



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



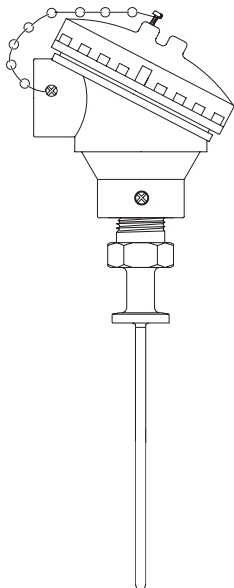
Services



Solutions

Sanitary RTD Temperature sensor TH18

Compact Instructions



Measuring System

Sanitary RTD temperature assembly with connection head TH18 for pharmaceuticals applications.

The single element RTD is specifically designed for use in process temperature range -58°F to 392°F . Meets 3-A sanitary standards.



Important Notice



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 sanitary regulations.
2. Avoid any spark due to impact, friction and installation. Anti-sparking wrenches should be utilized.
3. The temperature sensor should be connected to the power supply or other external circuit using the appropriate cable glands and wire entries.
4. For ambient temperature higher than 158 °F, suitable cables, conduit and conductors must be used. Only use approved wire entries.
5. When utilized in dust atmospheres, the connection between the housing, fittings and thermowell should provide a minimum degree of Ingress Protection. Liquid/gas sealants shall be used. Local regulations need to be respected.
6. Installation procedures relating to integrity of sanitary processes should be followed to prevent any contamination.



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.

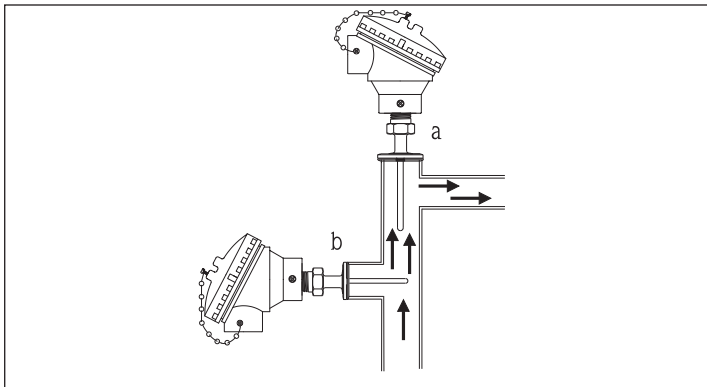
 Warning!

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.

Though the information provided herein is believed to be accurate, be advised that the information contained herein is NOT a guarantee of satisfactory results. Specifically, this information is neither a warranty nor guarantee, expressed or implied, regarding performance; merchantability, fitness, or other matter with respect to the products; and recommendation for the use of the product/process information in conflict with any patent. Please note that Endress+Hauser reserves the right to change and/or improve the product design and specifications without notice.

Installation

Installation locations



a: At angle sections, against the direction of flow.

b: Perpendicular to the direction of flow.

For installation proceed as follows:

1. Make sure that the hygienic process fitting and the clamp assembly match the maximum specified process pressure.
2. Install and tighten the RTD sensor before applying process pressure.

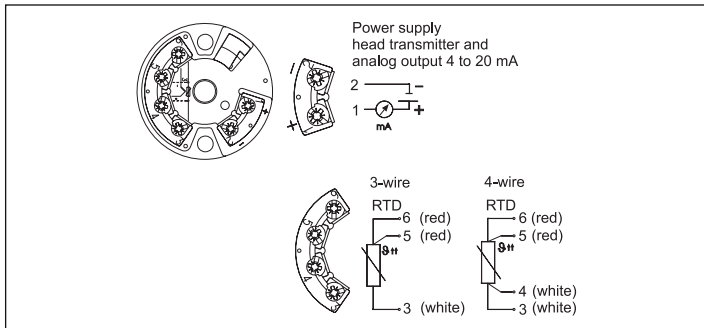


Note!

