Supplementary documentation
All important Temperature Operating Instructions, particularly with regard to head and field transmitters are available on CD–ROM, find enclosed or order by order number: SONDTT-AG.

Compact Instructions
RTD Temperature sensor
TH11

Measuring System
General purpose RTD with connection head TH11 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).

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 performed 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.

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**

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: Inverted installation.

For installation proceed as follows:
1. Seal the ½" NPT process connection or 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**

Transmitter mounted (3" or 5½" flying leads - crimped sleeves)

Terminal block mounted (3" flying leads - fork lugs)

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**

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 60068-2-6
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

<table>
<thead>
<tr>
<th>Construction</th>
<th>Ø 1/8&quot;</th>
<th>Ø 3/16&quot;</th>
<th>Ø ¼&quot;</th>
<th>Ø 3/8&quot; red. 3/16&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>High temp. range</td>
<td>2 s</td>
<td>2 s</td>
<td>5 s</td>
<td>not available</td>
</tr>
<tr>
<td>Low temp. range</td>
<td>3 s</td>
<td>7 s</td>
<td>9 s</td>
<td>6 s</td>
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**Maximum measured error**

<table>
<thead>
<tr>
<th>Class</th>
<th>max. Tolerances (°C)</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>± (0.15 + 0.002 ·</td>
</tr>
<tr>
<td>B</td>
<td>± (0.3 + 0.005 ·</td>
</tr>
</tbody>
</table>

* |t| = absolute value °C. For measured error 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)