

RESISTANCE SENSORS FOR HEAT METERS

TS 204

Sensors are designed for temperature measurement of liquid and gaseous media, **especially in central heating systems.**

Sensor is made on the basis of **Pt100, Pt500 or Pt1000** resistor, and connecting cable in silicone rubber insulation with the copper wires of dia. 4x0,25 mm² (4-wire measurement).

Sensors are delivered in pairs that meet requirements of metrological regulations on heat meters for water .

Selection accuracy for pairs is limited to 66% of permissible errors acc. to the National Weights and Measures Office „GUM” instructions as well as the MID 2014/32/EU Annex VI MI-004 (Heat Meters) of the European Parliament.

For easy mounting, sensors are marked with red label (supply) and blue label (return), the same is with the wire ends what enables its quick assembly to the Heat meter calculator. Cable lengths allow to use sensors with housing within all the range of a pipeline diameter.

Housing of sensor **TS 204** is made either of **stainless steel** or **brass**.

Sensors and brass housings are manufactured in two versions of galvanic coat:

Nickel plated coat – silver colour

Chromated coat – golden colour

Sensors **TS 204** series have one length of measuring insert for housings of various length.



TS 204

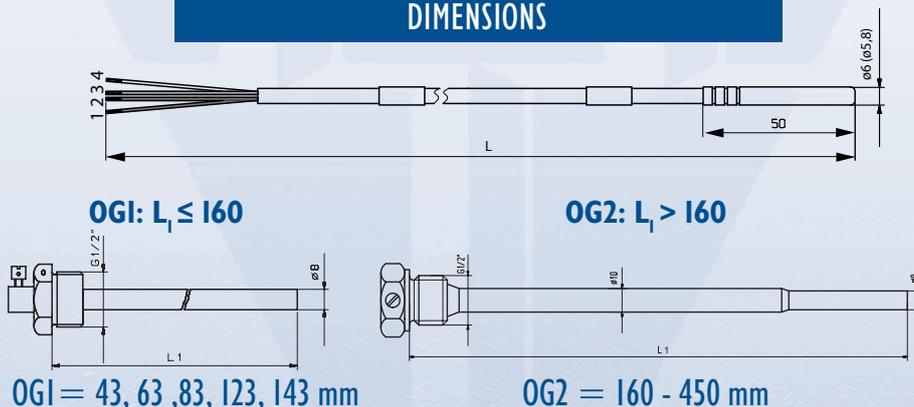
TECHNICAL DATA

- Measuring range **$0^{\circ}\text{C} \leq \Theta \leq 150^{\circ}\text{C}$**
- Temperature difference range **$3\text{K} \leq \Delta\Theta \leq 150\text{K}$**
- Sensing element **Pt100, Pt500, Pt 1000**
acc. to DIN EN 60751:2009
- Permissible working pressure **1,6 MPa**
- Max. measuring current **1 mA**
- Housing material **Brass M60 / stainless steel**
- Time constant, with outer housing (determined in the stirred water) **$\tau_{0,5} \leq 17\text{s}$**
- Connecting cable **silicone cable 4x0,25 mm²**
length: L = 0,5 ÷ 25,0 m

PERMISSIBLE ERRORS OF A PAIR OF SENSORS

$$E_{Td} = \pm (0,5 + \frac{2}{\Delta\Theta})\% \cdot 0,66$$

DIMENSIONS



The paired sensors have the same manufacturing No., but a different marking that depends on a mounting place.

..XX/1 – marking for sensor on “supply” (**red color**)

..XX/2 – marking for sensor on “return” (**blue color**)

DESCRIBING AND ORDERING EXAMPLE

The paired resistance sensors **TS 204**

• Sensing element

Pt 100

Pt 500

Pt 1000

• Cable length L =

0,5 ÷ 25,0 m

• Immersion length of housing L_1 =

43 ÷ 450 mm

Example:

The paired resistance sensors **TS 204 Pt 500 / 2 m / 43 mm**