DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors



pH measurements with DULCOTEST sensors: Precise, reliable and application-adapted measured values in real-time. Control, regulate and monitor chemical processes with the aid of precise measured values.

Technical Details

- Selection of sensor type according to the application
- The insertion angle must be > 15° from the horizontal (except with PHEK-L: horizontal to vertical)
- Maximum flow < 0.8 m/s
- With cable lengths > 10 m, use the 4-20 mA transducer type PHV1
- Calibration using quality buffer solutions



ProMinent Webshop

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHES 112 SE

pH sensor optimised for use in potable water treatment, swimming pools/hot tubs at up to 60 °C/3 bar

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Diaphragm and reference system optimised for use in swimming pools and for potable water
- Ceramic diaphragm with special material, optimised size and optimised pore diameter
- Long service life due to reduced diffusion ('bleeding') of the electrolyte
- Long service life due to the material, which is inert to aggressive disinfectants
- Stable reference system
- Twist protection for the sensor cable connected. This means that the cable can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…60 °C
Max. pressure	3.0 bar
Min. conductivity	150 µS/cm
Electrolyte	Gel containing potassium chloride
Diaphragm	Ceramic
Sensor shaft	Glass
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	All DULCOMETER controllers
Typical applications	Swimming pools, whirlpools, potable water
Resistance to	Disinfectant
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, gel electrolyte, ceramic diaphragm, separate temperature measurement for temperature compensation needed

	Installation length	Order no.
PHES-112-SE SLg100	100 ±3 mm	1051745
PHES 112 SE	120 ±3 mm	150702
PHES-112-SE SLg225	225 ±3 mm	150092

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHES 112 SE 3D

pH sensor optimised for use in potable water treatment, swimming pools/hot tubs and at low electrolytic conductivities of up to 60 °C/3 bar

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Diaphragm and reference system optimised for use in swimming pools
- Ceramic diaphragm with special material, optimised size and optimised pore diameter
- Three ceramic diaphragms optimised for low electrolytic conductivities
- Long service life due to reduced diffusion ('bleeding') of the electrolyte
- Long service life due to the material, which is inert to aggressive disinfectants
- Stable reference system
- Twist protection for the sensor cable connected. This means that the cable can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…60 °C
Max. pressure	3.0 bar
Min. conductivity	50 µS/cm
Electrolyte	Gel containing potassium chloride
Diaphragm	3 ceramic diaphragms
Sensor shaft	Glass
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	all DULCOMETER controllers
Typical applications	Low conductivity water.
Resistance to	Disinfectant
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, gel electrolyte, ceramic diaphragm, separate temperature measurement for temperature compensation needed

	Installation length	Order no.
PHES 112 SE 3D	120 ±3 mm	1045759

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEP 112 SE

pH sensor optimised for use with clear process water and conditions of up to 80 °C/6 bar

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Diaphragm and reference system optimised for exacting process requirements
- Ceramic diaphragm with special material, optimised size and optimised pore diameter
- Long service life due to reduced diffusion ('bleeding') of the electrolyte
- Long service life due to the material, which is inert to aggressive disinfectants
- Stable reference system for high pressure/temperature requirements
- Twist protection for the sensor cable connected. This means that the cable can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…80 °C
Max. pressure	6.0 bar
Min. conductivity	150 µS/cm
Electrolyte	Gel containing potassium chloride
Diaphragm	Ceramic
Sensor shaft	Glass
Shaft diameter	15 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	All DULCOMETER controllers
Typical applications	Drinking water, clear process water
Resistance to	Disinfectant
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, gel electrolyte, ceramic diaphragm, separate temperature measurement for temperature compensation needed

	Installation length	Order no.
PHEP 112 SE	120 ±3 mm	150041
PHEP 112 SE SLg100	100 ±3 mm	150951

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEP-H 314 SE

pH sensor optimised for use with clear process water, specifically for alkaline process solutions at high temperatures of up to 100 °C

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Diaphragm and reference system optimised for exacting process requirements
- Optimised pH-sensitive glass for high alkali content and high temperatures
- Long service life / excellent precision: Measurement at a high pH value of up to 14
- Long service life: at high temperatures of up to 100 °C
- Stable reference system for high pressure/temperature requirements
- Twist protection for the sensor cable connected. This means that the cables can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	3…14
Temperature	0…100 °C
Max. pressure	6.0 bar (25 °C), 3.0 bar (100 °C)
Min. conductivity	150 µS/cm
Electrolyte	Gel containing potassium chloride with KCl reservoir
Diaphragm	Ceramic
Sensor shaft	Glass
Shaft diameter	15 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	All DULCOMETER controllers
Typical applications	Monitoring or control of chemical processes with neutral to highly-alkaline media and temperatures up to 100 °C.
Resistance to	Disinfectant, high alkalinity
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, highly alkaline tempered glass, ceramic diaphragm, gel electrolyte, separate temperature measurement for temperature compensation needed

