

# DULCOTEST sensors for hydrogen peroxide

## Reliable online measurement of hydrogen peroxide with DULCOTEST sensors.



Hydrogen peroxide measurement with DULCOTEST sensors: Efficient and reliable determination of the concentration of hydrogen peroxide - can be used in a wide range of applications.

### Technical Details

- pH-range of 1-11 (variable), suitable for use at a constant pH value of up to pH 12 (types PER 1, PEROX H2.10 P)
- PER1 and PEROX H-3E sensor types can also be used with contaminated process media
- Maximum operating temperature of up to 50 °C (type PER 1)



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### Overview of sensors for hydrogen peroxide

Features	Type PER 1-mA	PEROX H2.10 P	PEROX H3 E
<b>Resistance to chemicals and films (dirt, limescale, surfactants)</b>	yes, exceptions: H <sub>2</sub> S, sulfides	limited, but resistant to H <sub>2</sub> S	Improved compared to PEROX H2.10 P
<b>Max. temperature of shaft/diaphragm material</b>	up to 50 °C PVC-C/ silicone	up to 40 °C stainless steel/PVDF	up to 45 °C PVC-U/PET
<b>Transducer</b>	integrated in the shaft	must be attached to the sensor	integrated in the shaft
<b>Temperature correction</b>	integrated in the shaft simple to use	separate Pt 100 rapid temperature correction	separate Pt 100 rapid temperature correction
<b>Measuring range</b>	Standard type: 2,000 ppm Special types: up to 10 %	Switch on transducer 20, 200, 2,000 ppm	VARIOus sensors 10, 50, 200, 500 ppm
<b>Response time as t<sub>90</sub></b>	8 min.	< 45 s	< 45 s
<b>Long-term operation without H<sub>2</sub>O<sub>2</sub></b>	not possible	possible	possible
<b>Cross-sensitivity Free chlorine and peracetic acid</b>	yes	< 5 %	< 5 %
<b>Interference by sulfites</b>	no	< 30 %	< 30 %

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## Hydrogen peroxide sensor PER 1-mA

Sensor for the measurement of hydrogen peroxide even in chemically contaminated and polluted water. Available with measuring ranges for medium to very high concentrations

### Your Benefits

- Hydrogen peroxide as the measured variable, with measuring ranges from 20 ppm to 100,000 ppm (10%. With > 2%, as special versions) available
- Diaphragm-covered sensor minimises faults caused by changing flow or substances in the water
- Resistance to films of dirt thanks to use of a pore-free diaphragm
- Can be used in wide pH range of 1...11
- Operating temperature up to 50 °C

Measured variable	Hydrogen peroxide
Calibration	Photometric with manual DT3B photometer
pH-range	1.0...11.0
Temperature	0...50 °C
Admissible temperature fluctuation	< 0.3 °K/min
Response time sensor $t_{90}$	approx. 480 sec
Max. pressure	1.0 bar
Flow	DGMa, DLG III: 30...80 l/h BAMa: 5...60 l/h (depending on design)
Supply voltage	16...24 V DC (2-wire)
Output signal	4...20 mA temperature-compensated, uncalibrated, not electrically isolated
Selectivity	Hydrogen peroxide selective towards sulphite
Cross sensitivity	Ozone, chlorine dioxide, peracetic acid, chlorine, bromine
Process integration	Bypass: open outlet or return of the sample water into the process line
Sensor fitting	BAMa, DGMa, DLG III
Controllers	D1C
Typical applications	Cooling and waste water treatment, bleaching processes, H <sub>2</sub> O <sub>2</sub> product qualification, water with higher H <sub>2</sub> O <sub>2</sub> concentrations of up to 100,000 ppm.
Resistance to	Salts, acids, alkalis, surfactants, dirt films, not against hydrogen sulphide (H <sub>2</sub> S)
Measuring principle, technology	Amperometric, 2 electrodes, diaphragm-covered

	Measuring range	Order no.
PER 1-mA-2000 ppm	20.0...2,000.0 mg/l	1022510

**Important note:** Measuring ranges up to 100,000 ppm on request

# DULCOTEST sensors for hydrogen peroxide

**Reliable online measurement of hydrogen peroxide with DULCOTEST sensors.**

## Hydrogen peroxide sensor PEROX H2.10 P-mA

Sensor for measuring hydrogen peroxide without cross-sensitivity to chlorine. It can also be used for fast control processes even with the temporary absence of hydrogen peroxide in clear water in a wide pH range of 2.5...10.

