

# iTHERM TMS01 MultiSens Flex Multipoint

Modular direct contact TC and RTD multipoint thermometer for oil, gas and petrochemical applications



More information and current pricing:

[www.at.endress.com/TMS01](http://www.at.endress.com/TMS01)

## Benefits:

- Easy-to-use device with modular and flexible design, ready to be installed either for direct contact measurements or by means of sensor-dedicated protecting tubes. The device can also be installed in thermowells already in place
- Infinite layouts of 3D sensors distribution for any desired process monitoring configuration
- High degree of customization thanks to a modular product design for easy installation, process integration and maintenance
- High degree of insert process compatibility as per standard IEC 60584, ASTM E230 and IEC 60751
- On-board electronic heat protection for highest product durability
- Compliance to different types of protection for use in hazardous locations for easy process integration

## Specs at a glance

- **Accuracy** class 2 acc. to IEC 60584 ASTM E230 and ANSI MC 96.1
- **Response time** depending on configuration: TC: t50 = 2 s t90 = 5 s RTD: t50 = 0,8s t90 = 2s
- **Max. process pressure (static)** at 20 °C: 100 bar (1450 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) Type T: -270 °C ...370 °C (-454 °F ...698 °F)
- **Max. immersion length on request** up to 30.000,00 mm (1181")

**Field of application:** By complying with the highest safety standards, iTHERM TMS01 can be customized for various applications. Bendable into a 3D layout, it provides a complete temperature profile just by using one nozzle. The device is configurable with or without thermowells for optimal response times, mechanical strength or sensors replaceability. It is available either with TC or RTD technology or with our iTHERM StrongSens.

## Features and specifications

### Thermometer

#### Measuring principle

Resistance Temperature Detector

#### Characteristic / Application

metric style  
easy-to-use  
suitable for hazardous areas  
flanged process connection  
light chemical processes  
3D sensors distributions  
modular design  
replaceable sensors during shutdown

#### Thermowell / protection tube

without (for direct contact sensors type)  
with (for replaceable sensors)  
with (for increased mechanical protection)  
Multi-thermowells, each one dedicated to a sensor

#### Insert / probe

mineral insulated (MI), flexible  
mineral insulated (MI), flexible, with its own thermowell

#### Outer diameter protection tube / Insert

6,0 mm (0,24")  
8,0 mm (0,31")  
10,29 mm (1/8")

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**Thermometer****Max. immersion length on request**up to 30.000,00 mm (1181")

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**Material protection tube/ thermowell**

1.4401 (316)

1.4435 (316L)

1.4541 (321)

1.4550 (347)

Alloy 600 (2.4816)

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**Process connection**

flange:

2" ASME/ANSI B16.5 150

...600

3" ASME/ANSI B16.5 150

..600

4" ASME/ANSI B16.5 150

...600

6" ASME/ANSI B16.5 150

...600

8" ASME/ANSI B16.5 150

...600

DN80 EN/DIN 1092.1 PN10

...PN100

DN100 EN/DIN 1092.1 PN10

...PN100

DN125 EN/DIN 1092.1 PN10

...PN100

DN150 EN/DIN 1092.1 PN10

...PN100

DN200 EN/DIN 1092.1 PN10

...PN100

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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)

Type T:

-270 °C ...370 °C

(-454 °F ...698 °F)

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### Max. process pressure (static)

at 20 °C: 100 bar (1450 psi)

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### Accuracy

class 2 acc. to IEC 60584

ASTM E230 and ANSI MC 96.1

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### Response time

depending on configuration:

TC:

t50 = 2 s

t90 = 5 s

RTD:

t50 = 0,8s

t90 = 2s

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### Integration head transmitter

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

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### Ex - approvals

ATEX

IECEX

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Thermometer

**Certification**

SIL (transmitter only)

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