Thermocouple TC10

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 1 acc. to IEC 60584
- **Response time** depending on configuration $t_{50} = 6 \text{s}$ $t_{90} = 13 \text{s}$
- **Max. process pressure (static)** at 20 °C: 75 bar (1088 psi)
- **Operating temperature range** Type K: max. 1.100 °C (max. 2.012 °F) Type J: max. 800 °C (max. 1.3472 °F)
- **Max. immersion length on request** up to 10,000 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

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### Thermometer

**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)

**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
  - R1/2"
  - R3/4"

**Tip shape**
- straight
- reduced
- tapered

**Surface roughness Ra**
- 0,8 μm (31,5 μin.)

**Operating temperature range**
- Type K:
  - max. 1.100 °C
  - (max. 2.012 °F)
- Type J:
  - max. 800 °C
  - (max. 1.3472 °F)

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

**Accuracy**
- class 1 acc. to IEC 60584

**Response time**
- depending on configuration
  - t50 = 6 s
  - t90 = 13 s
Thermocouple TC10

Thermometer

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

Ex - approvals
ATEX II
ATEX IECEx
NEPSI
IECEx
EAC Ex

Certification
Gost Metrology
SIL (transmitter only)

More information www.us.endress.com/TC10