



FT-1001 LOOP POWERED AIR VOLUME/ VELOCITY TRANSDUCER

DESCRIPTION

The **FT-1001** transducer is a combination differential pressure transmitter, square root extractor, scaling multiplier, and output filter; 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).

Each **FT-1001** 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
- Full scale ranges as low as 1,266 fpm
- Can be operated continuously in temperature ranges of 32 to 160 °F
- Can be stored in temperature ranges of -40 to 180 °F
- Zero shift of only $\pm 0.025\%$ F.S. per °F
- Span shift of only $\pm 0.025\%$ F.S. per °F
- Operable line pressure less than 0.5% F.S. at 10 psi maximum static pressure
- Differential overpressure of 5 psi proof and 25 psi burst
- Vibration less than 0.05% F.S. temporary effect with 5g's, 0-60 Hz
- Non-corrosive dry gas pressure media
- Pneumatic 1/4" barbed process input connection
- FR110 Polycarbonate enclosure

FT-1001 Technical Specifications

1. AVAILABLE FULL SCALE RANGES

No.	Velocity (fpm)
1	1,266
2	2,003
3	2,832
4	3,468
5	4,005
6	5,664
7	6,937
8	8,955
9	12,665

2. PROCESS INPUT CONNECTION

Pneumatic 1/4" barb

3. ENCLOSURE

FR110 Polycarbonate

4. PRESSURE MEDIA

Non-Corrosive dry gases

5. OPERABLE LINE PRESSURE

< 0.5% F.S. @ 10 psi maximum static pressure

6. DIFFERENTIAL OVERPRESSURE

5 psi proof and 25 psi burst pressure

7. VIBRATION

<0.05% F.S. temporary effect with 5g's, 0-60 Hz

8. FULL SCALE ACCURACY DATA AT 70°F

	Standard	Optional
Combined accuracy	±1.00%	±0.50%
Terminal point nonlinearity	±0.80%	±0.40%
Hysteresis	±0.05%	±0.02%
Non-repeatability	±0.10%	±0.05%

9. ENVIRONMENTAL ATTRIBUTES

Storage	-40 ~ 180°F	-40 ~ 82°C
Operating	32 ~ 160°F	0 ~ 70°C
	(10-95% R.H. non-condensing)	
Compensation Range	40 ~ 125°F	4 ~ 52°C
Zero shift	±0.025%FS/°F	±0.025%FS/½°C
Span shift	±0.025%FS/°F	±0.025%FS/½°C

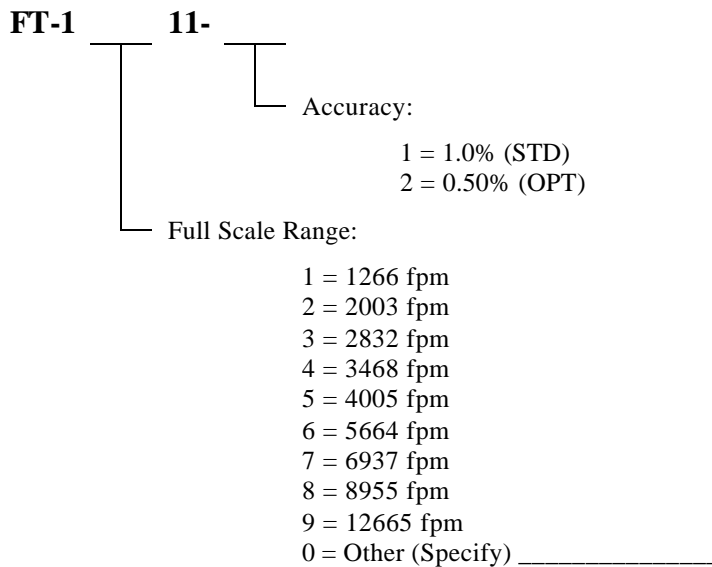
10. ELECTRICAL INFORMATION

Output	4 ~ 20mA (2 Wire)
Supply Power	12 ~ 36 VDC
	$V_{min} = 12 + (0.022 \times R_{LOAD})$
Connections	Removable Plug w/Screw Terminals
External Load	1090 Ω max. @ 36 VDC

