

Specifications

CONTACTLESS OPTICAL TEMPERATURE SENSORS

1 SENSOR SPECIFICATIONS

Specifications are valid for temperature sensor spots (item no.: **TPSP5**), self-adhesive temperature sensor spots (item no.: **TPSP5-ADH**), temperature sensor foil (item no.: **TPFOIL**), for the temperature sensor of respiration vials (item no.: **TOVIAL20**, **PHTOVIAL20-PKx**, **PHTVIAL20-PKx**), and for the temperature sensor of flow-through cells (item no.: **TPFTC2**, **TOFTC2**, **TPFLOW**).

1.1 Specifications in gas & water/aqueous samples

Specifications	
Measuring Range	0 to 50°C (273-323 K; 32-122 °F)
Accuracy	± 0.5°C (1-point calibrated)
Resolution	0.04°C
Drift	<0.2°C / week at 25°C

* For 1-point calibrated sensor.

1.2 General Characteristics

Response time ‡ (t90) in water	<1 s
Minimum Lifetime	10,000,000 data points
Calibration Modes	1-point calibration
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 change.

1.3 Specific Characteristics of TPFLOW

Materials of FLOW cell (apart from sensing layer)	Polycarbonat and Polyamid (item no. TPFLOW)
Tubing Connectors (Luer-Lock)	ID tubing 3.2 or 4.8 mm (item no. TPFLOW)
Recommended flow rate for liquids	1-500 mL/min (item no. TPFLOW)
Pressure Range	0 to 3 bar (differential pressure) (item no. TPFLOW)

2 APPLICABILITY AND CROSS-SENSITIVITY

	Applicability	Cross-Sensitivity
Water/Aqueous solutions	X	
Gas Phase (typ. air components)	X	
Ethanol ¹	short-term only	
Methanol ¹	short-term only	
Isopropanol ¹	short-term only	
Other organic solvents ²		X
Bleach		X
pH 1-14 ³	X	

¹ Only for temperature compensation of oxygen measurements (in combination with contactless oxygen sensor).

² Includes liquid solvents and solvent vapors

³ pH 2-9 for **TPSP5-ADH**

3 CLEANING, STERILIZATION, STORAGE

Cleaning	3% H ₂ O ₂ , soap solution, short-term ethanol
Sterilization	<p>TPSP5: Sterilization with short-term 70% ethanol and 70% isopropanol; sterilization with ethylene oxide (EtO, EO) (details on request); autoclavable few cycles at 121°C for 15 min with special precautions (details on request).</p> <p>TOVIAL20: Sterilization with short-term 70% Ethanol and 70% Isopropanol; sterilization with ethylene oxide (EtO, EO) (details on request); autoclavable few cycles at 121°C for 15 min only without lid & septum and with special precautions (details on request).</p> <p>PHTOVIAL20-PKx, PHTVIAL20-PKx: Sterilization with 2% glutaraldehyde solution; sterilization with ethylene oxide (EtO, EO) (details on request); autoclavable few cycles at 121°C for 15 min only without lid & septum and with special precautions (details on request).</p> <p>TPFTC2, TOFTC2: Sterilization with short-term 70% Ethanol and 70% Isopropanol; not autoclavable.</p> <p>TPFLOW: delivered pre-sterilized with 25kGy beta-radiation, Sterilization with short-term 70% Ethanol and 70% Isopropanol; autoclavable few cycles at 121°C for 15 min without the optical fiber and with special precautions (details on request).</p>
Storage	>3 years in darkness at room temperature

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