

# Installation Instructions iTHERM TM402, TM412 Imperial Hygienic Thermometer, US Style

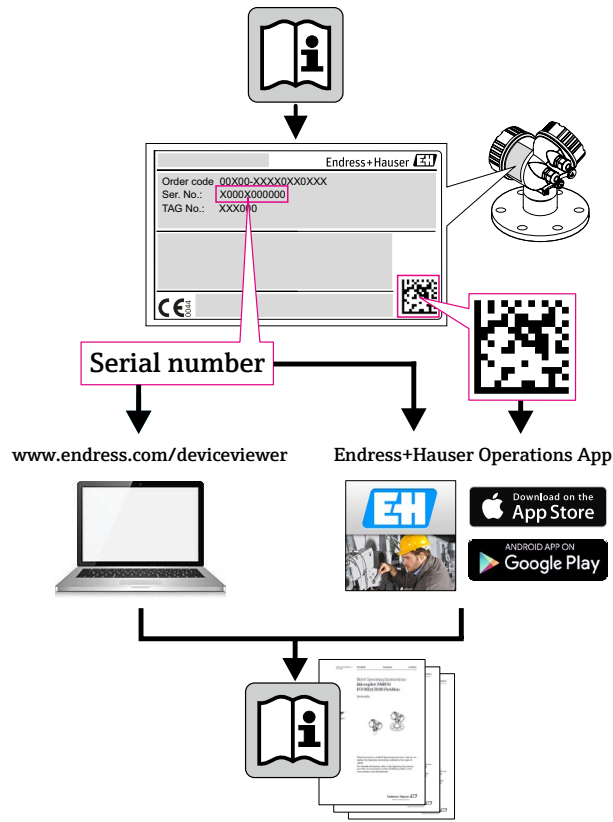
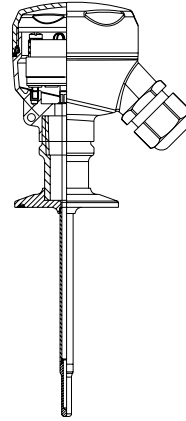
RTD thermometer for hygienic and aseptic applications

Quick installation instructions and safety information.

Detailed technical information can be found in the additional documentation.

Available for all device versions via:

- Internet:  
[www.endress.com/deviceviewer](http://www.endress.com/deviceviewer)
- Smart phone/tablet:  
Endress+Hauser Operations App



[www.addresses.endress.com](http://www.addresses.endress.com)

## Important Notice

### CAUTION

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 [www.endress.com](http://www.endress.com)

### 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. 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 atmosphere, the connection between the housing, fittings and thermowell should provide a minimum degree of ingress protection. Liquid/gas sealants should be used. Local regulations need to be respected.

### CAUTION

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.

*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.*

## Safety pictograms and symbols



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 seriously injured, to safety risks or to the destruction of the device if they are not carried out properly.

## Installation and operation

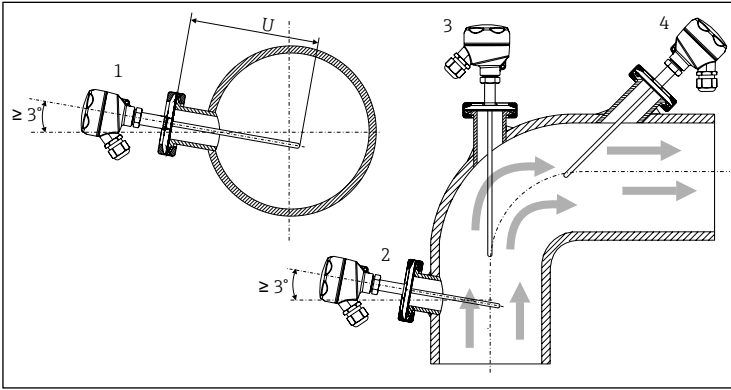
The unit is constructed using the most up to date production equipment and complies with the safety requirements of the local guidelines. However, if it is installed incorrectly or misused, certain application dangers can occur. Installation, wiring and maintenance of the unit must only be completed 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**

The measuring device must be returned if it is need of repair or a factory calibration, or if the wrong measuring device has been delivered or ordered. Legal specifications require Endress+Hauser, as an ISO-certified company, to follow certain procedures when handling products that are in contact with the medium. To ensure safe, swift and professional device returns, please refer to the procedure and conditions for returning devices provided on the Endress+Hauser website at [www.endress.com/support/return-material](http://www.endress.com/support/return-material)

