

Indoor RTD Probe (Transmitter) TS(O)R

- ◆ Low-cost variant for budget applications
- ◆ Ptx sensitive element
- ◆ 2-wire 4...20 mA output available
- ◆ Easy & Fast connection plug
- ◆ Ready to use - no adjustments
- ◆ DIN-rail accessory available

The indoor temperature probes TSR, TSR1, TSOR, and TSOR1 perform fast temperature measurement by means of a Ptx sensitive element mounted in a copper sheath or inside the housing. The TSOR and TSOR1 variants, in addition, convert the measured temperature into standard 4...20 mA 2-wire signal. All variants are enclosed in a freely mountable small plastic box that may also be mounted on a DIN rail when an optional mounting clamp is installed. TSR and TSOR are also equipped with a 3-pin plug-in terminal that allow fast and easy electrical decoupling. Five different temperature measurement ranges from -50 °C and up to 100 °C as well as customer specified ranges are available. Thanks to their simplicity, small size, and affordable price, TSR, TSR1, TSOR, and TSOR1 are applicable for various indoor applications, room temperature control, control board temperature measurement, etc.



Technical specifications

Input

Incorporated RTD	Pt100 or Pt1000 (w=1.385)
Measurement range	-50...50 °C; 0...50 °C; -20...60 °C; 0...100 °C ⁽¹⁾ ; -50...100 °C ⁽¹⁾
Range on request	minimum span 50 °C
Output	(transmitter only)
Signal type	4...20 mA, 2-wire
Linearity proportional to	measured value
Output at sensor burnout	32 mA
Output at sensor shorted	0.2 mA
Accuracy	(transmitter only)
Electronic measurement error	0.2% from span or 0.2 °C ⁽²⁾
RTD measurement error	according to accuracy class
Non-linearity	within measurement error
Self-heating error	0.02%/mA at 24 V
Temperature drift	0.02% from span for 1 °C

Power supply

Loop voltage	10...32 VDC
Admissible variations	1 Vp-p at 50 Hz
Maximum line load	750 Ω at 24V/20mA
Operating conditions	
Ambient temperature	-30...65 °C
Ambient humidity	5...85 %RH
Directives	CE (2004/108/EC), LVD (2006/95/EC)
Design and materials	TS(O)R TS(O)R1
Sensor sheath	copper none (hidden sensor)
Housing material	plastic plastic
Wiring	plug-in terminal hidden terminal
Mounting	free ⁽³⁾ free ⁽³⁾
Dimensions	40x75x26 mm (w/o terminal) 40x75x26 mm
Weight	max. 45 g max. 30 g
Protection class	IP44 (excl. terminal) IP20

⁽¹⁾ Not available for TSR and TSR1.

⁽²⁾ Which is greater

⁽³⁾ DIN-rail mounting accessory is also available (see 'Accessories')

Ordering code TS* - G2.G3.G11

Code	Feature or option	Code values
*	Variant	R - RTD probe, R1 - low-cost RTD probe, OR - temperature transmitter, OR1 - low-cost temperature transmitter
G2	Sensor ⁽⁴⁾	RD - Pt100, RG - Pt1000
G3	Temperature range	T10 - -20...60 °C, T17 - -50...50 °C, T18 - 0...50 °C, T19 - 0...100 °C ⁽¹⁾ , T12 - -50...100 °C ⁽¹⁾ , TZ - other (specify, ΔT ≥ 50 °C)
G11	Accuracy class	A - 'A', B - 'B', C - '2xB'

⁽⁴⁾ Do not code for TSOR and TSOR1.