

Harmonized standards applied: LST EN 1434-1:2007, LST EN 1434-2:2007+AC:2007, LST EN 1434-4:2007+AC:2007, LST EN 1434-5:2007.

The measuring instrument must correspond with the following specifications:

1 Design of the instrument

1.1 Construction

The temperature sensor pair TP2 is a sub-assembly of a heat meter. The sensors are connected to the calculator of the heat meter and measure the temperature difference between the forward and return line. The temperature sensors have a permanently connected signal leads and are intended for direct mounting. 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.

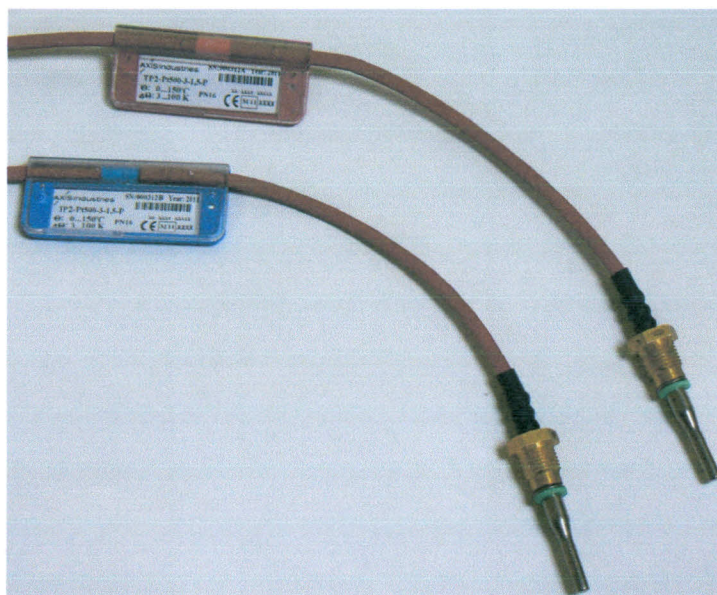


Fig.1. Temperature sensor pair TP2

Type number combination of temperature sensor pair TP2:

Type	TP2 - Pt500 - □ - □,□ - □□
Pt- designation:	Pt500
The lower limit of the temperature difference, K:	2 or 3
Connection cable length, m:	1,5; 3,0 either 5,0
Temperature sensor pair:	P
Temperature sensor double pair (three sensors):	PD



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1.2 Measurand sensor

Platinum resistance thermometer with Pt500 sensor and resistance characteristics according to LST EN 60751:2008.

1.3 Measurand processing

Not applicable.

1.4 Indication of the measurement results

The output signal in the form of resistance from the temperature sensor is transferred to the heat meter calculator, which displays the values of temperatures in forward and return lines and values of temperature differences.

1.5 Optional equipment and functions subject to MID requirements

Not applicable.

1.6 Technical documentation

PLTP2V01. Platinum resistance temperature sensors TP2 .Technical description, user manual, certificate (issued 2011-11-25).

Reference documents on which basis this certificate is issued, are stored in a file LEI-12-MP-009.10.

1.7 Integrated equipment and functions not subject to MID

Not applicable.

2 Technical data

2.1 Rated operating conditions

2.1.1 Measurand

Temperature difference, which is directly related to the thermal energy, measured by the calculator.

2.1.2 Measurement limits:

- limits of temperature ranges : $\Theta = (0 - 150)^{\circ}\text{C}$;
- limits of temperature differences : $\Delta\Theta = (2 - 100) \text{ K}$, either $\Delta\Theta = (3 - 100) \text{ K}$.

2.1.3 Maximum permissible error

$$E_t = \pm(0,5 + 3\Delta\Theta_{\min}/\Delta\Theta), \%$$

where: $\Delta\Theta_{\min}$ - the lower limit of the temperature difference, K;

$\Delta\Theta$ - the measured temperature difference, K.

2.1.4 Environmental conditions/ Influence quantities

Ambient temperature	:	+5°C to +55°C;
Humidity	:	condensing;
Location	:	closed;
Mechanical environment	:	class M1;
Electromagnetic environment	:	class E1.

