

# iTHERM ModuLine TM111

Trend-setting, modular thermometer for direct installation into a variety of industrial applications



## Benefits:

- User-friendly and reliable from product selection to maintenance
- iTHERM inserts: globally unique, automated production. Full traceability and consistently high product quality for reliable measured values
- iTHERM QuickSens: fastest response times 1.5 s for optimum process control
- iTHERM StrongSens: unsurpassed vibration resistance (> 60g) for ultimate plant safety
- iTHERM TA30x: variety of terminal heads for easier handling and lower installation and maintenance costs
- International certification: explosion protection according to ATEX, IECEx, CSA C US and NEPSI

More information and current pricing:

[www.fi.endress.com/TM111](http://www.fi.endress.com/TM111)

## Specs at a glance

- **Accuracy** Class AA acc. to IEC 60751 Class A acc. to IEC 60751 Class B acc. to IEC 60751 Class special or standard acc. to ASTM E230 Class 1 or 2 acc. to IEC 60584-2
- **Response time** t<sub>90</sub> starting at < 1,5 s QuickSens depending on configuration
- **Max. process pressure (static)** depending on the configuration
- **Operating temperature range** PT100 TF StrongSens: -50 °C ...500 °C (-58 °F ...932 °F) PT100 QuickSensTF: -50 °C ...200 °C (-58 °F ...392 °F) PT100 WW: -200 °C ...600 °C (-328 °F ...1.112 °F) PT100 TF: -50 °C ...400 °C (-58 °F ...752 °F) Thermoelement: Typ K up to 1.100 °C (2.012 °F) Typ J up to 800 °C (1.472 °F) Typ N up to 1.100 °C (2.012 °F)
- **Max. immersion length on request** up to 4.500,0 mm (177")

**Field of application:** Easy-to-use metric version with outstanding RTD or TC sensor technology. An optional head transmitter, with all common communication protocols - Bluetooth® technology inclusive, makes the device ready to use with enhanced measurement accuracy and reliability. A variety of process connections, dimensions and materials offer flexible application possibilities. It features vibration-resistant and fast-response sensor technology (iTHERM StrongSens and QuickSens) as well as hazardous area approvals.

## Features and specifications

### Thermometer

**Measuring principle**

Resistance Temperature Detector

**Characteristic / Application**

metric style

universal range of application

suitable for hazardous areas

can be used with StrongSens, QuickSens insert

direct process contact

**Thermowell / protection tube**

without, direct process contact

**Insert / probe**

mineral insulated (MI), flexible

**Outer diameter protection tube / Insert**

Insert:

3,0 mm

6,0 mm

**Max. immersion length on request**

up to 4.500,0 mm (177")

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**Thermometer****Material protection tube/ thermowell**

Insert Material:

316L (1.4404)

Alloy 600 (2.4816)

Pyrosil

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**Process connection**

Thread:

G1/4, G1/2"

NPT1/2", NPT3/4"

M18x1.5, M20x1.5

Cap-nut:

G1/2", G3/4"

Compression fitting, also spring load:

NPT1/2", G1/2"

Weld-in adapter cylindrical or spherical

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**Tip shape**straight

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**Surface roughness Ra**< 1.6  $\mu\text{m}$  (63.00  $\mu\text{in}$ )

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## Thermometer

### Operating temperature range

PT100 TF StrongSens:

-50 °C ...500 °C

(-58 °F ...932 °F)

PT100 QuickSensTF:

-50 °C ...200 °C

(-58 °F ...392 °F)

PT100 WW:

-200 °C ...600 °C

(-328 °F ...1.112 °F)

PT100 TF:

-50 °C ...400 °C

(-58 °F ...752 °F)

Thermoelement:

Typ K up to 1.100 °C (2.012 °F)

Typ J up to 800 °C (1.472 °F)

Typ N up to 1.100 °C (2.012 °F)

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### Max. process pressure (static)

depending on the configuration

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### Accuracy

Class AA acc. to IEC 60751

Class A acc. to IEC 60751

Class B acc. to IEC 60751

Class special or standard acc. to ASTM E230

Class 1 or 2 acc. to IEC 60584-2

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### Response time

t90 starting at < 1,5 s QuickSens

depending on configuration

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### Integration head transmitter

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

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Thermometer

**Ex - approvals**

ATEX  
ATEX IECEX  
NEPSI  
IECEX  
EAC Ex  
CSA C/US  
INMETRO

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**Certification**

SIL (Transmitter)

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