



PARAGON
CONTROLS
INCORPORATED



FIT-1001-D

*Air Volume/Velocity Transducer
with Digital Indication*

Operation & Maintenance Manual

*Engineered for accuracy, applicability,
durability and simplicity*

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1. INTRODUCTION

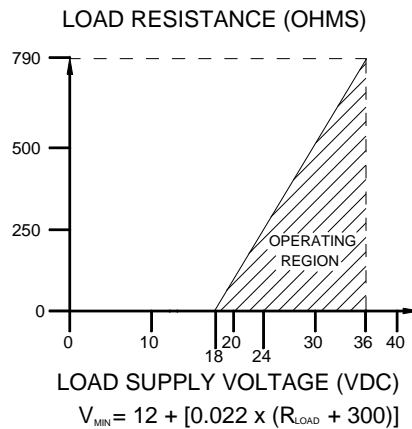
This user manual provides information on product features and guides you through all basic functions.

1.1. DESCRIPTION

The **FIT-1001D** 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 FIT-1001D transducer includes local indication of the measured process air velocity or volume on a 3 ½ digit LCD display. An integral red LED indicator verifies proper power supply wiring orientation.

1.1.1. Output Load Limitations

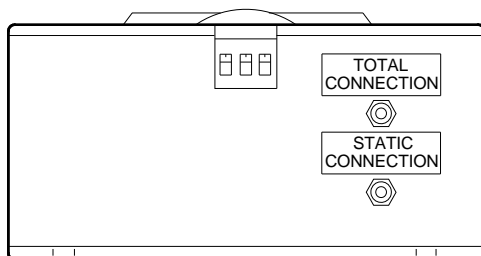
Use the chart shown below to determine load limitations verses loop power supply values.



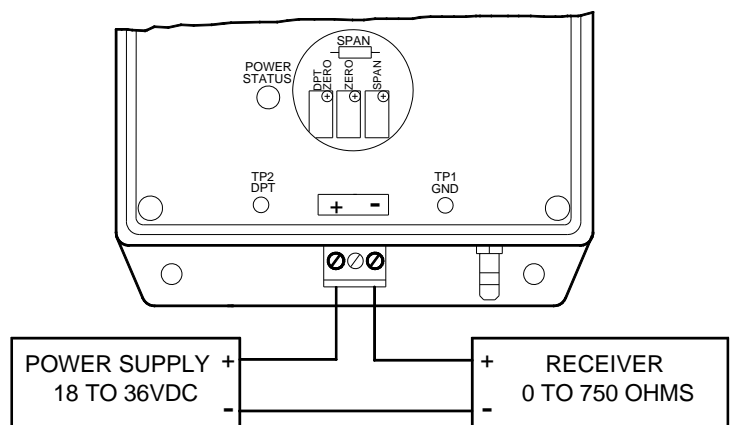
1.1.2. Installation Setup

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 sections 1.1.1 & 1.1.2.**

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 $0.0 \pm .001$ vdc.

2.2. OUTPUT ZERO CALIBRATION

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

- Step 1. Place the DMM set to current mode in series with the output between the (-) terminal and the Receiver (+).
- Step 2. With no pressure applied, adjust the **ZERO** potentiometer for a reading of $4 \pm .01$ mA.

2.3. OUTPUT SPAN CALIBRATION

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

- Step 1. Place the DMM set to current in series with the output between the (-) terminal and the Receiver (+).
- Step 2. 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 $20 \pm .01$ mA.
- Step 3. Reinstall the black rubber plug.

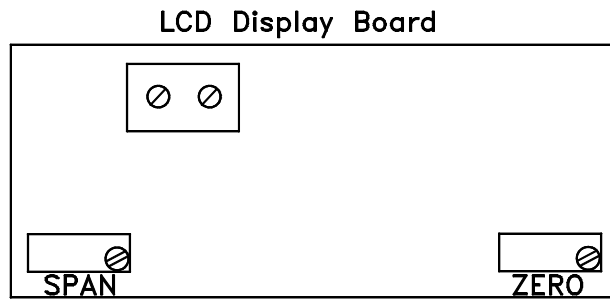
2.4. DISPLAY CALIBRATION

2.4.1. Display Zero Calibration

- Step 1. Remove the 4 mounting screws and the cover.
- Step 2. Apply Power to the transducer.
- Step 3. With no pressure applied, verify LCD Display reads 000 \pm 1 count. If not, adjust the **ZERO** potentiometer located on the backside of the LCD Display for a reading of 000.

2.4.2. Display Span Calibration

- Step 1. Apply full scale pressure (Value shown on the transducer label) to the Total (High) Pressure port and if needed, adjust the LCD Display potentiometer located on the back side of the LCD Display **SPAN** for the calibrated full scale value shown on the transducer label.
- Step 2. Due to ZERO and SPAN interaction, repeat ZERO and SPAN calibration as required.
- Step 3. Reinstall the cover and 4 mounting screws.



3. TROUBLESHOOTING GUIDE

TROUBLESHOOTING TABLE	
SYMPTOM	SOLUTION
1. No output reading	1. Verify Power 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 load resistance (See section 1.1.1)
	2. Verify Supply Voltage level (See section 1.1.1)
	3. Verify input pressure differential with a manometer
	4. Contact Factory Service Department.

