

Bimetal temperature switch

TSM-Atex, TSE-Atex



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



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 (also see chart)
Probe length L max.:	1000 mm

	TSM	TSE
Probe material:	Brass	1.4571
Max. operating pressure:	5 bar	10 bar
Operating temperature:	max. +80 °C	
Ambient temperature:	-20 to +80 °C	

Temperature contacts

Switch-back difference for TMÖ-50 to TMÖ-80:	18 K ± 5 K	
Switch-back difference for TSM-60:	53 K ± 5 K	
Switch-back difference for TSM-70:	40 K ± 5 K	
Switching point:	NC*	NO*
50 °C	TMÖ-50	-
60 °C	TMÖ-60	TSM-60
70 °C	TMÖ-70	TSM-70
80 °C	TMÖ-80	-

Other temperatures available upon request

*NC = NC contact/NO = NO contact All data for rising temperature

Accessories

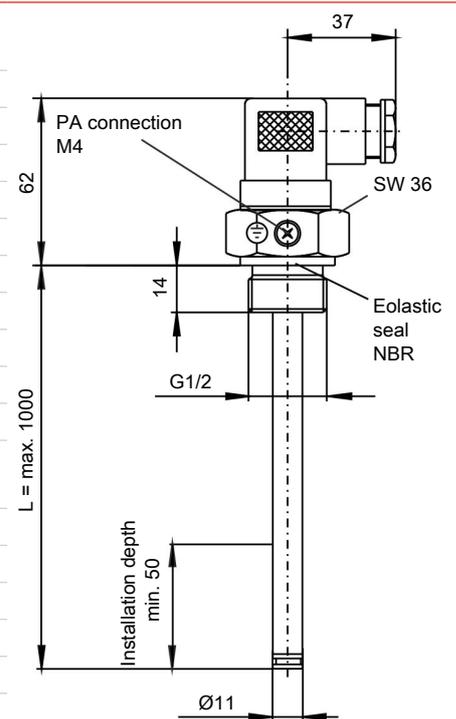
Connection cable M12x1 (5-pin) 3.0 m long, item no.: 9144050018

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

Dimensions:	M3	M12 (base)
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)
 280
 370
 500
 variable (please specify)

T2 (2nd temperature contact)

NC contact NO contact
 TM50NC TM50NO = 50 °C
 TM60NC TM60NO = 60 °C
 TM70NC TM70NO = 70 °C
 TM80NC TM80NO = 80 °C

T1 (1st temperature contact)

NC contact NO contact
 TM50NC TM50NO = 50 °C
 TM60NC TM60NO = 60 °C
 TM70NC TM70NO = 70 °C
 TM80NC TM80NO = 80 °C

Ordering example

You require: Pressure 5 bar, M3 plug connection, length L= 300 mm, 2 temperature contacts, 1st contact (T1) NC contact at 50 °C, 2nd contact (T2) NO contact at 70 °C

Order: TSM-2-MS-G1/2-M3/300-TM50NC-TM70NO-ATEX