AB Axis industries

CERTIFICATE

Temperature sensors pair (double pair) corresponds to requirements of LST EN 60751:2008, LST EN 1434, essential requirements of the Technical Regulation for Measuring Instruments, dated 30 March 2006 (transposing in the NB's country law Directive 2004/22/EC of 31 March 2004 on measuring instruments) and corresponds to requirements of the EC - type examination certificate Nr. LT-1621-MI004-007.

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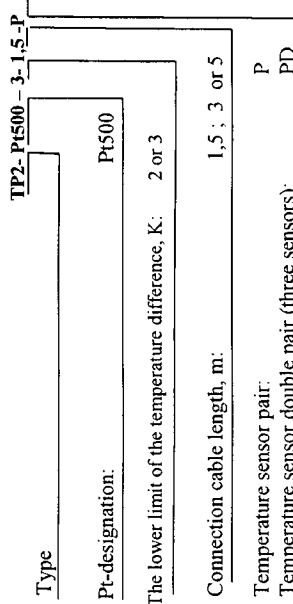## PLATINUM RESISTANCE TEMPERATURE SENSORS PAIR TP2

1. General information

Platinum resistance thermometer with Pt-500 sensors and resistance characteristics according to LST EN 60751 :2008 are designed for temperature measurement and are used as sub-assembly of heat meter. Mechanical design of the sensors - type DS according to LST EN 1434-2:2007+AC:2007. The sensors have a 2-wire connection. The length of cables can be 1,5; 3 either 5 m.

Temperature sensors TP2 are selected as mached pairs according to LST EN1434-1:2007.

Temperature sensors pair TP2 corresponds to essential requirements of the Technical Regulation for Measuring Instruments, dated 30 March 2006 (transposing in the NB's country law Directive 2004/22/EC of 31 March 2004 on measuring instruments):

- Annex I   Essential requirements
- Annex MI-004   Heat meter ,

Type number combination of temperature sensor pair TP2:

TP2- Pt500 - 3- 1,5 -P

Type	
Pt-designation:	Pt500
The lower limit of the temperature difference, K:	2 or 3
Connection cable length, m:	1,5 ; 3 or 5
Temperature sensor pair:	P
Temperature sensor double pair (three sensors).	PD

2. Technical data

Temperature measurement range	0°C ...150 °C.
Temperature difference measurement range	(2 ...100) K, either (3...100) K
Maximum admissible temperature of medium	150 °C
Resistance characteristics	according to LST EN 60751
Tolerance class	B according to LST EN 60751
Connection cable length	1,5; 3 either 5 m
Maximum permissible RMS value of sensor current	0,5 mA
Response time $\tau_{0,5}$	< 10 s
Minimum immersion depth	at least 26 mm
Connection method	2-wire
Total resistance of signal leads	0,22 Ω - for wire length 1,5 m 0,44 Ω - for wire length 3 m 0,72 Ω - for wire length 5 m
Environmental conditions	Ambient temperature: +5°C ...+55 °C Ambient humidity: condensing Mechanical environment class MI Electromagnetic environment class EI
Maximum admissible working pressure of the temperature sensors	16 bar (PN16)

3. Complete set

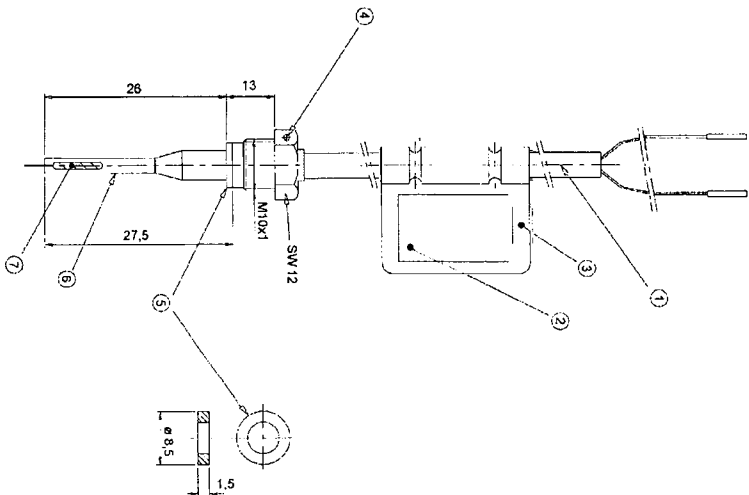|		Amount, pcs
1	Temperature sensors pair (or double pair) TP2	2 (3)
2	Mounting set	2 (3), (may not be ordered)
3	Technical description, user manual, certificate	1

4. Dimensional drawing

Fig.4.1. Sensor dimensions

1-signal lead (cable length 1,5, 3 either 5m); 2-marking plate; 3-security seal-sticker; 4- mounting thread; 5-sealing ring; 6- protective sheath, 7- temperature sensing element.

5. Mounting of sensors.

The temperature sensors have a permanently connected signal leads and are intended for direct mounting in a pipe DN15, DN20 or DN25.

Installation recommendations (see Fig.5.1):
- The probe axis (3) shall be perpendicular to axis of fitting and in the same plane.
- The temperature sensing element (2) must be inserted to pipe axis or beyond.
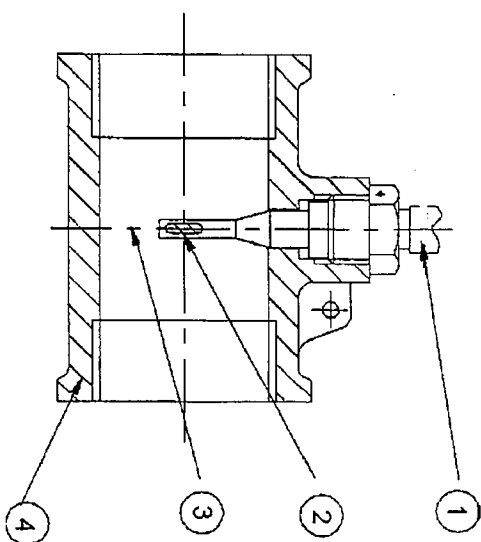

Fig. 5.1. Temperature sensors fitting example

1-temperature probe; 2- temperature sensing element; 3- probe axis; 4-pipe line.

After mounting of the temperature sensors by means of a pendant seal are sealed up a sensors installation site.

6. Marking and security seals

The following information are on the marking plate of the temperature sensor:
- manufacturer's trade mark,
- type designation and type number;
- Sensor type,
- serial number,
- year of manufacture,
- limits of temperature range (Θ_{min} and Θ_{max}),
- limits of temperature differences ($\Delta\Theta_{min}$ and $\Delta\Theta_{max}$),
- maximum admissible working pressure,
- EC-type examination certificate number.

Serial number of temperature sensor consists of six digits and the letter. The pair or double pair of temperature sensors has the same number and the several letters:

XXXXXX „A" – temperature sensor is used for flow temperature measurement. The base of marking label is red,

XXXXXX „B" – temperature sensor is used for return temperature measurement. The base of marking label is blue,

XXXXXX „C" – temperature sensor is selected as matched pair with flow temperature sensor and is used for measurement of liquid temperature in replenishment or in second return line. The base of marking label is blue,

Security seals:
Manufacturer seals:
- The marking label should be sealed as shown in fig. 4.1.
Installation seal:
- The installation site of temperature sensors in the pipeline should be sealed by means of a pendant seal.

8. Warranty

Warranty period of temperature sensors service - 24 months from the time of the sale date.
The company performs warranty service only in this case: the sensor seals are undamaged, the sensor mechanically is not damaged, the sensor service was carried out strictly under requirements of this instruction
Warranty service does not include verification of sensors.