



## **FIT-1001-D LOOP POWERED AIR VOLUME/ VELOCITY INDICATING TRANSDUCER**

### **DESCRIPTION**

The **FIT-1001-D** transducer is a combination differential pressure transmitter, square root extractor, scaling multiplier, and output filter with process indication; complete in a single package.

The differential pressure transducer sensor operates on the capacitance principal and is capable of sensing ultra low differential (velocity) 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 linear to velocity (fpm) or volume (cfm).

The measured process air volume is locally indicated on a 0.5 inch high 3-1/2 digit LCD display meter, scaled in fpm or cfm.

Each **FIT-1001-D** is selected and factory calibrated to meet the design requirement of the flow measuring element being served.

### **Features**

- Two wire 4-20 mA output
- $\pm 1\%$  F.S. accuracy  
 $\pm 0.5\%$  F.S. accuracy (optional)
- Square root extractor/multiplier
- Digital indicating meter
- Full scale ranges as low as 1,266 fpm
- Can be operated continuously in temperature ranges of 32 to 140 °F
- Can be stored in temperature ranges of -40 to 160 °F
- Zero shift of only  $\pm 0.1\%$  F.S. per °F
- Span shift of only  $\pm 0.1\%$  F.S per °F
- Differential overpressure of 11.6 psi proof
- Non-corrosive dry gas pressure media
- Pneumatic 1/4" barbed process input connection
- Constructed of flame retardant ABS plastic

## FIT-1001-D Technical Specifications

### 1. AVAILABLE FULL SCALE RANGES

No.	Velocity (fpm)
1	1,266
2	2,003
3	2,832
4	3,582
5	4,005
6	8,010
7	12,665
8	17,910

### 2. PROCESS INPUT CONNECTION

Pneumatic 1/4" barb compression, suitable for either hard or soft wall signal tubing

### 3. ENCLOSURE

Flame retardant ABS plastic

### 4. PRESSURE MEDIA

Non-Corrosive dry gases

### 5. OPERABLE LINE PRESSURE

7.25 psi maximum static line pressure

### 6. DIFFERENTIAL OVERPRESSURE

11.6 psi proof

### 7. FULL SCALE ACCURACY DATA AT 70°F

	Standard	Optional
Combined accuracy includes:	±1.00%	±0.50%
Terminal point nonlinearity		
Hysteresis		
Non-repeatability		

### 8. ENVIRONMENTAL ATTRIBUTES

Storage	-40 ~ 160°F	-40 ~ 70°C
Operating	32 ~ 140°F	0 ~ 60°C
	(10-95% R.H. non-condensing)	
Compensation Range	40 ~ 125°F	4 ~ 52°C
Zero shift	±0.1% FS/°F	±0.09% FS/½°C
Span shift	±0.1% FS/°F	±0.09% FS/½°C

### 9. ELECTRICAL INFORMATION

Output	4 ~ 20mA (2 Wire)
Supply Power	18 ~ 36 VDC
	$V_{min} = 12 + [0.022 \times (R_{LOAD} + 300)]$
External Load ( $R_{LOAD}$ )	250 Ω max. @ 24 VDC
	790 Ω max. @ 36 VDC
Connections	Removable Plug w/Screw Terminals

### 10. APPROXIMATE WEIGHT

1.2 LB

## FIT-1001-D Specification Guide

### Electronic Transducers

- Provide individual airflow transducers selected for the required design airflow rate of the primary element served. Each transducer shall be selected for its respective duty. Supply, Exhaust and/or Return Airflow Transducers shall provide analog output signal linear to air volume that are factory set for a full scale value equal to 110% of the maximum design capacity of the airflow measuring element served for variable air volume applications, or 200% of the design operating value for constant volume applications.
- The transducer(s) shall be solid state electronic type, with infinite output resolution, capable of performing dedicated air volume measurement and indication functions. Microprocessor based transducers with time sharing of multiple square root extractors and/or controllers are not acceptable.
- Each transducer's output shall not be affected by direction of mounting (orientation) or external vibrations, and shall be furnished with a factory calibrated span that matches the application.
- Airflow transducers shall be provided with an integral digital indicating meter that shall indicate the measured air volume in units of cubic feet per minute (cfm).
- Transducer performance shall be equal to or better than the following:  
 Accuracy: ±1.0% F.S.  
 Temperature Effects: <0.1% F.S./°F  
 Over-pressure: 11.6 PSID Proof / 25 PSID Burst  
 Noise Filtration: Low Pass Filter, factory set @ 3.2Hz

