



**Dimensional Drawing**

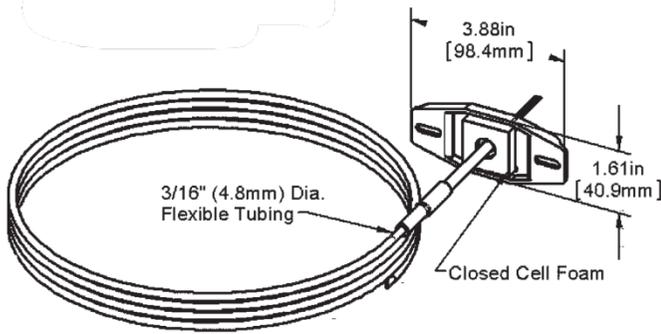


Figure 1: Duct Unit with No Box (NB)

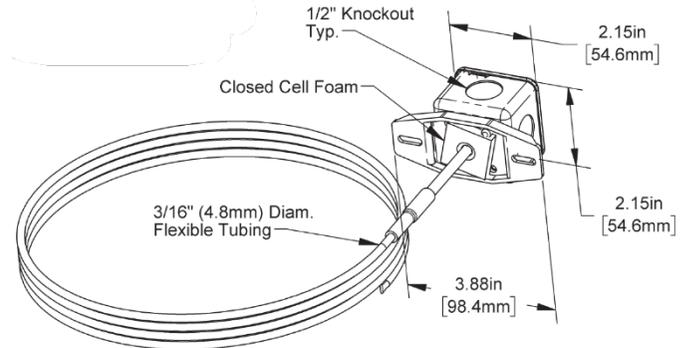


Figure 2: Duct Unit with JBox

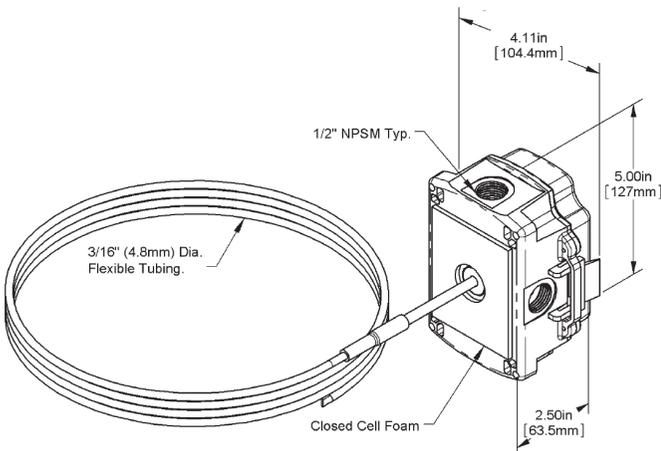


Figure 3: BBox (BB) Duct Unit

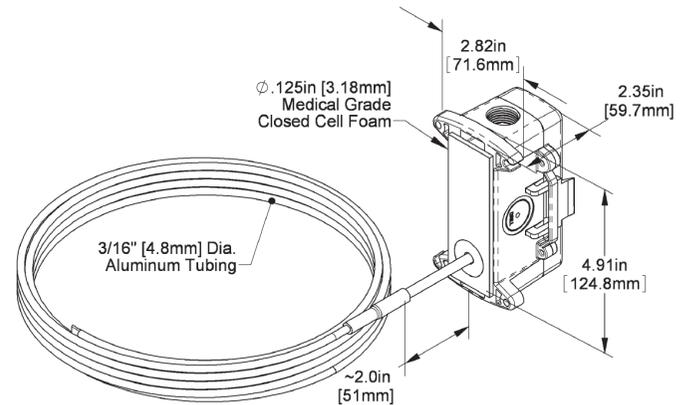


Figure 4: BBox2 (BB2) Duct

**Mounting**

1. Place the sensor in the middle or top of the duct as shown in Figs 5 and 6 and drill the probe and mounting holes as depicted for the enclosure being used.
2. Insert the probe by unrolling it into the duct carefully to avoid kinking. Serpentine the probe at least twice across the stratified air in the duct to achieve the best average temperature reading. At the probe reversing points, a Flexible Probe Bracket can be used to support the sensor, avoid kinking and provide isolation from the duct wall.
3. Mount the enclosure to the duct using recommended 5/16" self-tapping, self-drilling sheet metal screws through a minimum of two opposing mounting tabs. A 1/8" pilot screw hole in the duct makes mounting easier through the mounting tabs. Use the enclosure tabs to mark the pilot hole locations. Weatherproof (WP) enclosures require assembly of the mounting tabs on opposite corners.
4. Snug up the sensors so that the foam backing is depressed to prevent air leakage but do not over-tighten or strip the duct wall.

