

# TR10

## Modular RTD thermometer

Comprehensive and common temperature measurement technology for almost all branches of industry



More information and current pricing:

[www.ca.endress.com/TR10](http://www.ca.endress.com/TR10)

### Benefits:

- High degree of flexibility thanks to modular design with standard terminal heads as per DIN EN 50446 and customer-specific immersion lengths
- 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
- Types of protection for use in hazardous locations: Intrinsic safety (Ex ia), non-sparking (Ex nA)
- Head transmitter with easy selection: Analog output 4 to 20 mA, HART®, PROFIBUS® PA or FOUNDATION Fieldbus™

### Specs at a glance

- **Accuracy** class A acc. to IEC 60751 class AA acc. to IEC 60751
- **Response time** depending on configuration
- **Max. process pressure (static)** at 20 °C: 75 bar (1088 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 high modular and robust thermometer finds its use in several applications in almost all industries. 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. A variety of process connections, dimensions and materials offer flexible application possibilities.

## Features and specifications

### Thermometer

**Measuring principle**

Resistance Temperature Detector

**Characteristic / Application**

metric style

modular temperature assembly

universal range of application

suitable for hazardous areas

threaded process connection

with neck

incl. thermowell / protection tube (metal)

can be used with StrongSens insert

**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")

14,0 mm (0,55")

15,0 mm (0,59")

**Max. immersion length on request**

up to 10.000,00 mm (393,70")

## Thermometer

**Material protection tube/ thermowell**

1.4404 (316L)  
1.4571 (316Ti)  
Alloy C276 (2.4819)  
Alloy 600 (2.4816)

---

**Optional coating**

Not defined

---

**Process connection**

male thread:  
G1/2"  
G3/4"  
G1"  
NPT1/2"  
NPT3/4"  
M20x1.5

---

**Tip shape**

straight  
reduced  
tapered

---

**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)

---

## Thermometer

**Max. process pressure (static)**  
at 20 °C: 75 bar (1088 psi)

---

**Accuracy**  
class A acc. to IEC 60751  
class AA acc. to IEC 60751

---

**Response time**  
depending on configuration

---

**Integration head transmitter**  
yes (4 ... 20 mA; HART; PROFIBUS PA; FOUNDATION  
FIELDBUS)

---

**Ex - approvals**  
ATEX II1D Ex ia IIIC, II1G Ex ia IIC T6  
ATEX II1/2D Ex ia IIIC, II1G Ex ia IIC T6  
ATEX IECEx II1/2D Ex ta/tb IIIC Da/Db  
ATEX II1G Ex ia IIC T6  
ATEX II 3 G Ex nA IIC T6, II3D  
NEPSI Ex ia IIC T6, Ex iaD 20 T85-T450  
IECEx Ex ia IIC T6 Ga/Gb  
UK II1D Ex ia IIIC Da, II1G Ex ia IIC T6 Ga  
UK II1/2D Ex ia IIIC Da/Db, II1G Ex ia IIC T6 Ga  
UK II1G Ex ia IIC T6 Ga  
UK II 3 G Ex nA IIC T6 Gc, II3D Ex tc IIIC Dc  
EAC Ex ia IIC T6 Ga + DIP  
NEPSI Ex nA IIC T6

---

**Certification**  
Gost Metrology  
SIL (transmitter only)

---

More information [www.ca.endress.com/TR10](http://www.ca.endress.com/TR10)