iTHERM TMS12 MultiSens Linear
Multipoint

Modular straight TC and RTD multipoint thermometer with primary thermowell

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: \( t_{50} = 21 \text{ s} \) \( t_{90} = 52 \text{ s} \) RTD: \( t_{50} = 42 \text{ s} \) \( t_{90} = 108 \text{ s} \)
- **Max. process pressure (static)** at 20 °C: 240 bar (3481 psi)
- **Operating temperature range** Type K: max. 1.070 °C (max. 1.958 °F) Type J: max. 520 °C (max. 968 °F) Type N: max. 1.100 °C (max. 2.012 °F) Pt100 WW: -200...600 °C (-328...1.112 °F) Pt100 TF: -50...400 °F (-58...752 °F)
- **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

More information and current pricing: www.endress.com/TMS12
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)

**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

**Tip shape**
- straight
Thermometer

Operating temperature range
Type K:
max. 1.070 °C
(max. 1.958 °F)
Type J:
max. 520 °C
(max. 968 °F)
Type N:
max. 1.100 °C
(max. 2.012 °F)
Pt100 WW:
-200...600 °C
(-328...1.112 °F)
Pt100 TF:
-50...400 °F
(-58...752 °F)

Max. process pressure (static)
at 20 °C: 240 bar (3481 psi)

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:
t50 = 21 s
t90 = 52 s
RTD:
t50 = 42 s
t90 = 108 s

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

Ex - approvals
- ATEX
- IECEX
- UL
- FM
- CSA

Certification
- SIL (transmitter only)

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