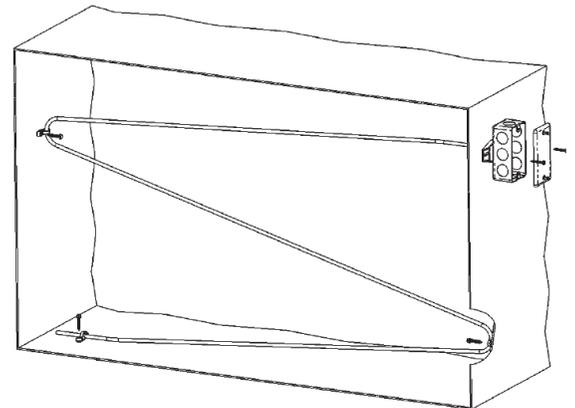


Figure 5: Flexible Sensor Horizontal Mount (Best for Vertical Stratification)

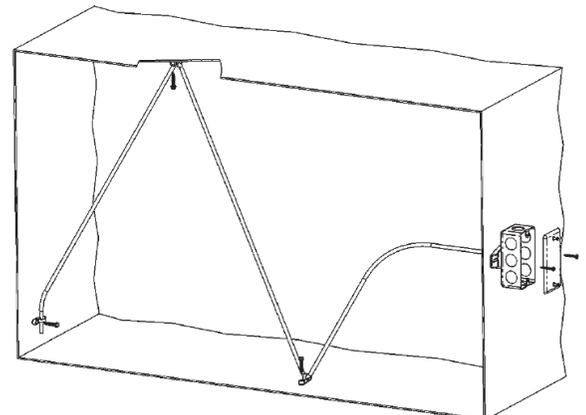


Figure 6: Flexible Sensor Vertical Mount (Best for Horizontal Stratification)

**NOTES**

- Be sure not to drill into the weatherproof enclosures (BB, BB2) which will violate the NEMA and/or the IP rating.
- Be sure to seal your conduit entries to maintain the appropriate NEMA or IP rating for your application if required.

**Thermistor Sensor Element Locations in Averaging Probes**

**8' (2.4m)** - First element located about 8" (200mm) from the tip. Spacing between thermistors is 27-1/2" (700mm).

**12' (3.7m)** - First element located about 8" (200mm) from the tip. Spacing between thermistors is 42-1/2" (1080mm).

**24' (7.3m)** - First element located about 15-3/4" (400mm) from the tip. Spacing between thermistors is 31-1/2" (800mm).

**50' (15.2m)** - First element located about 15-3/4" (400mm) from the tip. Spacing between thermistors is 70-3/4" (1800mm).

