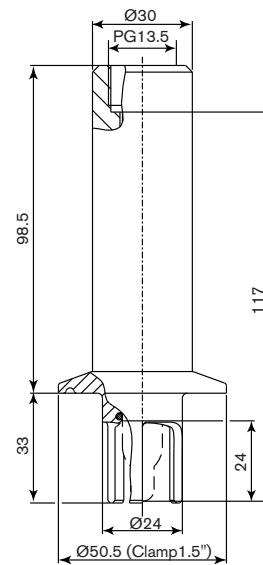
	Ø A	Ø B
1" 1/2	42.4	50.5
2"	53	64

Type 8200* for sanitary connection (according to DIN 11851) - Stainless steel 316Ti



DN	Ø C	Ø D	Ø E
40	48	56	10
50	61	68.5	11

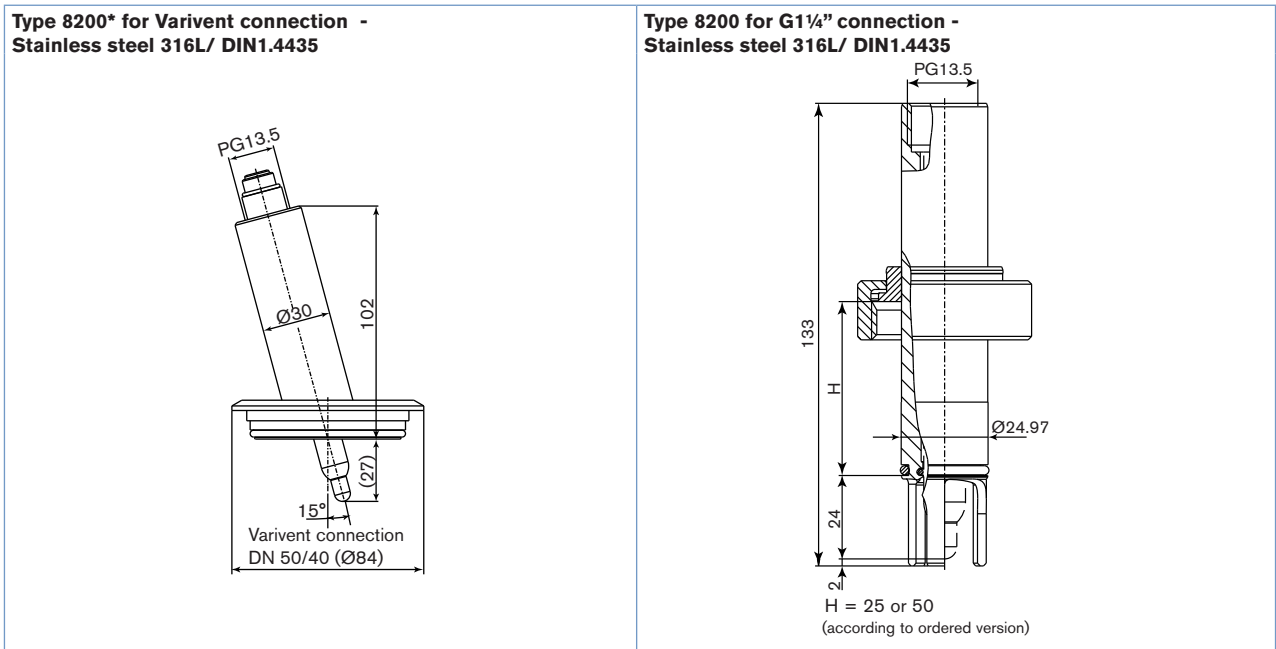
Type 8200 for Clamp connection - Stainless steel 316L / DIN1.4435



Short immersion depth

* with pH/O.R.P. probe and Pt1000/liquid earth rod (have to be ordered separately)

Dimensions [mm]



* with pH/O.R.P. probe and Pt1000/liquid earth rod (have to be ordered separately)

Combining the probes holder Type 8200 with fittings Type S020

Available fitting DN	<p>T-fitting S020 </p>	<p>DN15 DN65</p>
	<p>Welding tab S020 </p>	<p>DN50 DN200</p>
	<p>Fusion spigot S020 </p>	<p>DN65 DN100</p>
<p>pH or O.R.P. measurement using probes holder Type 8200 and S020</p>		<p>DN15 DN32 DN200</p> <p style="text-align: center;">⚠ Note A</p>
<p>Note A: Only use plastic fitting <i>in analytical version</i> with true union acc. to DIN8063 (PVC), to DIN16962 (PP) or to ISO10931 (PVDF), see data sheet Type S020</p>		

