

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

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

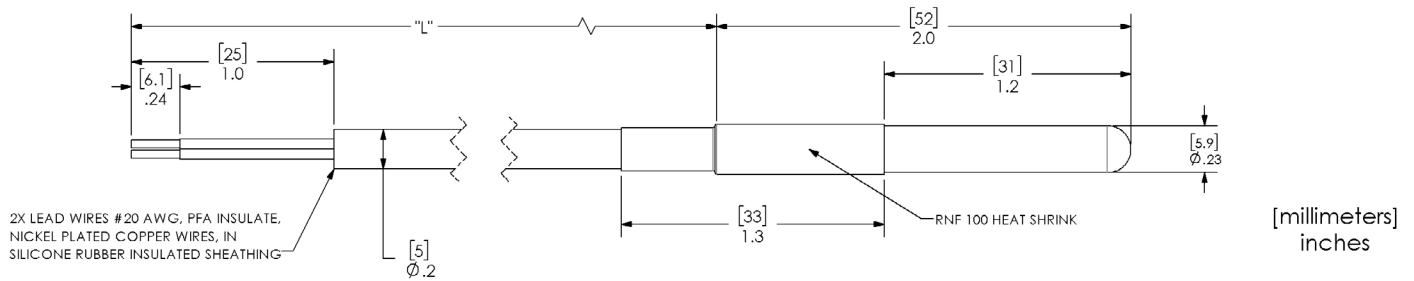
Physical

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

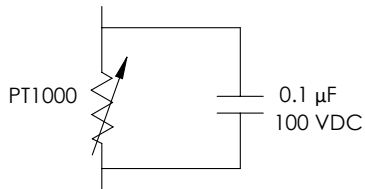


DIMENSIONS

Wire length will vary with options selected



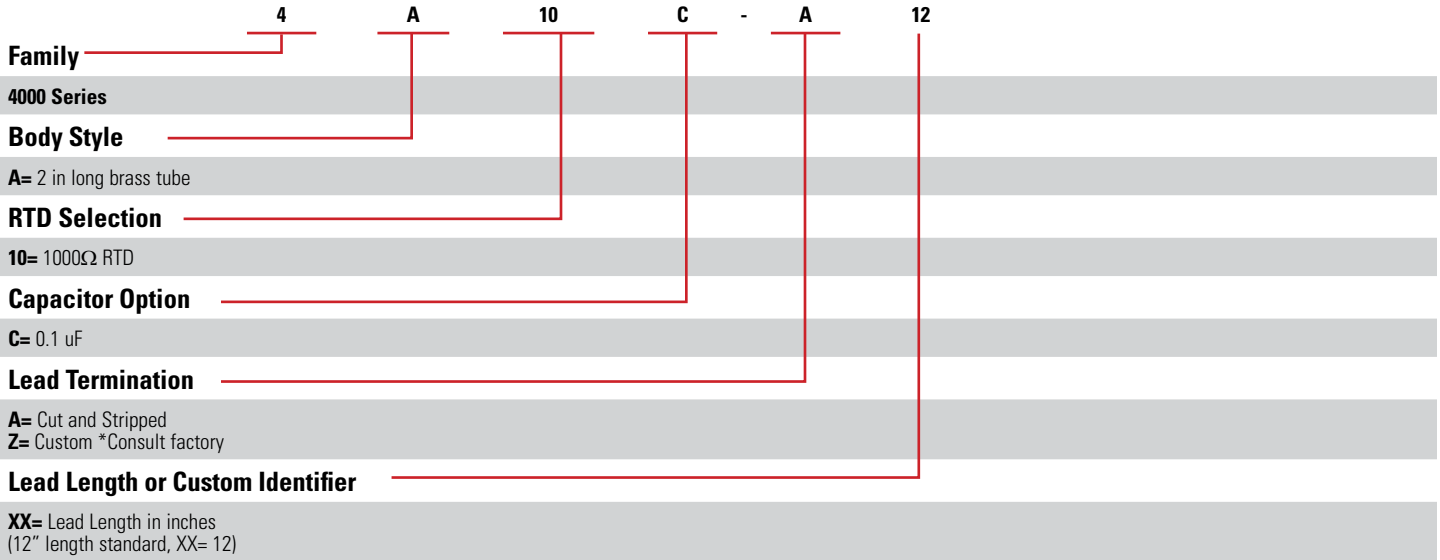
Schematic





ORDERING OPTIONS

Example : 4A10C-A12



GENERAL NOTE

- (1) RTD accuracy specified based on RTD sense element. Additional packaging into full sensor probe may result in slight additional inaccuracies
- (2) Supply current above 0.3mA could lead to self-heating of the RTD and cause inaccurate temperature measurements



AGENCY APPROVALS & CERTIFICATIONS



WARNINGS



RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

Failure to follow these instructions can result in serious injury, or equipment damage.

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