Bimetal temperature switch TSM-Atex, TSE-Atex

Fluidcontrol

Since the viscosity of oil changes based on the temperature, operating temperatures must be monitored. Depending on the requirements, monitoring by means of indicating the minimum temperature to warning points and ending with shut down, will suffice. The warning or shut-off points are implemented using a bimetallic switch and in the process, hysteresis can also be used as a reset point.

The TSM/TSE series consists of simple electrical equipment. In the case of intrinsically safe connections as per EN 60079-14, the TSM/TSE 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 switches are classified as temperature class T4.

These temperature switches are designed in a manner, which allows the internal electrical components to be replaced without having to remove the switching tube from the tank. This is convenient if the temperature switch 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

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Technical Data TSM-Atex/TSE-Atex

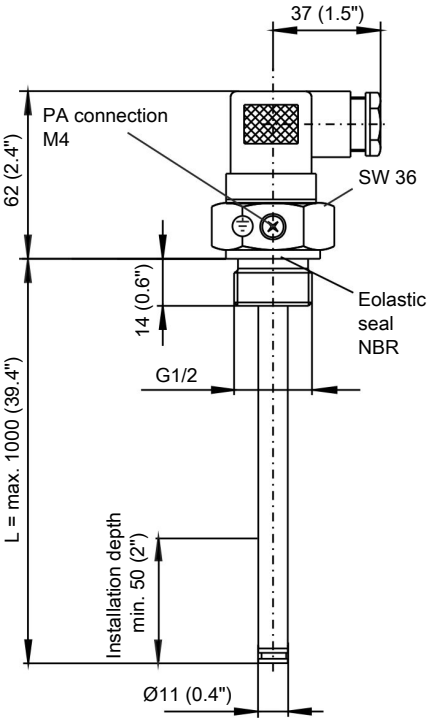
TSM-Atex, TSE-Atex			
Versions:	TSM-1/TSE-1 = with one temperature contact TSM-2/TSE-2 = with two temperature contacts		
Switch element:	bi-metal		
Switching function:	NC = NC contact/NO = NO contact		
Switching temperature:	50 to 80 °C (122 to 176 °F) (also see chart)		
Probe length L max.:	1000 mm (39.4")		
	TSM	**TSE**	
Probe material:	Brass	1.4571	
Max. operating pressure:	5 bar (72.5 psi)	10 bar (145 psi)	
Operating temperature:	max. +80 °C (176 °F)		
Ambient temperature:	-20 to +80 °C (-4 to 176 °F)		
Temperature contacts			
Switch-back difference for TMÖ-50 to TMÖ-80:	18 K ± 5 K (32.4 °Ra ± 9 °Ra)		
Switch-back difference for TSM-60:	53 K ± 5 K (95.4 °Ra ± 9 °Ra)		
Switch-back difference for TSM-70:	40 K ± 5 K (72 °Ra ± 9 °Ra)		
Switching point:		**NC***	**NO***
	50 °C (122 °F)	TMÖ-50	-
	60 °C (140 °F)	TMÖ-60	TSM-60
	70 °C (158 °F)	TMÖ-70	TSM-70
	80 °C (176 °F)	TMÖ-80	-

Other temperatures available upon request
*NC = NC contact/NO = NO contact All data for rising temperature

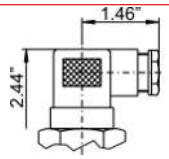
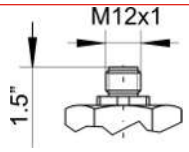
Accessories
Connection cable M12x1 (5-pin) 3.0 m (9.8 ft) long, item no.: 9144050018
Switch amplifier for temperature switches see data sheet no. 18 0003

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

Dimensions



Temperature contacts	
P_i	100 mW
U_i	30 V
I_i	50 mA
L_i; C_i	Negligible

Connector	M3	M12 (base)
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 TSM/TSE temperature switches

XXX - XX - XX - G1/2 - XX / XX - XX - XX - ATEX

TSM for Version MS
TSE for Version V

Number of temperature contacts
1 or 2

Version
MS Brass
VA Stainless steel

Plug connection
M3
M12

Length (max. 1000 mm/39.4")
280 (11")
370 (14.6")
500 (19.7")
variable (please specify)

T2 (2nd temperature contact)

NC contact	NO contact	
TM50NC	TM50NO	= 50 °C (122 °F)
TM60NC	TM60NO	= 60 °C (140 °F)
TM70NC	TM70NO	= 70 °C (158 °F)
TM80NC	TM80NO	= 80 °C (176 °F)

T1 (1st temperature contact)

NC contact	NO contact	
TM50NC	TM50NO	= 50 °C (122 °F)
TM60NC	TM60NO	= 60 °C (140 °F)
TM70NC	TM70NO	= 70 °C (158 °F)
TM80NC	TM80NO	= 80 °C (176 °F)

Ordering example

You require:	Pressure 5 bar (72.5 psi), M3 plug connection, length L= 300 mm (11.8 in), 2 temperature contacts, 1st contact (T1) NC contact at 50 °C (122 °F), 2nd contact (T2) NO contact at 70 °C (158 °F)
Order:	TSM-2-MS-G1/2-M3/300-TM50NC-TM70NO-ATEX