

# TH51

## Modular TC thermometer, US style

Best in class temperature measurement technology for general applications



More information and current pricing:

[www.endress.com/TH51](http://www.endress.com/TH51)

### Benefits:

- One source shopping for temperature measurement solutions. World class transmitter with integrated sensor offering. Remove and install straight out of the box!
- Improved galvanic isolation on most devices (2 kV)
- Simplified model structure: Competitively priced, offers great value. Easy to order and reorder. A single model number includes sensor and transmitter assembly for a complete point solution.
- All iTEMP® transmitters provide long term stability  $\leq 0.05$  % per year

### Specs at a glance

- **Accuracy** Standard acc. to ASTM E-230 Special acc. to ASTM E-230
- **Response time** 63% rt = 0.3 s
- **Max. process pressure (static)** at 20°C: 250 bar (3.626 psi) depends on configuration
- **Operating temperature range** Type T: -270 °C ...370 °C (-454 °F ...698 °F) Type J: -210 °C ...720 °C (-346 °F ...1.328 °F) Type E: -270 °C ...820 °C (-454 °F ...1.508 °F) Type K: -270 °C ...1.150 °C (-454 °F ...2.102 °F) Type N: -270 °C ... 1.150 °C (-454 °F ...2.102 °F)
- **Max. immersion length on request** up to 96" (2.438 mm) others on request

**Field of application:** The high modular thermometer is used for several applications in almost all industries. Examples are heat exchangers, furnaces, dryers, process reactors, etc. With different head transmitter it's a complete unit ready for use with enhanced measurement accuracy and

reliability. It also enables very fast response times, due to direct contact measurement without thermowell. A variety of process connections and dimensions offer flexible application possibilities.

## Features and specifications

### Thermometer

**Measuring principle**

Thermocouple

**Characteristic / Application**

US style  
modular temperature assembly  
threaded process connection

**Thermowell / protection tube**

without (not intended to use with thermowell)

**Insert / probe**

mineral insulated (MI), flexible

**Outer diameter protection tube / Insert**

1/8" (3,18 mm)  
3/16"(4,76 mm)  
1/4" (6,35 mm)  
3/8" (9,53 mm)

**Max. immersion length on request**

up to 96" (2.438 mm)  
others on request

**Material protection tube/ thermowell**

316  
Alloy 600

**Optional coating**

Not applicable

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**Thermometer****Process connection**

male thread:

G1/2"

NPT1/2"

compression fitting:

NPT1/8"

NPT1/4"

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**Tip shape**

straight

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**Surface roughness Ra**

Not defined

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**Operating temperature range**

Type T:

-270 °C ...370 °C

(-454 °F ...698 °F)

Type J:

-210 °C ...720 °C

(-346 °F ...1.328 °F)

Type E:

-270 °C ...820 °C

(-454 °F ...1.508 °F)

Type K:

-270 °C ...1.150 °C

(-454 °F ...2.102 °F)

Type N:

-270 °C ... 1.150 °C

(-454 °F ...2.102 °F)

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**Max. process pressure (static)**

at 20°C: 250 bar (3.626 psi)

depends on configuration

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**Accuracy**

Standard acc. to ASTM E-230

Special acc. to ASTM E-230

## Thermometer

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**Response time**

63% rt = 0.3 s

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**Integration head transmitter**

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

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**Ex - approvals**

transmitter only

FM IS

CSA IS

FM/CSA IS

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**Certification**

SIL (transmitter only)

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