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TEMPERATURE SENSORS



TBT-1AAP20253PZ | TBT

TEMPERATURE SENSORS



Detailed technical data

Features

Measuring range	-50 °C +150 °C
Sensor element	Pt100
Output signal	4 mA 20 mA, 2-wire
Maximum ohmic load R _A	R _A ≤ (L ⁺ – 10 V) / 0.028 A [Ohm]

Mechanics/electronics

Process connection	Compression fitting 1/2" NPT, PTFE ferrule
Insertion length/diameter of probe	25 mm / 3 mm
Wetted parts	Stainless steel 1.4571
Pressure resistance	Max. 40 bar with compression fitting with stainless steel ferrule included in scope of delivery
Housing material	Aluminum
Connection type	Cable gland M16 x 1.5 $^{1)}$
Enclosure rating	IP67 ²⁾
Measuring current	0.3 mA 1 mA
Supply voltage	10 V DC 35 V DC
Maximum current consumption	Max. 28 mA
Electrical safety	Protection class: III, insulation voltage: 100 V, reverse polarity protection of variant with measuring transducer 4 mA 20 mA: L+ to M $$
Protection class III	✓
CE-conformity	2004/108/EC, EN 61326-2-3
RoHS certificate	✓
Weight	Ca. 155 g (depending on configuration)
Initialization time	< 1 ms

¹⁾ The enclosure rating classes specified only apply while the thermometer is connected with female connectors that provide the corresponding enclosure rating. ²⁾ IP enclosure rating as per IEC 60529.

Performance

Accuracy of sensor element	Class A according to IEC 60751

 $^{\mbox{1})}$ Depending on sensor configuration, according to IEC 60751.

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Transmitter accuracy	≤ ± 0.1 % of span
Transmitter linearity	≤ 0.1 % of span
Response time	Response time t_{50} : $\leq 5.8 \text{ s}^{-1}$ Response time t_{90} : $\leq 15.5 \text{ s}^{-1}$

 $^{\mbox{\ 1)}}$ Depending on sensor configuration, according to IEC 60751.

Ambient data

Ambient temperature	-40 °C +85 °C
Storage and transport temperature	-40 °C +60 °C
Shock resistance according to IEC 60751	500 g
Vibration resistance according to IEC 60751	3 g

Classifications

ECLASS 5.0	27200208
ECLASS 5.1.4	27200208
ECLASS 6.0	27200208
ECLASS 6.2	27200208
ECLASS 7.0	27200208
ECLASS 8.0	27200208
ECLASS 8.1	27200208
ECLASS 9.0	27200208
ECLASS 10.0	27200208
ECLASS 11.0	27200208
ECLASS 12.0	27200208
ETIM 5.0	EC002994
ETIM 6.0	EC002994
ETIM 7.0	EC002994
ETIM 8.0	EC002994
UNSPSC 16.0901	41112211

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Dimensional drawing (Dimensions in mm (inch))

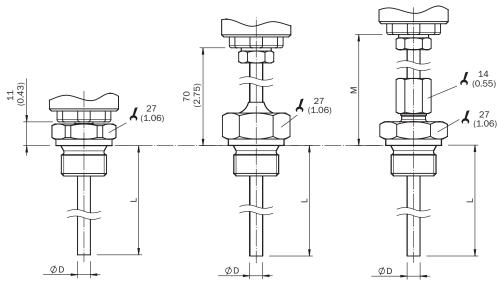
Dimensional drawing: zylindrical threads

Thread, up to 150 °C

°C

Thread, up to 250 °C

Compression fitting



Dimensional drawing: conical threads

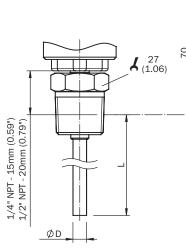
Thread, up to 150 °C

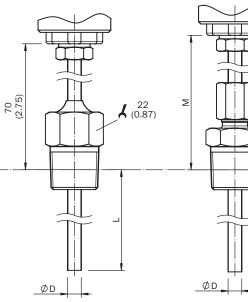
Thread, up to 250 °C

Compression fitting

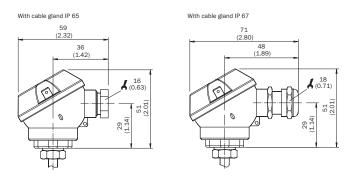
Å ¹⁴ (0.55)

X (1.06)



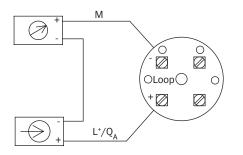


Dimensional drawing: housing, without process connection



Connection type

Cable entry M16 x 1.5, cable cross-section up to 0.75 mm2, output signal 4 mA \dots 20 mA



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