

Temperature sensor TF-M-Atex, TF-E-Atex



Fluidcontrol



Since the viscosity of oil changes based on the temperature, operating temperatures must be monitored. Depending on the application, this may have to take place continuously with a high degree of accuracy.

In the process, the Pt100 has asserted its position as the standard sensor in nearly all areas of technology. It is a resistor, whose value changes in proportion to the temperature, which results in a continuous signal change.

The resistance value of the Pt100 connection cable must be taken into consideration as of a length of >3 m (9.8 ft), when aligning the measured value.

The TF-M-Atex/TF-E-Atex series consists of simple electrical equipment without a separate voltage source. In the case of intrinsically safe connections as per EN 60079-14, the TF-M-Atex/TF-E-Atex can be used in Zone 1 (group IIC, device category 2G) explosive areas; this also applies to the inner zone of the tank. The temperature sensors are classified as temperature class T4.

The design of the temperature switch was chosen, to enable the removal of the electrical inner workings without having to remove the switching tube from the tank. This is convenient if the temperature sensor is installed laterally inside oil.



ATEX applications: Zone 1 (cat. 2G), simple electrical equipment according to EN 60079-11

Simple, robust design

Electrical inner part, easy to remove

Optionally DIN connector or M12 base connector

DIN connector cable outlet direction adjustable in 90° steps

Elastic sealing ring



Technical Data TF-M-Atex/TF-E-Atex

TF-M-Atex, TF-E-Atex

Operating temperature:	max. +80 °C (176 °F)	
Ambient temperature:	-20 to +80 °C (-4 to 176 °F)	
	TF-M-Atex-Pt100	TF-E-Atex-Pt100
Probe material:	Brass	1.4571
Max. operating pressure:	5 bar (72.5 psi)	10 bar (145 psi)
Probe length L max.:	1000 mm (39.4 in)	1000 mm (39.4 in)

Pt100 resistance thermometer

Tolerance:	± 0.8 K (± 1.4 °Ra)
Measuring current I_c :	≤ 1 mA
P_i :	100 mW
I_i :	50 mA
U_i :	30 V
L_i, C_i :	negligible

Accessories

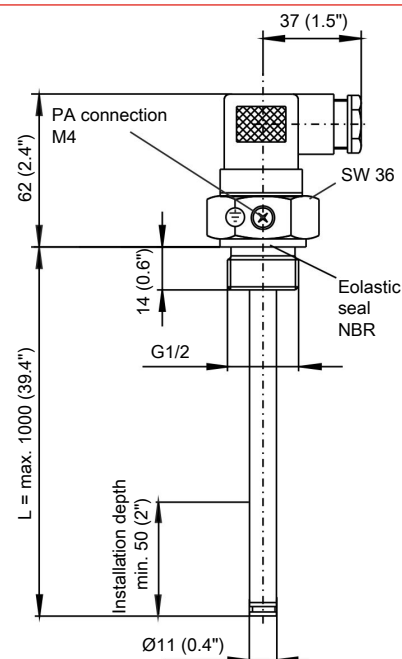
Connection cable M12x1 (5-pin) 3.0 m (9.8 ft) long, item no.: 9144050018

Switch amplifier for temperature sensors see data sheet no. 18 0003

The device is suitable for use in ATEX category II 2 G Ex ib IIC T4.

The temperature sensors may only be operated on intrinsically-safe circuits!

Dimensions

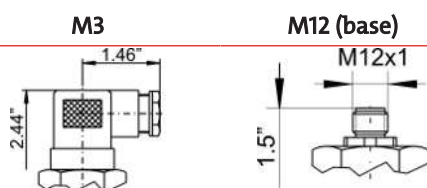


Pt100 measuring resistance base values

°C (°F)	0 (32)	10 (50)	20 (68)	30 (86)	40 (104)	50 (122)	60 (140)	70 (158)	80 (176)	90 (194)	100 (212)
Ohm	100.00	103.90	107.79	111.67	115.54	119.40	123.24	127.07	130.89	134.70	138.50

Connector

Dimensions:



Number of pins:	3-pin + PE	4-pin+PE
DIN EN:	175301-803	
IP rating:	IP65	IP 67**
Cable fitting:	PG 11	PG 7**

**with IP67 cable box screwed on

Other connectors available on request

Model key for TF temperature sensor

XXX - G1/2 - XX - XX - PT100 - XX / XX - ATEX	
TF-M for Version MS TF-E for Version V	Length (max. 1000 mm/39.4") 280 (11") 370 (14.6") 500 (19.7") variable (please specify)
Version MS Brass VA Stainless steel	Switching type 2L = 2 conductor
Plug connection M3 M12	

Ordering example

You require: Temperature sensor with M3 plug connection length L= 220 mm (8.7 in), operating pressure 2 bar (29 psi)

Order: TF-M-G1/2-MS-M3-PT100-2L/220-ATEX