High-Temperature Thermocouple - TAF16

Designed for the extremely high process temperatures in cement production, steel treatment, incinerators and fluidized bed furnaces

Benefits:
- Long lifetime by usage of innovative thermowell materials with increased wear and chemical resistance
- Long-term stable measurement due to sensor protection with non-porous materials
- Flexible product selection thanks to modular design
- Optimized life cycle costs by means of replaceable spare parts

Specs at a glance
- **Accuracy** class 2 acc. to IEC 60584
- **Max. process pressure (static)** at 20 °C: 1 bar (15 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) Type N: -40 °C ...1.150 °C (-40 °F ...2102 °F) Type S: 0 °C ...1.400 °C (32 °F ...2.552 °F)
- **Max. immersion length on request** up to 4.525,00 mm (178,15")

Field of application: Measuring points with extremely high process temperatures require this high-temperature thermometer with a ceramic or metal thermowell as well as thermocouples made from special metals such as platinum and rhodium. The thermowell made from special materials protects from mechanical and chemical damages in the process and increases the life span of the used sensors. This leads to: Cost savings for maintenance of the measuring point, quality improvements of the products and increased plant safety.
## Features and specifications

<table>
<thead>
<tr>
<th>Thermometer</th>
<th>Measuring principle</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Thermocouple</td>
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<table>
<thead>
<tr>
<th>Characteristic / Application</th>
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<tbody>
<tr>
<td>metric style</td>
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<tr>
<td>modular temperature assembly</td>
</tr>
<tr>
<td>high temperature probe (furnace)</td>
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<tr>
<td>incl. thermowell / protection tube (metal)</td>
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<table>
<thead>
<tr>
<th>Thermowell / protection tube</th>
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<tbody>
<tr>
<td>welded protection tube</td>
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<tr>
<td>ceramic protection tube</td>
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<table>
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<tr>
<th>Insert / probe</th>
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<tbody>
<tr>
<td>mineral insulated (MI), flexible</td>
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<tr>
<td>ceramic capillary, rigid</td>
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<thead>
<tr>
<th>Outer diameter protection tube / Insert</th>
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<tbody>
<tr>
<td>14,0 mm (0,55&quot;)</td>
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<tr>
<td>15,0 mm (0,59&quot;)</td>
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<tr>
<td>17,2 mm (0,68&quot;)</td>
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<tr>
<td>18,0 mm (0,71&quot;)</td>
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<tr>
<td>21,3 mm (0,84&quot;)</td>
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<tr>
<td>22,0 mm (0,87&quot;)</td>
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<tr>
<td>26,7 mm (1,05&quot;)</td>
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<tr>
<td>28,0 mm (1,10&quot;)</td>
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### Thermocouple TAF16

<table>
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<th>Material protection tube/ thermowell</th>
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<tbody>
<tr>
<td>1.4401 (316)</td>
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<tr>
<td>1.4749 (~446)</td>
</tr>
<tr>
<td>1.4841 (310)</td>
</tr>
<tr>
<td>Alloy 600 (2.4816)</td>
</tr>
<tr>
<td>Alloy 601 (2.4851)</td>
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<tr>
<td>Incoloy 800HT (1.4959)</td>
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<tr>
<td>Kanthal AF</td>
</tr>
<tr>
<td>Kanthal Super</td>
</tr>
<tr>
<td>NiCo</td>
</tr>
<tr>
<td>Siliciumnitrid(SiN)</td>
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### Process connection
compression fitting:
- G1/2"
- G3/4"
- G1"
- G1 1/4"
- G1 1/2"
adjustable Flange

### Tip shape
straight

### 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)

Type N:
-40 °C ... 1.150 °C
(-40 °F ... 2.102 °F)

Type S:
0 °C ... 1.400 °C
(32 °F ... 2.552 °F)
**Thermocouple TAF16**

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<tr>
<td><strong>Integration head transmitter</strong></td>
</tr>
<tr>
<td>yes (4 ... 20 mA; HART; PROFIBUS PA; FOUNDATION FIELDBUS)</td>
</tr>
<tr>
<td><strong>Certification</strong></td>
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<td>SIL (transmitter only)</td>
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More information [www.us.endress.com/TAF16](http://www.us.endress.com/TAF16)