

RESISTANCE TEMPERATURE SENSORS T 13



DESCRIPTION AND APPLICATION

The sensors were designed as a part of meters that measure a heat quantity supplied by vapour according to TPM 3723-03 and TPM 3724-03. They are produced with the Pt 100, Pt 500 and Pt 1000 temperature sensing elements. The structure of the sleeve allows for direct installation of sensors type DS into pipes without the need for a thermowell, which ensures a fast response to changes in temperature. The standard operating temperature range is 0 to 150 °C.

The sensors are designed to operate in a chemically non-aggressive environment and they are supplied with a calibration certificate, issued by the metrological centre of our manufacturing facility.

DECLARATION, CERTIFICATES

The sensors are compliant with the requirements of the EN 60 751 standard and TPM 3342-94, which is declared by official certification. The approval mark of the sensor type is TCM 321/01-3608.

Declaration of Conformity – in accordance with EN ISO/IEC 17050-1 standard as amended for sensors with resistance output.



Quick response time to changes in temperature.



SPECIFICATIONS

BASIC DATA

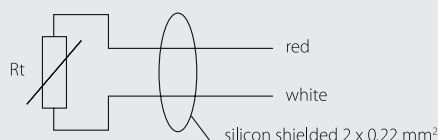
Type of sensing element	Pt 100, Pt 500
Maximum measuring DC current	3 mA (Pt 100); 1,5 mA (Pt 500)
Recommended measuring DC current	1 mA (Pt 100); 0,5 mA (Pt 500); 0,3 mA (Pt 1000)
Measuring range	0 to 150 °C
Accuracy class of individual sensors	B according to IEC 751
Sensor connection	according to the wiring diagram

OTHER PARAMETERS

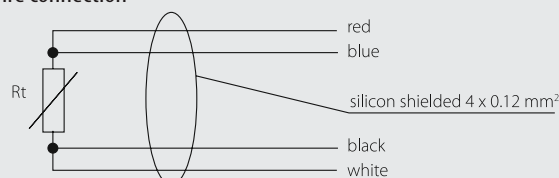
Case length	27,5 mm
Case diameter	3,6 mm
Material of the case	stainless steel 1.4301
Lead-in cable	2-wire silicone shielded 2 x 0,22 mm ² 4-wire silicone shielded 4 x 0,12 mm ²
Cable lengths	Pt 100 (2-wire) – max. 3 m; Pt 500 (2-wire) – max. 15 m
Wire resistance	2-wire cable 0,16 Ω for 1 m cable
Temperature resistivity of the cable	-25 to 180 °C
Ingress protection	IP 67 according to EN 60 529
Insulation resistance	> 100 MΩ at 100 V DC, 15 to 35 °C, humidity < 80 %
Response time	T _{0,5} < 3 s (in streaming water at 0,4 m.s ⁻¹)
Maximum overpressure of the thermowell	2,5 MPa

WIRING DIAGRAM

2-wire connection

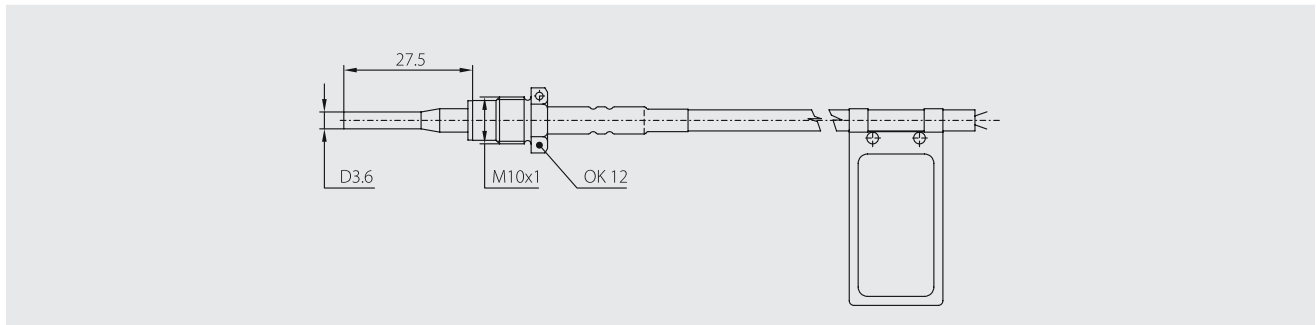


4-wire connection



RESISTANCE TEMPERATURE SENSORS T 13

■ DIMENSIONAL DRAFT



■ SENSOR INSTALLATION AND SERVICING

The sensors are intended directly for a directly installation in tubing. As a rule, the sensors are installed in tubing in the skew position in the angle of 45° counter to the streaming of measured medium. Before connection of individual sensors to a heat-meter the sensors have to be inserted in corresponded openings for sensors-installation. After that the nut which is the part of a sensor has to be screwed and tightened to the endstop.

To prevent an unauthorized manipulation, the sensors are provided by sealing openings. The installation sealing wire has to be pushed through the nut opening and then through the assembly opening in the body of a flowmeter (or in welded-on piece). Then it has to be sealed not to allow to turn the nut! Finally the individual sensors are connected to the heat quantity meter according to the wiring diagram.

Caution: The lead-in cable resistance in the two-wire connection depends on the cable length. That is why the conductors must not be changed (shortened). The superfluous cable has to be rolled up and fastened.