DTS 1000141421 EN Version: A Status: RL (released | freigegeben | validé) printed: 03.02.2011

Ordering chart for complete sensor Type 8200

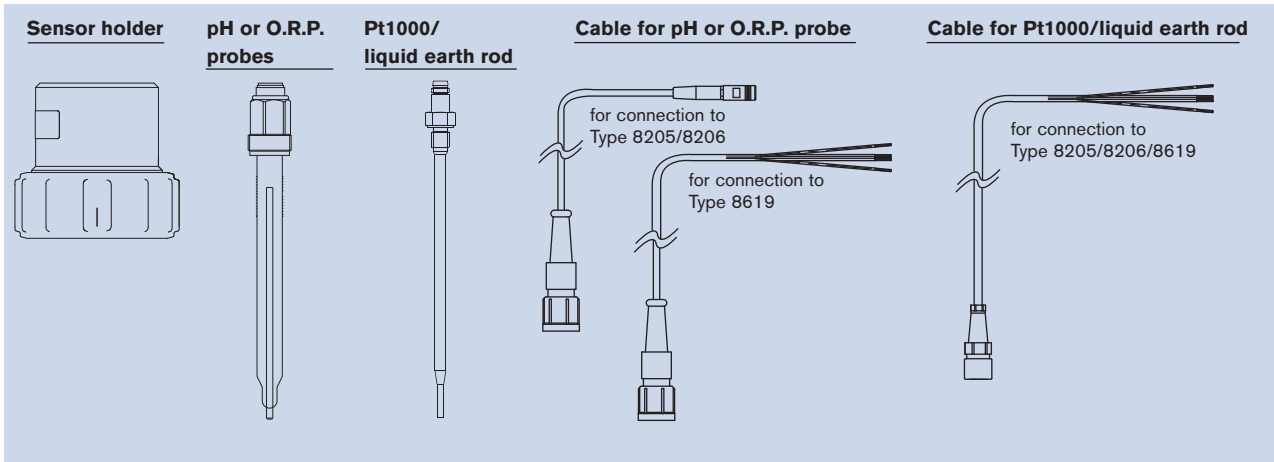
A complete pH/O.R.P. sensor consists of a probes holder Type 8200 with seals, a pH or O.R.P. probe, a Pt1000/liquid earth rod (option), a pH/O.R.P. shielded cable, a Pt1000/liquid earth rod shielded cable (option) and a fitting according to the selected holder.

The following information is necessary for the selection of a complete device:

- **Item no.** of the desired probes holder **Type 8200** (see ordering chart, p. 8)
- **Item no.** of the selected pH or O.R.P. probe (see ordering chart, p. 8)
- **Item no.** of the Pt1000/liquid earth rod if needed (see ordering chart, p.8)
- **Item no.** of the pH/O.R.P. shielded cable (see ordering chart, p.9)
- **Item no.** of the Pt1000/liquid earth rod shielded cable (see ordering chart, p.9)
- **Item no.** of the selected fitting **Type S020** (DN15 - DN200) **only** if probe holder with G 2" connection (see separate data sheet)

More info. When you click on the orange box "More info.", you will come to our website for the resp. product where you can download the data sheet.

→ You have to order five or six components.



