

# iTHERM TMS12 MultiSens Linear Multipoint

## Modular straight TC and RTD multipoint thermometer with primary thermowell



More information and current pricing:

[www.ca.endress.com/TMS12](http://www.ca.endress.com/TMS12)

### Benefits:

- Primary thermowell for superior mechanical strength and an easy replacement of individual inserts, which are available either with TC or RTD technology
- Increased safety thanks to a diagnostic chamber able to contain the process in the event of leakages through the primary seals
- Compliance to various safety standards (such as but not limited to ATEX, PED), electrical and Pressure Directive for easy process integration
- High degree of customization thanks to a modular product design for maximum flexibility, easy installation and maintenance
- On board electronic heat protection for long product lifetime
- Superior mechanical strength and sensors replaceability thanks to a primary thermowell

### Specs at a glance

- **Accuracy** class 1 acc. to IEC 60584 class Special ASTM E230 and ANSI MC 96.1 IEC60751 Class A IEC60751 Class AA
- **Response time** depending on configuration: TC:  $t_{50} = 21$  s  $t_{90} = 52$  s RTD:  $t_{50} = 42$  s  $t_{90} = 108$  s
- **Max. process pressure (static)** at 20 °C: 240 bar (3481 psi)
- **Operating temperature range** Type K: -270 °C ...1.100 °C (-454 °F ...2.012 °F) Type J: -210 °C ...760 °C (-346 °F ...1.382 °F) Type N: -270 °C ...1100 °C (-454 °F ...2.012 °F) Pt100 WW; 3mm; 316L; -200...600oC Pt100 TF; 3mm; 316L; -50...400oC
- **Max. immersion length on request** up to 15.000,00 mm (590")

**Field of application:** The iTHERM TMS12 MultiSens Linear multipoint thermometer for oil & gas and chemical applications can be customized

for various scenarios in compliance with the highest safety standards. It increases process safety by creating detailed linear temperature profiles and features a diagnostic chamber to contain and monitor leakages through the primary seals. Easy process integration reduces installation time and thus maximizes plant availability.

## Features and specifications

### Thermometer

#### Measuring principle

Resistance Temperature Detector

#### Characteristic / Application

metric style  
imperial style  
easy-to-use  
suitable for hazardous areas  
process connection: flanged  
light chemical processes  
linear sensor distribution  
modular design  
replaceable sensors during operation  
diagnostic chamber

#### Thermowell / protection tube

with one primary thermowell (for replaceable sensors and increased mechanical protection)

#### Insert / probe

mineral insulated (MI) sensors in a primary thermowell

#### Outer diameter protection tube / Insert

48,3mm (1 1/2")  
60,3mm (2")  
76,1mm (2 1/2")  
88,9mm (3")

#### Max. immersion length on request

up to 15.000,00 mm (590")

## Thermometer

**Material protection tube/ thermowell**

1.4401 (316)  
1.4435 (316L)  
1.4541 (321)  
1.4845 (310L)  
1.4301 (304)  
1.4307 (304L)

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**Process connection**

flange:

1 1/2" ASME/ANSI B16.5 150  
...900  
2" ASME/ANSI B16.5 150  
...900  
3" ASME/ANSI B16.5 150  
..900  
DN40 EN/DIN 1092.1 PN10  
...PN150  
DN50 EN/DIN 1092.1 PN10  
...PN150  
DN80 EN/DIN 1092.1 PN10  
...PN150

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**Tip shape**straight

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## Thermometer

### Operating temperature range

Type K:

-270 °C ...1.100 °C

(-454 °F ...2.012 °F)

Type J:

-210 °C ...760 °C

(-346 °F ...1.382 °F)

Type N:

-270 °C ...1100 °C

(-454 °F ...2.012 °F)

Pt100 WW; 3mm; 316L; -200...600oC

Pt100 TF; 3mm; 316L; -50...400oC

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### Max. process pressure (static)

at 20 °C: 240 bar (3481 psi)

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### Accuracy

class 1 acc. to IEC 60584

class Special ASTM E230 and ANSI MC 96.1

IEC60751 Class A

IEC60751 Class AA

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### Response time

depending on configuration:

TC:

t50 = 21 s

t90 = 52 s

RTD:

t50 = 42 s

t90 = 108 s

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### Integration head transmitter

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

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Thermometer

**Ex - approvals**

ATEX

IECEX

UL

FM

CSA

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**Certification**

SIL (transmitter only)

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