

PART 2 PRODUCTS

2.1 PRODUCTS INCLUDED IN THIS SECTION

A. Duct mounted airflow measurement devices for duct sizes between 4 and 16 inches.

2.2 ACCEPTABLE MANUFACTURERS and MODELS

A. Subject to compliance with all requirements of this section, provide products that comply with this specification by one of the following vendors:

1. Greentrol Automation, Inc., Models GF-1100 and GF-1200
2. Ebtron, Inc., Model HTA104-T
3. Substitutions to basis of design

- a) All other vendors shall be considered as substitutions only. Substitutions for the basis of design requesting acceptance less than 30 days prior to bid date or products submitted in non-conformance with the requirements of this specification will not be considered.
- b) For any product or assembly to be considered for substitution, a written request shall be submitted to the engineer detailing exceptions and compliance items within this specification, section-by-section with supporting documentation, before an approval will be considered.
- c) Any product submitted as an equal shall be expected to comply with all performance, capabilities and functional aspects of this specification. Submitting vendors will also be required to present a functioning demonstration sample for review in the specifying engineer's office. Nonfunctioning samples will not be considered and submissions will be rejected.

B. The following specific technologies are excluded.

1. Pitot tubes, arrays and other devices using a pressure sensor to determine the airflow rate are not acceptable.

2.3 SMALL DUCT AIRFLOW MEASUREMENT DEVICES WITH ALARM

A. Provide one airflow measurement device (AMD) with an integral airflow alarm where required.

1. Airflow measurement shall use the principal of thermal dispersion and have one zero-power and one heated thermistor at each sensing node. The heated thermistor shall be "bead-in-glass" type.
 - a) Each sensor node shall be independently calibrated at a minimum of 7 airflow rates to volumetric standards and have an airflow measurement accuracy better than 4% of reading between 0 and 2,000 FPM [10.16 MPS] over a temperature range of -20° to 160° F [-28.9° to 71° C]
 - b) Each sensor node shall have a temperature measurement accuracy better than or equal to 0.36° F [0.2° C].
 - c) Technologies using "chip-in-glass", "chip-in-epoxy" or other "chip" type thermistors for the heated thermistor are not acceptable.
 - d) Pitot tubes, arrays and other devices using a pressure sensor to determine the airflow rate are not acceptable.
2. Each AMD shall consist of one sensor probe consisting of one or two sensor nodes.
 - a) The sensor probe shall be provided with a UL listed, FEP plenum rated cable and plug for connection to a remotely mounted transmitter.
3. Each AMD shall be provided with a single, remotely mounted transmitter.
 - a) The transmitter shall be microprocessor-based with an integral LCD display and pushbutton user interface for display of airflow, temperature and alarm and be used for configuration and diagnostics.
 - b) The transmitter shall be mounted in an environment protected from direct contact with water.
 - c) The transmitter shall independently process the airflow and temperature of each sensor node prior to averaging and output.
4. The transmitter shall provide one linear analog output signal field configurable as 0-5, 0-10 or 2-10 VDC (20 mA max.).
 - a) The analog output signal shall provide the average airflow rate in CFM [LPS].
5. The transmitter shall have alarm capability and provide a dry contact relay capable of passing 30 VDC or 24 VAC @ 3 amp max. or be configured to drive an LED (15 mA typ., by others). When the alarm is active, the alarm condition shall be indicated on the LCD display.
6. The transmitter shall have a built-in field calibration wizard for one or two point adjustments to the factory calibration when required.