Thermocouple TC63

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, nipple union version, to protect the head transmitter from overheating
- Variable selection of process connections: thread, compression fitting or flange
- Optionally fast response time with 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 1 acc. to IEC 60584
- **Response time** depending on configuration t50 = 3 s t90 = 7 s
- **Max. process pressure (static)** at 20 °C: 100 bar (1.450 psi)
- **Operating temperature range** Type K: -40 °C ... 1.100 °C (-40 °F ...2.012 °F) Type J: -200 °C ...750 °C (-328 °F ...1.382 °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

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
welded protection tube

Insert / probe
mineral insulated (MI), flexible

Outer diameter protection tube / Insert
1/4" SCH80
1/2" SCH80
1/2" SCH40
3/4" SCH80
3/4" SCH40

Max. immersion length on request
up to 10.000,00 mm (393,70")

Material protection tube/ thermowell
1.4401 (316)
1.4749 (~446)

Optional coating
Not defined
**Thermometer**

**Process connection**
- male thread:
  - NPT 1/2"
  - NPT 3/4"
  - NPT 1"
- compression fitting:
  - 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
- reduced

**Surface roughness Ra**
- 1.6 μm (63.0 μin.)

**Operating temperature range**
- Type K:
  - -40 °C ... 1.100 °C
  - (-40 °F ... 2.012 °F)
- Type J:
  - -200 °C ... 750 °C
  - (-328 °F ... 1.382 °F)

**Max. process pressure (static)**
- at 20 °C: 100 bar (1.450 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

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

More information [www.us.endress.com/TC63](http://www.us.endress.com/TC63)