

ABS Enclosure



Duct Average Temperature Sensor

The averaging sensor incorporates several sensors encapsulated at equal distances across the length of the probe. The complete assembly acts as a single sensor to monitor the average temperature in a duct.

Specifications

Standard Lengths	6', 12', 20' & 24'
Operating Temperature Range	-20 to 105 °C (-4 to 221 °F)
Probe Type	Flexible copper tube
Wiring Connections	Pig Tail (2 or 3 wire)
Enclosures	ABS, Metal or Weatherproof
Sensor Types	100 Ω, 1K PT, 1K Nickel RTD's, 1801 Ω, 3K, 10K (type 2 & 3), 20K & 100K Thermistors

Wiring & Color codes

All two-wire sensors are polarity insensitive. The three-wire sensors have the following color code:

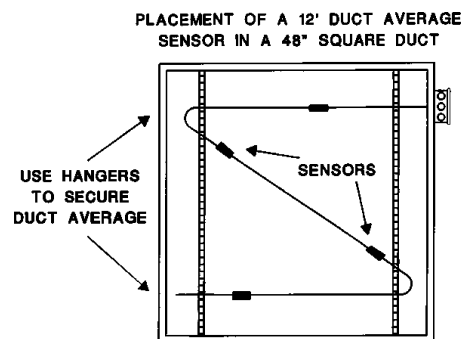
Connection	Duct Average Wire Color
EXCitation	RED
SENse	GREEN
NEGative	BLACK

To connect a three-wire sensor as a two-wire, tie the EXCitation and SENse lines together. All connections should be made using either butt-splices or soldering. The use of wire nuts is not recommended.

Installation

The duct average sensors can be installed onto hangers in the duct using tube clamps or wire ties and should be located in a straight section of duct away from heating, cooling or humidifier elements. The duct average sensor can be easily shaped to fit any duct size but observe a minimum bend radius of six inches to prevent damage to wires or sensors. Duct average elements are not recommended for high humidity applications.

Example Placement



Typical Wire Resistance Values

When using low resistance sensors (i.e. 100 ohm RTD), long wire runs can add significant error to the readings. Use the following chart to determine errors due to wire resistance or consider using a 1000 ohm sensor or a transmitter for better accuracy. Locate the type of wire being used. Multiply the total length of the wire (distance from the controller to the sensor and back) by the number found in the following chart for total resistance.

GAUGE WIRE TYPE	18 AWG	22 AWG	24 AWG
STRANDED (OHMS/FOOT)	5.85 mΩ	14.75 mΩ	23.29 mΩ
SOLID (OHMS/)	6.4 mΩ	15.85 mΩ	25.72 mΩ

Other Enclosure Styles

Metal Enclosure

Weatherproof Enclosure

