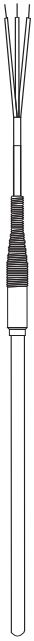
Level | Pressure | Flow | Temperature | Liquid Analysis | Registration | Systems Components | Services | Solutions

RTD Temperature sensor TH12

Compact Instructions



Measuring System

General purpose RTD with conductor external lead wires for process and laboratory applications.
The single element RTD is specifically designed for use in two different process temperature ranges (low range RTD -58 °F to 392 °F; high range RTD -328 °F to 1112 °F).

KA 179R/24/ae/10.04
51008410

Endress+Hauser
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Important Notice

⚠ Warning!
Electrical shock could cause death or serious injury. If the sensor is installed in a high voltage environment and a fault or installation error occurs, high voltage may be present on the connection terminals or the probe itself.

Safe and secure operation of the temperature sensor can only be guaranteed if the operating instructions of the used transmitters and all included safety notes are read, understood and followed. For Endress+Hauser temperature transmitters see enclosed CD–ROM.

Correct use
The manufacturer cannot be held responsible for damage caused by misuse of the unit. The installation conditions and connection values indicated in the operating instructions must be followed!

Installation Guidelines and Safety instructions

1. Install the unit according to the relevant NEC Code and local regulations.
2. Avoid any spark due to impact, friction and installation. Anti-sparking wrenches should be utilized.
3. For ambient temperature higher than 158 °F, suitable cables and conductors must be used.

⚠ Warning!
Do not disconnect equipment unless power has been switched off or the area is not hazardous.

The accessories for pipe connections and the appropriate gaskets and sealing rings are not supplied with the sensors. These are the customer's responsibility.
Depending on temperature and pressure operating conditions, the gaskets, the sealing and clamping rings and the applicable torques must be selected by the user.
For further information regarding connections, please refer to the corresponding standards.

Installation and operation
The unit is constructed using the most up to date production equipment and complies with the safety requirements of the local guidelines. However, if it is installed incorrectly or misused, certain application dangers can occur. Installation, wiring and maintenance of the unit must only be completed by trained, skilled personnel who are authorized to do so by the plant operator. The plant operator must make sure that the measurement system has been correctly wired to the connection schematics. Procedures indicated in these instructions must be followed.

Returns
Please follow the Return Authorization Policy which is attached with this manual.

Safety pictograms and symbols

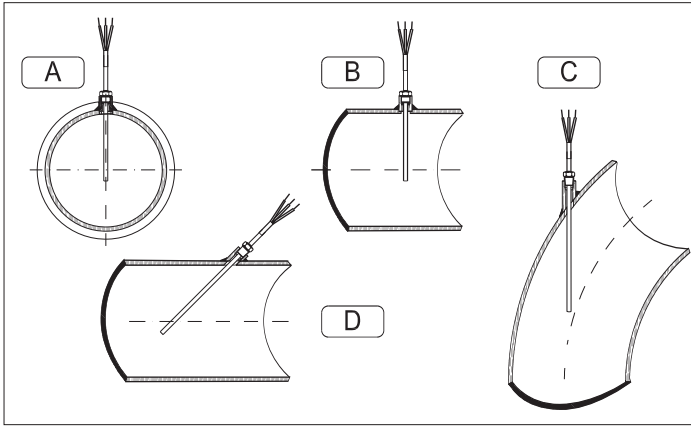
✎ Note!
Notes draw attention to activities or procedures that can have a direct influence on operation or trigger an unforeseen device reaction if they are not carried out properly.

☞ Caution!
Cautions draw attention to activities or procedures that can lead to persons being injured or to incorrect device operation if they are not carried out properly.

⚠ Warning!
Warnings draw attention to activities or procedures that can lead to persons being seriously injured, to safety risks or to the destruction of the device if they are not carried out properly.

