RTD Thermometer TR61

Benefits:
- Types of protection for use in hazardous locations: Intrinsic safety (Ex i.a.), flameproof (Ex d), non-sparking (Ex nA)
- High degree of insert compatibility and design as per DIN 43772
- Extension neck to protect the head transmitter from overheating
- Fast response time with reduced/tapered tip form
- High degree of flexibility thanks to modular design with standard terminal heads as per DIN EN 50446 and customer-specific immersion lengths

Specs at a glance
- **Accuracy** class A acc. to IEC 60751 class AA acc. to IEC 60751
- **Response time** depending on configuration t50 = 8 s t90 = 21 s
- **Max. process pressure (static)** at 20 °C: 100 bar (1.450 psi)
- **Operating temperature range** PT100 TF StrongSens: -50 °C ...500 °C (-58 °F ...932 °F) PT100 WW: -200 °C ...600 °C (-328 °F ...1.112 °F) PT100 TF: -50 °C ...400 °C (-58 °F ...752 °F)
- **Max. immersion length on request** up to 10.000,00 mm (393,70")

Field of application: The robust thermometer is designed for use in demanding and safety relevant applications e.g. in the Chemical, Oil & Gas and Energy industry. Harsh environments, corrosive substances and highest pressures can be handled by the use of robust protection tubes and special materials. An optional head transmitter with all common communication protocols makes the device ready to use with enhanced measurement accuracy and reliability compared to directly wired sensors. Flexible configuration possible.

Features and specifications
**Thermometer**

<table>
<thead>
<tr>
<th>Measuring principle</th>
<th>Resistance Temperature Detector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic / Application</td>
<td></td>
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<tr>
<td>metric style</td>
<td>modular temperature assembly</td>
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<tr>
<td>for heavy duty applications</td>
<td>suitable for hazardous areas</td>
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<tr>
<td>with neck</td>
<td>incl. thermowell / protection tube (metal)</td>
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<tr>
<td>usable with insert StrongSens</td>
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<tr>
<td>Thermowell / protection tube</td>
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<tr>
<td>welded protection tube</td>
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<tr>
<td>Insert / probe</td>
<td></td>
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<tr>
<td>mineral insulated (MI), flexible</td>
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<tr>
<td>Outer diameter protection tube / Insert</td>
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<tr>
<td>9,0 mm (0,35&quot;)</td>
<td></td>
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<tr>
<td>11,0 mm (0,43&quot;)</td>
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<tr>
<td>12,0 mm (0,47&quot;)</td>
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<tr>
<td>Max. immersion length on request</td>
<td></td>
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<tr>
<td>up to 10.000,00 mm (393,70&quot;)</td>
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<tr>
<td>Material protection tube/ thermowell</td>
<td></td>
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<tr>
<td>1.4404 (316L)</td>
<td></td>
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<tr>
<td>1.4571 (316Ti)</td>
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<tr>
<td>AlloyC276 (2.4819)</td>
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<tr>
<td>Optional coating</td>
<td></td>
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<tr>
<td>Not defined</td>
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</table>
Thermometer

**Process connection**
- male thread:
  - G1/2"
  - G3/4"
  - G1"
  - NPT1/2"
  - NPT3/4"
  - M20x1,5
- compression fitting:
  - G1/2"
- flange:
  - ASME 1" 150 RF (B16.5)
  - ASME 1" 300 RF (B16.5)
  - DN25 PN40 B1 (EN1092)
  - DN40 PN40 B1(EN1092)
  - DN50 PN40 B1 (EN1092)

**Tip shape**
- straight
- reduced
- tapered

**Surface roughness Ra**
- Not defined

**Operating temperature range**
- PT100 TF StrongSens:
  - -50 °C ...500 °C
  - (-58 °F ...932 °F)
- PT100 WW:
  - -200 °C ...600 °C
  - (-328 °F ...1.112 °F)
- PT100 TF:
  - -50 °C ...400 °C
  - (-58 °F ...752 °F)

**Max. process pressure (static)**
- at 20 °C: 100 bar (1.450 psi)
# Thermometer

## Accuracy
- class A acc. to IEC 60751
- class AA acc. to IEC 60751

## Response time
- depending on configuration
- t50 = 8 s
- t90 = 21 s

## Integration head transmitter
- yes (4 ... 20 mA; HART; PROFIBUS PA; FOUNDATION FIELDBUS)

## Ex - approvals
- ATEX II1/2D Ex ia IIIC,II1G Ex ia IIC T6
- ATEX II 2 GD Ex d IIC
- ATEX II 3 G Ex nA IIC T6, II3D
- ATEX II 1/2 GD Ex d IIC
- IECEx Ex d Ga/Gb IIC T6/T5/T4,Ex tD A20
- IECEx Ex ia IIC T6 Ga/Gb
- IECEx Ex d IIC T6/T5/T4
- IECEx Ex d IIC T6/T5/T4, Ex tD A21
- EAC Ex ia IIC T6 Ga + DIP
- EAC Ex d IIC T6 Gb + DIP
- NEPSI Ex ia IIC T6, Ex iaD 20 T85-T450
- NEPSI Ex d IIC T6
- NEPSI Ex nA IIC T6

## Explosion proof

## Certification
- Gost Metrology
- SIL (transmitter only)

More information [www.us.endress.com/TR61](http://www.us.endress.com/TR61)