Resistance Thermometer TSP

Efficient and space saving temperature measurement

SICK
Sensor Intelligence.

Efficient and space saving temperature measurement

Product description

The TSP is a universal purpose platinum insertion thermometer for the temperature measurement in liquids and gases. It can be adapted to specific applications through its available connection threads and insertion lengths. Wetted parts are made from stainless steel 1.4305. The platinum resistor (Pt100 or Pt1000, accuracy class B according to IEC 60751) is located inside the tip of the probe, it is electrically connected by an M12x1 circular connector. Therefore, the device is compact and well suited for narrow installation spaces.

At a glance

- Platinum element (Pt100 or Pt1000, 2-wire), accuracy class B according to IEC 60751
- Measuring range –30 °... +130 °C
- Various connection threads and insertion lengths
- Wetted parts made from stainless steel 1.4305
- Circular connector M12x1 (IP 67)

Your benefits

- Reliable operation through rugged design and high-quality materials
- Good long-term stability
- Easy installation
- Convenient system integration through very compact dimensions

Additional information

Detailed technical data

Features

Measuring range	–30 °C ... +130 °C
Sensor element	Pt100 or Pt1000
Output signals	Pt100, 2-wire or Pt1000, 2-wire

Performance

Accuracy of sensor element	Class B according to IEC 60751

Mechanics/electronics

Process connections	Thread G 1/4 B, Thread G 3/8 B, Thread M14x1.5, Thread 1/4" NPT
Insertion length/diameter of probe	30 mm / 5 mm, 40 mm / 5 mm, 50 mm / 6 mm, 60 mm / 6 mm
Pressure resistance	Max. 120 bar
Housing material	Stainless steel 1.4305
Wetted parts	Stainless steel 1.4305
Electrical connection/enclosure rating [1]	Plug M12x1, 4-pin, IP 67
Electrical safety	Protection class: III, Dielectric strength: 500 V AC
Weight	Ca. 30 g (depending on configuration)

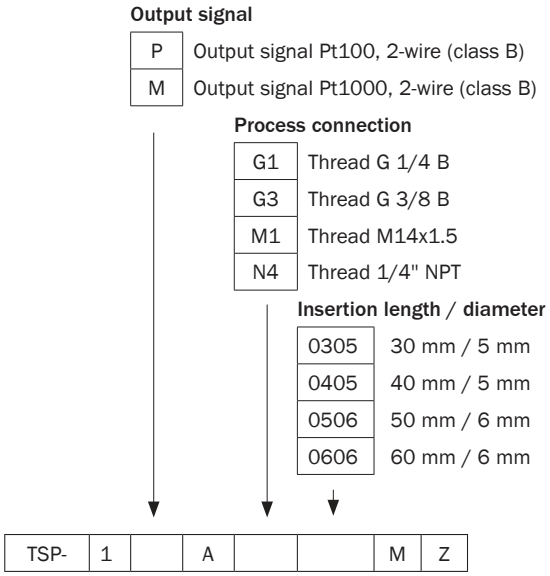
[1] Enclosure rating IP per IEC 60529. The enclosure rating classes specified only apply while the pressure transmitter is connected with female connectors that provide the corresponding enclosure rating.

Ambient data

Ambient temperature [1]	–40 °C ... +100 °C
Storage and transport temperature	–40 °C ... +85 °C
Shock resistance according to IEC 60751	500 g
Vibration resistance according to IEC 60751	3 g

[1] Due to the short overall length the temperature at the connection plug may rise to inadmissibly high values. It is essential to avoid this with a corresponding design of the test point. The connection cable has to be selected accordingly.

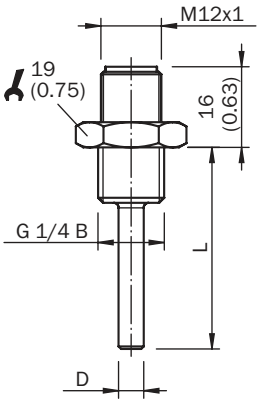
Type code


Output signal
P
Output signal Pt100, 2-wire (class B)
M
Output signal Pt1000, 2-wire (class B)
Process connection
G1
Thread G 1/4 B
G3
Thread G 3/8 B
M1
Thread M14x1.5
N4
Thread 1/4" NPT
Insertion length / diameter
0305
30 mm / 5 mm
0405
40 mm / 5 mm
0506
50 mm / 6 mm
0606
60 mm / 6 mm
TSP-
1
A
M
Z

