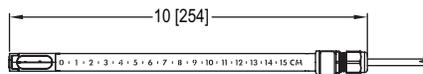
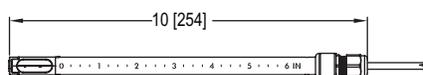
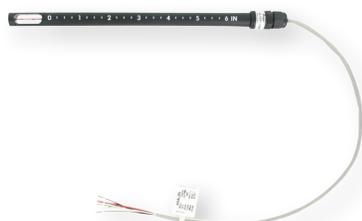




## Series AVPT Pencil Style Air Velocity Transmitter

### Specifications - Installation and Operating Instructions



6" probe length

12" probe length

The **Series AVPT Pencil Style Air Velocity Transmitter** uses thermal anemometer technology to provide high accuracy and stable air velocity measurements in imperial and metric units. The Series AVPT can be configured with either a voltage output or BACnet MS/TP communication to provide universal inputs to a variety of monitoring equipment. Models are available with fixed cable lengths of 20 or 78 inches with flying leads or a 5-pin M12 connector on a 24 inch cable. Probes are available in lengths of 6 or 12 inches. A mounting flange included with the product provides the ability to vary insertion depth.

Models are available in 3% or 5% accuracy to suit a variety of applications, while the optional BACnet MS/TP communication protocol allows units to be daisy-chained to provide access to all of the velocity and temperature measurements.

#### SPECIFICATIONS

**Service:** Clean air.

**Ranges:** 1000, 2000, 3000, or 4000 FPM (5, 10, 15, or 20 m/s); Model specific.

**Accuracy:** Standard:  $\pm(5\%$  reading  $+40$  FPM); High accuracy:  $\pm(3\%$  reading  $+40$  FPM); Model specific.

**Power Requirements:** 24 VAC/VDC  $\pm 20\%$ .

**Current Consumption:**  $< 50$  mA.

**Outputs:** Analog: 0-10 V (0-5 V configurable).

**BACnet MS/TP:** Selectable at time of order.

**Supported Baud Rate:** 9600, 19200, 38400, 57600, 76800, and 115200.

**Voltage Output Load Resistance:** 10k  $\Omega$  minimum (10 V output with AC supply); 1k  $\Omega$  minimum all other conditions.

**Electrical Connection:** Cable: Plenum rated cable with 22 AWG conductors.

**5-Conductor Cable whip:** 20" (0.5 m) or 78" (2 m).

**5-pin M-12:** 24" (0.6 m); model specific.

**Response Time (90%):** 4 s, typical.

**Operational Temperature Limits:** -4 to 140 °F (-20 to 60 °C).

**Storage Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Probe Length:** 6" or 12"; model specific.

**Enclosure Rating:** NEMA 3.

**Mounting Orientation:** Flow direction must be parallel to the sensor tip; See Installation section for details.

**Weight:** 1.4 oz (40 g); based on M12 connection with 12" probe length.

**Agency Approvals:** CE, RCM, BTL, UL plenum rated (UL tested).

MODEL CHART									
Example	AVPT	-S	03	C1	A	06	127	-FC	AVPT-S03C1A06127-FC
Series	AVPT								Pencil style air velocity transmitter
Accuracy		S H							Standard $\pm 5\%$ of reading $+40$ FPM High accuracy $\pm 3\%$ of reading $+40$ FPM
Velocity Range			01 02 03 04 05 10 15 20						1000 FPM 2000 FPM 3000 FPM 4000 FPM 5 m/s 10 m/s 15 m/s 20 m/s
Electrical Connection				C1 C2 M1					Cable whip 20" (0.5 m) Cable whip 78" (2 m) M12 24" (0.6 m)
Output Type					A B				Analog 0-5 V and 0-10 V BACnet MS/TP
Probe Length						06 12			6" 12"
BACnet Address							127		000-127 whole integer with BACnet output
Options								FC NIST	Factory calibration certificate NIST traceable certificate

## INSTALLATION

### Included Duct Mount Flange:

The transmitter should be mounted away from fans, corners, heating and cooling coils, and other equipment that will affect the measurement of the air velocity. It is recommended that the AVPT is mounted at least 10 duct diameters downstream of any disturbances and 5 duct diameters upstream of any disturbances, if possible.

