

## T53

# Explosion proof TC thermometer, US style

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



More information and current pricing:

[www.ch.endress.com/T53](http://www.ch.endress.com/T53)

### Benefits:

- FM/CSA XP Class I, Div. 1 approved temperature assemblies for maximum safety
- One source shopping for temperature measurement solutions. World class transmitter with integrated sensor offering for heavy process industry applications
- Remove and install straight out of the box!
- Improved galvanic isolation on most devices (2 kV)
- Simplified model structure: Competitively priced, offers great value. Easy to order and reorder. A single model number includes sensor, thermowell and transmitter assembly for a complete point solution
- All iTEMP transmitters provide long term stability  $\leq 0.05\%$  per year

### Specs at a glance

- **Accuracy** Standard acc. to ASTM E-230 Special acc. to ASTM E-230
- **Response time** depending on configuration 63% rt = 15,0 s
- **Max. process pressure (static)** Standard acc. to ASTM E-230 Special acc. to ASTM E-230
- **Operating temperature range** Type T: -270 °C ...370 °C (-454 °F ...698 °F) Type J: -210 °C ...720 °C (-346 °F ...1.328 °F) Type E: -270 °C ...820 °C (-454 °F ...1.508 °F) Type K: -270 °C ...1.150 °C (-454 °F ...2.102 °F) Type N: -270 °C ...1.150 °C (-454 °F ...2.102 °F)
- **Max. immersion length on request** up to 22.5" (571 mm) others on request

**Field of application:** The robust thermometer is designed for use in demanding and safety relevant applications e.g. in Chemical, Oil & Gas and Energy industry. Harsh environments, corrosive substances and highest pressures can be handled by the use of robust thermowells 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**

Explosion Proof US style  
modular temperature assembly  
for heavy duty applications  
threaded process connection  
with extension  
incl. thermowell

**Thermowell / protection tube**

bar stock (drilled)

**Insert / probe**

mineral insulated (MI), flexible

**Outer diameter protection tube / Insert**

0,63" ...1,31" (15,88 mm ... 33,40 mm)

**Max. immersion length on request**

up to 22.5" (571 mm)  
others on request

## Thermometer

**Material protection tube/ thermowell**

316/316L

A105

others on request

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**Optional coating**available on request

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**Process connection**

male thread:

NPT1/2"

NPT3/4"

NPT1"

weld in version

socket weld version

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**Tip shape**

stepped

tapered

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**Surface roughness Ra**32  $\mu\text{in}$  (0.80  $\mu\text{m}$ )

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## Thermometer

### Operating temperature range

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-270 °C ...370 °C

(-454 °F ...698 °F)

Type J:

-210 °C ...720 °C

(-346 °F ...1.328 °F)

Type E:

-270 °C ...820 °C

(-454 °F ...1.508 °F)

Type K:

-270 °C ...1.150 °C

(-454 °F ...2.102 °F)

Type N:

-270 °C ...1.150 °C

(-454 °F ...2.102 °F)

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### Max. process pressure (static)

Standard acc. to ASTM E-230

Special acc. to ASTM E-230

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### Accuracy

Standard acc. to ASTM E-230

Special acc. to ASTM E-230

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### Response time

depending on configuration

63% rt = 15,0 s

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### Integration head transmitter

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

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### Ex - approvals

FM XP

CSA XP

FM/CSA XP

CSA GP

## Thermometer

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### Certification

SIL (transmitter only)

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