TC66
Explosion-proof TC Thermometer

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

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
- 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 t50 = 3 s t90 = 7 s
- **Max. process pressure (static)** at 20 °C: 500 bar (7.252 psi)
- **Operating temperature range** Type K: max. 1,100 °C (max. 2,012 °F) Type J: max. 800 °C (max. 1,472 °F)
- **Max. immersion length on request** up to 5,000,00 mm (196,85"

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.

Features and specifications
Thermometer

**Measuring principle**
Thermocouple

**Characteristic / Application**
US style
modular temperature assembly
for heavy duty applications
suitable for hazardous areas
with neck
incl. thermowell / protection tube (metal)

**Thermowell / protection tube**
bar stock (drilled)

**Insert / probe**
mineral insulated (MI), flexible

**Outer diameter protection tube / Insert**
20 mm (0,79")
24 mm (0,94")
25 mm (0,98")

**Max. immersion length on request**
up to 5.000,00 mm (196,85")

**Material protection tube/ thermowell**
1.4401 (316)
1.4404 (316L)
1.4571 (316Ti)
Alloy C276
Alloy 400

**Optional coating**
Not defined
Thermocouple TC66

**Process connection**
- male thread:
  - NPT3/4"
  - NPT1"
- flange:
  - ASME 1" 150 RF (B16.5)
  - ASME 1" 300 RF (B16.5)
  - ASME 1" 600 RF (B16.5)
  - ASME 1,5" 150 RF (B16.5)
  - ASME 1,5" 300 RF (B16.5)
  - ASME 1,5" 600 RF (B16.5)
  - ASME 2" 300 RF (B16.5)
  - ASME 2" 600 RF (B16.5)

**Tip shape**
- straight
- tapered

**Surface roughness Ra**
- 1,6 μm (63,0 μin.)

**Operating temperature range**
- Type K:
  - max. 1.100 °C
  - (max. 2.012 °F)
- Type J:
  - max. 800 °C
  - (max. 1.472 °F)

**Max. process pressure (static)**
- at 20 °C: 500 bar (7.252 psi)

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

**Response time**
Depending on configuration
- \( t_{50} = 3 \text{ s} \)
- \( t_{90} = 7 \text{ s} \)

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

**Ex - approvals**
- ATEX II
- IECEx
- NEPSI
- EAC Ex
- Explosion proof
- UKCA

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

More information [www.us.endress.com/TC66](http://www.us.endress.com/TC66)