

# TC65

## Explosion-proof thermocouple thermometer

Safe monitoring of process temperatures in challenging applications e. g. in the Oil & Gas industry



More information and current pricing:

[www.endress.com/TC65](http://www.endress.com/TC65)

### Benefits:

- Types of protection for use in hazardous locations: Intrinsic safety (Ex ia), flameproof (Ex d), non-sparking (Ex nA)
- High degree of insert compatibility and design as per DIN 43772
- High degree of flexibility thanks to modular design with standard terminal heads as per DIN EN 50446 and customer-specific immersion lengths
- For plug-in/screw-in with sliding compression fitting

### Specs at a glance

- **Accuracy** class 1 acc. to IEC 60584
- **Response time** depending on configuration  $t_{50} = 3$  s  $t_{90} = 7$  s
- **Max. process pressure (static)** at 20 °C: 80 bar (1,160 psi)
- **Operating temperature range** Type K: -40 °C ...1.100 °C (-40 °F ...2.012 °F) Type J: -200 °C ...750 °C (-328 °F ...1.382 °F)
- **Max. immersion length on request** up to 30.000,00 mm (1.181,10")

**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. 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. The sensor may be used direct contact without thermowell or where the application requires it, spring load inside of a separate thermowell. Flexible configuration possible.

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## Features and specifications

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### Thermometer

**Measuring principle**

Thermocouple

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**Characteristic / Application**

metric style  
modular temperature assembly  
for heavy duty applications  
suitable for hazardous areas  
threaded process connection  
without neck

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**Thermowell / protection tube**

without (not intended to use with thermowell)

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**Insert / probe**

mineral insulated (MI), flexible

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**Outer diameter protection tube / Insert**

3,0 mm (0,12")

6,0 mm (0,24")

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**Max. immersion length on request**

up to 30.000,00 mm (1.181,10")

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**Material protection tube/ thermowell**

1.4404 (316L)

Alloy 600 (2.4816)

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**Process connection**

male thread:

NPT1/2"

NPT3/4"

compression fitting:

NPT1/2"

NPT3/4"

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## Thermometer

**Tip shape**

straight  
tapered

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**Operating temperature range**

Type K:  
-40 °C ...1.100 °C  
(-40 °F ...2.012 °F)  
Type J:  
-200 °C ...750 °C  
(-328 °F ...1.382 °F)

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**Max. process pressure (static)**

at 20 °C: 80 bar (1,160 psi)

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**Accuracy**

class 1 acc. to IEC 60584

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**Response time**

depending on configuration  
t50 = 3 s  
t90 = 7 s

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**Integration head transmitter**

yes (4 ... 20 mA; HART; PROFIBUS PA; FOUNDATION  
FIELDBUS)

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**Ex - approvals**

ATEX II  
IECEX  
NEPSI  
EAC Ex  
Explosion proof

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**Certification**

Gost Metrology  
SIL (transmitter only)

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