

## Data Sheet

Temperature sensor  
Type **MBT 3250**

Heavy-duty industrial temperature sensor.



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

## Product specification

### Technical data

Table 1: General data

Features	Description	
Measuring range	-50 – 200 °C	
Sensing element	1 or 2 x Pt 100, 1 or 2 x Pt 1000	
Protection tube	ø8 × 1 mm	
Permissible media velocity	Air	25 m/s
	Water	3 m/s

Table 2: Connection

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

Table 3: Response time

Type	Protection tube	Indicative response times			
		Water 0.2 m/s		Air 1 m/s	
		t <sub>0.5</sub>	t <sub>0.9</sub>	t <sub>0.5</sub>	t <sub>0.9</sub>
MBT 3250 with interchangeable measuring insert	ø8 x 1 mm	9 s	33 s	95 s	310 s

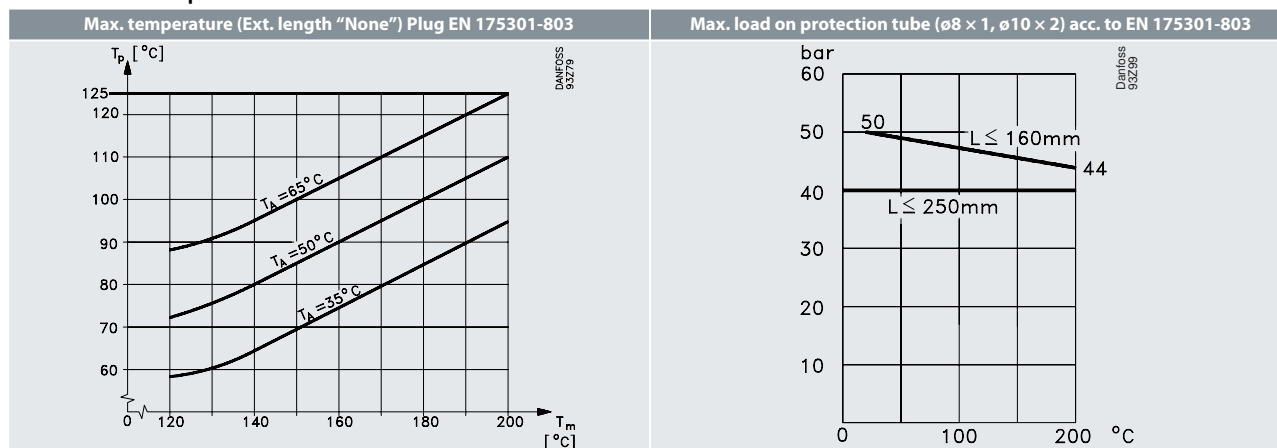
Table 4: Mechanical and environmental specifications

Features	Description	
Sensor tolerance	EN 60751 Class B: $\pm (0.3 + 0.005 \times t)$	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	

Table 5: Materials

Features	Description
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)

Table 6: Max. temperature and load



L	Insertion length	T <sub>p</sub>	Temperature for electric plug
T <sub>m</sub>	Media temperature	T <sub>A</sub>	Ambient temperature

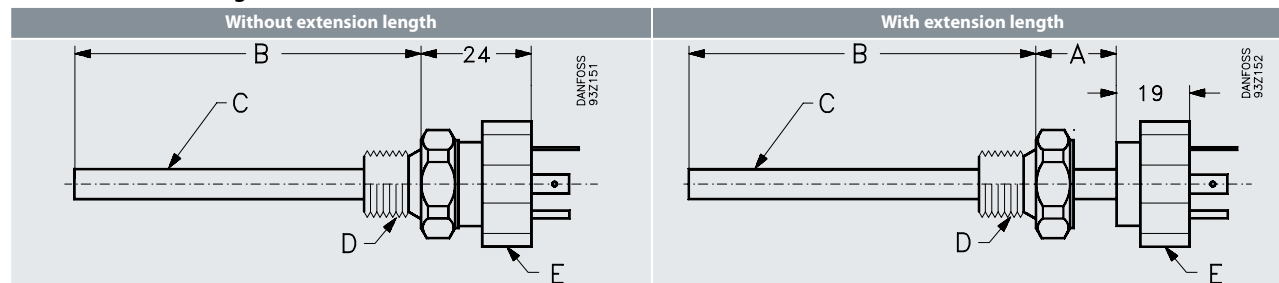
## Temperature sensor, Type MBT 3250

### NOTE:

For extension length = 50 mm no limitations up to 200 °C media temperature and 90 °C ambient temperature.

