

TDF500 / TF500

Temperature sensor Pt 500

Your benefits

- High accuracy:
  Low measurement errors
- Short response time:
  Accurate instantaneous values
- Various versions:
  Flexible insert
- CH refrigeration approval (METAS) incl. initial calibration:
  Approved for use in clearing traffic

Applications

- Temperature detection for heating and cooling measurements in the building services sector
- Temperature detection for energy measurements in billing transactions for district heating supplies

Properties

- Direct installation sensor or sensor for thermowell installation
- Temperature sensor Pt 500
- Cable sensor with silicone cable, 2-wire technology
- Supplied in pairs
- Standard EN 1434
- Temperature measuring range 2 to 150 °C
- Type examination/approval:
  - Heat: CE Conformity to European Measuring Instruments Directive (MID)
  - Cold: CH approval (METAS) incl. initial calibration

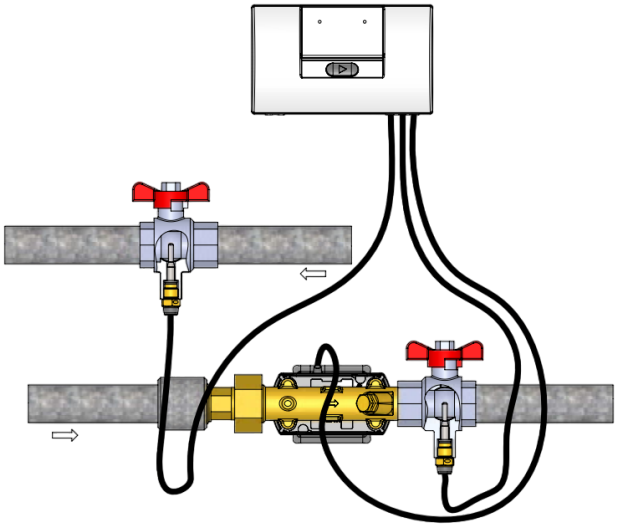
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TDF application



Approval and verification

MID approval DK-0200-MI004-046	
Temperature range	θ: 2....150 °C
Temperature difference	ΔΘ: 3....140 K

CH approval (METAS) incl. initial calibration CH-T2-21627-00	
Temperature range	θ: 2....150 °C
Temperature difference	ΔΘ: 3....140 K

Pairing and calibration according to EN 1434-5:2015

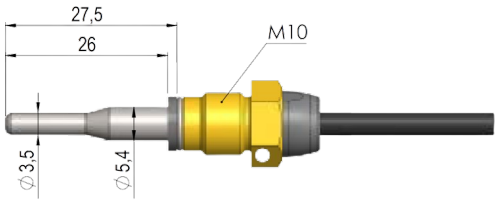
Technical Data

Series	 Direct installation sensor TDF500	 Direct installation sensor TDF500	 Immersion sleeve sensor TF500, Ø 5,8 mm
Sensor length	**27,5 mm**	**38 mm**	**46 mm**
Measuring resistor	Pt 500		
Resistance to	EN 60751		
Connection thread	M10 x 1	M10 x 1	-
Time constant $T_{0.5}$	2 s	2 s	4 s
Minimum immersion depth	15 mm	15 mm	18 mm
Material	AISI 316L W. No. 1.4404		
Silicone cable	2 x 0,22 mm^2		
Cable length	1,5 m, 3 m	1,5 m, 3 m	1,5 m, 3 m, 5 m, 10 m
Temperature measuring range	2 to 150 °C		
Temperature difference	3 to 140 K		
Ambient temperature	-10 to + 70 °C		
Storage temperature	-25 to + 70 °C		
Medium	District heating water		
Medium temperature	0...150 °C, short-term 160 °C		
Air humidity	<98 % rH condensing		
Tightness	IP68		
Approved mechanical classes	M1, M2		
Approved pressure levels	PN16, PN25, PS25		

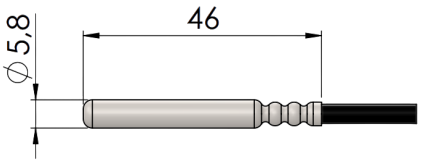
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Dimensions

Direct installation sensor TDF500, 27,5 mm



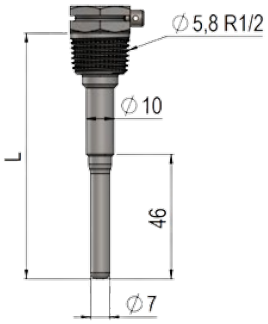
Immersion sleeve sensor TF500, Ø 5,8 mm



Immersion sleeves and nipples

Immersion sleeves for ø 5,8 mm temperature sensors



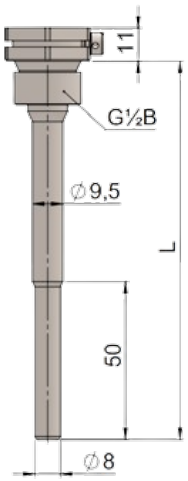


Technical Data	
Installation lengths	65 mm, 90 mm, 140 mm
Thread	Conical thread R½
Material	AISI 304/W. No. 1.4301
Time constant $T_{0.5}$	Max. 8 s
Pressure level	PN16/PN25, PS25
Highest flow rate	3 m/s
Highest service temperature	150 °C
Approved mechanical classes	M1, M2

