



Type 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.

Features & Benefits

- 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
- NEMA 1 enclosure provides sensor protection in harsh operating environments
- Sensor is temperature controlled at 45°C for stable performance
- Simultaneous 0 to 10 VDC and 4 to 20mA outputs interface with common process control systems

Pressure &

Vacuum Measurement Solutions

WWW.MKSINST.COM



Specifications and Ordering Information

Full Scale Ranges

1, 10, 20, 100, 1000, 5000, 10000, 15000, 20000, 25000 mmHg
(other engineering units available on request)

Resolution

0.01% of F.S.

Accuracy

±0.15% of Rdg. (± temperature coefficients)

Temperature Coefficients

Zero

0.008% of F.S./°C for 1 Torr
0.005% of F.S./°C > 1 Torr

Span

0.02% of Rdg./°C

Ambient Operating Temperature

15° – 40°C

Sensor Operating Temperature

Temperature controlled at 45°C

Maximum Overpressure

35 psia

Materials 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 F.S., are available with certain fittings; consult factory for a complete listing.)

Power Required

115/230 VAC, 50/60 Hz

Outputs

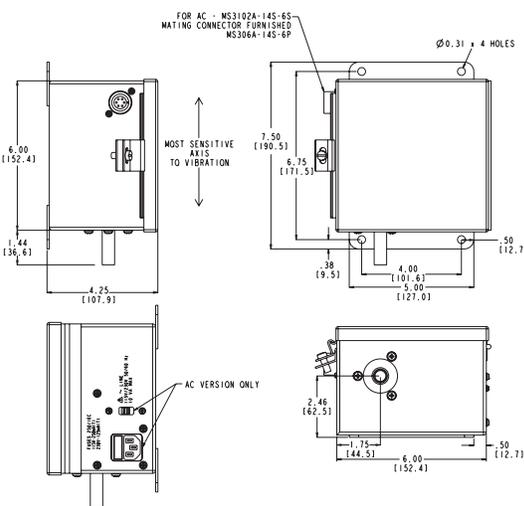
0 to 10 VDC into > 10K Ω load and 4 to 20 mA into < 500 Ω load

Electrical Connector

Mating connector P/N MS306A-14S-6S; MKS Connector Kit 220C-AC-K1

Ordering Code Example: 220DA00100A2B

Type 220DA	Code	Configuration
Type 220DA	220DA	220DA
Pressure Range Full Scale		
1	00001	00100
10	00010	
20	00020	
100	00100	
1000	01000	
5000	05000	
10,000	10000	
15,000	15000	
20,000	20000	
25,000	25000	
Fittings		
½" OD (12.7 mm) diameter tube	A	A
Swagelok 8 VCR female	B	
Mini-CF, rotatable	C	
NW16-KF	D	
Power Input Code		
115/230 VAC	2	2
Signal Input Code		
0-10 VDC and 4-20 mA	B	B



Dimensional Drawing —

Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).



220DA - 8/16
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