Installation

Installation locations



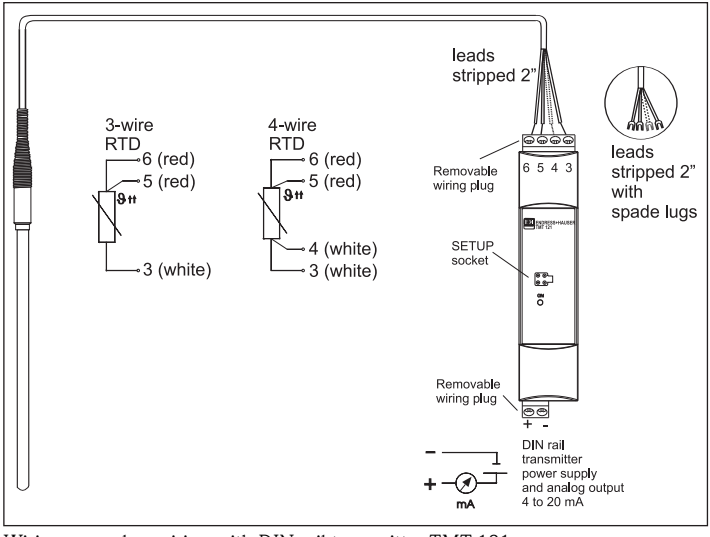
A, B: In pipes of a small section the axis line of the duct must be reached and if possible slightly exceeded by the tip of the probe.

C, D: Tilted installation.

For installation proceed as follows:

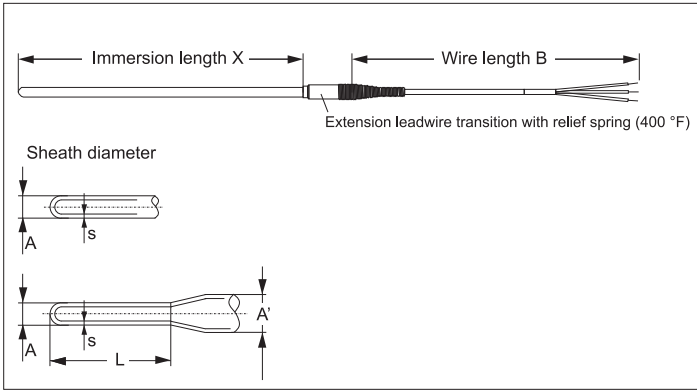
1. Seal the pipe thread of the compression fitting with pipe thread sealant, e.g. “TFE” tape before screwing in the device.
2. Make sure that the process fitting matches the maximum specified process pressure.
3. Install and tighten the RTD sensor before applying process pressure.

Electrical connection-wiring diagrams



Wiring example - wiring with DIN rail transmitter TMT 121

Dimensions



Immersion length X	Wire length B	Sheath diameter A (A')	Wall thickness s	Reduced length L
6", 12", 18", 24" specified length 2" to 96" in ½" increments	48", 72", 120" specified length 12" to 3600" in 12" increments	1/8"	0.012"	-
		3/16"	0.020"	-
		¼"	0.028"	-
		3/8" (A') red. 3/16" (A)	0.120" (0.016" at tip)*	1¼"

*High temperature version is not available with reduced tip

All dimensions in inches

Technical data

Weight	From 1 to 5.5 lbs
Material	Wetted parts 316 SS
Shock and vibration resistance	4g/2 to 150 Hz as per IEC 60 068-2-6
Ambient temperature limits	-40 to 185 °F (-40 to 85°C)

Performance Characteristics

Response time 63% response time per ASTM E644

Construction	Ø 1/8"	Ø 3/16"	Ø ¼"	Ø 3/8" red. 3/16"
High temp. range	2 s	2 s	3 s	not available
Low temp. range	3 s	7 s	9 s	6 s

Maximum measured error

Class	max. Tolerances (°C)
A	± (0.15 + 0.002 · |t|*)
B	± (0.3 + 0.005 · |t|*)

RTD corresponding to IEC 60751

* |t| = absolute value °C. For measurement errors in °F, calculate using equation above in °C, then multiply the outcome by 1.8.

Insulation resistance

Insulation resistance between terminals and probe sheath, test voltage 250 V.

- ≥ 100 MΩ at 77 °F (25 °C)
- ≥ 10 MΩ at 572 °F (300 °C)

Supplementary documentation

TMT 121 PCP DIN rail temperature transmitter	BA156r24ae
TMT 122 HART DIN rail temperature transmitter	BA155r24ae
TMT 162 HART temperature field transmitter	BA132r24ae

All Temperature Operating Instructions are available on CD–ROM, find enclosed or order by order number: **SONDTT-AG**.

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