	Order no.
PHEP-H 314 SE	1024882

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEI 112 SE

Reliable online measurement of pH values in industrial wastewater/water - with DULCOTEST sensors

Your Benefits

- Solid high-grade plastic housing with integrated process connection for direct installation in the process with ½" and ¾" NPT thread
- Large dirt-repellent Teflon diaphragm protects against unwanted blocking of the reference
- Double junction reference system for stability with chemically polluted water
- Large electrolyte reservoir for long service lives

pH-range	1…12
Temperature	0…80 °C
Max. pressure	6.0 bar
Min. conductivity	50 µS/cm
Electrolyte	Gel containing potassium chloride with a large KCl reservoir of gel
Diaphragm	1 x PTFE ring diaphragm and 1x ceramic diaphragm
Sensor shaft	Plastic
Shaft diameter	17 ±0.2 mm (below the ½" NPT thread), 22 ±0.2 mm (below the ¾" thread)
Installation length	20 ±0.2 mm (from the lower end of the ½" thread), 60 ±0.2 mm (from the lower end of the ¾" thread)
Fitting position	Vertical up to +25°
Thread	½" and ¾" NPT thread
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	all DULCOMETER controllers
Typical applications	Municipal and industrial waste water, cooling water, process water: contaminated with solids and chemicals.
Resistance to	Disinfectant, solids content (turbid water), water-soluble chemicals
Measuring principle, technology	direct potentiometric measurement, 2 probes, double junction, gel electrolyte, large Teflon diaphragm, separate temperature measurement for temperature compensation needed

	Order no.
PHEI 112 SE	1076610

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHER 112 SE

pH sensor optimised for use in contaminated water containing solids and for low conductivity of > 50 µS/cm at up to 80 °C/6 bar

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- The large dirt-repellent Teflon® diaphragm prevents the reference system from becoming blocked up
- Long service life when solids are present
- High-viscosity electrolyte combined with a salt reservoir prevents the electrolyte from 'bleeding'
- Long service life without drifts when there is clear water with low conductivity
- Twist protection for the sensor cable connected. This means that the cables can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…80 °C
Max. pressure	6.0 bar
Min. conductivity	50 µS/cm
Electrolyte	Gel containing potassium chloride with KCl reservoir
Diaphragm	PTFE ring diaphragm
Sensor shaft	Glass
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	All DULCOMETER controllers
Typical applications	Municipal and industrial waste water, cooling water, process water: containing moderate amounts of solids without high levels of chemical contamination.
Resistance to	Disinfectant, solids content (turbid types of water)
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, Teflon ring diaphragm, polymer electrolyte, separate temperature measurement for temperature compensation needed

	Order no.
PHER 112 SE	1001586

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

PH sensor PHER-DJ 112 SE

pH sensor with double diaphragm (double junction) optimised for use in contaminated water containing solids and for low conductivity of > 10 µS/cm at up to 80 °C/6 bar.

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- The large dirt-repellent Teflon® diaphragm prevents the reference system from becoming blocked up
- Long service life when solids are present
- High-viscosity electrolyte combined with a salt reservoir prevents the electrolyte from 'bleeding'
- Long service life without drifts when there is clear water with low conductivity
- Twist protection for the sensor cable connected. This means that the cables can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…80 °C
Max. pressure	6.0 bar
Min. conductivity	10 µS/cm
Electrolyte	Gel containing potassium chloride with KCl reservoir
Diaphragm	2x PTFE ring diaphragm
Sensor shaft	Glass
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	All DULCOMETER controllers
Typical applications	Municipal and industrial waste water, cooling water, process water: contaminated with solids and chemicals, reverse osmosis, acid and alkaline gas scrubbers (without fluoride, HF), water with low conductivity
Resistance to	Disinfectant, solids content (turbid types of water)
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, Teflon ring diaphragm, polymer electrolyte, separate temperature measurement for temperature compensation needed

	Installation length	Order no.
PHER-DJ 112 SE	120 ±3 mm	1108991

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEX 112 SE

pH sensor optimised for use with contaminated water with a high solids content at 6 bar/100 °C or 16 bar/25 °C

