

Bi-metal-Temperature switch

TSM, TSK, TSA

High operating temperatures significantly reduce the life of oils in the hydraulics and the lubrication. The prevent exceeding harmful limits, e.g. due to unforeseeable overloads or reduced cooling capacity, the systems must be shut off in a timely manner. In the following temperature switches this is done by a bi-metal which interrupts the flow of electricity with a temperature rise. After resolving the cause for the excess temperature, following a cooling phase (hysteresis) the bi-metal element automatically returns to operating mode. However, for safety reasons it is advisable to still display the current oil temperature on the oil tank.

TSM-G1/2, TSE-G1/2

G1/2" threaded connection

Up to 2 temperature switching points

Sensor length up to 1 m

TSK-G3/4

G3/4" threaded connection

Up to 2 temperature switching points

Sensor length up to 1 m

Low hysteresis

TSA

G1/2" threaded connection

1 x temperature switching point

Fixed length of 29 mm for line installation e.g.



TSM-G1/2
TSK-G3/4



TSA

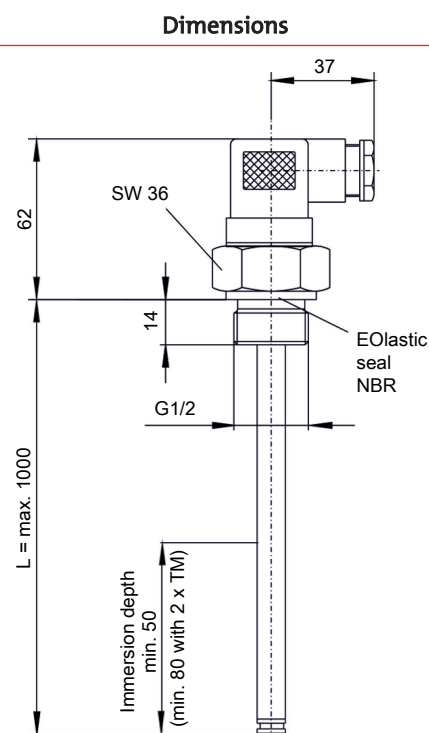


Technical Data TSM/TSE

Model	TSM-G1/2	TSE-G1/2
Version:	M5	VA
Probe material:	Brass	1.4571
Max. operating pressure:	5 bar	10 bar
Connection:	G1/2	G1/2
Operating temperatures:	-40 °C to +80 °C	
Lengths:	280, 370, 500 (standard) variable to max. 1000 mm	
Temperature contact	TMxx	
Switch element:	Bi-metal	
Number of contacts:	1 or 2	
Max. voltage:	230 V	
Max. switching current:	2 A	
Max. contact load:	100 VA	
Function	NC*	NO*
Switching point °C:	50/60/70/80	50/60/70/80
Switching point tolerance:	± 5 K	± 5 K
Max. hysteresis:	18 K ± 5 K	26/35/40/45 K ± 5 K

Other temperatures available upon request

* NC = NC contact/NO = NO contact (all data for rising temperature)



