

Data Sheet

Mini bearing temperature sensor Type **MBT 2310**

Compact bearing temperature sensor



The MBT 2310 temperature sensor series is specially designed for measuring the bearing temperature at applications with confined space and the purpose is to enable early warning in situations where an overheated bearing could lead to a machine havoc.

To obtain a fast reaction time the measuring element is placed at the very tip of the sensor tube ensuring a response time of down to $\tau_{0.5} = 4$ sec. in water.

The sensor is equipped with a spring-loaded sensor tube which enables physical contact between the bearing and sensor tube.

Features:

- Monitoring of bearing temperatures where there is risk of overheating, in applications such as:
 - Engine bearings
 - Gearbox bearings
 - Power transmission bearings
- 1. Based on Pt 100 / Pt 1000 / NTC technology
- 2. Spring loaded sensor tube to ensure optimal contact with the bearing.

Function

Spring function

Figure 1: Spring function

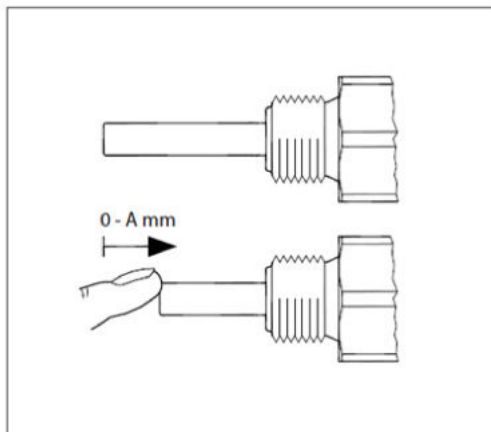


Table 1: Spring function

Material	Thickness
Stainless steel process connection	A = 0 – 6 mm

Product specification

Technical data

Table 2: Technical data

Ambient temperature @ plug	-25 – 85°C
Storage temperature	-25 – 85°C
Process connection	10 x 1 mm
Hex 19	Tightening torque 10 – 15 Nm
Measuring rang NTC elements	-25°C – 125°C
Measuring range Pt elements	Pt: -25°C – 200°C
Protection tube	ø6x 1 mm

Response time

Table 3: Response time

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}
6 x 1 mm	4 s	13.2 s	55 s	210 s

Material

Table 4: Material

Protection tube in contact with the media	AISI 316
O-ring	FPM
Process connection	SUS303
Gasket	Silicone
Electrical connections	AMP JPT
	AMP super seal
	Metri-Pack 150
	Deutsch DT04 (2P)
	M12 x 1 (4P)
	Cable with/without plug

Mechanical and environmental specifications

Table 5: Mechanical and environmental specifications

Sensor tolerance		EN 60751 Class B: $\pm (0.3 \text{ }^{\circ}\text{C} + 0.005 \times t)$ t = temperature of medium, numerical value
Vibration stability		Vibration test 20 - 2000Hz, 15.3g, 1 oct/min. Time: 3 x 2 hours (X-Y-Z-directions), total 6 hour Shock test (50g/6ms)
Enclosure	According to IEC 60529	Pin type
AMP Junior Power Timer	IP 67	2-pin Sn plated CuSn6
AMP super seal	IP 67	2-pin Sn plated
Metri-Pack 150	IP 67	2-pin Sn plated
Deutsch DT04 (2P)	IP 67	2-pin Sn plated
M12 x 1 (4P)	IP 67	4-pin Au, EN 60947-5-2
Cable with/without plug	IP 65	Silicone cable

Ordering

Ordering standards

Figure 2: Specification code for MBT 2310

MBT 2310			
Resistance value		1	EN 60751 Class B
1 x Pt 100	0		
1 x Pt 1000	2		
Other	9		
		0	10 x 1 mm
Protection tube (AISI 316)		1	G 1/4
Acid-proof steel, Ø6 x 1 mm	0	9	Other
Other	9		
Insertion length (working range)		Electric Connection	
17 - 22 mm	22	A	M12 plug, 4 pins
22 - 27 mm	27	B	AMP JPT
27 - 32 mm	32	C	AMP Super seal
32 - 37 mm	37	D	Metri-Pack 150
37 - 42 mm	42	E	Deutsch DT04, 2p
42 - 47 mm	47	F	Cable without plug

Certificates, declaration 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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