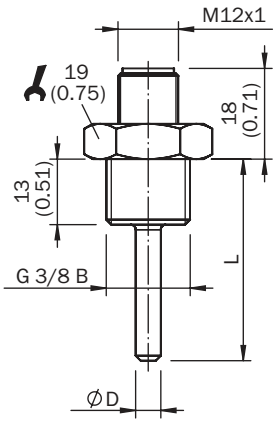
Ordering information

Output signal	Process connection	Insertion length/diameter of probe	Model name	Part No.
Pt100, 2-wire	Thread G 1/4 B	30 mm / 5 mm	TSP-1PAG10305MZ	6042938
		40 mm / 5 mm	TSP-1PAG10405MZ	6042939
		50 mm / 6 mm	TSP-1PAG10506MZ	6042940
		60 mm / 6 mm	TSP-1PAG10606MZ	6042941
	Thread G 3/8 B	30 mm / 5 mm	TSP-1PAG30305MZ	6042942
		40 mm / 5 mm	TSP-1PAG30405MZ	6042943
		50 mm / 6 mm	TSP-1PAG30506MZ	6042944
		60 mm / 6 mm	TSP-1PAG30606MZ	6042945
	Thread M14x1.5	30 mm / 5 mm	TSP-1PAM10305MZ	6042946
		40 mm / 5 mm	TSP-1PAM10405MZ	6042947
		50 mm / 6 mm	TSP-1PAM10506MZ	6042948
		60 mm / 6 mm	TSP-1PAM10606MZ	6042949
	Thread 1/4" NPT	30 mm / 5 mm	TSP-1PAN40305MZ	6042950
		40 mm / 5 mm	TSP-1PAN40405MZ	6042951
		50 mm / 6 mm	TSP-1PAN40506MZ	6042952
		60 mm / 6 mm	TSP-1PAN40606MZ	6042953
Pt1000, 2-wire	Thread G 1/4 B	30 mm / 5 mm	TSP-1MAG10305MZ	6042954
		40 mm / 5 mm	TSP-1MAG10405MZ	6042955
		50 mm / 6 mm	TSP-1MAG10506MZ	6042956
		60 mm / 6 mm	TSP-1MAG10606MZ	6042957
	Thread G 3/8 B	30 mm / 5 mm	TSP-1MAG30305MZ	6042958
		40 mm / 5 mm	TSP-1MAG30405MZ	6042959
		50 mm / 6 mm	TSP-1MAG30506MZ	6042960
		60 mm / 6 mm	TSP-1MAG30606MZ	6042961
	Thread M14x1.5	30 mm / 5 mm	TSP-1MAM10305MZ	6042962
		40 mm / 5 mm	TSP-1MAM10405MZ	6042963
		50 mm / 6 mm	TSP-1MAM10506MZ	6042964
		60 mm / 6 mm	TSP-1MAM10606MZ	6042965
	Thread 1/4" NPT	30 mm / 5 mm	TSP-1MAN40305MZ	6042966
		40 mm / 5 mm	TSP-1MAN40405MZ	6042967
		50 mm / 6 mm	TSP-1MAN40506MZ	6042968
		60 mm / 6 mm	TSP-1MAN40606MZ	6042969

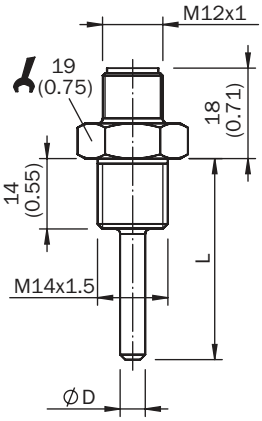
Dimensional drawings



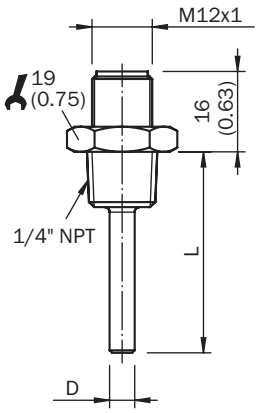
All dimensions in mm (inch)



All dimensions in mm (inch)



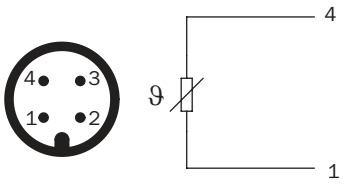
All dimensions in mm (inch)



All dimensions in mm (inch)

Connection type and diagram

Plug M12x1, output signal Pt100/Pt1000



Notes

8013880/2010-11-02 · LW/FD (2010-11) · WB USmod int-US35

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Our Business Segment Expertise

Factory automation

With its intelligent sensors, safety systems, and automatic identification applications, SICK provides comprehensive solutions for factory automation.

- Non-contact detecting, counting, classifying, and positioning of any type of object
- Accident protection and personal safety using sensors, as well as safety software and services

Logistics automation

Sensors made by SICK form the basis for automating material flows and the optimization of sorting and warehousing processes.

- Automated identification with barcode and RFID reading devices for the purpose of sorting and target control in industrial material flow
- Detecting volume, position, and contours of objects and surroundings with laser measurement systems

Process automation

Optimized system solutions from SICK ensure efficient acquisition of environmental and process data in many industrial processes.

- Precise measurement of gases, liquids and dust concentrations for continuous monitoring of emissions and the acquisition of process data in production processes
- Gas flow measurements with maximum accuracy thanks to compact gas meters