Standard Pin Assignment TSM/TSE

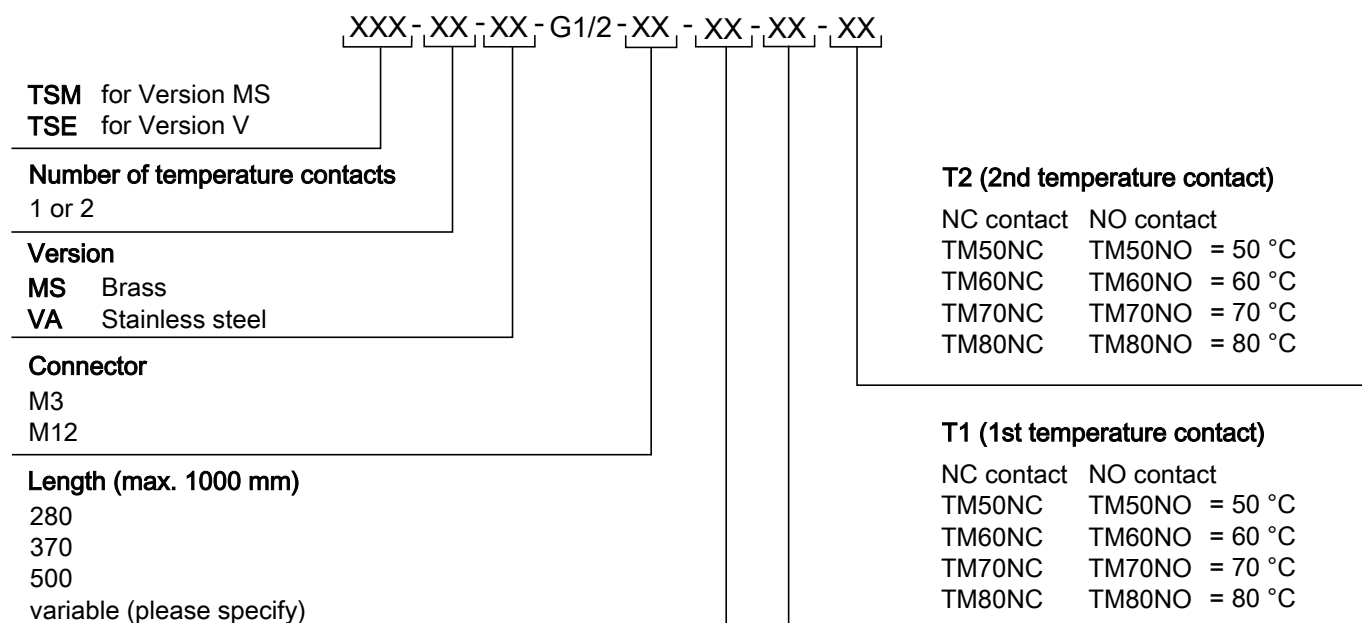
Plug connection*:	M3 valve connector	M12 plug A coded
Dimensions:		
Connection schematic:		
Number of pins:	3-pin + PE	4-pin
DIN EN:	175301-803	61076-2-101
Max. voltage:	230 V AC/DC	30 V DC
IP rating:	IP 65	IP 67**
Cable fitting:	PG 11	
Standard pin assignment:		

T1 = lower temperature/T2 upper temperature.

* other connectors available on request.

** with IP67 cable box screwed on.

Model Key for TSM/TSE

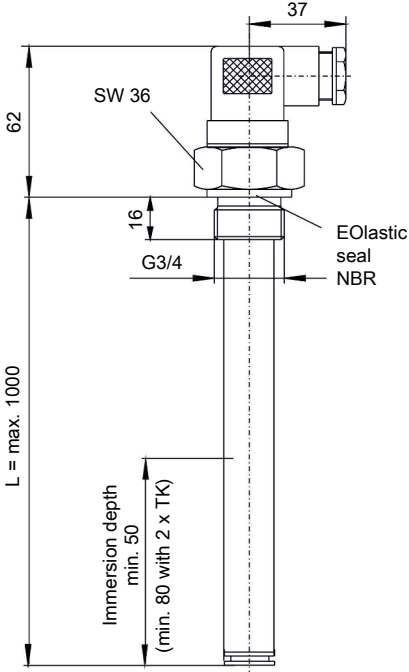


Ordering example

You need: Brass temperature switch, G1/2 connection, length L= 300 mm, M3 plug
 2 x temperature contact: 1st Contact 50 °C NC, 2nd contact 70 °C NO

Order: TSM-2-M3/300 -TM50NC-TM70NO

Technical Data TSK

Model	TSK-G3/4		Dimensions
Version:	MS	VA	
Probe material:	Brass	1.4571	
Max. operating pressure:	1 bar	5 bar	
Connection:	G3/4	G3/4	
Operating temperatures:	-40 °C to +80 °C		
Lengths:	280, 370, 500 (standard) variable to max. 1000 mm		
Temperature contact	TKxx		
Switch element:	Bi-metal		
Number of contacts:	1 or 2		
Max. voltage:	230 V		
Max. switching current:	2 A		
Max. contact load:	100 VA		
Function	NC*/NO*		
Switching point °C:	40/50/60/70/80		
Switching point tolerance:	± 3 K		
Max. hysteresis:	10 K ± 5 K		
<i>Other temperatures available upon request</i>			
<i>* NC = NC contact/NO = NO contact (all data for rising temperature)</i>			

Standard Pin Assignment TSK

Plug connection*:	M3 valve connector	M12 plug A coded
Dimensions:		
Connection schematic:		
Number of pins:	3-pin + PE	4-pin
DIN EN:	175301-803	61076-2-101
Max. voltage:	230 V AC/DC	30 V DC
IP rating:	IP 65	IP 67**
Cable fitting:	PG 11	
Standard pin assignment:		
T1 = lower temperature/T2 upper temperature.		
<i>* other connectors available on request.</i>		
<i>** with IP67 cable box screwed on.</i>		

