**VELTRON III Master Specification**

1. Product:
	1. Subject to compliance with requirements for pressure and flow meters in heating, ventilation, and air conditioning systems. American Made, Buy America Act FAR 52.225.1, ASHREA 62, field serviceable.
	2. The basis of the design is the VELTRON III pressure & flow transmitter. Manufacturers approved to bid, must adhere to requirements listed below.
2. Description:

The transmitter shall be capable of receiving flow signals (total and static pressure) from an airflow station, static pressure sensor or probe array measurement and produce an output for air volume, velocity, differential pressure, etc.

1. Application Range:

The contractor shall be responsible for selecting the transmitter options based on the application. The transmitter shall be constructed and scaled for the intended application in terms of expected flow rate, ambient conditions, and fluid characteristics which include but are not limited to pressure, temperature, relative humidity and air density.

1. Sensing Technology:

The transmitter shall be housed in a NEMA 1 enclosure [optional NEMA 4X enclosure or NEMA 4X enclosure with heater and insulation for outside environment installs], with an integral color graphic display and four button keypad for use during the configuration and field characterization process. The display shall be configurable to indicate four (4) measured process variables (volume, velocity, temperature, pressure) during normal operation. The transmitter shall utilize up to 4 transducers, a pair of stacked transducers for each channel. The transmitter shall incorporate an absolute pressure sensing system in order to provide automatic airflow compensation at the installed elevation. The transmitter shall incorporate temperature sensor input(s) as required to perform continuous airflow density compensation for each channel. The transmitter shall incorporate temperature sensor input(s) as required to perform relative humidity adjustments for each channel and be configurable at a minimum for supply & return air or custom conditions. The Transmitter shall provide BACnet MS/TP (MODBUS RTU) and four (4), field configurable analog outputs designed to interface with the building automation system (BAS). The ability to perform configuration changes and field characterization shall be accomplished via the user interface/display, the need for additional utility software shall not be required.

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Rev B

1. Design:

The transmitter shall consist of either a single or dual pair of transducers to measure the high and low range of pressure differential with a visual LCD display.

1. Construction:

Electronic enclosure shall be constructed of aluminum for rust protection against outdoor mounting. NEMA 4X enclosures shall be selected when a superior level of protection from corrosion and extreme environment is needed.

1. Maximum Pressure Rating: 20” w.c.
2. Process Air Temperature Rating: -40F to 175F
3. RTD Temperature Sensor Range: -40F to 120F
4. Ambient Conditions Transmitter: 0F to 120F, -40F to 120F with heater
5. Process Connections: 1/4” compression or 3/16” Hose barb for both high and low signal connections
6. Built-in Barometric Pressure: absolute pressure sensors for automatic elevation compensation
7. Display: 3.5” Diagonal color LCD display
8. Keypad: Menu driven interface via four push buttons
9. Measurement Range and Accuracy:

The Transmitter will be available in multiple natural spans covering the range of 0.1” w.c. to 20.0” w.c. with an accuracy of <3% of the reading.

1. Input Power:

15 VA @ 24 VAC; 40 VA with heater and 10 W @ 24 VDC; 35 W with heater

1. Analog Outputs:

Four (4) analog outputs, selectable based on configuration for airflow volume, velocity, temperature, and pressure.

1. Calibration:

Each transmitter will go through a NIST traceable calibration bench to verify the accuracy of the analog outputs. An optional NIST certificate can be provided.

1. Warranty:

Each flowmeter shall be covered by a one-year no-fault warranty and three-year manufacturing warranty.

1. Installation:

 Meters shall be installed per the manufacturer’s recommendations.