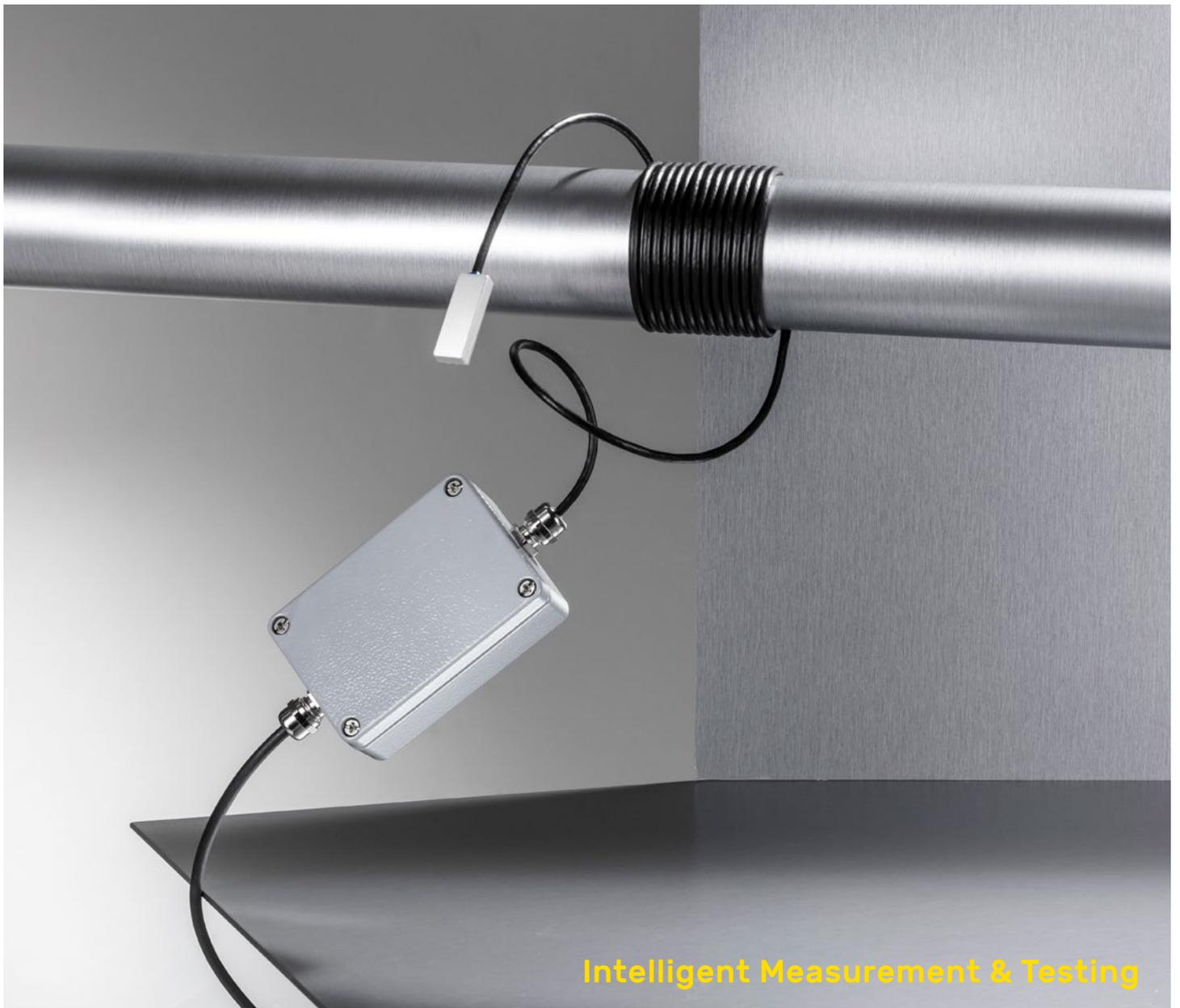




DATA SHEET

Sensors for Measuring PV Module Temperature



Precise Tracking of the Module Temperature on PV Systems

Measure the temperature of your PV module with utmost precision and minimal drift to assess your system’s productivity. Our module temperature sensors are equipped with a sturdy aluminium housing and robust, weatherproof cabling. Thanks to the use of premium components, the sensors achieve high accuracy and are ideal for use in industrial environments and on-site usage (e.g. PV module temperature). The sensor element’s compact design also makes it perfect for measuring temperature of bifacial modules.