## Installation

### Installation locations



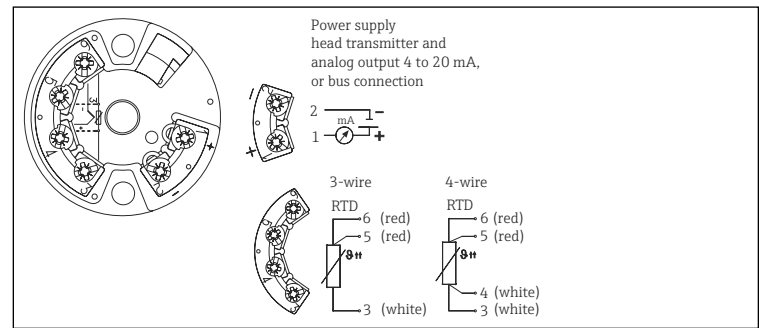
- 1, 2: Perpendicular to flow direction, installed at a minimum angle of  $3^\circ$  to ensure self-draining
  - 3: On elbows
  - 4: Inclined installation in pipes with a small nominal diameter
- U: Immersion length

For installation proceed as follows:

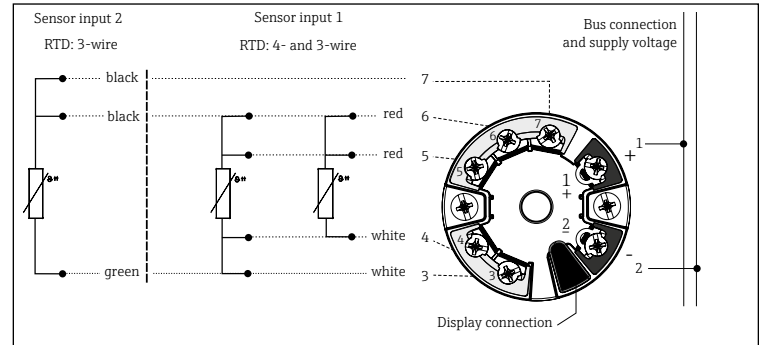
1. Make sure that the hygienic process fitting and the clamp assembly match the maximum specified process pressure.
2. Install and tighten the RTD sensor before applying process pressure.

## Electrical connection-wiring diagrams

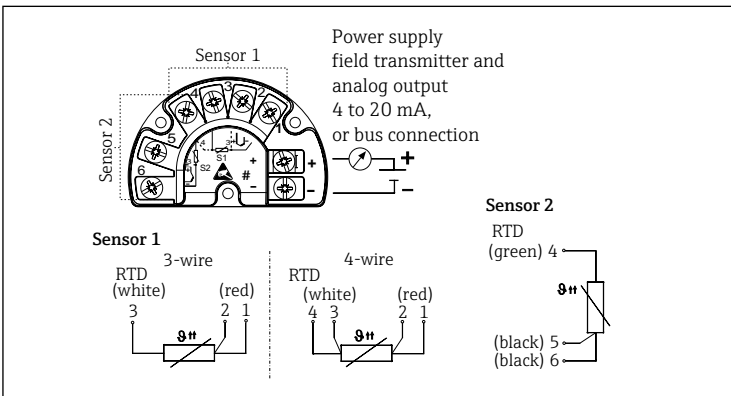
### Head mounted transmitter iTEMP TMT18x (single input)



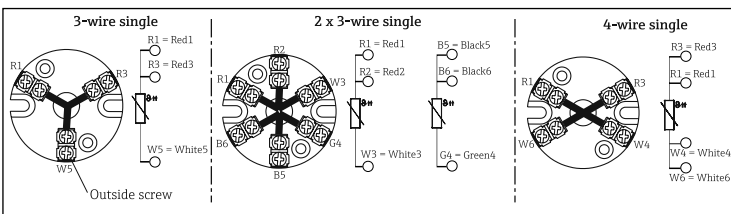
### Head mounted transmitter iTEMP TMT8x (dual input)



### Head mounted field transmitter iTEMP TMT162 (dual input)



### Terminal block mounted



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!

## Technical Data

### Dimensions

### Performance Characteristics

See technical Information: [www.endress.com](http://www.endress.com)