### Your Benefits

- Measured variable hydrogen peroxide without cross-sensitivity to chlorine
- Diaphragm-covered sensor minimises faults caused by changing flow
- Fast processes can be controlled through the sensor's rapid response time in conjunction with fast external temperature measurement for temperature correction
- Can be used in wide pH range of 2.5...10
- Reliable measurement even after periods of absence of hydrogen peroxide thanks to pulsed, self-regenerating measuring electrode

Measured variable	Hydrogen peroxide
Calibration	Photometric with manual DT3B photometer
Measuring range	1...20, 10...200, 100...2000 mg/l, switchable
pH-range	2.5...10.0
Temperature	0...40 °C
Admissible temperature fluctuation	< 1 °K/min (with external T measurement)
Response time sensor t <sub>90</sub>	approx. 20 sec
Min. conductivity	For measuring range 20 mg/l: 5 µS/cm For measuring range 200 mg/l: 200 µS/cm Up to 1,000 mg/l: 500 µS/cm Up to 2,000 mg/l: 1 mS/cm
Max. pressure	2.0 bar
Flow	DGMa, DLG III: 30...60 l/h BAMa: 5...100 l/h (depending on design)
Supply voltage	16...24 V DC (three-wire system)
Output signal	4...20 mA not temperature-compensated, uncalibrated, not electrically isolated
Selectivity	Hydrogen peroxide selective towards free chlorine
Process integration	Bypass: open outlet or return of the sample water into the process line
Sensor fitting	BAMa, DGMa, DLG III
Controllers	DAC, D1C (without temperature correction)
Typical applications	Exhaust air scrubbers, treatment of clear and chemically uncontaminated water, controls with the necessary very short response times
Resistance to	Salts, acids, lyes, surfactants.
Measuring principle, technology	amperometric, 2 pulsing electrodes, diaphragm-covered

### Order no.

H <sub>2</sub> O <sub>2</sub> sensor PEROX-H2.10 P	792976
PEROX transducer V1 for D1Ca	1034100
PEROX Transducer V2	1047979

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## Hydrogen peroxide sensor PEROX H 3E-mA

Sensor for the measurement of hydrogen peroxide without cross-sensitivity to free chlorine peracetic acid. Suitable for use with fast control processes, even in moderately contaminated water, and for reliable measurement from 0.2 ppm H<sub>2</sub>O<sub>2</sub>

### Your Benefits

- Measured variable hydrogen peroxide without cross-sensitivity to free chlorine and peracetic acid
- Sensitive measuring range from 0.2 mg/l
- Fast processes can be controlled through the sensor's rapid response time in conjunction with fast external temperature measurement for temperature correction
- Reliable measurement even after periods of absence of hydrogen peroxide thanks to pulsed, self-regenerating measuring electrode
- Low measuring range provided by a system containing 3 electrodes
- Membrane-covered sensor minimises faults caused by changing flow
- An integrated transmitter and the signal cable's plug-in connector make for an easy installation

Measured variable	Hydrogen peroxide
Calibration	Photometric with manual DT3B photometer
pH-range	2.5...8.0
Temperature	0...45 °C
Admissible temperature fluctuation	< 1 °K/min (with external T measurement)
Response time sensor t <sub>90</sub>	< 45 s
Electrolytic conductivity	0.05...50 mS/cm
Flow	DGMa, DLG III: 30...60 l/h BAMa: 5...100 l/h (depending on design)
Supply voltage	16...24 (two-wire technology) V DC
Output signal	4...20 mA not temperature-compensated, uncalibrated, not electrically isolated
Electrical Connection	via a 4-pin plug on the sensor via an open-ended signal cable on the unit
Selectivity	Hydrogen peroxide selective to free chlorine, peracetic acid, sulphite
Process integration	Bypass: open outlet or return of the sample water into the process line
Sensor fitting	BAMa, DGMa, DLG III
Controllers	DAC, D1Cb (without temperature correction)
Typical applications	Swimming pool, plant irrigation water, chlorine elimination. Can also be used for moderately contaminated water, controls with the necessary short response times and low H <sub>2</sub> O <sub>2</sub> concentrations
Resistance to	Salts, acids, alkalis, surfactants, dirt films
Measuring principle, technology	amperometric, 3 pulsing electrodes, diaphragm-covered

	Measuring range	Order no.
PEROX H-3E-10ppm	0.20...10.0 mg/l	1058563
PEROX H-3E-50ppm	1.0...50.0 mg/l	1105779
PEROX H-3E-200ppm	5.0...200 mg/l	1105778
PEROX H-3E-500ppm	10...500 mg/l	1117570