

# TC12

## Modular TC thermometer

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



More information and current pricing:

[www.be.endress.com/TC12](http://www.be.endress.com/TC12)

### 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
- Fast response time with reduced/tapered tip form
- Types of protection for use in hazardous locations: Intrinsic safety (Ex i.a.), 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: 40 bar (580 psi)
- **Operating temperature range** Type K: -40 °C ...1.100 °C (-40 °F ...2.012 °F) Type J: -40 °C ...750 °C (-40 °F ...1.382 °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.

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## Features and specifications

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### Thermometer

**Measuring principle**

Thermocouple

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**Characteristic / Application**

metric style  
modular temperature assembly  
universal range of application  
suitable for hazardous areas  
process connection as compression fitting  
without neck  
incl. thermowell / protection tube (metal)

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**Thermowell / protection tube**

welded protection tube

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**Insert / probe**

mineral insulated (MI), flexible

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**Outer diameter protection tube / Insert**

9,0 mm (0,35")  
11,0 mm (0,43")  
12,0 mm (0,47")

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**Max. immersion length on request**

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

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**Material protection tube/ thermowell**

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

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**Optional coating**

Not defined

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## Thermometer

**Process connection**

compression fitting:

G1/2"

G1"

R1/2"

R3/4"

**Tip shape**

straight

reduced

tapered

**Surface roughness Ra**

0,8 µm (31,5 µin.)

**Operating temperature range**

Type K:

-40 °C ...1.100 °C

(-40 °F ...2.012 °F)

Type J:

-40 °C ...750 °C

(-40 °F ...1.382 °F)

**Max. process pressure (static)**

at 20 °C: 40 bar (580 psi)

**Accuracy**

class 1 acc. to IEC 60584

**Response time**

depending on configuration

t50 = 6 s

t90 = 13 s

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

Thermometer

**Ex - approvals**

ATEX II  
ATEX IECEX  
NEPSI  
IECEX  
EAC Ex

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**Certification**

Gost Metrology  
SIL (transmitter only)

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