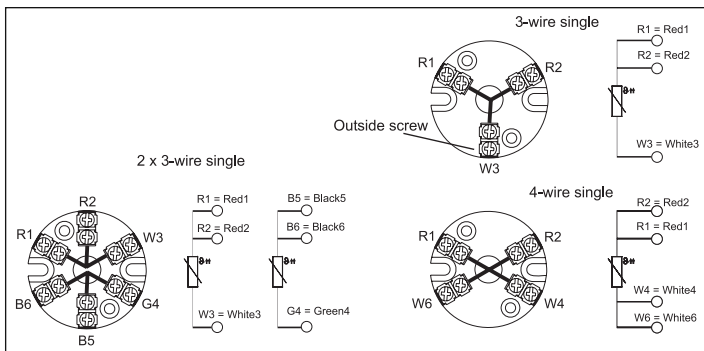
Minimum immersion is $\frac{3}{4}$ " as per ASTM E644.

Electrical connection-wiring diagrams

Head transmitter mounted



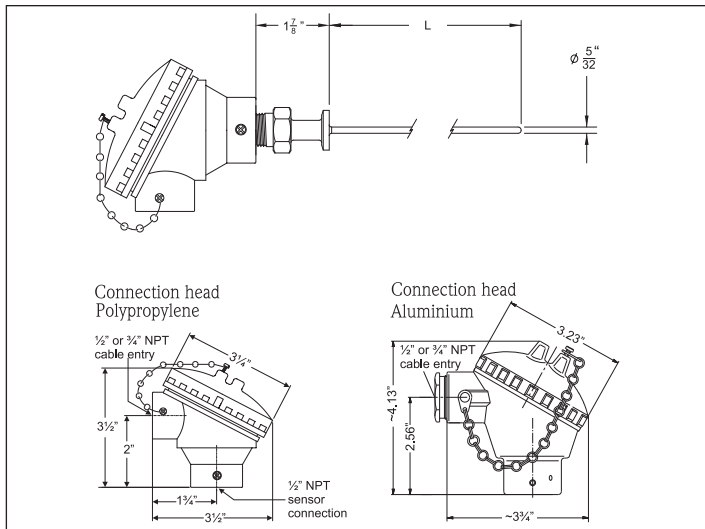
Terminal block mounted



Note!

The blocks and transmitters are shown as they will sit inside the heads in reference to the conduit opening. ALWAYS terminate leads to the outside screw!

Dimensions



Immersion length L

$\frac{3}{4}$ ", $1\frac{1}{4}$ ", $2\frac{3}{4}$ " specified length 1" to 15" in $\frac{1}{2}$ " increments

All dimensions in inches

Technical data

Weight	From 1 to 5.5 lbs
Material	Wetted parts 316L SS
Shock and vibration resistance	4g/2 to 150 Hz as per IEC 60 068-2-6
Ambient temperature limits	

Housing without head-mounted transmitter	
Aluminium pressure die-cast housing	-40 to 302 °F (-40 to 150 °C)
Plastic housing	-40 to 185 °F (-40 to 85 °C)
Housing with head-mounted transmitter	
All types of housing	-40 to 185 °F (-40 to 85 °C)

Performance Characteristics

Response time 63% response time per ASTM E644

Construction	Ø 5/32"
	2 s

Maximum measured error

Class	max. Tolerances (°C)
A	$\pm (0.15 + 0.002 \cdot t ^*)$

* $|t|$ = 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.

- $\geq 100 \text{ M}\Omega$ at 77 °F (25 °C)
- $\geq 10 \text{ M}\Omega$ at 572 °F (300 °C)

Supplementary documentation

TMT180 Pt temperature head transmitter
TMT181 PCP temperature head transmitter
TMT182 HART temperature head transmitter
TMT162 HART temperature field transmitter

BA163r24ae find on CD-ROM
BA100r24ae find on CD-ROM
BA105r24ae find on CD-ROM
BA132r24ae find on CD-ROM

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

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