

# TC61

## Explosion-proof TC thermometer with DIN thermowell

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



More information and current pricing:

[www.endress.com/TC61](http://www.endress.com/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

### Thermometer

**Measuring principle**

Thermocouple

**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

## Thermometer

**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)

## Thermometer

### 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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