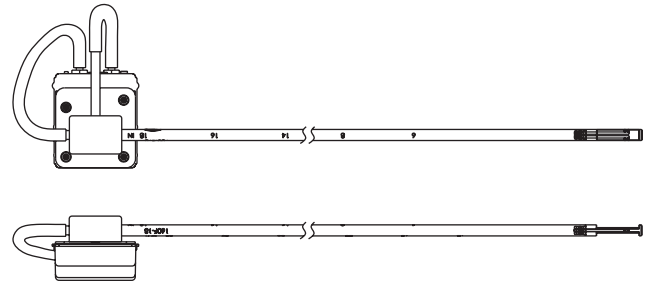




Series 160FW Wireless Straight Pitot Tubes

Specifications - Installation and Operating Instructions



Series 160FW Wireless Pitot Tubes are designed to meet the need of the environmental field testing and is an accurate and reliable way to measure the flow of air or gas streams. Combined with the universal handheld and UHH gateway, the 160FW wireless capability allow users to read velocity directly on the handheld in the Mobile Meter® App. This universal pitot tube can also be used to take duct traverses when used with Dwyer's TraverseIT™ App. Data can be logged and sent via email for later reporting.

For maximum accuracy of ±0.5%, as in laboratory applications, care is required and the following recommendations should be followed.

1. Duct diameter should be 4" or larger.
2. Point **total pressure** opening upstream facing flow, and **static pressure** opening downstream pointing in the direction of the flow. The faces of both openings must be perpendicular to the airflow.
3. Make an accurate traverse per drawings; calculate the velocities at each point and average them.
4. Take readings in a smooth, straight duct section a minimum of 10-15 duct diameters in length upstream and 5 diameters downstream from the pitot tube.
5. Provide an egg-crate type straightener upstream from the pitot tube for best performance.

TAKING AIR VELOCITY READINGS

To measure air velocity with a Series 160FW Pitot Tube, make a 0.35" opening in duct. Tubing is connected to the wireless manometer during manufacturing. In the event tubing becomes disconnected. Connect tubing from total pressure port or port facing flow to high pressure side of manometer, and from static pressure port or port facing perpendicular to flow to the low pressure side. If reading is negative, reverse connections.

Manual Traverse

Make a series of readings traversing the duct in horizontal and vertical planes. Using velocity pressures recorded at each location, calculate velocities and average them for final velocity value. See Figure 1 for more detail.

Quick Traverse

In the TraverseIT™ app select the 160FW for the probe and follow the step by step instructions in the app. Refer to the TraverseIT™ app instruction manual for complete details.

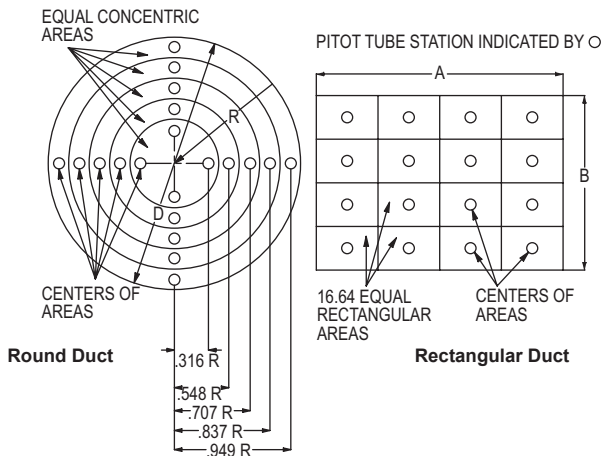


Figure 1: Traverse on Round and Square Duct Areas

SPECIFICATIONS

Wetted Material: 304 SS.
Accuracy: ±0.5% FS span @ 25°C (includes non linearity, hysteresis, and non repeatability).
Pressure Limit: ±2 in w.c. (±500 Pa).
Compensated Temperature Limits: 32 to 140°F (0 to 60°C).
Pitot Tube Range: 0 to 9000 FPM (45 M/s).
Pitot Tube K-Factor: 0.81.
Process Temperature Limit: 1500°F (815°C).
Process Connections: 1/4" OD.
Weight: 2 lb (0.91 kg) (weight varies depending on pitot tube length).
Agency Approvals: RoHS.

MANUALLY CALCULATING VELOCITY

NOTICE When combined with Dwyer's universal handheld or Android device. The velocity is auto calculated and displayed in the Mobile Meter® and TraverseIT™ app.

$$\text{Air Velocity} = 1096.2 (C_p) \sqrt{\frac{P_v}{D}}$$

where:

P_v = Sensed pressure difference (velocity pressure) in inches of water column

D = Air density in lbs./ft.³ (dry air = .075)

C_p = Pitot tube coefficient: 0.81

$$\text{Air Density} = 1.325 \times \frac{P_B}{T}$$

P_B = Barometric pressure in inches of mercury

T = Absolute Temperature (Indicated Temperature in °F plus 460)

Flow in cubic feet per minute equals duct cross sectional area in square feet x air velocity in feet per minute.

With dry air at 29.9 inches of mercury, air velocity can be read directly from temperature correction charts on reverse.

MAINTENANCE/REPAIR

Upon final installation of the Model 160FW, no routine maintenance is required. The Model 160FW is no field serviceable and should be returned if repair is needed. Field repair should not be attempted and may void warranty.

WARRANTY/RETURN

Refer to "Terms and Conditions of Sales" 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.

