

# TR61

## Explosion-proof Pt100 thermometer

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



More information and current pricing:

[www.us.endress.com/TR61](http://www.us.endress.com/TR61)

### 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 A acc. to IEC 60751 class AA acc. to IEC 60751
- **Response time** depending on configuration  $t_{50} = 8\text{ s}$   $t_{90} = 21\text{ s}$
- **Max. process pressure (static)** at 20 °C: 100 bar (1.450 psi)
- **Operating temperature range** PT100 TF StrongSens: -50 °C ...500 °C (-58 °F ...932 °F) PT100 WW: -200 °C ...600 °C (-328 °F ...1.112 °F) PT100 TF: -50 °C ...400 °C (-58 °F ...752 °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

Resistance Temperature Detector

#### Characteristic / Application

metric style

modular temperature assembly

for heavy duty applications

suitable for hazardous areas

with neck

incl. thermowell / protection tube (metal)

usable with insert StrongSens

#### 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")

Thermometer

**Material protection tube/ thermowell**

1.4404 (316L)

1.4571 (316Ti)

AlloyC276 (2.4819)

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**Optional coating**

Not defined

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## Thermometer

**Process connection**

male thread:

G1/2"

G3/4"

G1"

NPT1/2"

NPT3/4"

M20x1,5

compression fitting:

G1/2"

flange:

ASME 1" 150 RF (B16.5)

ASME 1" 300 RF (B16.5)

DN25 PN40 B1 (EN1092)

DN40 PN40 B1(EN1092)

DN50 PN40 B1 (EN1092)

**Tip shape**

straight

reduced

tapered

## Thermometer

**Surface roughness Ra**

Not defined

**Operating temperature range**

PT100 TF StrongSens:

-50 °C ...500 °C

(-58 °F ...932 °F)

PT100 WW:

-200 °C ...600 °C

(-328 °F ...1.112 °F)

PT100 TF:

-50 °C ...400 °C

(-58 °F ...752 °F)

**Max. process pressure (static)**

at 20 °C: 100 bar (1.450 psi)

**Accuracy**

class A acc. to IEC 60751

class AA acc. to IEC 60751

**Response time**

depending on configuration

t<sub>50</sub> = 8 st<sub>90</sub> = 21 s

Thermometer

**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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