## Dimensions

Table 7: Extension length

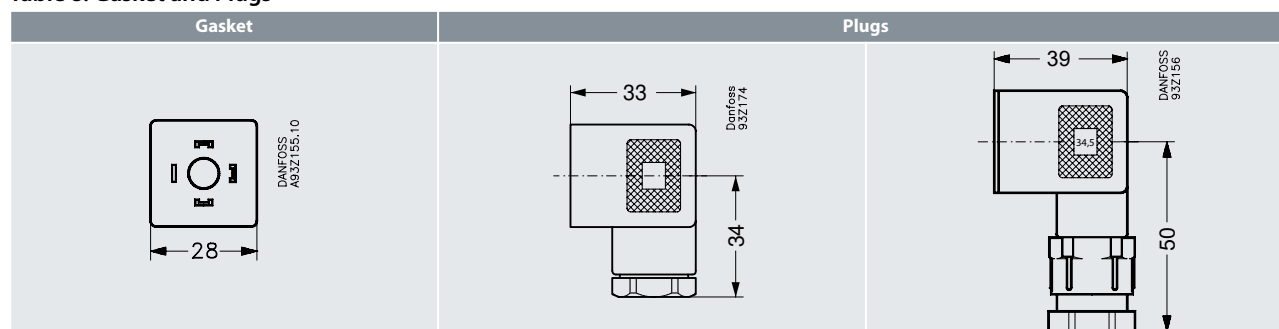


A	Extension length	D	Process connection
B	Insertion length	E	Union
C	Protection tube		

### 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

Table 8: Gasket and Plugs



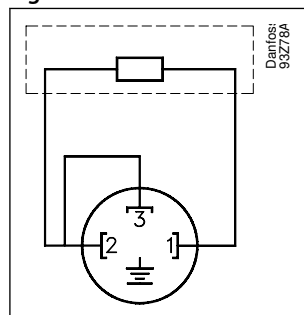
Units: mm

Table 9: Connection

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

## Electrical connection

Figure 1: Electrical connection



2-wire, 3 terminals  
(Ground not connected)

## Ordering

Figure 2: Ordering for MBT 3250

Type MBT 3250		Sensor									
							-			-	
<b>Measuring range, sensor element</b>											
-50 – 200 °C		0								0	
										9	
<b>Sensing element</b>											
1 × Pt 100		0									
1 × Pt 1000 (Class B only)		1									
2 × Pt 100		2									
2 × Pt 1000 (Class B only)		3									
Other		9									
<b>Protection Tube, W.nr. 1.4571 (AISI 316 Ti)</b>											
Acid-proof steel, ø8 × 1mm		0									
Other		9									
<b>Extension length</b>											
None		0									
50 mm		1									
<b>Insertion length</b>											
50 mm						050				0	
80 mm						080				1	
100 mm						100				2	
150 mm						150				3	
200 mm						200				8	
250 mm						250				A	
xx0 mm						xx0				B	
										C	
										9	
<b>Tolerance</b>											
EN 60751 Class B											
Other											
<b>Process connection</b>											
None											
G 1/4 A											
G 1/2 A											
1/2 – 14 NPT											
G 3/4 A											
M18 × 1.5											
Other											
<b>Electrical Connections</b>											
EN175301/803 excl. female plug											
EN175301/803 plug Pg 9 (IP65)											
EN175301/803 plug Pg 11 (IP65)											
EN175301/803 plug Pg 13,5 (IP65)											
ITT Canon 4 pins Au											
EN175301/803 GL. plug Pg 13,5 (IP65) Sn pins											
EN175301/803 Pg 9–4 pins without earth (IP65)											
EN175301/803 Pg 11–4 pins without earth (IP65)											
Other											

Preferred versions

## Certificates, declarations, and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

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**Table 10: Certificates, declarations, and approvals**

File name	Document type	Document topic	Approval authority
084R1022.01	Manufacturers Declaration	China RoHS	Danfoss
097R0004.01	Manufacturers Declaration	RoHS	Danfoss
087R0017.00	Manufacturers Declaration	Simple apparatus	Danfoss
OC.C.32.004.A 75977	Measuring - Performance Certificate	–	GOST

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