Thermocouple TC61

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 1 acc. to IEC 60584
- **Response time** depending on configuration \( t_{50} = 3 \text{ s} \) \( t_{90} = 7 \text{ s} \)
- **Max. process pressure (static)** at 20 °C: 100 bar (1.450 psi)
- **Operating temperature range** Type K: -40 °C ...1.100 °C (-40 °F ...2.012 °F) Type J: -40 °C ...750 °C (-40 °F ...1.382 °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

<table>
<thead>
<tr>
<th>Thermometer</th>
<th>Measuring principle</th>
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Thermometer

**Characteristic / Application**
- metric style
- modular temperature assembly
- for heavy duty applications
- suitable for hazardous areas
- with neck
- incl. thermowell / protection tube (metal)

**Thermowell / protection tube**
- welded protection tube

**Insert / probe**
- mineral insulated (MI), flexible

**Outer diameter protection tube / Insert**
- 9,0 mm (0,35'')
- 11,0 mm (0,43'')
- 12,0 mm (0,47'')

**Max. immersion length on request**
- up to 10,000,00 mm (393,70'')

**Material protection tube/ thermowell**
- 1.4404 (316L)
- 1.4571 (316Ti)
- Alloy 600 (2.4816)
- Alloy C276 (2.4819)

**Optional coating**
- Not defined
Thermocouple TC61

**Process connection**

male thread:
- G1/2"
- G3/4"
- G1"
- NPT1/2"
- NPT3/4"
- M20x1,5

compression fitting:
- G1/2"
- G1"

flange:
- DN25 PN40 B1 (EN1092)
- DN40 PN40 B1(EN1092)
- DN50 PN40 B1 (EN1092)
- ASME 1" 150 RF (B16.5)
- ASME 1" 300 RF (B16.5)

**Tip shape**

- straight
- reduced
- tapered

**Surface roughness Ra**

0,8 μm (31,5 μin.)

**Operating temperature range**

Type K:
- -40 °C ...1.100 °C
- (-40 °F ...2.012 °F)

Type J:
- -40 °C ...750 °C
- (-40 °F ...1.382 °F)

**Max. process pressure (static)**

at 20 °C: 100 bar (1.450 psi)
**Thermocouple TC61**

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<tr>
<th><strong>Integration head transmitter</strong></th>
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<tbody>
<tr>
<td>yes (4 ... 20 mA; HART; PROFIBUS PA; FOUNDATION FIELDBUS)</td>
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<tr>
<th><strong>Ex - approvals</strong></th>
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<tbody>
<tr>
<td>ATEX II</td>
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<tr>
<td>IECEx</td>
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<td>NEPSI</td>
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<td>EAC Ex</td>
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<td>Explosion proof</td>
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<tr>
<th><strong>Certification</strong></th>
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<tbody>
<tr>
<td>Gost Metrology</td>
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<tr>
<td>SIL (transmitter only)</td>
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More information [www.endress.com/TC61](http://www.endress.com/TC61)