

THERM-SS Stainless Steel Thermistor Sensor

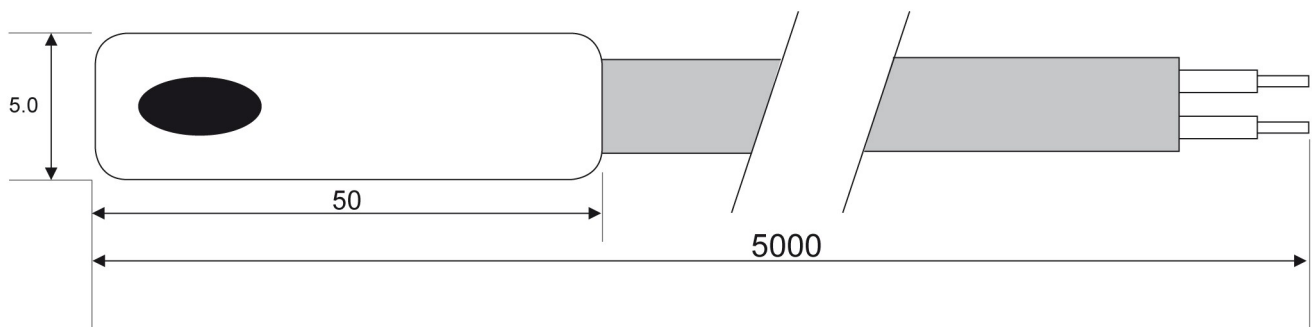
Product Overview

The stainless steel temperature sensors (THERM-SS) are high quality, low cost sensors for measurement of soil, air or liquid temperature. The sensor consists of a thermistor embedded in a protective stainless steel body. THERM-SS sensors can be used in a wide range of applications from soil monitoring and climate control to concrete monitoring and explosive testing.

THERM-SS has a measurement range between -40°C and $+100^{\circ}\text{C}$. Standard cable lengths are 5m, 30m and 50m however custom length cables are available.



(unit : mm)



- The THERM-SS is ideally supported by the Thermistor Sensor Meter (TRM), a wireless, stand-alone logging instrument available from ICT International. With the TRM, THERM-SS sensors can be individually calibrated for maximum accuracy.
- The TRM can support up to 10 THERM-SS sensors.
- For complete monitoring solutions, the THERM-SS is used in combination with the MP406 soil volumetric moisture content sensor, tensiometers for soil water potential, ICTO2 soil oxygen sensor, or the ICT International automatic weather station.



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THERM-SS Specifications

1. Electrical Characteristic

ITEM	SYMBOL	TEST CONDITION	PERFORMANCE	UNIT
1.1 Rated resistance	R25°C	+ 25±0.05°C	10±1%	kΩ
1.2 B value	B25/85	+ 25±0.05°C, 85±0.05°C	3976±1%	k
1.3 Time constant	t	In well stirred water	≤ 11	sec
1.4 Dissipation factor	s	In still air	≥ 2.2	mW/°C
1.5 Voltage withstanding	U	AC1500V (Peak value)	No destroy or spark	V
1.6 Insulation resistance	Ri	DC500V	≥ 100	MΩ
1.7 Max.power	Pmax	Ambient Temp. +25°C	≤ 100	mW

2. Reliability test

2.1 Intensity: Fix the probe, pull the lead by the striped wire end with 10N force for ± 1sec. No visible damage.

2.2 High Temp. Store (in air) 80±3°C 100h

$\Delta R_{25}/R_{25} \leq 3\%$

2.3 Low Temp. Store (in air)

-40±3°C 1000h

$\Delta R_{25}/R_{25} \leq 3\%$

2.4 Heat and Humidity Stability

40±2°C 92%RH~98%RH 240h

$\Delta R_{25}/R_{25} \leq 3\%$

2.5 Temperature Shift

-50±3°C X 30min $\xrightarrow[2\pm 1\text{min}]{\text{normal temp.}}$ 105±3°C X 30min 5 times

$\Delta R_{25}/R_{25} \leq 3\%$

3. Operation Notice

3.1 Application: Temperature measure and control.

3.2 Operating Temp. Range: -50°C~+100°C

3.3 Avoid measurement error caused by self heating with excess current.

3.4 Avoid excessive heat shock, the hot air blow should be at least 10mm from the probe, in cases when a heat shrink protection tube needs to be attached.



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