pyroscience
sensor technology

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: µmol/L, mg/L = ppm

Oxygen dissolved in water can be expressed in % air saturation and in concentration units like µmol/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 Optimum Maximum (not specified)	**µmol/L** 0-720 µmol/L 0-1.4 mmol/L	**mg/L (ppm)** 0-23 mg/L 0-44 mg/L
Accuracy * at 13.75 µmol/L / 0.44 mg/L at 275 µmol/L / 8.8 mg/L	 ±0.3 µmol/L ±3 µmol/L	 ±0.01 mg/L ±0.1 mg/L
Resolution at 13.75 µmol/L / 0.44 mg/L at 275 µmol/L / 8.8 mg/L	 ±0.15 µmol/L ±0.8 µmol/L	 ±0.005 mg/L ±0.025 mg/L
Detection Limit	0.3 µmol/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 ‡	**OXSP5-SUB** < 10s	**OXCAP-/ 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% Na_2SO_3

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_2S			X
Any ionic species			X

* Includes liquid solvents and solvent vapors

3 CLEANING & STORAGE

Cleaning	3% H_2O_2, Soap solution, short-term Ethanol
Storage	> 3 years in darkness at room temperature

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