Remote Temperature Probes

Installation and Operation

#20910 – 10/26/20

Overview

- The Remote Probe with Plenum-Rated Cable is a small stainless steel temperature sensor used for single point temperature measurement with PVC plenum rated cable. It is ideal for bracket mounting for chamber, duct, thermowell or L-bracket applications.
  Part #s NSB-10K-2-RPP-6 (6" probe)
  NSB-10K-2-RPP-5 (5' probe)
  NSB-10K-2-RPP-10 (10' probe)
  NSB-10K-2-RPP-15 (15' probe)
  NSB-10K-2-RPP-25 (25' probe)
  NSB-50K-RPP-5-C (5' probe)
- The Remote Probe with FEP-Jacketed Cable is a small stainless steel temperature sensor used for single point temperature measurement with FEP plenum cable. It is ideal for bracket mounting in harsh environments for chamber, duct, thermowell or L-bracket applications.
  Part #s NSB-10K-2-RPFEP-18 (18" probe)
  NSB-10K-2-RPFEP-5 (5' probe)
- The Remote Probe with FEP-Jacketed Cable for submersion is a small stainless steel temperature sensor used for sin gle point temperature measurement with submersion FEP plenum cable. It is ideal for bracket mounting in wet or water submersion environments for chamber, duct, immersion or L-bracket applications.
  Part #s NSB-10K-2-RPFEP2-5 (5' probe)
  NSB-10K-2-RPFEP2-25 (25' probe)
  NSB-50K-RPFEP2-5-C (5' probe)

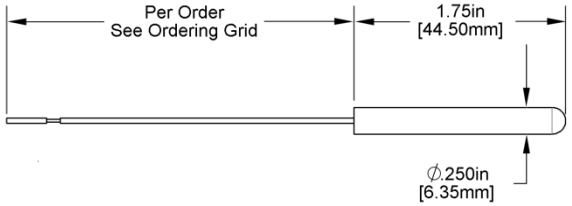

Figure 1: Remote Probe

Specifications

Sensor	Passive, NTC, 2 wire
Thermistor	Thermal resistor
Temp. Output	Resistance, 10k Type 2
Accuracy (Std)	±0.36ºF, (±0.2ºC)
Stability	< 0.036ºF/Year, (<0.02ºC/Year) Heat
dissipation	2.7 mW/ºC
Temp. Drift	<0.02ºC per year
Probe range	-40º to 221ºF (-40º to 105ºC)
Lead wire	22AWG stranded
Wire Insulation	
-RPP	Flame Retardant PVC plenum cable
-RPFEP	FEP jacketed plenum rated cable
-RPFEP2	FEP jacketed plenum and submersion rated cable
Probe	
-RPP, RPFEP	Rigid, 304 Stainless Steel, 0.25" OD
Probe Length	
-RPP, RPFEP	1.75" (44.5mm)
Mounting	External Probe Bracket required **Probe** Vented polycarbonate shield, ½" OD
Probe Length	1.2" with ½" NPT threads
Agency	RoHS, CE

Specifications subject to change without notice.

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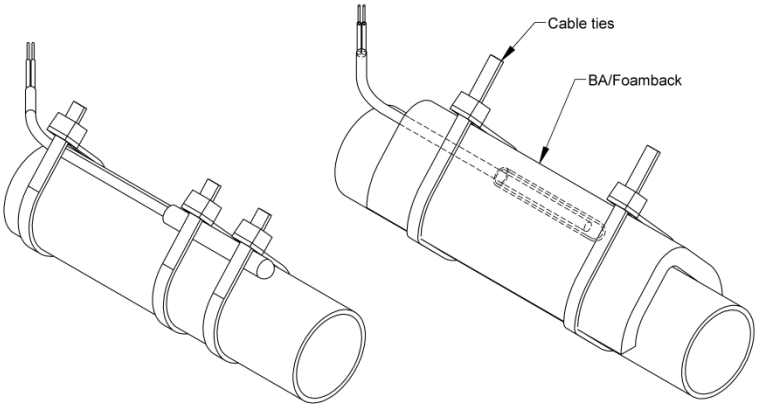
Mounting



Step 1 **Step 2**

Figure 2: Stainless Steel Remote Probe Strapped to Pipe

1. Strap sensor so that it has good contact with bare pipe.
2. To increase the accuracy of the sensor, use an insulating material to insulate the sensor and pipe from ambient temperature influences. Foamback insulation is available in 1/4" thickness (p/n NSB-Foamback-.250) and in 1/8" thickness (p/n NSB-Foamback-.125).

NOTES

- Insulation should be installed a minimum of 4 pipe diameters on each side of the strap-on sensor. Example: ½" pipe x 4 = 2".
- Insulation should be 2" on each side of the sensor wrapped all the way around the pipe.

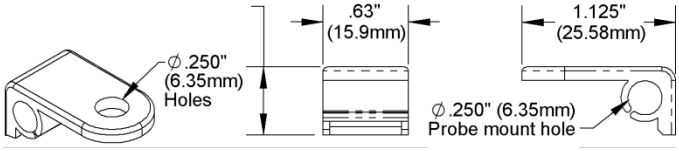


Figure 3A: Break-Off Tab from a Flexible Probe Bracket (P/N NSB-PB-50)

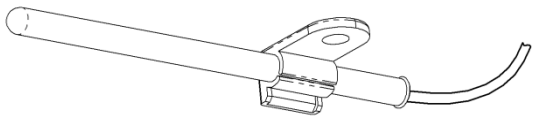


Figure 3B: Break-Off Tab Used to Mount a Stainless Steel Remote Probe

Wiring and Termination

Carrier® recommends using twisted pair of at least 22 AWG for runs under 100 feet, and sealant filled connectors for all wire connections. Runs from 100 to 500 feet should use shielded 22 AWG. All wiring must comply with the National Electric Code (NEC) and local codes.

Do NOT run this device's wiring in the same conduit as high or low voltage AC power wiring. Tests show that inaccurate signal levels are possible when AC power wiring is present in the same conduit as the sensor wires.

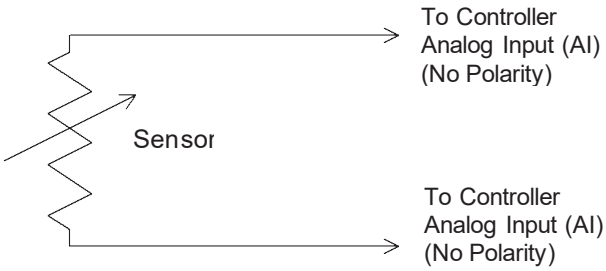


Figure 4: 2 Wire Lead Wire Termination for Thermistor

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Diagnostics

Possible Problem:	**Possible Solutions:**
Controller reports higher or lower than actual temperature	- Confirm the input is set up correctly in the controller to which the sensor is attached - Check wiring for proper termination and continuity (shorted or open). - Disconnect wires and measure sensor resistance and verify the “Sensor” output is correct. - Add or subtract an offset for the sensor in the controller -