pyroscience
sensor technology

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 sensor 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**)

1.4 Specific Characteristics of Sensor Vial

Material of Septum (Sensor Vials)	Butyl/PTFE

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_2O_2, soap solution, short-term ethanol
Sterilization	**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); UV treatment: wavelength of 254 nm for 30 minutes, ca. 60 cm from the light source (max. 600 mW*s/cm2) **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). **PHTOVIAL20-PKx, PHTVIAL20-PKx**: Sterilization with 2% glutaraldehyde solution; sterilization with ethylene oxide (EtO, EO) (details on request); autoclavable **once** at 121°C for 15 min only without lid & septum and with special precautions (details on request). **TPFTC2, TOFTC2**: Sterilization with short-term 70% ethanol and 70% isopropanol; **not** autoclavable. **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).
Storage	>3 years in darkness at room temperature

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