220DA

Baratron® General Purpose Absolute Capacitance Manometer

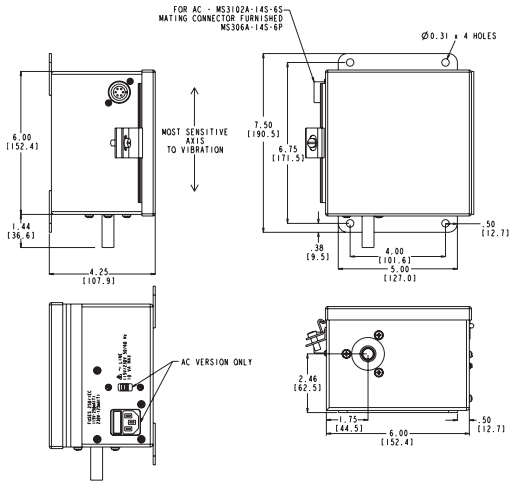
The MKS Type 220DA Baratron® General Purpose Absolute Manometer offers a reliable, accurate, inexpensive solution to measuring low absolute pressures.

Operating on the variable capacitance technique, the 220DA 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 sealed at a high vacuum reference so absolute pressure is measured. The diaphragm deflects with changing absolute pressure, causing a capacitance change between the diaphragm and the adjacent electrode assembly. The capacitance change 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 Type 220DA sensor is temperature controlled at 45°C for enhanced zero and span stability.

All components are housed in a rugged, NEMA 1 enclosure for protection when used in harsh environments. Two outputs, 0-10 VDC and 4-20 mA, are provided for interfacing with common process controllers.

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
- Sensor is temperature controlled at 45°C for stable performance



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

Key Benefits

- NEMA 1 enclosure provides sensor protection in harsh operating environments
- Simultaneous 0 to 10 VDC and 4 to 20mA outputs interface with common process control systems

Specifications		
Full Scale Ranges		1, 10, 20, 100, 1000, 5000, 10000, 15000, 20000, 25000 mmHg (other engineering units available on request)
Resolution		0.01% of Full Scale
Accuracy		±0.15% of Reading (± temperature coefficients)
Temperature Coefficients	**Zero** **Span**	• 0.008% of Full Scale/°C for 1 Torr • 0.005% of Full Scale/°C > 1 Torr • 0.02% of Reading/°C
Ambient Operating Temperature		15° - 40°C
Sensor Operating Time		Temperature controlled at 45°C
Maximum Overpressure		35 psia
Material Exposed to Gases	**Px side**	Inconel®
Volume (Px)		7.0 cc
Fittings	**Standard** **Optional**	• ½" OD (12.7 mm) diameter tube • Swagelok® 8 VCR® female, NW16-KF, mini-CF rotatable (High pressure units, 5000 to 25000 mmHg Full Scale, are available with certain fittings; consult factory for a complete listing).
Power Required		115/230 VAC, 50/60 Hz
Outputs		0 to 10 VDC into > 10K Ω load and 4 to 20 mA into < 500 Ω load
Electrical Connector		Mating connector P/N MS306A-14S-6S; MKS Connector Kit 220C-AC-K1

Ordering Code Example: 220DA00100A2B	Code	Configuration
Model		
220DA	220DA	220DA
Pressure Range Full Scale		
1 10 20 100 1000 5000 10,000 15,000 20,000 25,000	00001 00010 00020 00100 01000 05000 10000 15000 20000 25000	00100
Fittings		
½" OD (12.7 mm) diameter tube Swagelok 8 VCR (female) Mini-CF, rotatable NW 16 KF	A B C D	A
Power Input Code		
115/230 VAC	2	2
Single Input Code		
0 - 10 VDC and 4 - 20 mA	B	B

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220DA_08/26