

# Model PTDM

**Pressure Transducer for Corrosive Liquids or Gases,  
Gauge and Absolute PSI Ranges**

Edgetech Instruments' pressure transducer is used for accurate pressure measurement of gases or liquids compatible with stainless steel. The high-level output signal requires no additional signal conditioning and results in excellent stability, accuracy, and fast dynamic response, making the Model PTDM ideal for high performance applications.

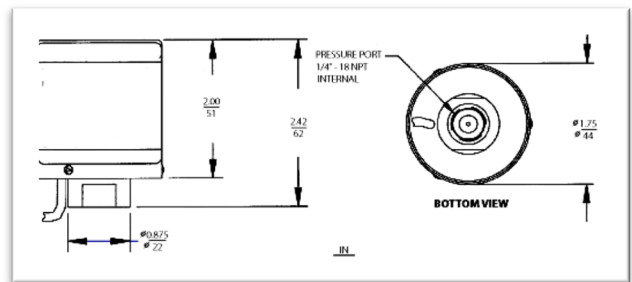
The stable electronic circuit, combined with Edgetech Instruments' patented variable capacitance sensor, results in the ultimate in design simplicity. The sensor features a one-piece 17-4 PH stainless steel pressure sensor and an insulated electrode, which forms a variable capacitor. As the pressure increases, the capacitance decreases. This change in capacitance is detected and converted to a linear DC electric signal.

#### Applications:

- R&D Test & Measurement
- Vacuum Systems
- Dynamometers
- Engine Test Cells

#### Pressure Ranges

Standard Pressure Ranges (psi)	Proof Pressure (psi)	Burst Pressure Rating (psi)	Approximate Natural Frequency (KHz)
0-25	50	150	2
0-50	75	200	2.5
0-100	150	500	3.5
0-250	375	1000	5



**The Model PTDM**

 **Edgetech Instruments**

ISO 9001:2015 Registered

ISO/IEC 17025:2005 Accredited

## Technical Specifications

### Pressure ranges:

Standard Pressure Ranges in psi (associated proof pressures in psi):

- 0 to 25 (50)
- 0 to 50 (75)
- 0 to 100 (150)
- 0 to 250 (375)

### Performance Data:

- Accuracy RSS\* (at constant temp),  $\pm 0.11\%$  FS
- Non-Linearity, BFUL  $\pm 0.10\%$  FS
- Hysteresis,  $0.05\%$  FS
- Non-Repeatability,  $0.02\%$  FS
- Thermal Effects\*\*
- Compensated Range, °F(°C) +30 to +150 (-1 to +65)
- Zero Shift, %FS/°F(%FS/°C)  $\pm 0.02$  ( $\pm 0.036$ )
- Span Shift, %FS/°F(%FS/°C)  $\pm 0.015$  ( $\pm 0.027$ )
- Warm-up Shift,  $\pm 0.5\%$  FS ( $\pm 0.1\%$  FS residual shift after 5 minutes)
- Response Time 1 Millisecond
- Static Acceleration Effect  $0.05$  psi/g

\*RSS of Non-Linearity, Hysteresis and Non-Repeatability.

\*\*Units calibrated at nominal 70°F.

Maximum thermal error computed from this datum.

### Environmental Data:

#### Temperature:

- Operating, \* °F (°C) 0 to +175 (-18 to +79)
- Storage, °F (°C) -65 to +250 (-54 to +121)
- Vibration, 2g from 5 Hz to 500 Hz
- Shock, 50g Acceleration 10g Maximum

\*Operating temperature limits of the electronics only.

Pressure media temperatures may be considerably higher or lower.

### Physical Description:

- Case, Stainless Steel
- Electrical Connection, 2ft. Multiconductor Cable
- Pressure Fitting, 1/4"-18 NPT
- Internal Weight, 4 ounces

### Electrical Data:

- Circuit, 4-Wire (+Exc, -Exc, +Out, -Out)
- Excitation, 18 to 30 Vdc
- Output,\* 0 to 5 Vdc\*\*
- Output Impedance, 400 Ohms
- Output Noise, 100 Microvolts RMS (0 Hz to 10 KHz)

\*Calibrated into a 50K ohm load.

\*\*Zero output factory set to within  $\pm 50$  mV. Span (Full Scale) output factory set to within  $\pm 50$  mV.

NOTE: Both output leads are nominally 1.6 VDC above the negative excitation lead at zero pressure. Either negative excitation or negative output should be connected to case (ground). But both leads cannot be connected to case (ground). Unit is calibrated at the factory with the negative excitation connected to case (ground).

### Pressure Media:

- Liquids or gases compatible with 17-4 PH Stainless Steel.
- NOTE: Hydrogen not recommended for use with 17-4 PH Stainless Steel

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