



# FT-1003-ZV

*Air Volume/Velocity Transducer  
with Manual Zeroing Valve*

*Operation & Maintenance Manual*

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*Engineered for accuracy, applicability,  
durability and simplicity*



## **TABLE OF CONTENTS**

TABLE OF CONTENTS.....	i
1. INTRODUCTION .....	1
1.1. DESCRIPTION.....	1
1.1.1. Installation Setup .....	1
2. CALIBRATION .....	2
2.1. DPT ZERO CALIBRATION .....	2
2.2. OUTPUT SPAN CALIBRATION .....	2
2.2.1. 0-5vdc Output Procedure .....	2
2.2.2. 0-10vdc Output Procedure .....	2
3. TROUBLESHOOTING GUIDE .....	3

# 1. INTRODUCTION

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

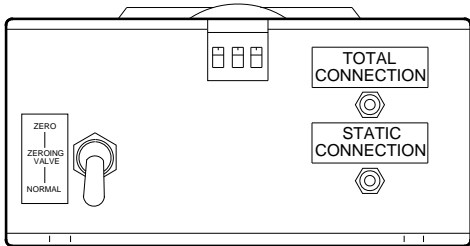
## 1.1. DESCRIPTION

The **FT-1003ZV** 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). The FT-1003ZV is supplied with a manual zeroing valve for easy verification of zero output. An integral red LED indicator verifies proper power supply wiring orientation.

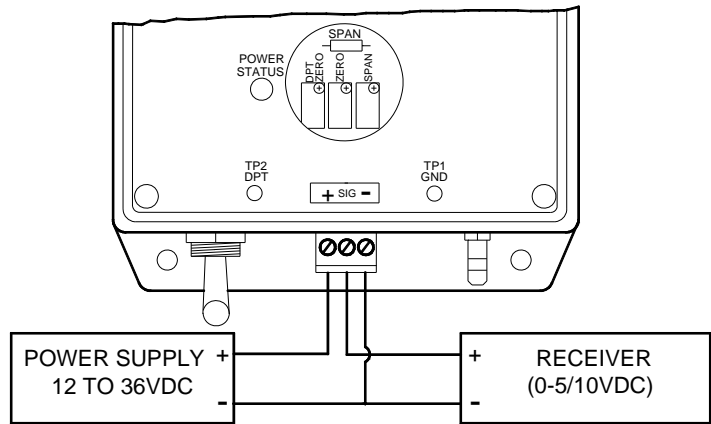
### 1.1.1. Installation Setup

Refer to figures below for pressure and electrical connections.

#### PRESSURE CONNECTION



#### ELECTRICAL CONNECTION



## 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. Set Zeroing Valve to the zero position.
- Step 4. Using a DMM set to voltage mode, monitor between TP1 (GND) and TP2 (DPT).
- Step 5. Adjust **DPT ZERO** potentiometer for a reading of  $0.0 \pm .001$  vdc.

### 2.2. OUTPUT SPAN CALIBRATION

*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. Set Zeroing Valve to the Normal position.
- Step 3. Apply full scale pressure (Value shown on the transducer label) to the **Total (High) Pressure** port and adjust the **SPAN** potentiometer for an output reading of  $5 \pm .01$  vdc.
- Step 4. 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. Set Zeroing Valve to Normal position.
- Step 3. Apply full scale pressure (Value shown on the transducer label) to the **Total (High) Pressure** port and adjust the **SPAN** potentiometer for an output reading of  $10 \pm .01$  vdc.
- Step 4. Reinstall the black rubber plug.

### 3. TROUBLESHOOTING GUIDE

<b>TROUBLESHOOTING TABLE</b>	
<b>SYMPTOM</b>	<b>SOLUTION</b>
1. No output reading	1. Verify power is correct
	2. Verify correct wire connections
	3. Verify Zeroing Valve is in the Normal position.
	4. Verify correct pressure connections
	5. Verify input pressure differential with a manometer
	6. 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.