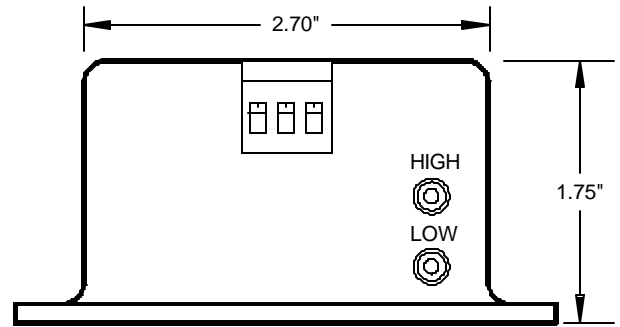
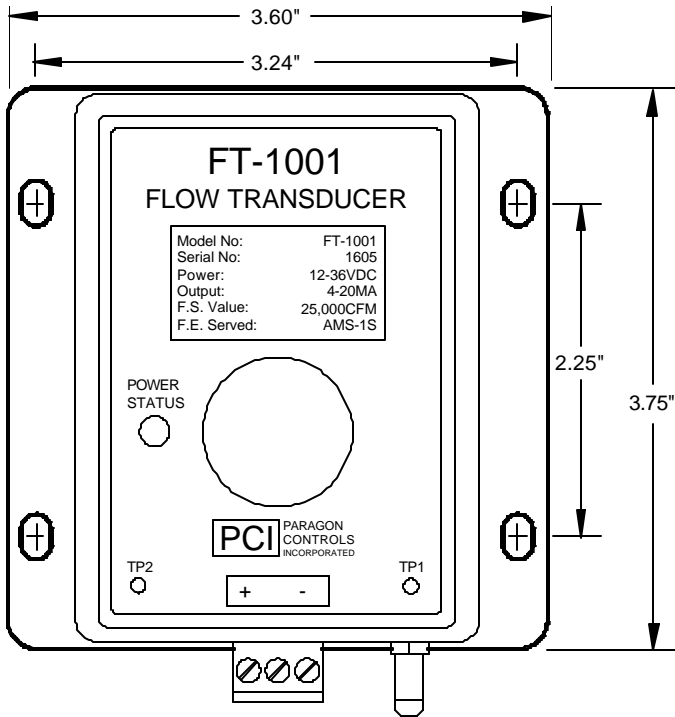
11. APPROXIMATE WEIGHT

6 OZ

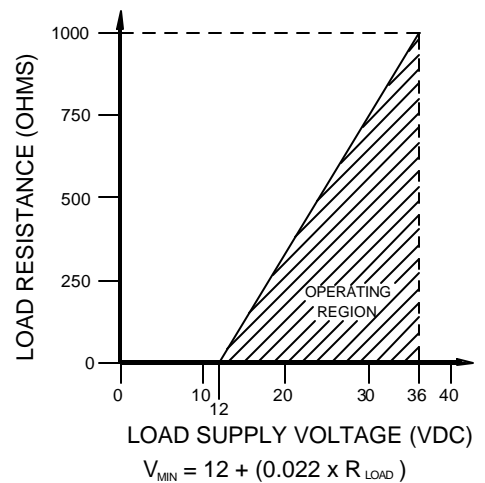
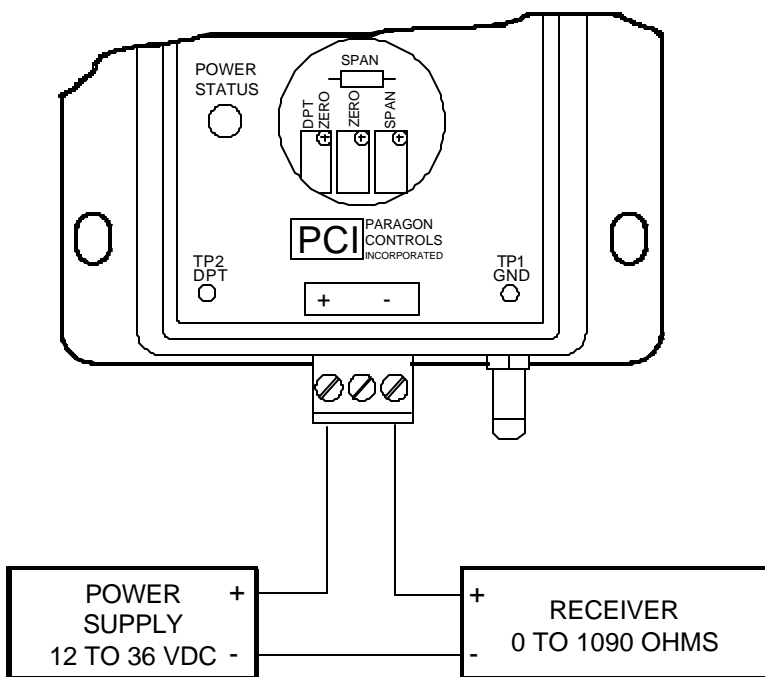
FT-1001 Ordering Information



FT-1001 Dimensions



FT-1001 Field Connections and Load Limitations



FT-1001 Specification Guide

Electronic Transducers

1. 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.
2. The transducer(s) shall be solid state electronic type, with infinite output resolution, capable of performing dedicated air volume measurement. Microprocessor based transducers with time sharing of multiple square root extractors and/or controllers are not acceptable.
3. Each transducer's output shall not be affected by direction of mounting (attitude) or external vibrations, and shall be furnished with a factory calibrated span that matches the application.
4. Transducer performance shall be equal to or better than the following:
Accuracy: 0.5% F.S. (Terminal Point) / 0.35% F.S. (BFSL)
Temperature Effects: <0.03% F.S./°F
Over-pressure: 5 PSIG Proof / 10 PSIG Burst
Response: <0.25 seconds for full span input
Noise Filtration: Low Pass Filter, factory set @ 3.2Hz

Labeling

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

Manufacturer

1. Electronic transducers shall be Paragon Controls Inc. Model FT-1001 or equal as approved by the Design Engineer.
2. 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