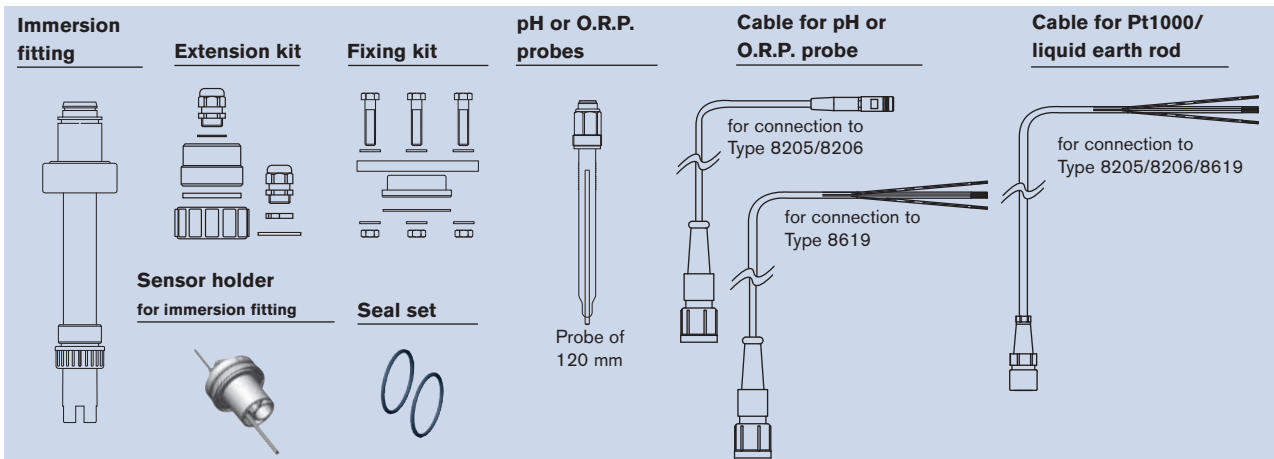
Tank installation with the immersion fitting.

A complete pH/O.R.P. sensor for tank installation is consisting of an immersion fitting, an extension kit for immersion fitting, a fixing kit (flange DN65 with stainless steel screws), a sensor holder with Pt1000, a pH or O.R.P. probe, a shielded cable for pH/O.R.P., a shielded cable for Pt1000/liquid earth rod and a seal.

The following information is necessary for the selection of a complete device:

- **Item no.** of the immersion fitting (see ordering chart, p. 8)
- **Item no.** of the extension kit for the immersion fitting (see ordering chart, p. 9)
- **Item no.** of the fixing kit (flange DN65 with stainless steel screws - see ordering chart, p. 9)
- **Item no.** of the sensor holder with Pt1000 (see ordering chart, p. 8)
- **Item no.** of the 120 mm pH or O.R.P. probe (see ordering chart, p. 8)
- **Item no.** of the seal set if EPDM desired (see ordering chart, p. 9)
- **Item no.** of the pH/O.R.P. shielded cable (see ordering chart, p.9)
- **Item no.** of the Pt1000/liquid earth rod shielded cable (see ordering chart, p.9)

→ You have to order seven or eight components.



DTS 1000141421 EN Version: A Status: RL (released | freigegeben | validé) printed: 03.02.2011

Ordering chart - probe holders Type 8200

Specifications	Version	Material	Boring for temperature sensor Pt1000	Protection tube	Item no.
For G2" connection for installation on Bürkert fitting S020	standard	PVC	Yes	Yes	429 228
		PP	Yes	Yes	429 229
		PVDF	Yes	Yes	429 230
		Stainless steel	Yes	Yes	429 231
For G1" connection	short	PVC	Yes	No	429 221
	long	PVC	Yes	No	429 223
For clamp 1½" connection - (dia. 50.5 mm)	Long immersion depth	Stainless steel 316L	Yes	Yes	429 235
For clamp 2" connection - (dia. 64 mm)	Long immersion depth	Stainless steel 316L	Yes	Yes	429 239
For sanitary connection DN40 - (DIN11851)	standard	Stainless steel 316Ti	Yes	Yes	429 247
For sanitary connection DN50 - (DIN11851)	standard	Stainless steel 316Ti	Yes	Yes	429 255
For clamp 1½" connection- (dia. 50.5 mm)	Short immersion depth	Stainless steel 316L	No	Yes	558 885
For Varivent connection DN40/50	15°	Stainless steel 316L	No	Yes	561 433
For G1¼" connection	High=25	Stainless steel 316L	No	Yes	561 431
For G1¼" connection	High=50	Stainless steel 316L	No	Yes	561 432
For immersion fitting	Pt1000/liquid earth rod in stainless steel	PVDF	Yes	Yes	418 889
For immersion fitting	Pt1000/liquid earth rod in titanium	PVDF	Yes	Yes	418 890
Immersion fitting	L=0.5 m	PP	No	Yes	419 567
Immersion fitting	L=1.0 m	PP	No	Yes	419 568
Immersion fitting	L=1.5 m	PP	No	Yes	419 569
Immersion fitting	L=2.5 m	PP	No	Yes	419 570

