iTHERM ModuLine TM151

Trend-setting, highly modular and robust RTD or TC thermometer for a wide range of industrial applications

Daha fazla bilgi ve güncel fiyatlandırma:
www.tr.endress.com/TM151

Avantajlar:

- Second process seal with failure indication offering valuable device health status information
- **iTHERM QuickSens**: fastest response times of 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 CCC

Özelliklere genel bakış

- **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** depending on configuration
- **Max. process pressure (static)** depending on the configuration up to 500 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) 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 1.500,0 mm (59,06")

Uygulama alanı: Modular industrial RTD or TC thermometer, complete with barstock thermowell or to be used with onsite thermowell. Available with Endress+Hauser temperature transmitters for enhanced accuracy and reliability - easy customizing by choosing the outputs and communication protocols. Optionally available with Bluetooth® connectivity. Thermometer featuring latest innovations such as **iTHERM QuickNeck**, and temperature sensor technologies like **iTHERM QuickSens** and **iTHERM StrongSens**.

Özellikler ve şartlar

Thermometer

Measuring principle

Resistance Temperature Detector

Characteristic / Application

metric style
modular temperature assembly
universal range of application
suitable for hazardous areas
suitable for high process pressures
with neck or QuickNeck
incl. thermowell / protection tube (metal) or to be installed into thermowell
can be used with StrongSens

Thermowell / protection tube

barstock (drilled) or to be used with thermowell

Insert / probe

mineral insulated (MI), flexible

Thermometer

Outer diameter protection tube / Insert

16 mm (0,63")
18 mm (0,71")
19 mm (0,75")
19,5 mm (0,77")
20 mm (0,79")
22,2 mm (0,87")
24 mm (0,95")
25 mm (0,98")
25,4 mm (1,0")
26 mm (1,02")
27 mm (1,06")
30 mm (1,18")
33,4 mm (1,31")

Max. immersion length on request

up to 1.500,0 mm (59,06")

Material protection tube/ thermowell

316 (1.4401)
316L (1.4404)
316/316L (1.4401/1.4404)
316Ti (1.4571)
347 (1.4550)
310 (1.4841)
Alloy 600 (2.4816)
Alloy C276 (2.4819)
10CrMo9-10 (1.7380)
13CrMo4-5 (1.7335)
16Mo3 (1.5415)
A105 (1.0460)
C22.8 (P250GH) (1.0460)
P355NH (1.0565)
Duplex S32205 (1.4462)
Titanium Gr2 (3.7035)

Thermometer

Process connection

Male thread:
G1"
NPT1/2", NPT3/4", NPT 1"
M14x1.5, M18x1.5, M20x1.5, M27x2, M33x2
Female thread:
M24x1.5
NPT1/2"
Flange:
DN25 PN16, PN40, PN50, PN100 B1
DN40 PN40 B1
DN50 PN40, PN63 B1
ASME 1" 150 RF
ASME 1" 300 RF
ASME 1" 600 RF
ASME 1" 900/1500 RF
ASME 1 1/2" 150 RF
ASME 1 1/2" 300 RF
ASME 1 1/2" 600 RF
ASME 1 1/2" 900/1500 RF
ASME 1 1/2" 2500 RF
ASME 2" 150 RF
ASME 2" 300 RF
ASME 2" 600 RF
ASME 2" 900/1500 RF
ASME 2" 2500 RF
to weld-in:
Diameter 18 mm (0,71")
Diameter 24 mm (0,94")
Diameter 26 mm (1,02")
Diameter 26,7 mm (NPS 3/4")
Diameter 33,4 mm (NPS 1")

Tip shape

straight
tapered
stepped

Thermometer

Surface roughness Ra

0,76 µm (30 µin.)
1,6 µm (63,0 µin.)

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)
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 500 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

Thermometer

Response time

depending on configuration

Integration head transmitter

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

Ex - approvals

ATEX II3G Ex nA IIC T6, II3D
CSA C/US General Purpose
CSA C/US IS, NI I/1+2/A-D
CSA C/US XP, NI, DIP I, II, III/1+2/A-G
CSA C/US DIP II, III / 1/E-G
EAC 0Ex ia IIC T6...T1 Ga X
EAC Ga/Gb Ex d IIC T6...T1 X
EAC Ex ta/tb IIIC 85oC...450oC Da/Db X
EAC Ga/Gb Ex ia IIC T6...T1 X
EAC 0Ex ia IIC T6...T1 Ga X, Ex ia IIIC 85oC...450oC Da/Db X
EAC Ga/Gb Ex d IIC T6...T1 X, Ex ta/tb IIIC 85oC...450oC Da/Db X
INMETRO Ex ia IIC T6 Ga/Gb, Ex ia IIIC Da/Db
INMETRO Ex d IIC T6 Ga/Gb, Ex tb IIIC Da/Db
INMETRO Ex nA IIC T6 Gc
CCC Ex ia IIC T6 Ga/Gb
CCC Ex d IIC T6 Ga/Gb, Ex tD A20/A21
CCC Ex tD A20/A21
CCC Ex nA IIC T6 Gc
UK II1/2G Ex ia IIC T6 Ga/Gb, II1/2D Ex ia IIIC Da/Db
UK II3G Ex nA IIC T6 Gc, II3D Ex tc IIIC Dc
UK II1/2G Ex db IIC T6 Ga/Gb, II1/2D Ex ta/tb IIIC Da/Db
ATEX IECEx II1/2D Ex ta/tb IIIC Da/Db
ATEX IECEx II1/2G Ex ia IIC T6 Ga/Gb
ATEX IECEx II1/2G Ex ia IIC T6, II1/2D
ATEX IECEx II1/2G Ex db IIC T6, II1/2D

Certification

SIL, MID, DNV/GL

Ayrıntılı bilgi **www.tr.endress.com/TM151**

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Endress+Hauser