1. Mark and drill a 0.750-0.938" (20-24 mm) diameter hole into the duct.
2. Insert and center the duct mount flange in the previously drilled hole and mark location of the three mounting screw holes.
3. Remove the mounting flange and drill or punch the mounting holes in the marked locations.
4. Fasten the flange to the duct using three #8 x 1/2" pan head sheet metal screws. Do not over tighten screws.
5. Insert the AVPT probe into the duct mount flange and set the desired insertion depth.
6. Note the flow direction and unit alignment as shown on sensor tip and product label, tighten probe retention set screw on the duct mount flange to affix the probe in place.

### Electrical Connection:

The cable supplied with the analog voltage output version of the Series AVPT allows access to the device power and the voltage output signal. An additional signal is also provided to configure the voltage output (0-10 V/0-5 V).

### Power Supply:

Choose a power supply with a voltage and current rating sufficient to meet the power specifications under all operating conditions. If the power supply is unregulated, make sure the output voltage remains within the required voltage range under all power line conditions. Ripple on the supply should not exceed 100 mV.

When using an AC supply with the analog output, be sure that the supply common is adequately grounded or DC referenced to allow minimum of ripple or noise on the analog signal.

**CAUTION** DO NOT EXCEED SPECIFIED SUPPLY VOLTAGE RATINGS. PERMANENT DAMAGE NOT COVERED BY WARRANTY WILL RESULT.

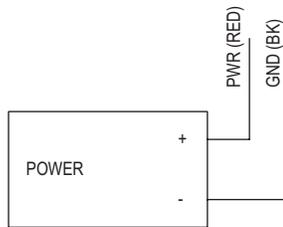


Figure 1: Power supply wiring

### Voltage Output Operation:

**CAUTION** DO NOT EXCEED SPECIFIED SUPPLY VOLTAGE RATINGS. PERMANENT DAMAGE NOT COVERED BY WARRANTY WILL RESULT.

The minimum receiver load for the voltage output model is 1 kΩ except when using an AC supply and 10 V output, where 10 kΩ should be used. The resistance due to the wire should be low compared to the receiver load resistance. While the voltage at the device remains unchanged with a full load current flow, resistive losses in the wiring do cause errors in the voltage delivered to the receiver. For example, a 1% accurate gage, the resistance of the wires should be less than 0.1% of the value of the receiver load.

The configuration wire may be left unconnected for default 0-10 V output operation as seen in Figure 2, or connected to power supply common to configure a 0-5 V output operation as seen in Figure 3.

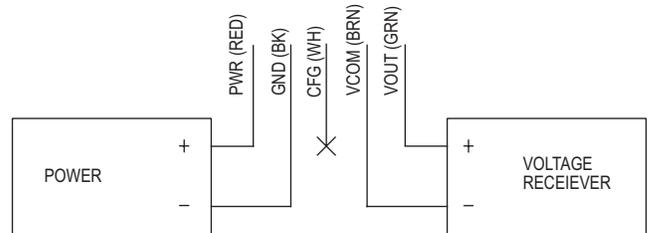


Figure 2: 10 V output wiring

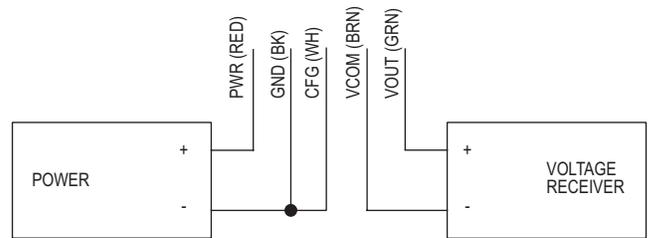


Figure 3: 5 V output wiring

For models ordered with optional M-12 electrical connections. Reference Table 1 for wiring color and pinout designation.

Wire Color	M-12 Pin
White	1
Black	2
Green	3
Brown	4
Red	5

Table 1: M-12 wiring pinout

### MAINTENANCE/REPAIR

Upon final installation of the Series AVPT, no routine maintenance is required; though sensor should be kept clean and free of dirt or debris.



This symbol indicates waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

### WARRANTY/RETURN

Refer to "Terms and Conditions of Sale" in our catalog and on our website. Contact customer service to receive a Return Goods Authorization number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.

