

PAIRED TEMPERATURE SENSORS TP 13, TP 13A



DESCRIPTION AND APPLICATION

These paired temperature sensors are used as component parts of the electrical heat-quantity meters. They are produced with the Pt 100, Pt 500 and Pt 1000 temperature sensing elements. The structure of the case allows for direct installation of sensors into pipes without the need for a thermowell, thus ensuring a quick response to changes in temperature. The sensors are compatible with heat-quantity meters manufactured by SIEMENS, LANDIS+GYR, KAMSTRUP, ITRON, CODEA, COMAC CAL, SENSUS METERING and others. The standard operating temperature range is 0 to 180 °C or 0 to 150 °C.

The sensors are designed to operate in a chemically non-aggressive environment.

ACCESSORIES

- The sealing from TEMASIL material
- The VEXVE valve

DECLARATION, CERTIFICATES

The sensors are compliant with the requirements of the EN 60 751 and EN 1434 standards and have an EC-Type Examination Certificate No. TCM 321/07-4530.

EC Declaration of Conformity – the sensors are manufactured in conformity with the Directive of the European Parliament and of the Council 2004/22/EC on Measuring Instruments (so-called MID).



Quick response to changes in temperature.



VEXVE valve

SPECIFICATIONS

BASIC DATA

Type of sensing element	Pt 100, Pt 500, Pt 1000
Maximum measuring DC current	3 mA (Pt 100); 1.5 mA (Pt 500); 1 mA (Pt 1000)
Recommended measuring DC current	1 mA (Pt 100); 0.5 mA (Pt 500); 0.3 mA (Pt 1000)
Measuring range	0 to 180 °C or 0 to 150 °C
$\Delta\Theta_{min}$	2 °C or 3 °C
$\Delta\Theta_{max}$	180 °C or 150 °C
Accuracy class of individual sensors	B according to IEC 751
Sensor connection	according to the wiring diagram

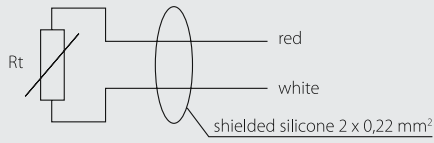
OTHER PARAMETERS

Length of the case	27,5 mm
Diameter of the case	3.6 mm (TP 13); 5 mm (TP 13A)
Material of the case	stainless steel 1.4301
Material of the fastening nut	brass
Lead-in cable	2-wire shielded silicone 2 x 0.22 mm ² 4-wire shielded silicone 4 x 0.12 mm ²
Lengths of the cable	According to EN 1434-2, art. 3.3.4, chart 2
Wire resistance	0.16 Ω per 1 m of the 2-wire cable
Temperature stability 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	TP 13: $\tau_{0.5} < 3$ s (in streaming water at 0.4 m.s ⁻¹) TP 13A: $\tau_{0.5} < 8$ s (in streaming water at 0.4 m.s ⁻¹)

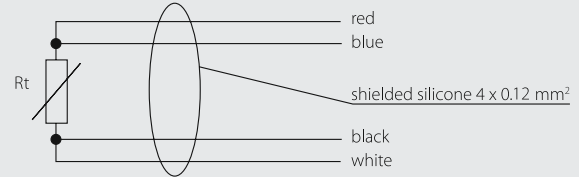
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WIRING DIAGRAM

2-wire connection

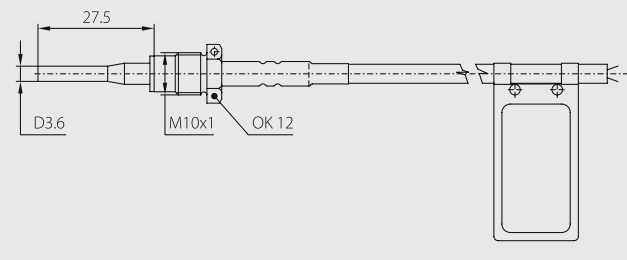


4-wire connection

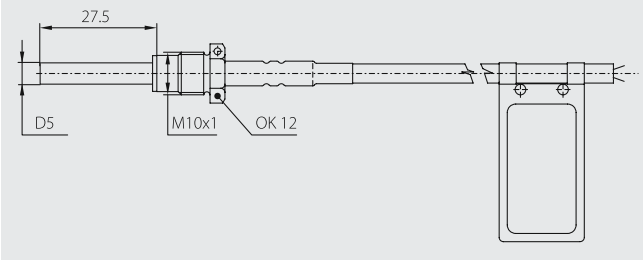


DIMENSIONAL DRAFT

TP 13



TP 13A



SENSOR INSTALLATION AND SERVICING

These sensors are intended for a direct installation in a tubing. As a rule, the sensors are fitted in a skew position at an angle of 45° counter to the streaming of the media the temperature of which is to be measured. Before connecting the temperature sensor to the heat consumption meter insert the sensor in the opening designed for the sensor installation, screw in the fixing nut, which is the sensor's component part, and tighten it to secure the sensor reliably.

The sensor marked with the red identification label, the red plug and the red insulation is intended for wiring in supply circuit. The second sensor with blue identification label, plug and insulation is intended for assembly in reverse branch.

To prevent unauthorised manipulation, the sensors are provided with sealing openings. The installation seal wire has to be pushed through the fixing nut opening first, then through the installation opening in the flow meter (or the weld-on piece) body, after which it has to be sealed in such a way that the fixing nut cannot be turned! Finally the individual sensors are connected to the heat consumption meter according to wiring diagram.

Caution: Before installation check the identity of the paired sensors by means of the code specified on the sensor's name plate. The numbers within one pair must be identical. Also, check the attestation date. Consult the producer in case the serial numbers in the name plate are not identical.

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.