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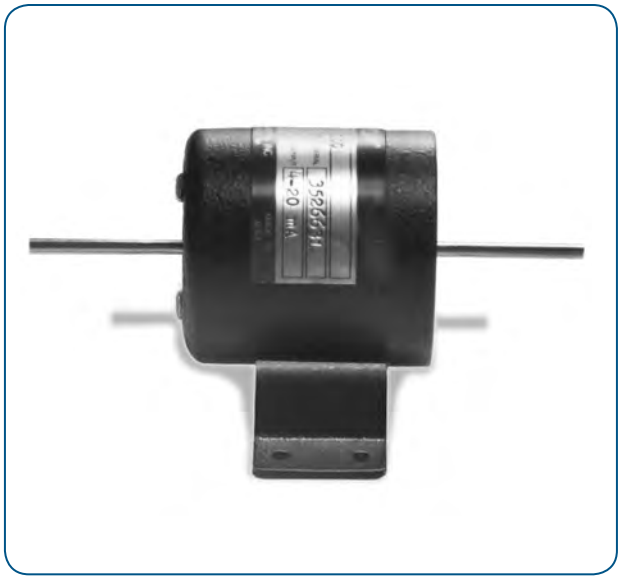
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Pressure Measurement & Control

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Type 229

BARATRON® GENERAL PURPOSE DIFFERENTIAL PRESSURE TRANSMITTER

The MKS Type 229 Baratron® General Purpose Differential Transmitter offers a reliable, accurate, inexpensive solution to measuring low differential pressures.

The all-metal sensor employed in the 229 Differential is the same sensor used in the popular Type 223, with the addition of 2-wire, 4 to 20 mA circuitry. Operating on the variable capacitance technique, the 229 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) 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. This capacitance change via the 229's signal conditioner is converted into a 4 to 20 mA output, linear with pressure, and calibrated against a pressure standard.

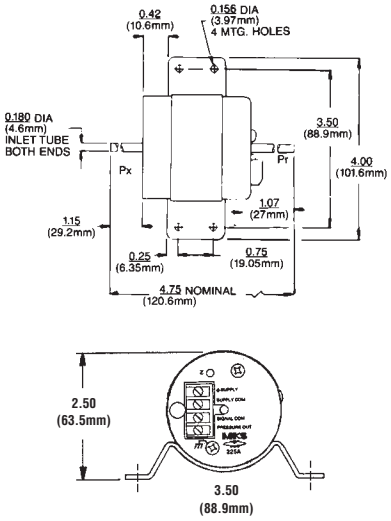
An external power supply (24-32 VDC) is required to operate the 229.

Features & Benefits

- All-metal sensor eliminates handling problems associated with glass, mercury, and liquid gauges
- Usable resolution of 1 part in 10,000 — minimizes the number of transmitters required to cover a wide range of pressures
- Designed for use with two-wire, 4 to 20 mA input/output signals
- Three levels of accuracy to meet your specific process control requirements
- Can be calibrated for either uni- or bidirectional applications

Specifications and Ordering Information

Full Scale Ranges	
Standard	0.2, 1, 10, 100, 1000 mmHg
Optional	0.2, 1, 10, 100, 1000 cmH_20
	0.1, 0.25, 0.5, 5, 50, 500 inH_20 (For 0.25 inH_20 F.S. range, consult factory for ordering code.)
Resolution	0.01% of F.S.
Accuracy	
Standard	±0.5% of Full Scale, bidirectional or unidirectional
Optional	±0.3% of Full Scale, bidirectional or unidirectional
Optional	±0.3% of Reading, unidirectional only
Temperature Coefficients	
Zero	For 0.5% of F.S. accuracy: 0.1% of F.S./°C
	For 0.3% of F.S. accuracy: 0.05% of F.S./°C
	For 0.3% of Reading accuracy: 0.05% of F.S./°C
Span	0.04% of Reading/°C
Ambient Operating Temperature	0° to 50°C
Maximum Overpressure	120% of F.S. 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 F.S. or 20 psi, which ever is greater; if high pressure is on the Pr side of the sensor, the maximum differential overpressure allowable is 120% of F.S.) (Consult factory for higher Pr overpressure protection.)
Maximum Line Pressure	40 psig (275 kPa)
Materials Exposed to Gases	
Px side	Inconel®
Pr side	Inconel, Ceramic, Palladium, Stainless Steel, Glass
Volume	Px side: 1.3 cc Pr side: 9.8 cc
Fittings	3/16" (4.6 mm) tubulation (Consult factory if other fittings are required.)
Input/Output	2-wire, 4-20 mA from 24-32 VDC power supply, into <500 Ω load. Bidirectional calibrations: output is 4 mA at negative Full Scale to 20 mA at positive Full Scale (4 mA = -F.S., 12 mA = 0 ΔP, 20 mA = +F.S.) Unidirectional calibrations: output is 4 mA at 0 to 20 mA at positive Full Scale (4 mA = 0 ΔP, 20 mA = +F.S.) (Other ranges or outputs available by special order; consult factory.)
Electrical Connector	Screw terminal barrier strip



Dimensional Drawing —

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

Ordering Code Example: 229HD-00010AAB	Code	Configuration
Type 229	**229HD**	229HD
Pressure Range Full Scale		
0.2 mmHg or cmH_20 / 0.1 inH_20	000.2	00010
1 mmHg or cmH_20 / 0.5 inH_20	00001	
10 mmHg or cmH_20 / 5 in H_20	00010	
100 mmHg or cmH_20 / 50 in H_20	00100	
1000 mmHg or cmH_20 / 500 inH_20	01000	
(Specify required engineering unit on order.)		
Fittings		
3/16" OD (4.6 mm) tube	A	A
Accuracy		
Standard: ±0.5% of F.S., bidirectional or unidirectional	A	A
Optional: ±0.3% of F.S., bidirectional or unidirectional	B	
Optional: ±0.3% of Rdg, unidirectional only	C	
Calibration		
Bidirectional	B	B
Unidirectional	U	
(For bidirectional calibration, output is 4 mA for F.S. pressure and 20 mA for +F.S. pressure.)		

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