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EN 1434 Immersion sleeves for ø 5,8 mm temperature sensors



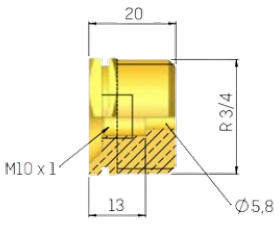


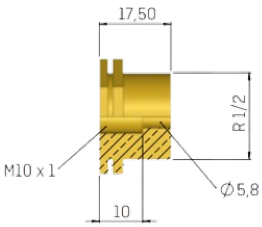
Technical Data	
Installation lengths L	65 mm, 85 mm, 120 mm, 210 mm
Thread	Straight thread G½B
Gasket	Copper seal (supplied in bag with 2 immersion sleeves)
Material	AISI 316L/W. No. 1.4404
Time constant $T_{0.5}$	Max. 14 s with ø 5,8 mm temperature sensor
Pressure level	PN16/PN25, PS25
Highest flow rate	3 m/s
Highest service temperature	150 °C
Approved mechanical classes	M1, M2

Nipple









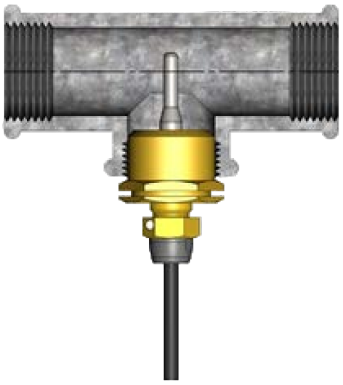
Connection R½ or R¾

Material MS 58 Bb

Nipples may be used in both PN16 and PN25 installations.

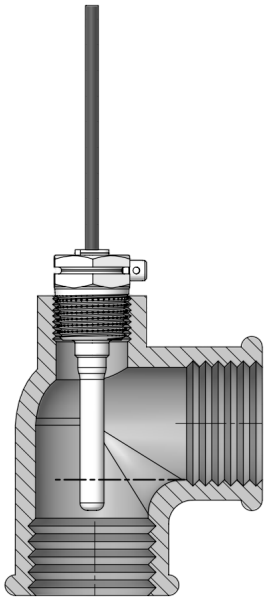
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Assembly examples



Example 1

Direct installation sensor, mounted in a T-piece with transition nipple

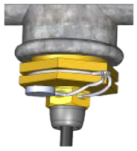


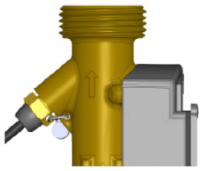
Example 2

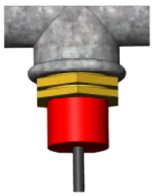
Immersion sleeve sensor, mounted in a T-piece with immersion sleeve

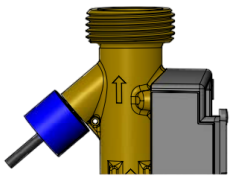
■ Observe the flow direction

Sealing examples

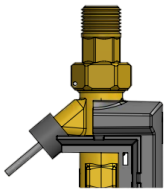


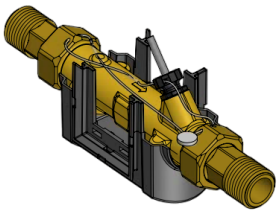


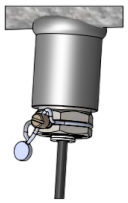












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Installation note

Installing the sensors

The supply and return sensor cables must always be the same length and have the same cross-section in order to avoid different cable resistances. The supplied cable of the flow and return sensor must not be shortened or lengthened in accordance with EN 1434-2 chapter 3.3.4. The sensors are paired. They are supplied in pairs and must also be used in pairs for the same calculator. The active sensor part should be located in the middle of the pipe; the tip should be directed towards the flow if possible.

Installation recommendations

Ensure symmetrical positioning of the flow and return sensors, i. e. the two sensors in a measuring system should be installed in the same way (e. g. both in pipe bends). Direct installation sensors must not be mixed with immersion sleeve sensors. This ensures that the temperature difference is measured with the best possible accuracy.

Installing the immersion sleeves

When installing the thermowells, ensure that the heating water flows around them over their entire length.
Important: Take any pipe insulation into account when dimensioning. Provide sufficient free space so that the sensor can be removed from the permanently installed immersion sleeve.

In order to achieve the best possible measuring accuracy, it is necessary to install the manufacturer's original immersion sleeves in conjunction with the temperature sensors supplied.

Insulation

Any cable insulation must be designed in such a way that the locking screw of the sensor immersion sleeve remains accessible at all times and the sensor can be easily removed for service and maintenance.

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