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Diaphragm and reference system optimised for extremely high solids content
- The solid electrolyte makes the diaphragm redundant and prevents the reference system from becoming blocked up
- Long service life when sludge is present due to lack of a diaphragm
- Long service life as the solid electrolyte prevents the electrolyte from 'bleeding'
- Stable reference system
- Twist protection for the sensor cable connected. This means that the cable can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…100 °C
Max. pressure	16.0 bar (25 °C), 6.0 bar (100 °C)
Min. conductivity	500 µS/cm
Electrolyte	Polymer containing potassium chloride (solid)
Diaphragm	Circular gap diaphragm (solid electrolyte)
Sensor shaft	Glass
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	all DULCOMETER controllers
Typical applications	Waste process water: high solids content, no chemical contamination. Suspensions, sludge, emulsions. Not suitable in clear waters, not suitable for media with oxidation agents.
Resistance to	Solids content (turbid types of water), sludge, emulsions
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, no diaphragm, polymer electrolyte, separate temperature measurement for temperature compensation needed

	Installation length	Order no.
PHEX 112 SE	120 ±3 mm	305096
PHEX 112 SE SLg225	225 ±3 mm	150061

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHED 112 SE

pH sensor optimised for use with chemically contaminated but clear water at up to 80 °C/8 bar

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Diaphragm and reference system optimised for use in chemically contaminated but clear water
- Double junction: two coupled ceramic diaphragms protect the reference system
- Long service life when chemical pollutants are present
- Special construction permits a maximum pressure of 8 bar
- Twist protection for the sensor cable connected. This means that the cables can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…80 °C
Max. pressure	8.0 bar
Min. conductivity	150 µS/cm
Electrolyte	Gel containing potassium chloride
Diaphragm	Double junction
Sensor shaft	Glass
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	all DULCOMETER controllers
Typical applications	Clear process, cooling and waste water polluted by chemicals
Resistance to	Disinfectants, water-soluble chemicals
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, double junction, gel electrolyte, separate temperature measurement for temperature compensation needed

	Order no.
PHED 112 SE	741036

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEF 012 SE

pH sensor optimised for use with acidic water containing fluoride and abrasive water containing solids at up to 50 °C/7 bar

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Optimised pH glass for use in the presence of glass-corroding hydrofluoric acid (HF). HF is formed primarily in the presence of fluoride (F^-) at a pH of < 4. Glass corrosion is promoted by a constant concentration of fluoride, a falling pH value and a rising temperature. The glass composition and structure of the PHEF type reduce the release of SiF_4. Extended service life in the presence of fluoride (F^-) at a pH of < 7
- The flat shape of the glass diaphragm and large ring diaphragm facilitate use in contaminated water, which also contains abrasive solids

pH-range	0…12
Temperature	0…50 °C
Max. pressure	7.0 bar
Min. conductivity	150 µS/cm
Electrolyte	Gel containing potassium chloride
Diaphragm	HDPE ring diaphragm, flat (Double Junction)
Sensor shaft	Epoxy
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	all DULCOMETER controllers
Typical applications	A significantly longer service life can be achieved compared with standard pH sensors in media containing hydrofluoric acid, e.g. wastewater from the semiconductor industry or electroplating applications and air scrubbers.
Resistance to	Disinfectant, solids content (turbid types of water), hydrofluoric acid (HF), abrasive particles
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, PE ring diaphragm, HF-compatible flat glass diaphragm, gel electrolyte, separate temperature measurement for temperature compensation needed

	Order no.
PHEF 012 SE	1010511

Technical changes reserved. Printed in Germany, 12-6-2025.

DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH sensor PHEF-DJ 112 SE

pH sensor with double diaphragm (double junction) optimised for acid water containing fluoride at up to 60 °C/8 bar

