

The 221 Baratron® General Purpose Differential Pressure Transducer offers a reliable, accurate, inexpensive solution to measuring low differential pressures.

Operating on the variable capacitance technique, the 221 all-metal sensor contains a tensioned metal diaphragm, one side of which is exposed to the gas whose pressure is to be measured (Px side). The other side (reference, or Pr, side) is adjacent to an electrode assembly which is terminated in another like port. The diaphragm deflects with changing differential pressure, causing a capacitance change between the diaphragm

and the adjacent electrode assembly. The capacitance change with pressure generates an AC voltage which is amplified, demodulated, and converted into a high level DC voltage output, linear with pressure, and calibrated against a pressure standard.

The electronics of the 221 are housed remotely from the sensor, allowing it to be baked at 200°C (with interconnecting cable removed). An MKS or user-supplied power supply/readout is required to operate the 221.

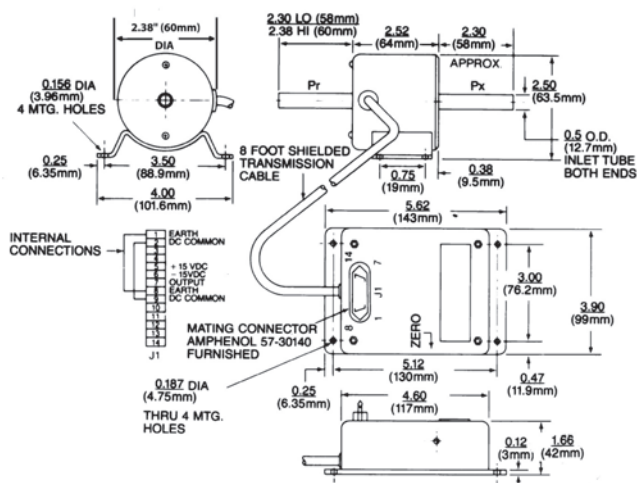
Product Features

- All-metal sensor eliminates handling problems associated with glass, mercury, and liquid gauges
- Useable resolution of 1 part in 10,000
 - Minimizes the number of capacitance manometers required to cover a wide range of pressures



Key Benefits

- Remote electronics allow sensor to operate at temperatures up to 150°C (bakeable to 200°C with cable removed)
- Sensor is capable of handling any corrosive gases compatible with Inconel® on high pressure side and Inconel, Ceramic, Palladium, Glass and Stainless Steel on reference side



Dimensional Drawing - Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Specifications		
Full Scale Ranges		10, 100, 1000, 5000, 10000, 15000, 20000, 25000 mmHg
Resolution		0.01% of Full Scale
Accuracy		0.5% of Reading ($\pm$ temperature coefficients)
Temperature Coefficients	Zero Span	• 0.02% of Full Scale/$^{\circ}$C • 0.04% of Reading/$^{\circ}$C
Ambient Operating Temperature	Sensor Preamp	• 0° to 150°C (bakeable to 200°C with cable removed) • 0° to 50°C
Maximum Overpressure		120% of Full Scale or 20 psi (140 kPa), whichever is greater (For Full Scale ranges less than 1000 mmHg, the following restrictions apply: if high pressure is on the Px side of the sensor, the maximum differential overpressure allowable is 120% of Full Scale or 20 psi, whichever is greater; if high pressure is on the Pr side of the sensor, the maximum differential overpressure allowable is 120% of Full Scale. Consult factory for higher Pr overpressure protection.)
Maximum Line Pressure		40 psig (275 kPa)
Materials Exposed to Gases	Px side Pr side	• Inconel • Inconel, Ceramic, Palladium, Stainless Steel, Glass
Volume	Px side Pr side	• 7.9 cc • 19.0 cc
Fittings	Standard Optional	• 1/2" (12.7 mm) tubulation • Swagelok[®] 8 VCR[®] female, NW16-KF, mini-CF rotatable (High pressure units, 5000 to 25000 mmHg Full Scale, supplied with 8 VCR fittings only).
Power Required		$\pm$ 15 VDC @ 35 mA regulated $\pm$ 2%
Output		0 to 10 VDC into > 10K Ω load
Electrical Connector		AMP 14-pin ribbon connectors; MKS Connector Kit, 221B-K1

Ordering Code Example: 221BD00100A	Code	Configuration
Model		
221BD	221BD	221BD
Pressure Range Full Scale		
10 100 1000 5000 10,000 15,000 20,000 25,000	00010 00100 01000 05000 10000 15000 20000 25000	00100
Fittings		
1/2" OD (12.7 mm) diameter tube Swagelok 8 VCR female Mini-CF, rotatable NW 16 KF	A B C D	A