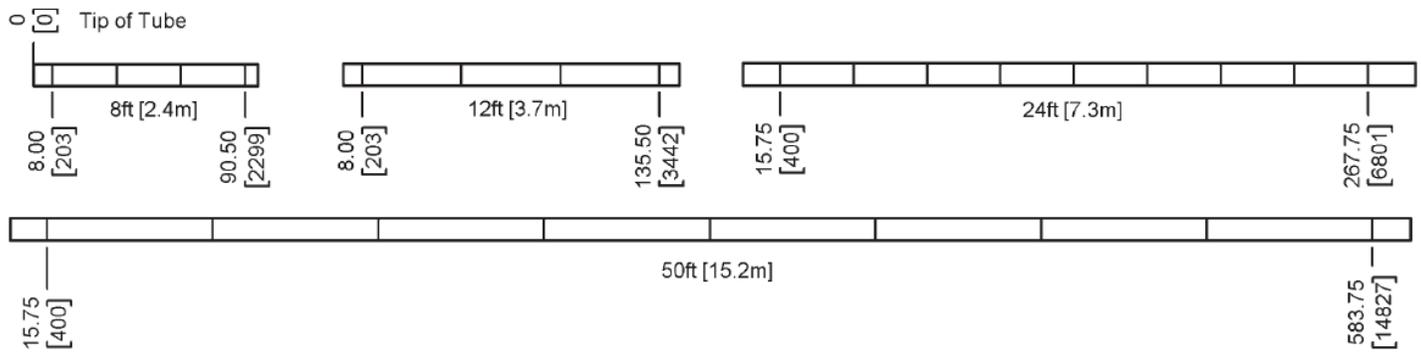


Figure 7: Thermistor Sensor Element Location in Probes

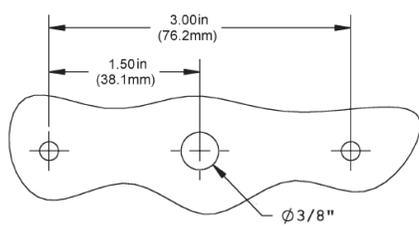


Figure 8: Junction Box or No Box (NB)

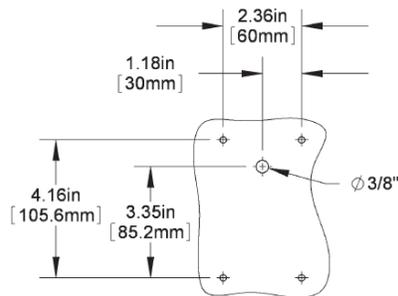


Figure 9: BBox2 (BB2) Mounting Holes and installation

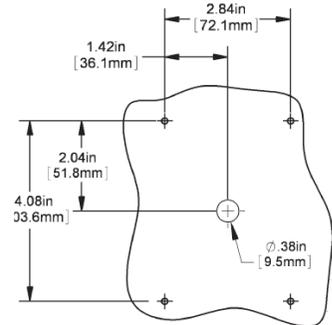


Figure 10: BBox (BB) Enclosure Mounting and installation Holes (Rotate 90° for Horizontal Mounting)

**Wiring and Termination**

All wiring must comply with the National Electric Code (NEC) and local codes.

 <b>Caution</b>	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.
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 <b>Tip</b>	We recommend using twisted pair of at least 22AWG and sealant filled connectors for all wire connections. Larger gauge wire may be required for long runs
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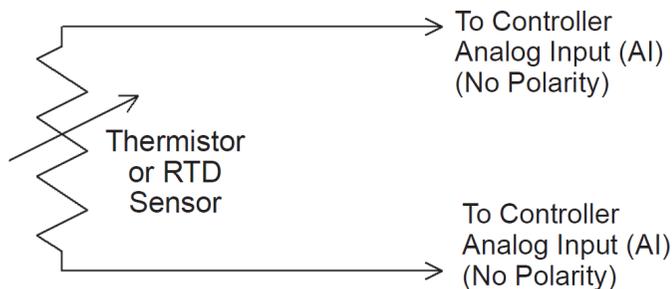