Ordering chart for pH or O.R.P. probe to use with probes holder Type 8200

Description	Item no.
pH probe -10... 40°C, 0... 6 bar, pH 0... 14 - PLASTRODE pH 120 mm	560 377
pH probe 0... 80°C, 0... 6 bar, pH 0... 14 - FLATRODE pH 120 mm	561 025
pH probe -10... 60°C, 0... 6 bar, pH 2... 14 - LOGOTRODE pH 120 mm	427 114
pH probe 0... 130°C, 0... 6 bar, pH 0... 14 - UNITRODE PLUS pH 120 mm	560 376
pH probe 0... 130°C, 0... 16 bar, pH 0... 14 - CERATRODE pH 120 mm	418 319
ORP probe 0... 80°C, 0... 6 bar, -2000 ... +2000 mV - FLATRODE ORP 120 mm	561 027
ORP probe -10... 50°C, 0... 6 bar, -2000 ... +2000 mV - LOGOTRODE ORP 120 mm	560 379
ORP probe 0... 130°C, 0... 6 bar, -2000 ... +2000 mV - UNITRODE PLUS ORP 120 mm	560 378
Temperature probe Pt1000/liquid earth rod - in stainless steel	427 023

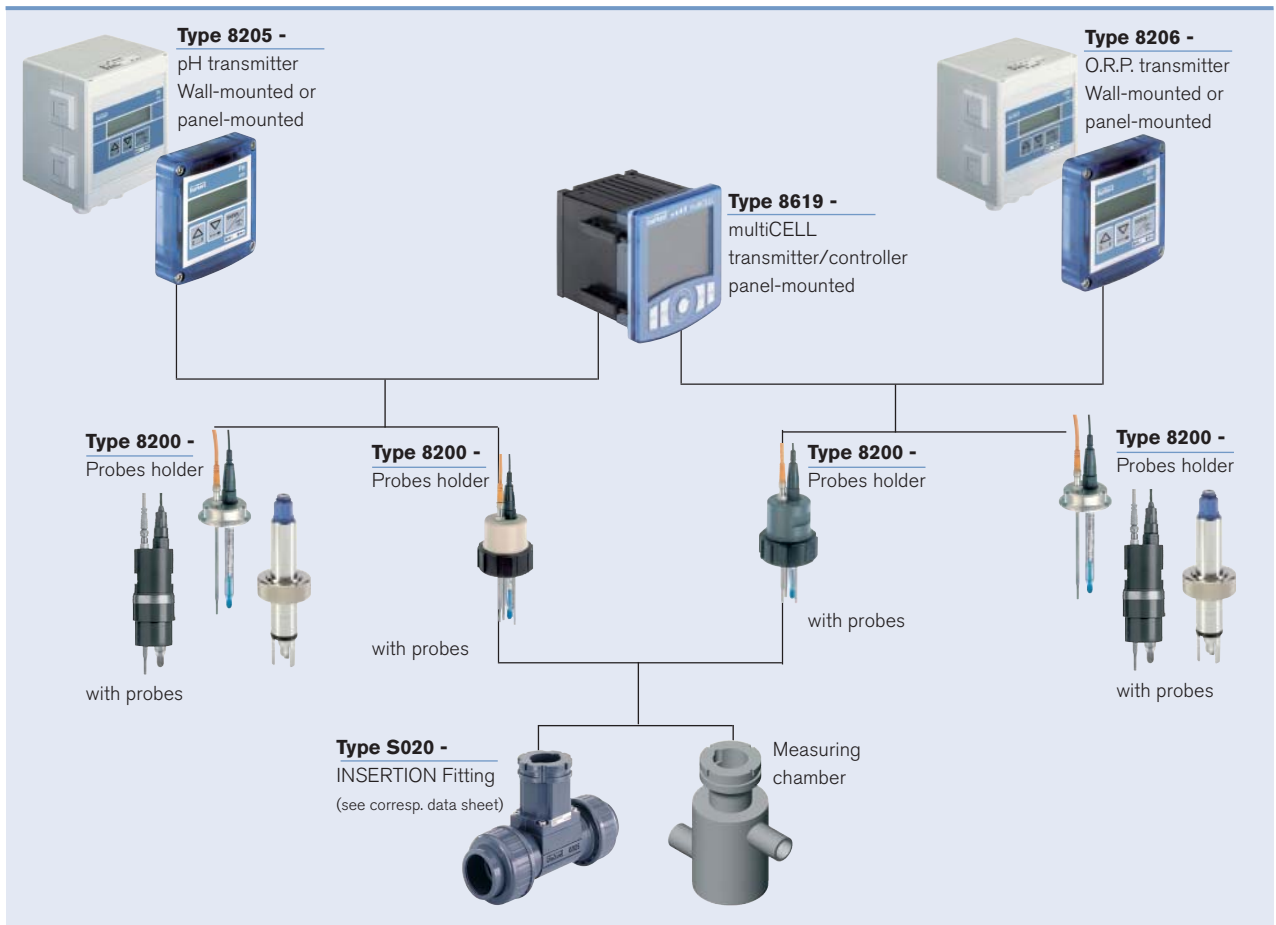
Ordering chart for cables for probes

Description	Item no.
pH/O.R.P. coaxial cable with standard probe plug - 2 m (for connection between 8205/8206 transmitter and pH/O.R.P. probe mounting into Type 8200)	427 024
pH/O.R.P. coaxial cable with standard probe plug - 5 m (for connection between 8205/8206 transmitter and pH/O.R.P. probe mounting into Type 8200)	427 025
pH/O.R.P. coaxial cable with standard probe plug - 10 m (for connection between 8205/8206 transmitter and pH/O.R.P. probe mounting into Type 8200)	432 660
pH/O.R.P. coaxial cable with standard probe plug - 3 m (for connection between 8619 transmitter and pH/O.R.P. probe mounting into Type 8200)	561 904
pH/O.R.P. coaxial cable with standard probe plug - 5 m (for connection between 8619 transmitter and pH/O.R.P. probe mounting into Type 8200)	561 905
pH/O.R.P. coaxial cable with standard probe plug - 10 m (for connection between 8619 transmitter and pH/O.R.P. probe mounting into Type 8200)	561 906
Pt1000/liquid earth rod 4-wire cable with M8 connector - 2 m (for connection between 8205/8206/8619 transmitter and Pt1000/liquid earth rod mounting into Type 8200)	427 110
