

iTHERM ModuLine TM131

Industrial modular thermometer

Metric RTD/TC thermometer with welded thermowell for a wide range of industrial applications



More information and current pricing:

www.endress.com/TM131

Benefits:

- Dual Seal: Second process barrier with failure indication offering valuable health status information
- iTHERM QuickSens: fastest response times 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
- Bluetooth® connectivity (optional)
- International certification: explosion protection according to ATEX, IECEx, CSA C/US and NEPSI

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** fastest response time with thermowell t90 starting at below 10 s depending on configuration
- **Max. process pressure (static)** depending on the configuration up to 100 bar
- **Operating temperature range** PT100 TF iTHERM StrongSens: -50 °C ...500 °C (-58 °F ...932 °F) PT100 TF iTHERM QuickSens: -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) Typ K: max. 1.100 °C (max. 2.012 °F) Typ J: max. 800 °C (max. 1.472 °F) Typ N: max. 1.100 °C (max. 2.012 °F)

- **Max. immersion length on request** up to 4.500,0 mm (177")

Field of application: Intrinsically safe temperature sensor (RTD / TC assembly) with manufactured thermowell or for use with existing thermowell. An optional head transmitter with all common communication protocols – Bluetooth® technology inclusive – and special features like iTHERM QuickNeck for tool-free, easy recalibration, vibration-resistant and fast-response sensor and thermowell technology (**iTHERM StrongSens, QuickSens**) as well as hazardous area approvals ensure enhanced measurement accuracy and reliability.

Features and specifications

Thermometer

Measuring principle

Resistance Temperature Detector

Characteristic / Application

metric style

modular temperature assembly

universal range of application

suitable for hazardous areas

with neck or iTHERM QuickNeck

incl. thermowell / protection tube (metal) or to be installed into thermowell

can be used with iTHERM StrongSens, iTHERM QuickSens insert for fast response times

Thermowell / protection tube

welded protection tube or to be used with thermowell

Insert / probe

mineral insulated (MI), flexible

Thermometer**Outer diameter protection tube / Insert**

Thermowell:

9x1,25 mm

11x2 mm

12x2,5 mm

14x2 mm

16x3,5

1/4" SCH80

1/2" SCH80

1/2" SCH40

Max. immersion length on request

up to 4.500,0 mm (177")

Material protection tube/ thermowell

316 (1.4401)

316L (1.4404)

316Ti (1.4571)

Alloy 600 (2.4816)

Alloy C276 (2.4819)

Alloy 446 (1.4749)

Alloy 321 (1.4541)

Sheath PTFE

Sheath Tantal

Thermometer

Process connection

Male thread:

G3/8, G1/2", G3/4", G1"

NPT1/2", NPT3/4", NPT 1"

M14x1.5, M18x1.5, M20x1.5, M27x2, M33x2

R1/2", R3/4"

Female thread:

M20x1.5, M24x1.5

NPT1/2"

Cap-nut:

M20x1.5, G1/2", G3/4"

Compression fitting:

NPT1/2", G1/2", G1"

Flange:

DN15 PN40 B1, C

DN25 PN20, PN40, PN100 B1, B2, C

DN40 PN40 B1

DN50 PN40 B1

ASME 1" 150 RF

ASME 1" 300 RF

ASME 1 1/2" 150 RF

ASME 2" 150 RF

ASME 2" 300 RF

Tip shape

straight

reduced

tapered

optimized for quick response times

Surface roughness Ra

< 0.76 µm (0.03 µin)

Thermometer

Operating temperature range

PT100 TF iTHERM StrongSens:

-50 °C ...500 °C

(-58 °F ...932 °F)

PT100 TF iTHERM QuickSens:

-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)

Typ K:

max. 1.100 °C

(max. 2.012 °F)

Typ J:

max. 800 °C

(max. 1.472 °F)

Typ N:

max. 1.100 °C

(max. 2.012 °F)

Max. process pressure (static)

depending on the configuration up to 100 bar

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

fastest response time with thermowell t90 starting at below 10 s

depending on configuration

Thermometer

Integration head transmitter

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

Ex - approvals

ATEX Ex ec, Ex tc
ATEX IECEx Ex ta/tb, Ex ia, Ex db
CSA C/US IS, NI, XP, DIP
INMETRO Ex ia, Ex d, Ex tb
NEPSI Ex ia, Ex d, Ex tD
EAC Ex d, Ex ta/tb, Ex ia
UKCA Ex ia, Ex nA, Ex tc
KC Ex ia

Certification

SIL, MID, DNV/GL

More information www.endress.com/TM131