

DUCT COIL TEMPERATURE SENSOR

AVERAGING DUCT SENSOR DESCRIPTIONS

This sensor is used to measure the air temperature in the mixing section of return air type air handling units. The probe utilizes several sensor elements along its length, and provides a temperature reading which is the average of all elements in the probe. These sensors are encapsulated in a 12 foot (3.6m) long flexible copper tube which is crisscrossed through the mixing section. There are three thermistor based models, and one RTD version to provide compatibility with the majority of popular DDC systems. The sensing elements are precision sensors and calibration is not generally required.

Sensor Property Specification

- Thermistor Accuracy +/- 0.2C
- Platinum RTD Accuracy +/- 0.4C
- Useable temperature range -70C to 150C
- Probe Material Refrigeration grade copper Cable properties FT4, 80C, 600V

Construction

The sensor is manufactured to industrial standards, and is epoxy sealed to protect against contamination by moisture. The probe is made from a soft copper tube which can be bent by hand. The sensor elements are wired such that resistance is an average reading of all the elements in the probe. The sturdy electrical box is made from galvanized steel, all other fittings are made from machined brass.



Installation

The duct sensor is mounted in the mixing section of the air handler using the following guidelines:

- Mount the sensor as far away from the return and fresh air sections as possible, but avoiding direct contact with the coils.
- Make sure not to block the filter or access to other equipment in side the unit.
- The sensor element locations are marked on the probe. Keep the elements away from the securing straps and sides of the duct. Drill a 7/8" (20 mm) hole in the air handler and feed the probe through the hole into the air stream. Secure the electrical box to the outside of the air handling unit with two sheet-metal screws. Crisscross the probe in the mixing section, taking care to maximize the coverage. Use copper tubing straps to secure the probe to the sides of the duct. The knockouts on the electrical box accept a pipe or flex connector. The sensor requires two conductors, usually 18 ga, unshielded twisted pair.

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