



## Description

Precision Pt100 reference sensors suitable for use with dry block calibrators and measurement systems for reference calibration of common industrial temperature sensing devices.

Each sensor is designed to deliver accuracy and maintain stability, ensuring minimal uncertainty and drift between calibration intervals. The standard range features four sensors for coverage from -150 to 650 °C, each 4 mm diameter to match the reference holes in the inserts of the Time Electronics dry block calibrator range.

Suitable for use with CalBench systems featuring the 8060 or 7051+ modules for precision temperature measurements and automated testing applications using EasyCal calibration software.

## Features

- Precision Pt100 sensors
- 250 mm and 350 mm lengths
- TERS400: -40 to 400 °C (-58 to 752 °F)
- TERS650: -150 to 650 °C (-238 to 1207 °F)
- 4 mm diameter sensors
- For use with dry block calibrators
- Fast response times
- Supplied with ISO 17025 certificate

## Specifications

Model	Temperature Range	Diameter	Length	Sensor Type	Min. Immersion Depth	Self Heating Effect	Response Time	Outer Tube
TERS400/4/250	-50 to 400 °C (-58 to 752 °F)	4 mm	250 mm (9.84 ") straight	Pt100	60 mm (2.36 ")	0.04 °C/mW (0.07 °F/mW)	50 %: 7 secs 90 %: 17 secs	AISI 316
TERS400/4/350	-50 to 400 °C (-58 to 752 °F)	4 mm	350 mm (13.8 ") straight	Pt100	60 mm (2.36 ")	0.04 °C/mW (0.07 °F/mW)	50 %: 7 secs 90 %: 17 secs	AISI 316
TERS650/4/250	-150 to 650 °C (-238 to 1207 °F)	4 mm	250 mm (9.84 ") straight	Pt100	100 mm (3.9 ")	0.06 °C/mW (0.108 °F/mW)	50 %: 8 secs 90 %: 26 secs	Inconel 600
TERS650/4/350	-150 to 650 °C (-238 to 1207 °F)	4 mm	350 mm (13.8 ") straight	Pt100	100 mm (3.9 ")	0.06 °C/mW (0.108 °F/mW)	50 %: 8 secs 90 %: 26 secs	Inconel 600

**TERS400 Accuracy**..... Hysteresis <sup>(1)</sup> @ 0 °C (32 °F): 0.01 °C (0.02 °F)  
 Long Term Stability <sup>(2)</sup> @ 0 °C (32 °F): typical 0.014 °C (0.025 °F)  
 Repeatability <sup>(1)</sup> @ 0 °C (32 °F): 0.005 °C (0.009 °F)  
<sup>(1)</sup> When used in the range -50 to 400 °C (-58 to 752 °F).  
<sup>(2)</sup> When exposed to 400 °C (752 °F) for 100 hours.  
 Stability will depend on actual use of the sensor.

**TERS650 Accuracy**..... Hysteresis <sup>(1)</sup> @ 0 °C (32 °F): 0.01 °C (0.02 °F)  
 Long Term Stability <sup>(2)</sup> @ 0 °C (32 °F): typical 0.014 °C (0.025 °F)  
 Repeatability <sup>(1)</sup> @ 0 °C (32 °F): 0.002 °C (0.0036 °F)  
<sup>(1)</sup> When used in the range -90 to 650 °C (-130 to 1202 °F).  
<sup>(2)</sup> When exposed to 650 °C (1202 °F) for 100 hours.  
 Stability will depend on actual use of the sensor.

**Cable** ..... 4 wire

**Cable length**..... 2 m (3.3 ft)

**Connection** ..... Configured upon order depending on accompanying products

**Insulation resistance** ... @ 23 °C / 73 °F: 100 GΩ / @ 650 °C / 1202 °F: 70 MΩ

**Operating conditions**..... Sensor connection and cable: Max. 70 °C/158 °F  
 Storage temperature: -20 to 70 °F / -4 to 158 °F  
 Humidity: 0 to 90 % RH  
 Protection class (connectors): DIN 40050 IP-50

**Supplied with** ..... ISO 17025 calibration certificate.  
 Carry case included with TERS650/4/350 sensors.

## Ordering Information

**TERS400/4/250** ..... Pt100 Reference Sensor  
 (-50 to 400 °C / -58 to 752 °F, diameter 4 mm, straight, length 250 mm)

**TERS400/4/350** ..... Pt100 Reference Sensor  
 (-50 to 400 °C / -58 to 752 °F, diameter 4 mm, straight, length 350 mm)

**TERS650/4/250** ..... Pt100 Reference Sensor, solid  
 (-150 to 650 °C / -238 to 1207 °F, diameter 4 mm, length 250 mm)

**TERS650/4/350** ..... Pt100 Reference Sensor, solid  
 (-150 to 650 °C / -238 to 1207 °F, diameter 4 mm, length 350 mm)

*Due to continuous development Time Electronics reserves the right to change specifications without prior notice.*