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2.2 Other operating conditions

2.2.1 Maximum admissible working pressure

The maximum admissible working pressure of the temperature sensors is 16 bar (PN16).

3 Interfaces and compatibility conditions

3.1 Compatibility conditions

The heat meter calculator must be intended for the connection of the temperature sensors Pt500.

4 Requirements on production, putting into use and utilization

4.1 Requirements on production

The initial verification of the temperature sensor pair TP2 must be carried out according to LST EN 1434-5:2007.

4.2 Requirements on putting into use

The temperature sensor pair must be mounted in accordance with the mounting instruction listed in 1.6.

4.3 Requirements for utilization

No special requirements identified.

5 Control of the measuring process after tasks of the instrument in use

5.1 Documentation of the procedure

No special requirements identified.

5.2 Special equipment of hardware or software

No special requirements identified.

5.3 Identification of hardware and software

Not applicable.

5.4 Calibration-adjustment procedure

Not applicable.

6 Security measures

6.1 Sealing

The marking label should be sealed by means of manufacturer's seal as shown in fig.2.

The temperature sensors must be sealed according to the mounting instructions to ensure that after the temperature sensors have been installed, it is not possible to dismantle, remove or alter the sensors without evident damage on the sensors or the seal (see fig. 3).

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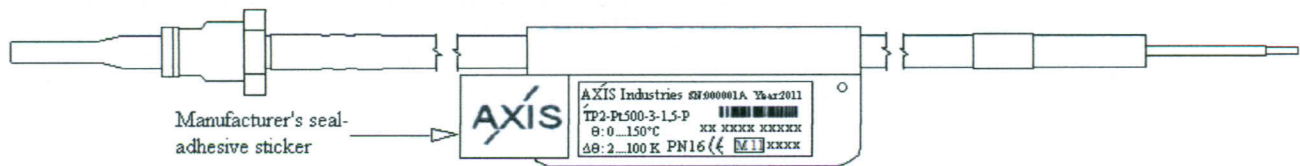


Fig. 2. Sealing of the temperature sensors by means of manufacturer's seal-sticker

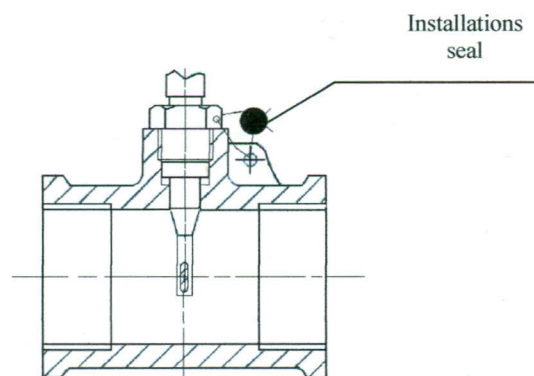


Fig. 3. Sealing of the temperature sensors after installation

6.2 Data logger

Not applicable.

7 Marking and inscriptions

7.1 Information to be borne by and to accompany the measuring instrument

The following information shall appear on the type label of the temperature sensors:

- number of EC-type examination certificate (LT-1621-MI004-007);
- manufacturer's mark or name;
- type designation and type number;
- sensor type;
- year of manufacture and serial number;
- limits of temperature range;
- limits of temperature differences;
- the maximum admissible working pressure.

The colour marking of temperature sensors pair is used: the sensor for mounting in flow pipe is equipped with a red type sign, the sensor for mounting in return pipe - with blue type sign.

7.2. Conformity marking

In addition, the label of the temperature sensor should contain the following marking:

- symbol "CE";

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- metrology mark, consisting of the capital letter "M" and the last two digits of the year of its affixing, surrounded by a rectangle;
- number of the notified body, which carried out the conformity assessment.

8 List of the drawings attached to the certificate

Drawings are not added.

9 Certificate history

Issue Nr.	Date	Description
LT-1621-MI004-007	2012-02-15	Type examination certificate first issued