

iTHERM ModuLine TM131

Trend-setting, high modular and robust thermometer for a wide range of industrial applications



Benefits:

- 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

More information and current pricing:

www.ie.endress.com/TM131

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 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: RTD or TC assembly complete with manufactured thermowell or to be used 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 makes the device ready to use with 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 QuickNeck

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

can be used with StrongSens, 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")

Thermometer

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**

Thread:

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

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

M18x1.5, M20x1.5, M27x2, M33x2

R1/2", R3/4"

Cap-nut:

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

Compression fitting:

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

Flansche:

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

Thermometer

Tip shape

straight

reduced

tapered

optimized for quick response times

Surface roughness Ra< 1.6 μm (63.00 μin)

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)

Max. process pressure (static)depending on the configuration up to 100 bar

Thermometer**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

Integration head transmitter

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

Ex - approvals

ATEX

ATEX IECEx

NEPSI

IECEx

EAC Ex

CSA C/US

INMETRO

Certification

SIL, MID, DNV/GL

More information www.ie.endress.com/TM131