



## FT-1005 AIR VOLUME/ VELOCITY TRANSDUCER

### DESCRIPTION

The **FT-1005** 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 signal linear to velocity (fpm) or volume (cfm).

Each **FT-1005** is selected and factory calibrated to meet the design requirement of the flow measuring element being served.

### Features

- Field selectable 4-20 mA or 0-10 VDC output, (optional 0-5 VDC output)
- $\pm 0.5\%$  F.S. accuracy  
 $\pm 0.25\%$  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
- Standard zero shift of only  $\pm 0.025\%$  F.S./°F  
Zero shift of only  $\pm 0.015\%$  F.S./°F (optional)
- Standard span shift of only  $\pm 0.025\%$  F.S./°F  
Span shift of only  $\pm 0.015\%$  F.S./°F (optional)
- 25 psi maximum static line pressure
- Differential overpressure of 15 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" compression process input connection
- Steel enclosure

## FT-1005 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" compression, suitable for either hard or soft wall signal tubing

### 3. ENCLOSURE

NEMA 12, steel  
NEMA 4, steel (optional)

### 4. PRESSURE MEDIA

Non-corrosive dry gases

### 5. OPERABLE LINE PRESSURE

25 psi maximum static line pressure

### 6. DIFFERENTIAL OVERPRESSURE

15 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 includes:	±0.50%	±0.25%
Terminal point nonlinearity		
Hysteresis		
Non-repeatability		

### 9. ENVIRONMENTAL ATTRIBUTES

Storage	-40 ~ 180°F	-40 ~ 82°C
Operating	32 ~ 160°F	0 ~ 70°C
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
** Opt 0.25% Accuracy	±0.015%FS/°F	±0.015%FS/½°C

### 10. ELECTRICAL INFORMATION

Output	Field selectable 4 ~ 20mA or 0 ~ 10VDC, (optional 0 ~ 5VDC)
Supply Power	18 ~ 28 VDC/AC; 50 ~ 60Hz; 150mA
Connections	Removable plug with screw terminals
External Load	500 Ω max

### 11. APPROXIMATE WEIGHT

3.0 LBS

## FT-1005 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. 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.
- Transducer performance shall be equal to or better than the following:  
Accuracy: ±0.5% F.S.  
Temperature Effects: <0.03% F.S./°F  
Over-pressure: 15 PSID Proof / 25 PSID Burst  
Noise Filtration: Low Pass Filter, factory set @ 3.2Hz

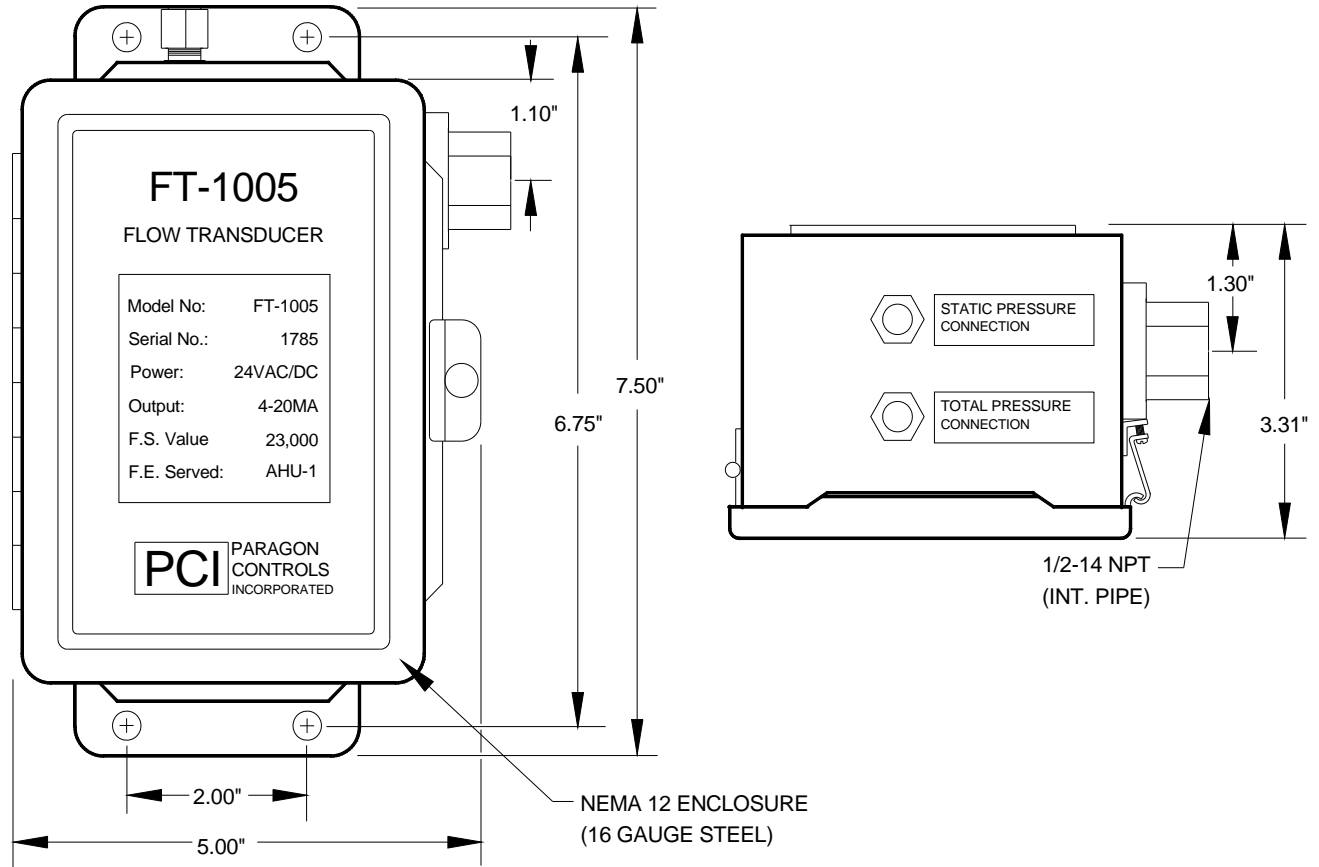
### Labeling

- 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

- Electronic transducers shall be Paragon Controls Inc. model FT-1005 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.

**FT-1005 Dimensions**



**FT-1005 Field Connections and Load Limitations**

