

# 4000 SERIES

## TEMPERATURE SENSOR PROBE

### Introduction

The 4000 series temperature sensor probe is a universal cable temperature sensor probe utilizing a highly accurate Class AA PT1000 RTD. The sensor is based on a small diameter brass housing for fast response time with a four crimp seal to the silicon wire insulation for increased ingress protection. The 4000 series also offers adhesive-lined heatshrink over the housing to wire connection for added wire strain relief and further robustness to moisture ingress.

Built for tough applications the 4000 series is an ideal choice for HVAC equipment, heat pumps, water heaters, industrial heating and cooling equipment.



### Features

- Highly accurate PT1000 RTD (Class AA)
- 5.9mm diameter brass probe
- IP69K
- -40 - 85°C operating temperature range
- 100nF Capacitor for electrical noise reduction
- Outer polyolefin heatshrink
- RoHS compliant

### Applications

- HVAC Equipment
- Heat Pumps
- Water Heaters
- Industrial Heating and Cooling Equipment

## SPECIFICATIONS

### Electrical

<b>Output at Temperature</b>	<p>1000 ohms at 0°C PTC</p> <p>-40-0°C: <math>R(t) = R_0 \times (1 + At + Bt^2 + C[t - 100]t^3)</math></p> <p>0-85°C: <math>R(t) = R_0 \times (1 + At + Bt^2)</math></p> <p><math>R_0 = 1000</math></p> <p><math>A = 3.91 \times 10^{-3}</math></p> <p><math>B = -5.78 \times 10^{-7}</math></p> <p><math>C = -5.78 \times 10^{-12}</math></p> <p><math>t = \text{temperature in } ^\circ\text{C}</math></p>
<b>Accuracy<sup>(1)</sup></b>	Class AA (F0.1) RTD with +/-0.1 °C accuracy at 0 °C
<b>Recommended Supply Current<sup>(2)</sup></b>	≤0.3 milliamps
<b>Output Response Time (T63)</b>	≤18 seconds from stagnant ambient air temperature to 0°C glycol bath
<b>Surge Immunity</b>	IEC 6100-4-5, ten 1KV surge pulses using a 1.2/50 micro second profile

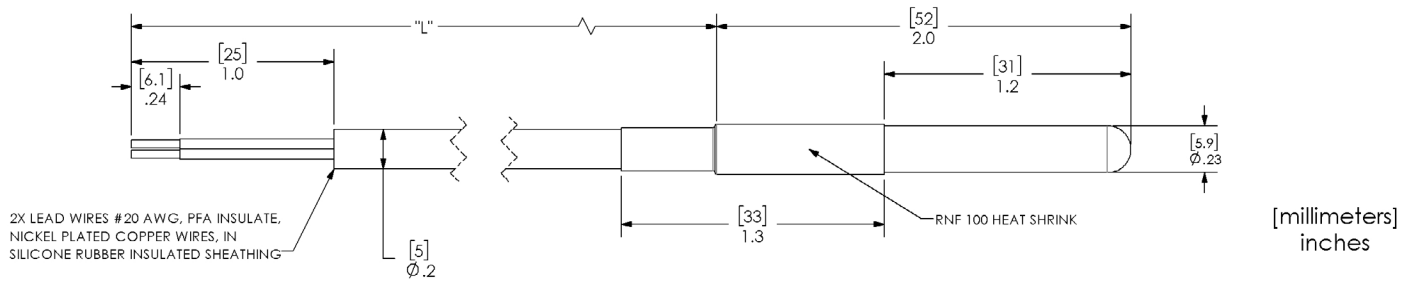
# Physical

<b>Vibration</b>	20-2000 Hz, 3 axis with imposed resonance frequencies (engine vibration) 33 Hz 25 G's (transportation vibration)
<b>Mechanical Shock</b>	50 G's, 3 axis per MIL-STD 202G Method 213B, Condition A
<b>Drop (any Axis)</b>	1 meter
<b>Humidity</b>	100% condensing
<b>Ingress Protection</b>	IP69K
<b>Operating Temperature</b>	-40°C to 85°C
<b>Storage Temperature</b>	-40°C to 100°C



## DIMENSIONS

Wire length will vary with options selected



## Schematic

