

# TR 093.0 AND TR 093.0/A – TEMPERATURE SENSORS WITH A CABLE AND METAL CASE

K05.05en

## DESCRIPTION AND APPLICATION

These temperature sensors are designed to measure the temperature of gaseous and liquid substances. The maximum temperature range of use of the sensors is -50 to 200 °C. The 3 mm diameter of the case ensures fast response to changes in temperature. The used type of lead-in cable is PVC or with silicone insulation and shielding. The sensors are designed for universal use, the method of use must be chosen with regard to the temperature and chemical resistance of the case and lead-in cable.

## ACCESSORIES

- screw with collet or cutting rings – if different lengths of stem immersion of the temperature sensor are set
- connectors

## DECLARATION, CERTIFICATES, CALIBRATION

Manufacturer provides **EU Declaration of Conformity**.

**Calibration** – The final metrological inspection – comparison with standards or working instruments – is carried out for all the products. Continuity of the standards and working measuring instruments is ensured within the meaning of the Section 5 of Act no.505/1990 on metrology. The manufacturer offers a possibility to supply the sensors calibrated in SENSIT s.r.o.'s laboratory (according to requirements of the EN ISO/IEC 17025 standard) or in an Accredited laboratory.

## SPECIFICATIONS

Sensor type	TR 093.0 and TR 093.0/A
Measuring range	-50 to 200 °C (can be limited by the sensing element and cable, determine in documentation)
Type of sensing element	Pt 100, Pt 500, Pt 1000, Ni 1000, NTC, TC K, TC J, TC T
Ingress protection	IP 67 in accordance with EN 60529, as amended
Case material	stainless steel DIN 1.4301
Diameter of case	3 mm
Length of case L	100-300 mm
Lead-in cable	shielded PVC 2 x 0.25 mm <sup>2</sup> or 4 x 0.25 mm <sup>2</sup> shielded silicone 2 x 0.22 mm <sup>2</sup> or 4 x 0.22 mm <sup>2</sup>
Wire resistance	0.16 Ω for 1 m of cable for 2-wire connection – silicone 0.14 Ω na 1 m of cable for 2-wire connection – PVC
Time response	$\tau_{0.5} < 4$ s (in flowing water at 0.4 m.s <sup>-1</sup> )

Note: Certain technical specifications of thermocouple sensors (lead wires, IP rating, etc.) may differ with different types.

## MODIFICATION AND CUSTOMIZATION

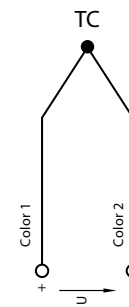
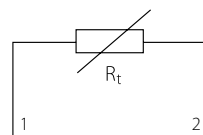
- variable stem design in the area – L length
- accuracy class A (with the exception of sensors Ni 10000/5000, Ni 10000/6180, T1 = Ni 2226, thermistor NTC 20 kΩ)
- possibility of three or four-wire connection
- increased temperature resistance up to 250°C in the model with a Teflon cable



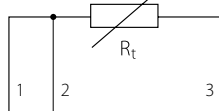
TEMPERATURE SENSORS WITH A CABLE

## WIRING DIAGRAM

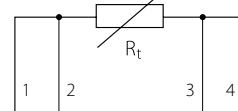
Two-wire



Three-wire

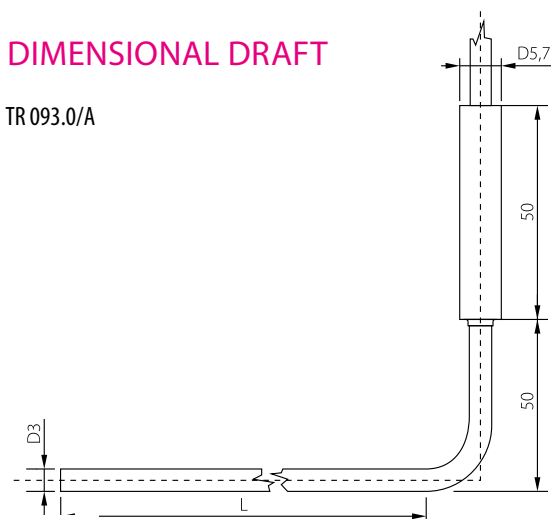


Four-wire



## DIMENSIONAL DRAFT

TR 093.0/A



TR 093.0

