iTHERM TM411
Innovative advanced, modular RTD thermometer

For use in hygienic and aseptic applications in the Food & Beverages and Life Sciences industries

More information and current pricing:
www.uk.endress.com/TM411

Benefits:

- User-friendly and reliable from product selection to maintenance
- iTHERM inserts: globally unique, fully-automated production. Full traceability and consistently high product quality for reliable measured values
- iTHERM QuickSens: fastest response times (t90s: 1.5 s) for optimum process control
- iTHERM StrongSens: unsurpassed vibration resistance (> 60g) for ultimate plant safety
- iTHERM QuickNeck – cost and time savings thanks to simple, tool-free recalibration
- Over 50 hygienic process connections
- International certification: explosion protection as per ATEX/IECEx, hygiene standards according to 3-A, EHEDG, ASME BPE, FDA, TSE Certificate of Suitability

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: It has been designed to meet the requirements of the Food & Beverages and Life Sciences industries and complies with the highest quality standards. It offers a variety of versions within a clearly segmented standard product. The result: Time and cost savings by simple and fast product selection. It offers many technical innovations: iTHERM QuickSens, StrongSens or QuickNeck. This leads to distinctive reduction of maintenance costs, improved product quality, process efficiency and safety.

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

Thermometer

Thermowell / protection tube

without

incl. thermowell

incl. T-/ellbow 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 corner pieces

Tip shape

straight

reduced

tapered

Thermometer

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:

-50 °C ... 200 °C

(-58 °F ... 392 °F)

Max. process pressure (static)

at 20 °C: 40 bar (580 psi)

Accuracy

class A acc. to IEC 60751

class AA acc. to IEC 60751

Thermometer

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

NEPSI

CRN

JPN

JPN Ex ia

Certification
SIL (transmitter only)

More information **www.uk.endress.com/TM411**