PARAGON CONTROLS INCORPORATED

FT-1003

Air Volume/Velocity Transducer

Operation & Maintenance Manual

Engineered for accuracy, applicability, durability and simplicity

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1. INTRODUCTION

This user manual provides information on product features and guides you through all basic functions.

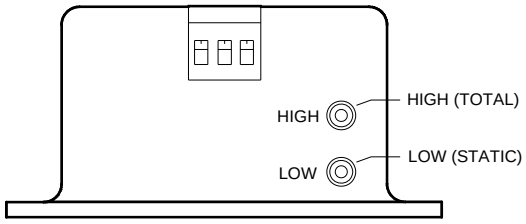
1.1. DESCRIPTION

The **FT-1003** Air Volume transducer sensor operates on the capacitance principal and is capable of sensing ultra low differential pressures. In the capacitance cell, a very lightweight, responsive diaphragm deflects a small amount when pressure is applied. This deflection results in a change in capacitance, which is then detected and processed electronically into an output signal linear to the velocity pressure. The electronic signal is then sent to the square root extractor/multiplier, which converts the velocity pressure signal into an analog output signal linear to velocity (fpm) or volume (cfm). An integral red LED indicator verifies proper power supply wiring orientation.

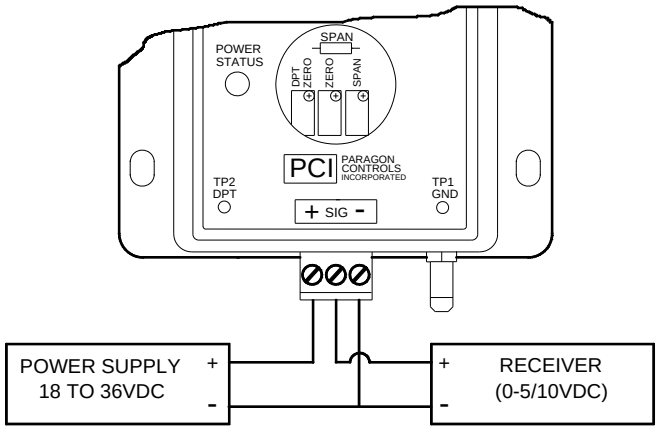
1.1.1. Installation Setup

Refer to figures below for pressure and electrical connections.

PRESSURE CONNECTIONS



ELECTRICAL CONNECTIONS



2. CALIBRATION

It is recommended that the DPT ZERO Calibration be performed upon installation. Span Calibration is not affected by the Zero Calibration. The Span of the unit has been factory calibrated and should only be adjusted using high accuracy test equipment. **Refer to section 1.1.1.**

Zero Calibration Equipment Required:

- DMM (Digital Multi Meter)

Span Calibration Equipment Required:

- Low pressure air source (Paragon PS-100 or equivalent)
- Manometer for measuring low pressure
- DMM (Digital Multi Meter)

2.1. DPT ZERO CALIBRATION

The following zero calibration procedure can be performed without the need to perform a span calibration.

Step 1. Remove the black rubber plug.

Step 2. Apply power to the transducer and verify Power Status LED is illuminated.

Step 3. Using a DMM set to voltage mode, monitor between TP1 (GND) and TP2 (DPT).

Step 4. With no pressure applied, adjust **DPT ZERO** potentiometer for a reading of 0.0±.001vdc.

Step 5. Reinstall the black rubber plug.

2.2. OUTPUT SPAN CALIBRATION

Check the transducer label to determine the voltage output range (0-5vdc or 0-10vdc) and perform the appropriate output procedure.

Note: It is recommended that a zero calibration be completed before performing a span calibration.

2.2.1. 0-5vdc Output Procedure

Step 1. Using a DMM set to voltage mode, monitor between (**SIG)** and (**-)** terminal.

Step 2. Apply full scale pressure (Value shown on the transducer label) to the **High** Pressure port and adjust the **SPAN** potentiometer for an output reading of 5±.01vdc.

Step 3. Reinstall the black rubber plug.

2.2.2. 0-10vdc Output Procedure

Step 1. Using a DMM set to voltage mode, monitor between (**SIG)** and (**-)** terminal.

Step 2. Apply full scale pressure (Value shown on the transducer label) to the **High** Pressure port and adjust the **SPAN** potentiometer for an output reading of 10±.01vdc.

Step 3. Reinstall the black rubber plug.

3. TROUBLESHOOTING GUIDE

TROUBLESHOOTING TABLE	
SYMPTOM	**SOLUTION**
1. No output reading	1. Verify Supply Voltage level (See Section 1.1.1)
	2. Verify correct wire connections
	3. Verify correct pressure connections
	4. Verify input pressure differential with a manometer.
	5. Contact Factory Service Department.
2. Low output reading	1. Verify Supply Voltage level (See section 1.1.1)
	2. Verify input pressure differential with a manometer.
	3. Contact Factory Service Department.

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