Model Key for TSK

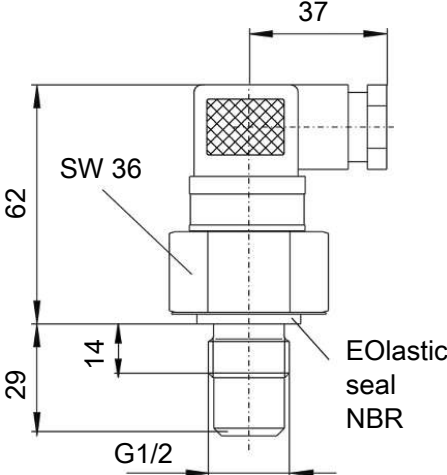
TSK - XX - XX - G3/4 - XX - XX - XX - XX									
Number of temperature contacts 1 or 2									
Version MS Brass VA Stainless steel									
Connector M3 M12									
Length (max. 1000 mm) 280 370 500 variable (please specify)									
				T2 (2nd temperature contact)					
				NC contact NO contact					
				TK40NC TK40NO = 40 °C					
				TK50NC TK50NO = 50 °C					
				TK60NC TK60NO = 60 °C					
				TK70NC TK70NO = 70 °C					
				TK80NC TK80NO = 80 °C					
				T1 (1st temperature contact)					
				NC contact NO contact					
				TK40NC TK40NO = 40 °C					
				TK50NC TK50NO = 50 °C					
				TK60NC TK60NO = 60 °C					
				TK70NC TK70NO = 70 °C					
				TK80NC TK80NO = 80 °C					

Ordering example

You need: Brass temperature switch, G3/4 connection, length L= 300 mm, M3 plug
2 x temperature contact: 1st Contact 50 °C NC, 2nd contact 70 °C NO,

Order: TSK-2-M3/300 -TK50NC-TK70NO

Technical Data TSA

Model	TSA	Dimensions
Probe length:	29 mm	
Probe material:	Anodised aluminium	
Max. operating pressure:	15 bars	
Operating temperatures:	-40 °C to +80 °C	
Temperature contacts		
Switch element:	Bi-metal	
Max. voltage:	230 V	
Max. switching current:	2 A	
Max. contact load:	100 VA	
Tolerance:	± 5 K	
Switch-back difference:	15 K ± 3 K	
Function		
Switching point °C:	25/40/50/60/70/80	
<i>Other temperatures available upon request</i>		
<i>* NC = NC contact/NO = NO contact (all data for rising temperature)</i>		

Standard Pin Assignment TSA

Plug connection*:	M3 valve connector	M12 plug A coded
Dimensions:		
Connection schematic:		
Number of pins:	3-pin + PE	4-pin
DIN EN:	175301-803	61076-2-101
Max. voltage:	230 V AC/DC	30 V DC
IP rating:	IP 65	IP 67**
Cable fitting:	PG 11	
Standard pin assignment:		
* other connectors available on request.		
** with IP67 cable box screwed on.		

Ordering Instructions TSA

Switching function	NO (NO contact)		NC (NC contact)	
Temperature	Model	Item no.	Model	Item no.
25 °C	TSA-25-M3	1139699	TÖA-25-M3	1142899
40 °C	TSA-40-M3	1139599	TÖA-40-M3	1143299
50 °C	TSA-50-M3	1138599	TÖA-50-M3	1142199
60 °C	TSA-60-M3	1138699	TÖA-60-M3	1143399
70 °C	TSA-70-M3	1138799	TÖA-70-M3	1140299
80 °C	TSA-80-M3	1139299	TÖA-80-M3	1140899
25 °C	TSA-25-M12	1141199	TÖA-25-M12	1144199
40 °C	TSA-40-M12	1141299	TÖA-40-M12	1144299
50 °C	TSA-50-M12	1141399	TÖA-50-M12	1144399
60 °C	TSA-60-M12	1141499	TÖA-60-M12	1144499
70 °C	TSA-70-M12	1141599	TÖA-70-M12	1144599
80 °C	TSA-80-M12	1141699	TÖA-80-M12	1144699

Ordering example

You need: Temperature contact at 50 °C NO, type M3 plug

Order: Item no. 1138599 Temperature switch TSA-50-M3