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

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, 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

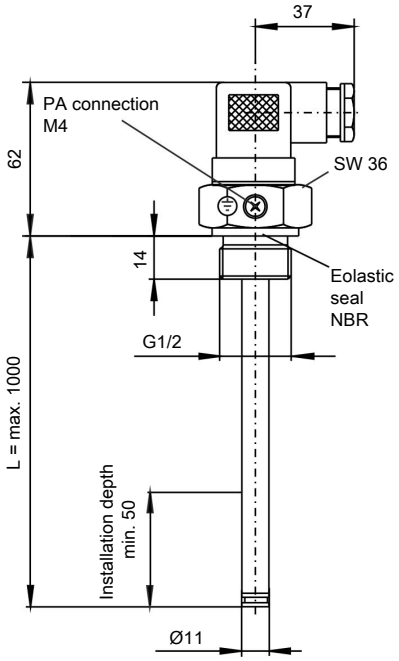
TF-M-Atex, TF-E-Atex		
Operating temperature:	max. +80 C°	
Ambient temperature:	-20 to +80 °C	
	TF-M-Atex-Pt100	**TF-E-Atex-Pt100**
Probe material:	Brass	1.4571
Max. operating pressure:	5 bar	10 bar
Probe length L max.:	1000 mm	1000 mm
Pt100 resistance thermometer (Pt100 class B DIN / IEC 751)		
Tolerance:	± 0.8 K	
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 long, item no.: 9144050018
Switch amplifier for temperature sensors see data sheet no. 18 0003

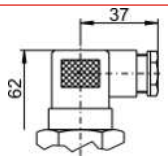
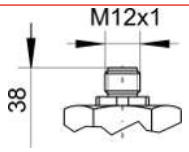
The device is suitable for use in ATEX category II 2 G Ex ib IIC T4.
The temperature sensors may only be operated on intrinsically-safe circuits!

Dimensions



Pt100 measuring resistance base values

°C	0	10	20	30	40	50	60	70	80	90	100
Ohm	100.00	103.90	107.79	111.67	115.54	119.40	123.24	127.07	130.89	134.70	138.50

Plug connection	M3	M12 (base)
Dimensions:		
Number of pins:	3-pin + PE	4-pin+PE
DIN EN:	175301-803	
Protection class:	IP65	IP 67**
Cable fitting:	PG 11	PG 7**

**with respective plug top
Other plug connections available upon 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

Version
MS Brass
VA Stainless steel

Plug connection
M3
M12

Length (max. 1000 mm)
280
370
500
variable (please specify)

Switching type
2L = 2 conductor
3L = 3 conductor

Ordering example

You require:	Temperature sensor with M3 plug connection length L= 220 mm, operating pressure 2 bar
Order:	TF-M-G1/2-MS-M3-PT100-2L/220-ATEX