Sanitary digital thermometer iTHERM TM411

Hygienic temperature measurement instrument for optimum product quality, process safety and efficiency

Benefits:

- Optimum process control: Fast sensor response times with iTHERM QuickSens technology (t90: 1.5 s)
- Up to 75% faster and safer recalibrations with iTHERM QuickNeck – tool-free quick-release for instant insert removal
- High sensor availability under rough conditions: Vibration resistant RTD technology iTHERM StrongSens (> 60g)
- Easy product selection, configuration and maintenance
- Increase productivity and product safety in sanitary applications with highly accurate and reliable measurements
- Thermowells, hygienic process connections and housings expertly manufactured from high-grade materials treated for low surface roughness

Specs at a glance

- **Accuracy** class A acc. to IEC 60751 class AA acc. to IEC 60751
- **Response time** depending on configuration QuickSens: t90 = 1.5 s StrongSens: t90 = 9.5 s
- **Max. process pressure (static)** at 20 °C: 40 bar (580 psi)
- **Operating temperature range** PT100: -200 °C ... 600 °C (-328 °F ... 1.112 °F) StrongSens: -50 °C ... 500 °C (-58 °F ... 932 °F) QuickSens: -50 °C ... 200 °C (-58 °F ... 392 °F)

Field of application: The modular sanitary thermometer iTHERM TM411 with digital display delivers highly accurate, reliable and fast temperature measurements in process lines, vessels, tanks, fermenters and more. The high-performance device is designed for the strictly regulated food and life sciences industries. Configure your hygienic...
instruments from a selection of thin film RTDs with QuickSens or StrongSens technology or 2x Pt100 wire wound temperature sensors, smart transmitters and hygienic process connections.

### Features and specifications

**Thermometer**

**Measuring principle**
Resistance Temperature Detector

**Characteristic / Application**
- metric style
- modular temperature assembly
- hygienic/aseptic design (3-A®, EHEDG, ASME BPE, FDA)
- hygienic process connections
- with neck
- suitable for hazardous areas
- incl. protection tube
- QuickSens for fastest response time
- StrongSens for most robust design
- QuickNeck for easy and cost saving recalibration

**Thermowell / protection tube**
- without
- incl. thermowell
- incl. Tee-/elbow thermowell

**Insert / probe**
- mineral insulated (MI), flexible
- pipe version, isolated wires, not flexible

**Outer diameter protection tube / Insert**
- 6,0 mm (0,24")
- 9,0 mm (0,35")
- 12,7 mm (0,5")

**Material protection tube/ thermowell**
- 1.4435 delta-ferrit < 1%
- 316L
**Thermometer**

**Process connection**
- compression fitting
- 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 liquiphant adaptor
- APV Inline
- Varivent
- Ingold
- SMS 1147
- Neumo Biocontrol
- T-, and elbow thermowell

**Tip shape**
- straight
- reduced
- tapered

**Surface roughness Ra**
- 0.76 μm (29.92 μin)
- 0.38 μm (14.96 μin)
- 0.38 μm (14.96 μin) electropolished

**Operating temperature range**
- PT100:
  - -200 °C ... 600 °C
  - (-328 °F ... 1.112 °F)
- StrongSens:
  - -50 °C ... 500 °C
  - (-58 °F ... 932 °F)
- QuickSens:
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class A acc. to IEC 60751
class AA acc. to IEC 60751

**Response time**
depending on configuration
QuickSens: t90 = 1,5 s
StrongSens: t90 = 9,5 s

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

**Ex - approvals**
ATEX II
ATEX IECEx
FM
CSA
CRN
JPN
JPN Ex ia

**Certification**
SIL (transmitter only)