

Specifications

Underwater Oxygen Sensors

1 OXYGEN SENSOR SPECIFICATIONS

Only valid in water for 2-point calibrated sensors at 20°C, 1013mbar absolute pressure, using default measuring parameters/modes.

Specifications are valid for underwater oxygen cap probes (item no.: **OXCAP-SUB**, **OXCAPG-HS-SUB**, **OXCAPG-UHS-SUB**), underwater oxygen sensor spots (item no.: **OXSP5-SUB**) and underwater oxygen robust probes (item no.: **OXROB10-SUB**, **OXROBSC-SUB**).

1.1 Dissolved Oxygen: $\mu\text{mol/L}$, mg/L = ppm

Oxygen dissolved in water can be expressed in % air saturation and in concentration units like $\mu\text{mol/L}$, mg/L (ppm), and mL/L . For details on calculation of dissolved oxygen units from partial pressure readings (interpolation formula based on temperature, atmospheric pressure and salinity), please see the respective sensor/oxygen meter manuals.

Specifications		
Measuring Range	$\mu\text{mol/L}$	mg/L (ppm)
Optimum	0-720 $\mu\text{mol/L}$	0-23 mg/L
Maximum (not specified)	0-1.4 mmol/L	0-44 mg/L
Accuracy *		
at 13.75 $\mu\text{mol/L}$ / 0.44 mg/L	$\pm 0.3 \mu\text{mol/L}$	$\pm 0.01 \text{mg/L}$
at 275 $\mu\text{mol/L}$ / 8.8 mg/L	$\pm 3 \mu\text{mol/L}$	$\pm 0.1 \text{mg/L}$
Resolution		
at 13.75 $\mu\text{mol/L}$ / 0.44 mg/L	$\pm 0.15 \mu\text{mol/L}$	$\pm 0.005 \text{mg/L}$
at 275 $\mu\text{mol/L}$ / 8.8 mg/L	$\pm 0.8 \mu\text{mol/L}$	$\pm 0.025 \text{mg/L}$
Detection Limit	0.3 $\mu\text{mol/L}$	0.01 mg/L

* The absolute accuracy of the full range sensors depends on the calibration mode. For 1-point calibrated sensors these values increase due to a decreasing accuracy. More details on request.

1.2 General Characteristics

Response Time (t90) in Water ‡	OXCAP-/OXSP5-/OXROB10/OXROBSC-SUB < 3s	OXCAPG-HS-SUB < 1s	OXCAPG-UHS-SUB < 0.5s
Drift	OXCAP-/OXSP5-/OXROB10/OXROBSC-SUB < 1% in 3 months	OXCAPG-HS-/OXCAPG-UHS-SUB < 2% in 3 months	
Minimum Lifetime	OXCAP-/OXSP5-/OXROB10/OXROBSC-SUB 2,000,000 data points	OXCAPG-HS-/OXCAPG-UHS-SUB <1,000,000 data points	
Influence of Pressure	ca. 1%/1000m		
Temperature Range	-2°C (28.4°F) to 40°C (104°F)		
Calibration Modes	1-point and 2-point calibration in water		
Application Areas	Laboratory, industry, research. NOT for medical or any safety-critical application. NOT for application in humans. NOT for application in food intended for human consumption.		

‡ Typical response times for 90% signal. Measured for the transition from air into a stirred solution of 3% Na₂SO₃

2 APPLICABILITY AND CROSS-SENSITIVITY

	Applicability	Cross-Sensitivity	NO Cross-Sensitivity
Water/Aqueous solutions	X		
Organic solvents*		X	
Chlorine gas (Cl ₂), NO ₂ gas, bleach		X	
pH 1-14			X
CO ₂			X
CH ₄			X
H ₂ S			X
Any ionic species			X

* Includes liquid solvents and solvent vapors

3 CLEANING & STORAGE

Cleaning	3% H ₂ O ₂ , Soap solution, short-term Ethanol
Storage	> 3 years in darkness at room temperature

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