Your Benefits

- Electrochemical combination probe: pH and reference electrode integrated
- Precise and reliable pH measurement in water containing fluoride with low pH enables efficient processes and excellent process reliability
- A special pH glass and dirt-repellent double junction can extend the service life of the sensor and thereby minimise downtimes as well as maintenance requirements
- The combination of hydrofluoric acid-resistant glass and PTFE double junction makes the sensor suited to gas scrubbing applications where fluoride and dirt may be encountered at the same time
- Twist protection for the sensor cable connection ensures that the cable can remain connected during installation and removal of the sensor, reducing moisture on the plug-in contacts

pH-range	1…12
Temperature	0…60 °C
Max. pressure	6.0 bar
Min. conductivity	10 µS/cm
Electrolyte	Gel containing potassium chloride with KCl reservoir
Diaphragm	2 x PTFE ring diaphragm, double junction
Sensor shaft	Glass
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	all DULCOMETER controllers
Typical applications	A significantly longer service life can be achieved compared with standard pH sensors in media containing hydrofluoric acid, e.g. wastewater from the semiconductor industry or electroplating applications and air scrubbers. Low conductivity water.
Resistance to	Disinfectant, dirt
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, gel electrolyte, PTFE diaphragm, separate temperature measurement needed for temperature compensation

	Order no.
PHEF-DJ 112 SE	1114185

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEN 112 SE

Refillable pH sensor optimised for use with chemically contaminated water at up to 80 °C/without excess pressure

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Renewable liquid electrolyte by continuous replenishment from an electrolyte bottle installed above the electrode
- 1 ceramic diaphragm made of special material and with an optimised size / with optimised pore diameter
- Twist protection for the sensor cable connected. This means that the cables can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Long service life in the presence of chemicals dissolved in the water, which could contaminate the reference system
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…80 °C
Max. pressure	Operation at atmospheric pressure
Min. conductivity	150 µS/cm
Electrolyte	KCL electrolyte, refillable
Diaphragm	Ceramic
Sensor shaft	Glass
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	all DULCOMETER controllers
Typical applications	Process water, cooling water, waste water: chemically contaminated, clear
Resistance to	Disinfectant, only for clear types of water
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, liquid electrolyte, 1 ceramic diaphragm, separate temperature measurement for temperature compensation needed

	Order no.
PHEN 112 SE	305090

Delivered without PE storage tank and hose

	Order no.
PE storage tank with connectors and tube	305058

For the PE storage tank, we recommend fitting approx. 0.5 - 1 m above the level of the measurement medium.

	Capacity	Order no.
KCl solution, 3 molar	250 ml	791440
KCl solution, 3 molar	1,000 ml	791441

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEN 112 SE 3D

Refillable pH sensor optimised for use in contaminated water containing solids and water with a low conductivity of > 50 µS/cm at up to 80 °C/without overpressure

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Renewable liquid electrolyte through continuous replenishment from an electrolyte bottle installed above the electrode
- 3 ceramic diaphragms made of special material, with optimised size and optimised pore diameter
- Twist protection for the sensor cable connected. This means that the cable can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Long service life in water with low conductivity of > 50 µS/cm and where solids are present
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…80 °C
Max. pressure	Operation at atmospheric pressure
Min. conductivity	50 µS/cm
Electrolyte	KCL electrolyte, refillable
Diaphragm	3 ceramic diaphragms
Sensor shaft	Glass
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	All DULCOMETER controllers
Typical applications	Wastewater, water with low conductivity, e.g. from reverse osmosis.
Resistance to	Disinfectant, solids content (turbid types of water)
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, liquid electrolyte, 1 ceramic diaphragm, separate temperature measurement for temperature compensation needed

	Order no.
PHEN 112 SE 3D	150078

Technical changes reserved. Printed in Germany, 12-6-2025.

DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEK 112 S

pH sensor for use with manual measuring instruments, with plastic shaft, optimised for use in potable water treatment, swimming pools/hot tubs at up to 80 °C/3 bar

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Diaphragm and reference system optimised for use in swimming pools and for potable water
- Ceramic diaphragm with special material, optimised size and optimised pore diameter
- With plastic shaft to prevent glass breakage
- Mechanical protection of the glass diaphragm
- Long service life due to reduced diffusion ('bleeding') of the electrolyte
- Long service life due to the material, which is inert to aggressive disinfectants
- Stable reference system
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…60 °C
Max. pressure	3.0 bar
Min. conductivity	150 µS/cm
Electrolyte	Gel containing potassium chloride
Diaphragm	Ceramic
Sensor shaft	Polycarbonate
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	none
Electrical Connection	SN6 plug-in head
Enclosure rating	IP 65
Process integration	Immersion by tripod or manually
Controllers	all DULCOMETER controllers
Typical applications	Hand-held measurement in swimming pools, potable water.
Resistance to	Disinfectant
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, gel electrolyte, ceramic diaphragm, separate temperature measurement for temperature compensation needed

	Order no.
PHEK 112 S	305051

Technical changes reserved. Printed in Germany, 12-6-2025.

DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEK 112 SE

pH sensor with plastic shaft, optimised for use in potable water treatment, swimming pools/hot tubs at up to 60 °C/3 bar

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Diaphragm and reference system optimised for use in swimming pools and for potable water
- Ceramic diaphragm with special material, optimised size and optimised pore diameter
- With plastic shaft to prevent glass breakage
- Mechanical protection of the glass diaphragm
- Long service life due to reduced diffusion ('bleeding') of the electrolyte
- Long service life due to the material, which is inert to aggressive disinfectants
- Stable reference system
- Twist protection for the sensor cable connected. This means that the cable can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…60 °C
Max. pressure	3.0 bar
Min. conductivity	150 µS/cm
Electrolyte	Gel containing potassium chloride
Diaphragm	Ceramic
Sensor shaft	Polycarbonate
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	all DULCOMETER controllers
Typical applications	Swimming pool, potable water, aquariums
Resistance to	Disinfectant
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, gel electrolyte, ceramic diaphragm, separate temperature measurement for temperature compensation needed

	Order no.
PHEK 112 SE	1028457

Technical changes reserved. Printed in Germany, 12-6-2025.

DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEK-L 112 SE

pH sensor with plastic shaft, optimised for use in potable water treatment, swimming pools/hot tubs, horizontal installation possible, at up to 60 °C/3 bar

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- With plastic shaft to prevent glass breakage
- Horizontal (level) installation possible (90° angle) (usually limited to 0 - 75° angle)
- Diaphragm and reference system optimised for use in swimming pools and for potable water
- Ceramic diaphragm with special material and optimised size / optimised pore diameter
- Long service life due to reduced diffusion ('bleeding') of the electrolyte
- Twist protection for the sensor cable connected. This means that the cable can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Long service life due to the material, which is inert to aggressive disinfectants
- Stable reference system

pH-range	1…12
Temperature	0…60 °C
Max. pressure	3.0 bar
Min. conductivity	150 µS/cm
Electrolyte	Gel containing potassium chloride
Diaphragm	Ceramic
Sensor shaft	Polycarbonate
Shaft diameter	12 mm
Installation length	120 ±3 mm
Fitting position	Vertical to horizontal
Thread	PG 13.5
Electrical Connection	SN6 plug-in head, rotatable with a ProMinent cable
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	all DULCOMETER controllers
Typical applications	Swimming pools, potable water, aquaria. Horizontal installation possible.
Resistance to	Disinfectant
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, gel electrolyte, ceramic diaphragm, separate temperature measurement for temperature compensation needed

	Order no.
PHEK-L 112 SE	1034918

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DULCOTEST pH sensors

Reliable online measurement of pH values – with DULCOTEST sensors

pH Sensor PHEPT 112 VE

pH sensor with integral temperature measurement, optimised for use with clear process water and changing process temperature of up to 80 °C/6 bar

Your Benefits

- Electrochemical combination electrode: pH and reference electrode integrated
- Diaphragm and reference system optimised for exacting process requirements
- Ceramic diaphragm with special material, optimised size and optimised pore diameter
- Long service life due to reduced diffusion ("bleeding") of the electrolyte
- Long service life due to the material, which is inert to aggressive chemicals
- Stable reference system for high pressure/temperature requirements
- Integrated Pt 100 temperature sensor for temperature compensation of the pH measurement in higher-order measuring instruments eliminates the need for an additional sensor housing and external temperature sensor
- VARIO Pin plug-in head with IP 67 specification
- Twist protection for the sensor cable connected. This means that the cable can remain connected during installation and dismantling of the sensor, avoiding troublesome moisture on the connector contacts
- Lead-free glass for advanced and environmentally-friendly production, use and disposal (RoHS-compliant)

pH-range	1…12
Temperature	0…80 °C
Max. pressure	6.0 bar
Min. conductivity	150 µS/cm
Electrolyte	Gel containing potassium chloride
Diaphragm	Ceramic
Sensor shaft	Glass
Shaft diameter	15 mm
Installation length	120 ±3 mm
Fitting position	Vertical up to +25°
Thread	PG 13.5
Electrical Connection	VARIO Pin plug-in head
Enclosure rating	IP 67
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Controllers	All DULCOMETER controllers (with the exception of DCCa pH)
Typical applications	Drinking water, clear process water, process water with temperature change
Resistance to	Disinfectant
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, gel electrolyte, ceramic diaphragm, integrated temperature measurement for temperature compensation

	Order no.
PHEPT 112 VE	1004571

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