

## iTHERM CompactLine TM311

Pt100 compact thermometer, with optional integrated IO-Link and 4–20 mA transmitter, programmable PC



from **€64.00**

Price as of 27.01.2022

More information and current pricing:

[www.easc.endress.com/TM311](http://www.easc.endress.com/TM311)

### Benefits:

- Fast installation and easy commissioning:
  - Small, compact design made entirely from stainless steel
  - M12 connection with IP69 for easy electrical connection
  - Pt100, 4-wire connection or universal output (IO-Link / 4–20 mA)
  - Preset measuring range
- Excellent metrological properties thanks to innovative sensor technology:
  - Extremely short response times
  - High level of measuring accuracy even with short immersion lengths
  - Improved measuring accuracy with transmitter-sensor matching
- Reliable operation ensured by approvals and certificates:
  - Device safety to EN610101-1 and CSA C/US
  - Electromagnetic compatibility to NAMUR NE21
  - Diagnostics information to NAMUR NE43
  - Hygiene-compliant design with 3-A marking
  - Marine approval

### Specs at a glance

- **Accuracy** class A acc. to IEC 60751
- **Response time**  $t_{50} = 1 \text{ s}$   $t_{90} = 2 \text{ s}$
- **Max. process pressure (static)** at 20 °C: 50 bar (725 psi)
- **Operating temperature range** PT 100: -50 °C ...200 °C (-58 °F ...392 °F)
- **Max. immersion length on request** up to 600,00 mm (23,62")

**Field of application:** The compact thermometer measures the process temperature using a Pt100 sensor element (Class A, 4-wire). An optional integrated transmitter converts the Pt100 input signal. In the version

with integrated electronics, the device automatically detects the connection variant (**IO-Link** or 4–20 mA).

## Features and specifications

### Thermometer

#### Measuring principle

Resistance Temperature Detector

#### Characteristic / Application

metric and imperial style  
compact temperature probe  
fast response time  
high accuracy  
standard and hygienic design  
hygienic process connection  
threaded process connection

#### Thermowell / protection tube

without  
incl. thermowell  
incl. T-/elbow thermowell

#### Insert / probe

pipe version, isolated wires, not flexible

#### Outer diameter protection tube / Insert

3,0 mm (0,12")  
6,0 mm (0,24")

#### Max. immersion length on request

up to 600,00 mm (23,62")

#### Material protection tube/ thermowell

1.4435 Delta-Ferrit < 1%  
316L

## Thermometer

### Process connection

compression fitting

Thread

weld in adapter

clamp connections acc. to ISO2852

screwed pipe joint acc. to DIN 11851

aseptic screwed pipe joint acc. to DIN 11864-1

metallic sealing system

thread acc. to ISO 228 for liquid adaptor

Varivent

SMS 1147

T- and elbow pieces

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### Tip shape

straight

reduced

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### Surface roughness Ra

0,76 µm (29,92 µin)

0,38 µm (14,96 µin)

0,38 µm (14,96 µin) electropolished

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### Operating temperature range

PT 100:

-50 °C ...200 °C

(-58 °F ...392 °F)

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### Max. process pressure (static)

at 20 °C: 50 bar (725 psi)

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### Accuracy

class A acc. to IEC 60751

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### Response time

t<sub>50</sub> = 1 s

t<sub>90</sub> = 2 s

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## Thermometer

### Integration head transmitter

no (4...20mA Signal, IO-Link)

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### Certification

3A, EHEDG, ASME BPE, FDA, TSE  
1935/2004, 2023/2006, 10/2011

DNVGL, BV

cCSAus

EAC

RCM

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More information [www.easc.endress.com/TM311](http://www.easc.endress.com/TM311)