Figure 11: 2 Wire Termination for Thermistor or RTD

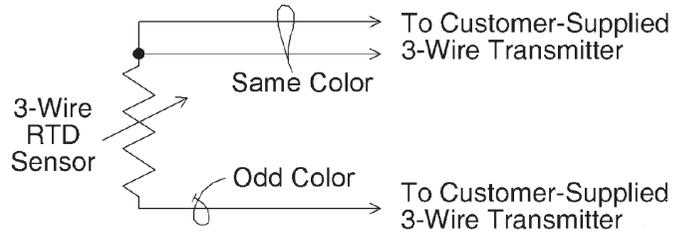


Figure 12: 3 Wire Termination for RTD

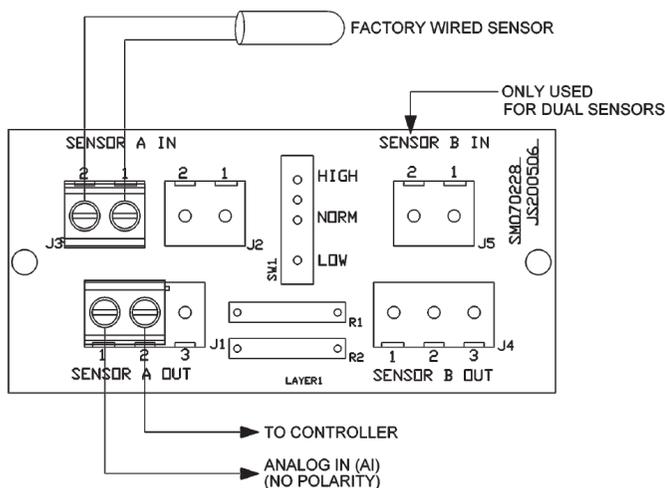


Figure 13: Terminal Strip (-TS) Option for 2 Wire Sensors Termination

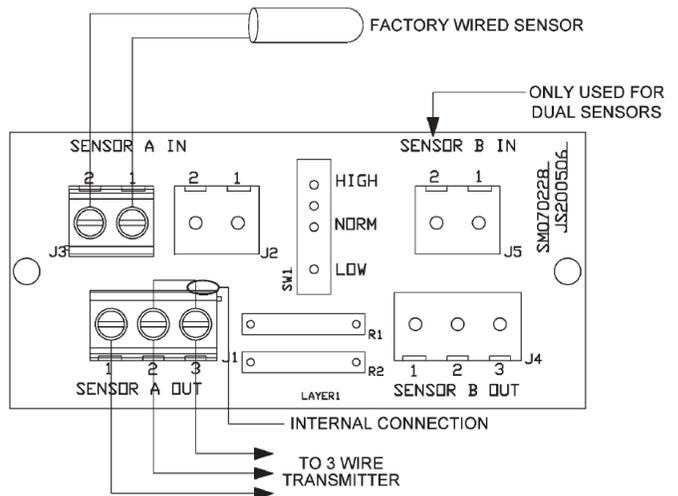


Figure 14: Terminal Strip (-TS) Option for 3 Wire Sensors Termination

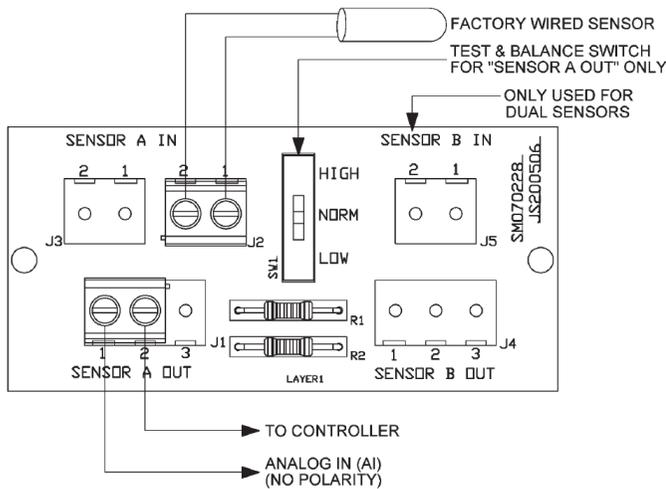


Figure 15: Test & Balance (-TB) Option for 2 Wire Sensors Termination

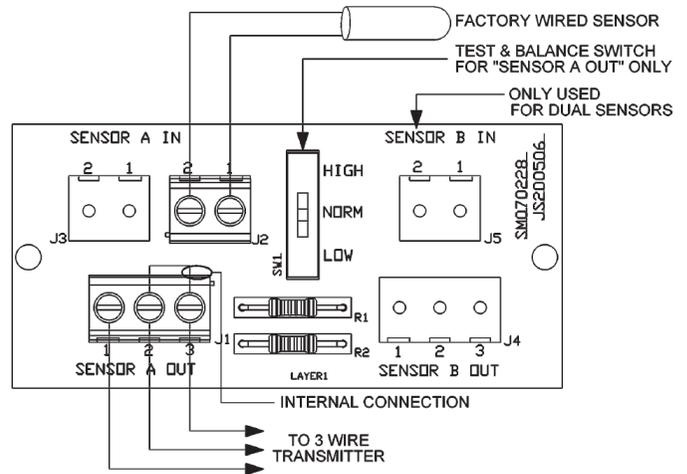


Figure 16: Test & Balance (-TB) Option for 3 Wire Sensors Termination

**Diagnostics**

Possible Problem:	Possible Solutions:
Controller reports higher or lower than actual temperature	<ul style="list-style-type: none"> <li>• Confirm the input is set up correctly in the front end software</li> <li>• Check wiring for proper termination &amp; continuity. (shorted or open)</li> <li>• Disconnect wires and measure sensor resistance and verify the "Sensor" output is correct.</li> </ul>

**Appendix – Symbols Key**

 <b>Warning</b>	Potential for death, serious injury, or permanent damage to a system.
 <b>Caution</b>	Potential for injury, damage to a system, or system failure.
 <b>Tip</b>	Useful information not related to injury or system damage.