


Resistance Thermometer TSP

Efficient and space saving temperature measurement


Efficient and space saving temperature measurement





Additional information

- Detailed technical data 3
- Type code 4
- Ordering information 5
- Dimensional drawings 6
- Connection type and diagram 7



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

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) |

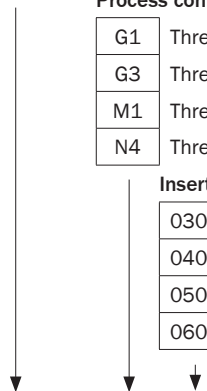
Process connection

| | |
|----|-----------------|
| 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 |

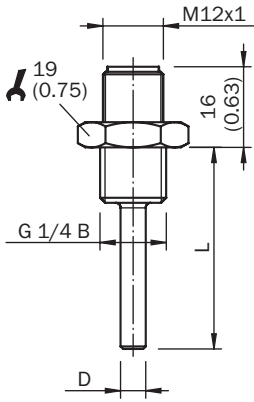
| | | | | | | | |
|------|---|--|---|--|--|---|---|
| TSP- | 1 | | A | | | M | Z |
|------|---|--|---|--|--|---|---|



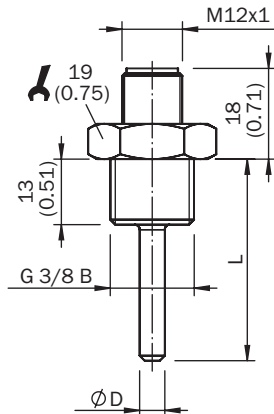
Ordering information

| 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 |

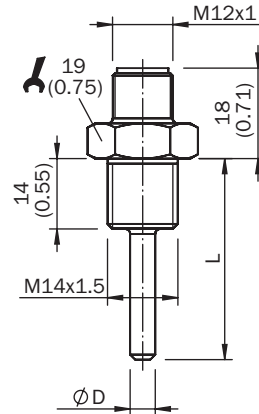
Dimensional drawings



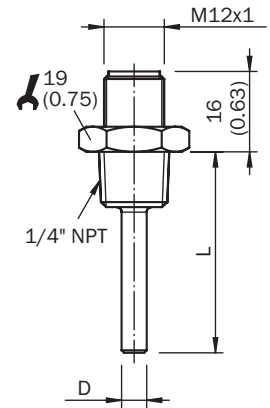
All dimensions in mm (inch)



All dimensions in mm (inch)



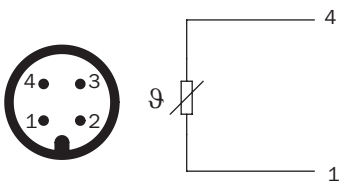
All dimensions in mm (inch)



All dimensions in mm (inch)

Connection type and diagram

Plug M12x1, output signal Pt100/Pt1000



Notes

Worldwide presence with subsidiaries in the following countries:

Australia
Belgium/Luxembourg
Brasil
Ceská Republika
China
Danmark
Deutschland
España
France
Great Britain
India
Israel
Italia
Japan
Nederland
Norge

Österreich
Polska
Republic of Korea
Republika Slovenija
România
Russia
Schweiz
Singapore
Suomi
Sverige
Taiwan
Türkiye
United Arab Emirates
USA/Canada/México

Please find detailed addresses and additional representatives and agencies in all major industrial nations at www.sick.com

Handed over by:

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 bar-code 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