

# TSC310

## Thermocouple sensor, cable probe

Cost efficient thermocouple sensor designed for use in many process and laboratory applications



More information and current pricing:

[www.be.endress.com/TSC310](http://www.be.endress.com/TSC310)

### Benefits:

- High flexibility through user-specific insertion lengths and variable process connections
- Fast response time
- Different types of thermocouples according to DIN EN 60584 and ASTM E230/ANSI MC96.1: type J (Fe-CuNi), type K (NiCr-Ni)
- Types of protection for use in hazardous locations: Intrinsic Safety (Ex ia) and non-Sparking (Ex nA)
- NEPSI approval (Ex ia)

### Specs at a glance

- **Accuracy** class 2 acc. to IEC 60584
- **Response time**  $t_{50} = 1 \text{ s}$   $t_{90} = 2 \text{ s}$
- **Max. process pressure (static)** at 20 °C: 25 bar (363 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 100.000,00 mm (3.937,01")

**Field of application:** The thermocouple (TC) cable probe is easy to install and provide a high operational safety due to reliable and accurate temperature measurement in common processes. The probe is specially suited to temperature measurement in machinery, laboratory equipment and plants in gaseous or liquid medium like air, water, oil, etc. Without additional thermowell the probe sheath is directly in contact with the process medium. This enables to detect rapid temperature changes fast and accurate.

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## Features and specifications

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### Thermometer

**Measuring principle**

Thermocouple

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**Characteristic / Application**

metric style  
cable probe  
suitable for hazardous areas  
process connection as compression fitting

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**Thermowell / protection tube**

without (not intended to use with thermowell)

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**Insert / probe**

mineral insulated (MI), flexible

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**Outer diameter protection tube / Insert**

2,0 mm (0,08")  
3,0 mm (0,12")  
4,5 mm (0,18")  
6,0 mm (0,24")

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**Max. immersion length on request**

up to 100.000,00 mm (3.937,01")

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**Material protection tube/ thermowell**

1.4401 (316)  
Alloy 600 (2.4816)

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**Process connection**

compression fitting:  
G1/4"  
G3/8"  
G1/2"  
NPT1/4"  
NPT1/2"

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## Thermometer

**Tip shape**

straight

**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: 25 bar (363 psi)

**Accuracy**

class 2 acc. to IEC 60584

**Response time**t<sub>50</sub> = 1 st<sub>90</sub> = 2 s**Integration head transmitter**

no

**Ex - approvals**

ATEX II

NEPSI

IECEX

**Certification**

Gost Metrology

More information [www.be.endress.com/TSC310](http://www.be.endress.com/TSC310)