

## 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

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

<sup>(1)</sup> Not available for TSOR and TSOR1.

<sup>(2)</sup> Which is greater

<sup>(3)</sup> DIN-rail mounting accessory is also available (see 'Accessories')

#### Power supply

<b>Loop voltage</b>	10...32 VDC
<b>Admissible variations</b>	1 Vp-p at 50 Hz
<b>Maximum line load</b>	750 Ω at 24V/20mA

#### Operating conditions

<b>Ambient temperature</b>	-30...65 °C
<b>Ambient humidity</b>	5...85 %RH
<b>Directives</b>	CE (2004/108/EC), LVD (2006/95/EC)

#### Design and materials

	TS(O)R	TS(O)R1
<b>Sensor sheath</b>	copper	none (hidden sensor)
<b>Housing material</b>	plastic	plastic
<b>Wiring</b>	plug-in terminal	hidden terminal
<b>Mounting</b>	free <sup>(3)</sup>	free <sup>(3)</sup>
<b>Dimensions</b>	40x75x26 mm (w/o terminal)	40x75x26 mm
<b>Weight</b>	max. 45 g	max. 30 g
<b>Protection class</b>	IP44 (excl. terminal)	IP20

### Ordering code TS\* - G2.G3.G11

Code	Feature or option	Code values
*	Variant	<b>R</b> - RTD probe, <b>R1</b> - low-cost RTD probe, <b>OR</b> - temperature transmitter, <b>OR1</b> - low-cost temperature transmitter
G2	Sensor <sup>(4)</sup>	<b>RD</b> - Pt100, <b>RG</b> - Pt1000
G3	Temperature range	<b>T25</b> - -20...60 °C, <b>T17</b> - -50...50 °C, <b>T18</b> - 0...50 °C, <b>T19</b> - 0...100 °C <sup>(1)</sup> , <b>T12</b> - -50...100 °C <sup>(1)</sup> , <b>TZ</b> - other (specify, ΔT ≥ 50 °C)
G11	Accuracy class	<b>A</b> - 'A', <b>B</b> - 'B', <b>C</b> - '2xB'

<sup>(4)</sup> Do not code for TSOR and TSOR1.