ENGINEERING TOMORROW

Data sheet

Temperature Sensors
MBT 3250

Heavy-duty temperature sensors for controlling cooling water, lubrication oil, hydraulic oil and refrigeration plants within general industry and marine applications.

On a standardized Pt 100 or Pt 1000 element, which gives a reliable and accurate measurement. The sensor can also be delivered with NTC / PTC elements on request.

The MBT 3250 with changeable measuring insert is equipped with EN 175302-803-A Pg plug as standard.
The measuring insert is based on a silicone cable, which makes the sensor very resistant towards vibrations.

Features

- Gaseous or liquid media, e.g. air, gas, vapour, water or oil.
- Up to 200 °C media temperature
- Pt 100 or Pt 1000 sensing element
- 1 or 2 elements
- Can be used with 2- or 3-wire connections
- Gold plated male and female connector
- With interchangeable measuring insert

Technical data

General data

Measuring range	-50 – 200 °C
Sensing element	1 or 2 x Pt 100, 1 or 2 x Pt 1000
Protection tube	ø8 × 1 mm

Response times

Type	Protection tube	Indicative response times			
		Water 0.2 m/s		Air 1 m/s	
		$t_{0.5}$	$t_{0.9}$	$t_{0.5}$	$t_{0.9}$
MBT 3250 with interchangeable measuring insert	ø8 × 1 mm	9 s.	33 s.	95 s.	310 s.

Materials

Protection tube in contact with media	W.no. 1.4571 (AISI 316 Ti)
Process connection	W.no. 1.4404 (AISI 316 L)
Extension length	W.no. 1.4571 (AISI 316 Ti)
Union	Nickel plated brass
Gasket	Silicone
Plug EN 175301-803	PA 6.6 (max 125 °C)

Mechanical and environmental specifications

Sensor tolerance	EN 60751 Class B: ± (0.3 + 0.005 × t)	t = temperature of medium, numerical value
Vibration stability	Shock:	100 g / 6 ms
	Vibrations:	4 g sine function 5 – 200 Hz, measured acc. to IEC 60068-2-6
Enclosure	IP65 according to IEC 60529	
Cable entry EN 175301-803	Pg 9, Pg 11 or Pg 13.5	

Ordering standard

Type MBT 3250

Sensor

				–				–			

Measuring range, sensor element

-50 – 200 °C	0

Sensing element

1 × Pt 100	0
1 × Pt 1000 (Class B only)	1
2 × Pt 100	2
2 × Pt 1000 (Class B only)	3
Other	9

Protection Tube, W.nr. 1.4571 (AISI 316 Ti)

Acid-proof steel, ø8 × 1mm	0
Other	9

Extension length

None	0
50 mm	1

Insertion length

50 mm	050
80 mm	080
100 mm	100
150 mm	150
200 mm	200
250 mm	250
xx0 mm	xx0

Tolerance

0	EN 60751 Class B
9	Other

Process connection

0	None
1	G ¼ A
2	G ½ A
3	½ – 14 NPT
4	G ¾ A
5	M18 × 1.5
9	Other

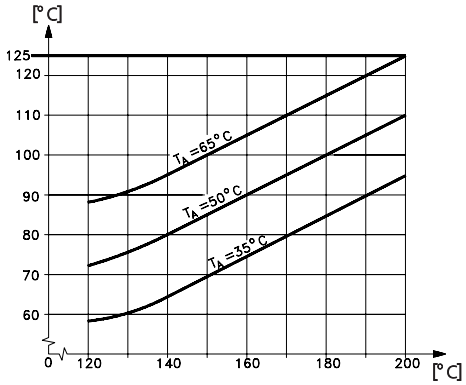
Electrical Connections

0	EN175301/803 excl. female plug
1	EN175301/803 plug Pg 9 (IP65)
2	EN175301/803 plug Pg 11 (IP65)
3	EN175301/803 plug Pg 13,5 (IP65)
8	ITT Canon 4 pins Au
A	EN175301/803 GL. plug Pg 13,5 (IP65) Sn pins
B	EN175301/803 Pg 9–4 pins without earth (IP65)
C	EN175301/803 Pg 11–4 pins without earth (IP65)
9	Other

Preferred versions

Technical data

Max. temperature (Ext. length "None")
Plug EN 175301-803

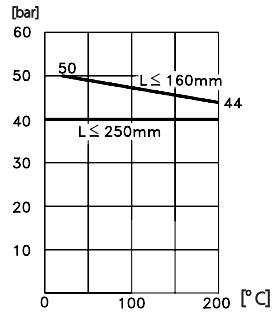


L = Insertion length

T_m = Media temperature
T_p = Temperature for electric plug
T_A = Ambient temperature

Note: for extension length = 50 mm
no limitations up to 200 °C media temperature
and 90 °C ambient temperature

Max. load on protection tube
(ø8 × 1, ø10 × 2) acc. to EN 175301-803



L = Insertion length

Permissible media velocity	Air	Water
	25 m/s	3 m/s

Process connection	G ¼ A	G ½ A G ⅜ A – M18	G ¾ A M24
Max. tightening torque	25 Nm	50 Nm	100 Nm

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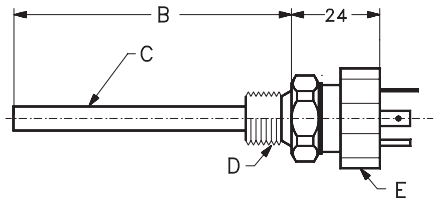
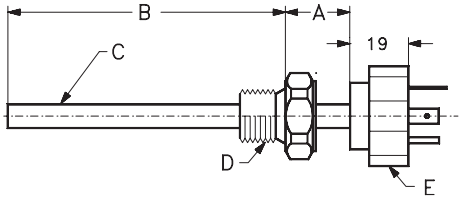
Dimensions [mm]

A = Extension length
B = Insertion length
C = Protection tube
D = Process connection
E = Union

Without extension length



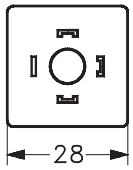
With extension length



Please note:

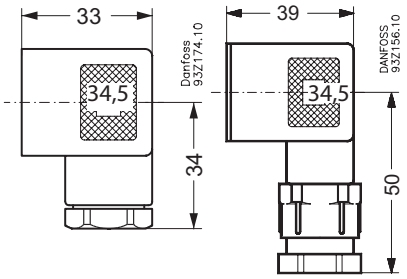
- Tightening torque for the mounting screw at the rear end of the electrical connection plug: 25 Ncm
- Tightening torque for the union (position "E"): 17 Nm

Gasket



Plugs

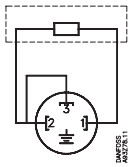
Pg 9, Pg 11 | Pg 13.5



All dimensions in millimeters

Process connection	G ¼	G ¼ A – G ½ A G ⅜ A – M18	G ¾ A M24
Width across flats	HEX 22	HEX 27	HEX 32

Electrical connections



2-wire, 3 terminals

(Ground not connected)