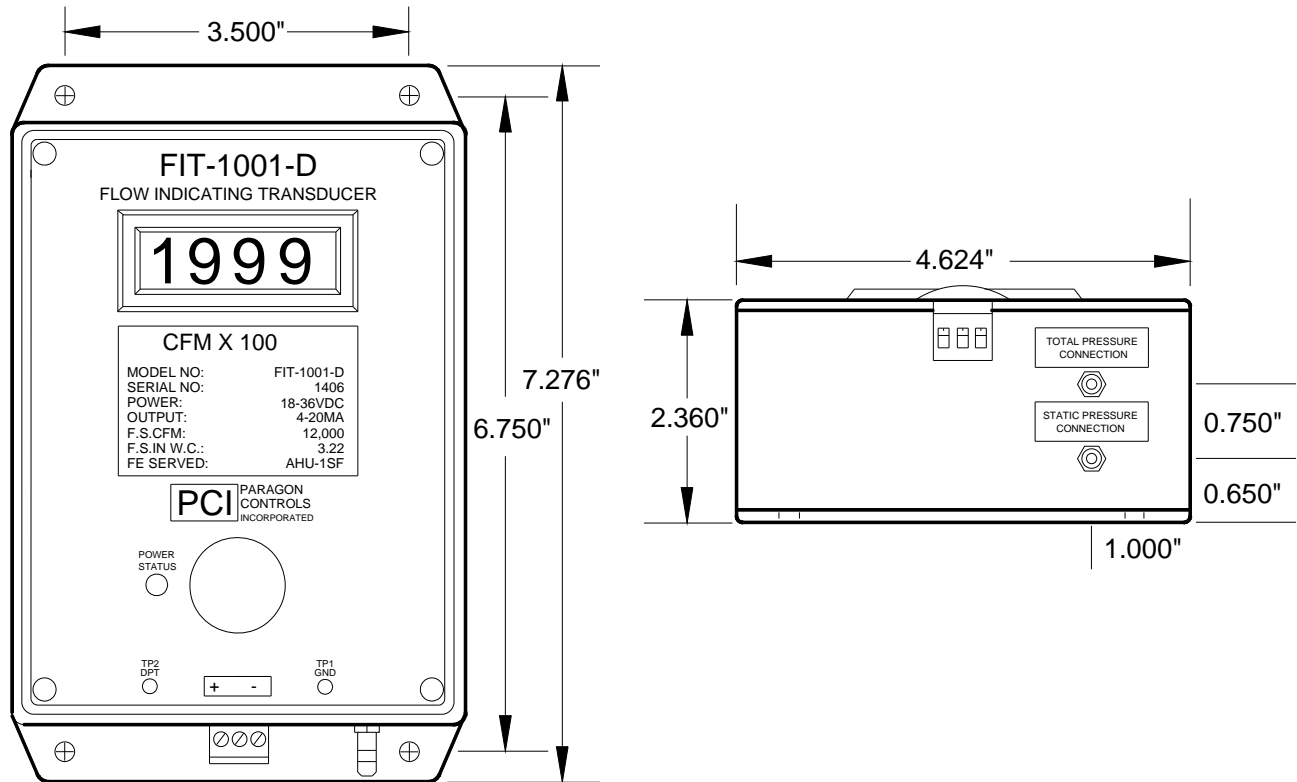
### Labeling

- An identification label shall be placed on each airflow indicating transducer listing the model number, airflow measuring elements served, full scale value, and identifying tag number.

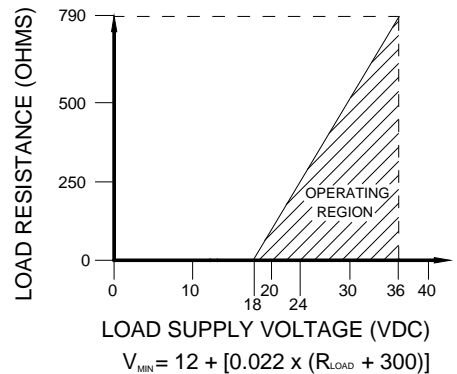
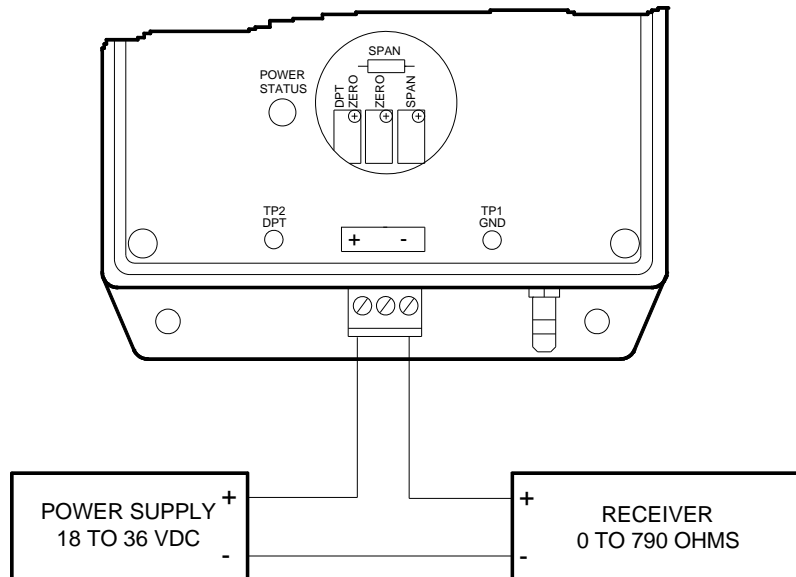
### Manufacturer

- Electronic indicating transducers shall be Paragon Controls Inc. model FIT-1001-D or equal as approved by the Design Engineer.
- Naming of a manufacturer does not automatically constitute acceptance of this standard product nor waive the responsibility of the manufacturer to comply totally with all requirements of the proceeding specification

**FIT-1001-D Dimensions**



**FIT-1001-D Field Connections and Load Limitations**



Example: At 24VDC, load resistance must not exceed 250 OHMS.

