

#20904 – 1/10/19

Overview

The Rigid Averaging Sensor is for duct mounting and temperature measurement of stratified air across the duct to give the average temperature along the length of the sensor.

The rigid Stainless Steel Probe is made in different lengths for a custom duct fit. The units is available in multiple thermistor or RTD types as shown in the specifications. Enclosure mounting styles come in plastic or metal for both NEMA 1 and NEMA 4 applications and are all plenum rated.

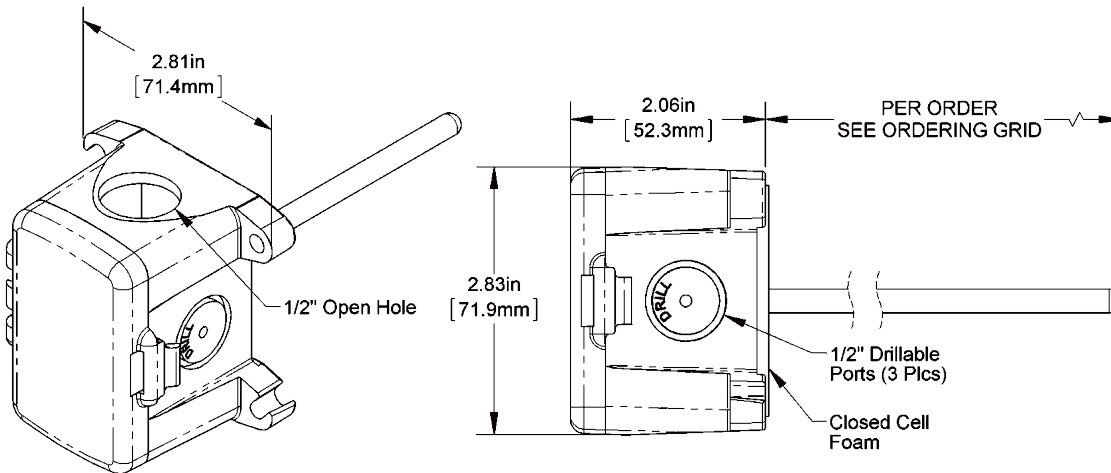


Figure 1: Unit with BB4Box

- 12" probe – Part #NSB-10K-2-RA-12-BB4
 - 24" probe – Part #NSB-10K-2-RA-24-BB4
 - 36" probe – Part #NSB-10K-2-RA-36-BB4
 - 48" probe – Part #NSB-10K-2-RA-48-BB4
- (A Pierceable Knockout Plug is available from BAPI for the open port in the BB4. Part #BA/PKP-100)

Specifications

Sensor	4 sensors per probe Passive Thermistor 2 wire	Mounting	Extension tabs (ears), 3/16" holes
Thermistor	Thermal resistor (NTC) Temp. Output Resistance per order Accuracy (Sstd) $\pm 0.36^{\circ}\text{F}$, ($\pm 0.2^{\circ}\text{C}$) Accuracy (Hi) $\pm 0.18^{\circ}\text{F}$, ($\pm 0.1^{\circ}\text{C}$), [XP] option Stability $< 0.036^{\circ}\text{F}/\text{Year}$, ($< 0.02^{\circ}\text{C}/\text{Year}$) Heat dissipation 2.7 mW/ $^{\circ}\text{C}$ Temp. Drift $< 0.02^{\circ}\text{C}$ per year Probe range -40° to 221°F (-40° to 105°C)	Enclosure Type	BB4, with three 1/2" drill-outs and one 1/2" open port
Lead Wire	22 AWG stranded	Enclosure Ratings	BB4, IP10 (IP44 with Knockout Plug in open port)
Insulation	Etched Teflon, Plenum rated	Enclosure Materials	BB4, Polycarbonate & Nylon, UL94V-0
Probe	Rigid Stainless Steel, 0.25" OD	Ambient (Encl.)	0 to 100% RH, Non-condensing -40 to 185°F , (-40 to 85°C)
Probe Length	12", 24", 36", or 48" per order	Agency	RoHS, *CE PT= DIN43760, IEC Pub 751-1983, JIS C1604-1989
Duct gasket	1/8" foam (impervious to mold) 176°F Max		

Specifications subject to change without notice.

Mounting

1. Place the sensor in the middle of the duct away from temperature stratified air, coils or humidifiers to achieve the best temperature reading.
2. Drill the probe hole as depicted below for the enclosure being used. Insert the probe into the duct.
3. Mount the enclosure to the duct using #8 screws through a minimum of two opposing mounting tabs provided.
4. Snug up the sensors so that the foam backing is depressed to prevent air leakage but do not over tighten or strip the screw threads.

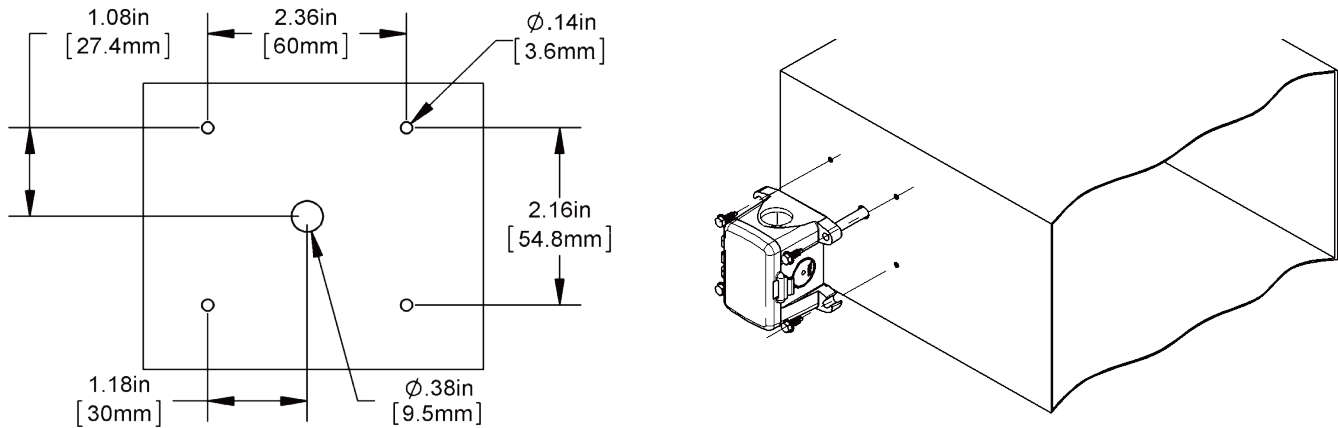


Figure 2: BB4 Enclosure Mounting Holes

Wiring and Termination

Carrier recommends using twisted pair of at least 22AWG for all wire connections. Larger gauge wire may be required for long runs. 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.

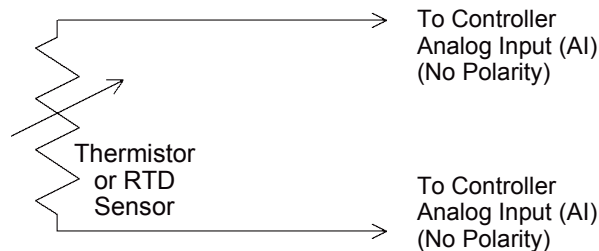


Figure 3: 2-Wire Lead Wire Termination for Thermistor or RTD

Diagnostics

Problems:

Controller reports higher or lower than actual temperature

Possible Solutions:

- Confirm the input is set up correctly in the front end software
- Check wiring for proper termination & continuity. (shorted or open)
- Disconnect wires and measure sensor resistance and verify the "Sensor" output is correct.