Pt1000/liquid earth rod 4-wire cable with M8 connector - 3 m (for connection between 8205/8206/8619 transmitter and Pt1000/liquid earth rod mounting into Type 8200)	561 907
Pt1000/liquid earth rod 4-wire cable with M8 connector - 5 m (for connection between 8205/8206/8619 transmitter and Pt1000/liquid earth rod mounting into Type 8200)	427 113
Pt1000/liquid earth rod 4-wire cable with M8 connector - 10 m (for connection between 8205/8206/8619 transmitter and Pt1000/liquid earth rod mounting into Type 8200)	554 822
Pt1000/liquid earth rod 4-wire cable with plug-in connector - 5 m (for connection between 8205/8206/8619 transmitter and Pt1000/liquid earth rod mounting into the immersion fitting Type 8200)	562 627
Pt1000/liquid earth rod 4-wire cable with plug-in connector - 10 m (for connection between 8205/8206/8619 transmitter and Pt1000/liquid earth rod mounting into the immersion fitting Type 8200)	562 628

Ordering chart for accessories

Description	Item no.
Set with FKM seal for holders Type 8200	429 264
Set with 1 green FKM + 1 black EPDM seal	552 111
Extension kit for the immersion fitting L= X m	562 573
Fixing kit - flange DN65 with stainless steel screws	413 615
Storage solution for probe (KCl 3M), 500 ml	418 557
Cleaning solution set for probe, 3 x 500 ml	560 949
Buffer solution, 500 ml, pH = 4.01	418 540
Buffer solution, 500 ml, pH = 7	418 541
Buffer solution, 500 ml, pH = 10.01	418 543
Buffer solution, 500 ml, O.R.P. = 475 mV	418 555
Factory 2-point pH calibration certificate	550 673
Factory 1-point O.R.P. calibration certificate	550 674

Interconnection possibilities with other Bürkert devices



DTS 1000141421 EN Version: A Status: RL (released | freigegeben | validé) printed: 03.02.2011

1-800-940-0453

www.industrialdynamics.com

In case of special application conditions, please consult for advice.

Subject to alteration.
© Christian Bürkert GmbH & Co. KG

1102/1_EU-en_00895158