Benefits & Features

- Sensors comply with all IEC 61724-1 requirements, including for bifacial modules
- Very small sensor element; covers less than 2% in full size M6 or half-cut M12 cells
- Adhesive’s thermal conductivity > 500/m²/K
- Pt1000 precision sensor element as per IEC 60751 Class A¹
- Sensor element, including extremely adhesive tape for long-term usage
- Highly sturdy aluminium housing¹
- High-precision measuring electronics including calibration certificate for all active models
- Developed and manufactured in Germany¹

Sensor Types

Type	Output at -40 to +90 °C	Notes
Tm-RS485-MB	RS485 / MODBUS	–
Tm-I-4090	4 to 20 mA	–
Tm-V-4090	0 to 10 V	–
Tm-Pt1000	Pt1000	–
Tm-Pt1000-box	Pt1000	Including junction box with spring terminals
Tm-Pt100	Pt100	–

Technical Data

All Types (except Tm-Pt100)

Sensor element	Pt1000 class A as per EN 60751
Sensor housing	Self-adhesive aluminum block, 35 mm x 12 mm x 6 mm
Sensor cable (Pt1000)	PUR sheath, shielded (LiYC11Y, 2 x 0.25 mm ²), length: 3 m
Case material	Powder coated aluminium
Operating temperature	Sensor element: -40 to +90 °C, case: -40 to +80 °C
Degree of protection	IP67
Customs tariff number	90 25 19 00

→ For further technical information please see also the instruction manual.

Tm-Pt100

Sensor element	Pt100 class B as per EN 60751
Sensor housing	Self-adhesive silicone rubber Patch, 45 mm x 13 mm x 5 mm
Sensor cable (Pt100)	PTFE sheath, 4 x AWG 30, length: 2 m
Operating temperature	Sensor element: -40 to +90 °C
Customs tariff number	90 25 19 00

→ For further technical information please see also the instruction manual.

Active Temperature Sensors

	Tm-I-4090 Tm-V-4090	Tm-RS485-MB
		
Measurement uncertainty	1 K at -40 to +80 °C 0.7 K at max. 50 °C case temperature	1 K at -40 to +90 °C
Voltage supply	24 V _{DC} (12 to 28 V _{DC})	24 V _{DC} (10 to 28 V _{DC})
Galvanic insulation	–	1000 V
Connection cable	PUR sheath, shielded (LiYC11Y, 4 x 0.14 mm ²)	
Cable length	3 m	3 m
Case size	64 mm x 58 mm x 34 mm	98 mm x 64 mm x 34 mm
Weight	350 g	500 g

Passive Temperature Sensors

	Tm-Pt1000	Tm-Pt1000-box	Tm-Pt100
			
Measurement uncertainty	0.35 K at -40 to +90 °C		0.75 K at -40 to +90 °C
Electrical connection	Wires of sensor cable	Spring terminals	Wires of sensor cable
Case size	–	64 mm x 58 mm x 34 mm	–
Weight	70 g	240 g	35 g

Accessories

Junction box set	JB-01	Junction box with cable glands and spring terminals. Only active types
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→ See also data sheet of accessories for further technical information.

Scope of Delivery

All types	Instruction manual
	Calibration certificate (not for Tm-Pt1000, Tm-Pt1000-box, Tm-Pt100)

1 except Tm-Pt100

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