

Temperature switch with two switching outputs

TM1



Technical Features

- › Temperature switch with two adjustable switch points
- › Simple switching point setting by means of two setting rings allowing optimum reading
- › Mechanical locking prevents inadvertent switching point manipulation
- › Particularly good response dynamics and very short power-on delay time
- › Installation length 250 mm
- › High vibration and shock resistance
- › Certification acc. to EU direction



Functional Description

Temperature switch with the measuring thermistor Pt 1000 and two adjustable temperature switching points. Two adjusting rings are provided with scale and their position is protected with a mechanical lock. The stainless-steel body is provided with connecting thread G 1/2 with FKM sealing ring. The needed installation length for the measuring stem is 250 mm. An electric connection is realized by four-pin connector M12 x 1. The temperature switch is suitable for industrial usage thanks to robust design, vibration and shock resisted.

Outputs: two switching contacts (pin 2 and pin 4)

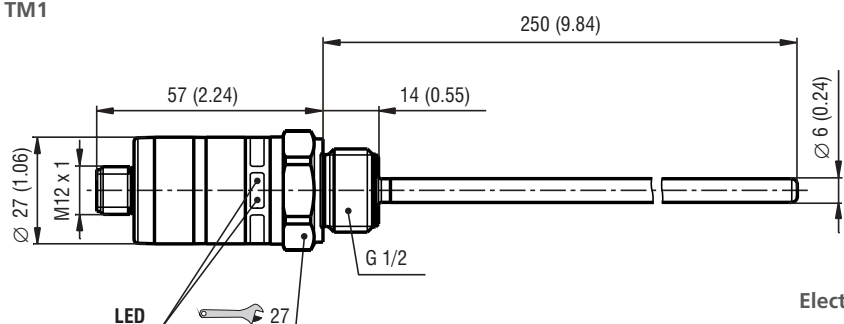
Technical Data

Application		
Measuring element		1x Pt 1000 (DIN EN 60751, class A)
Measuring range	°C (°F)	-25 ... +140 (-13 ... +284)
Set point SP	°C (°F)	-20 ... + 140 (-4 ... +284)
Media		Liquids
Medium temperature	°C (°F)	-40 ... +145 (-40 ... +293)
Ambient temperature	°C (°F)	-40 ... +80 (-40 ... +176) at medium temperature < 80 °C (+176 °F) -40 ... +50 (-40 ... +122) at medium temperature < 145 °C (+293 °F)
Storage temperature	°C (°F)	-40 ... +100 (-40 ... +212)
Pressure rating	bar (PSI)	300 (4350)
Electrical parameters		
Supply voltage	V DC	9.6 ... 32 (supply class 2 acc. to cULus)
Current consumption	mA	< 30
Protection class		III
IP protection		IP67
Protection		Reverse polarity protection
Power-on delay time	s	0.5
Outputs		
Two digital outputs		Switching signals; PNP switcher (contacts normally open / closed)
Max. voltage drop switching output DC	V	2
Permanent current rating of switching output DC	mA	500
Electric protection		Pulsed short-circuit and overload protection
Accuracy / deviations		
Temperature drift per 10 K	K	0.1
Repeatability	K	± 0.1
Setting accuracy	K	± 3
Response times		
Dynamic response T05/T09	s	1/3; acc. to DIN EN 60751
Adjusting		
Adjustment of the switching point		Two setting rings with a mechanical lock
Tests / approvals		
EMC		DIN EN 61000-4-2 ESD 4 kV CD / 8 kV AD EN 61000-4-3 HF radiated 10 V/m EN 61000-4-4 Burst 2 kV EN 61000-4-6 HF conducted 10 V
Shock resistance		DIN IEC 68-2-27 50 g (11 ms)
Vibration resistance		DIN IEC 60068-2-6 20 g (102000 Hz)

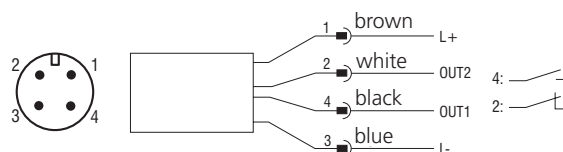
MTTF	years	643.1
UL approval No.		Schválení č. K018
Mechanical parameters		
Weight	Kg (lbs)	0.141 (0.31)
Materials		Stainless steel (1.4404/316L); PBT; PC; FKM
Materials (wetted parts)		Stainless steel (1.4404/316L); FKM
Tightening torque	Nm (lbf.ft)	45 (33.2)
Circuit connection		External thread G 1/2
Probe diameter	mm (in)	6 (0.24)
Installation length	mm (in)	250 (9.84)
Display, operating elements		
Display		Switching status – 2 x LED yellow
Electrical connection		
Connector		4-pin, M12 x 1, gold-plated

Dimensions in millimeters (in)

TM1

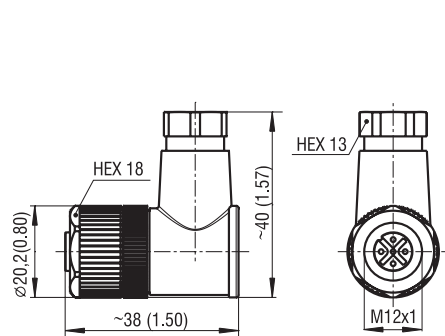


Electrical connection

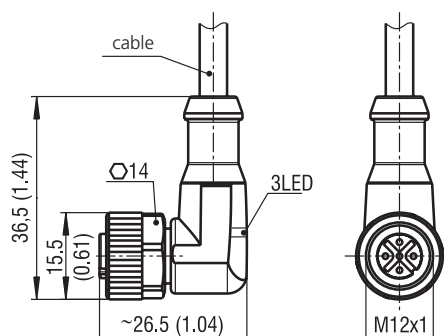


Colours acc. to standard EN 60947-5-2

Connector without cable



Connector with cable



Connector type	Ordering code
without cable	41349600
2m cable	41582300
5m cable	41825200

Connector **is not included** in order of any pressure switch or sensor and has to be ordered separately.

Ordering Code

TM1 - 140 - 2 - 250 - 2 - 1

Temperature switch with two switching outputs

Setting range
-20 ... 140 °C (-4 ... +284 °F)

Number of output signals
two switching outputs

Electrical connection
4-pin connector M12 x 1

Connection to the circuit
external thread G 1/2

Mounting length
mounting length 250 mm (9.84 in)