

Pressure Transmitters and Pressure Transducers



PXMS

PXMS and PXDGS Series

- 0.25% Accuracy
- 4-20 mA or 1-5 VDC Output Signal
- Precision Etched Silicon Sensor
- Field Adjustable
- Corrosion Resistant Construction
- High Stability

Description

The PXMS Series pressure transmitter and the PXDGS Series pressure transducer are state-of-the-art instruments providing 4 to 20 mA (PXMS) or 1-5 VDC (PXDGS) outputs. They feature a precision micro-machined silicon diaphragm with fully welded stainless steel pressure port for greater accuracy, stability and a wide range of compatibility.

Silicon technology is used to provide a miniature micro-machined diaphragm which is electrostatically bonded to a glass substrate and is then stitch-bonded within a glass to metal seal assembly to provide exceptional thermal and stress isolation. This technology assures you of high accuracy and stability over a wide range of operating conditions.

The enclosure is made of 316 stainless steel and all wetted parts are 316L stainless steel.

Applications

The PXMS and PXDGS models can be used in applications such as Compressors, Engines, Process Control, Liquid Level and Pumps.

Specifications

Accuracy (Full Scale, Best Straight Line):

±0.25% including non-linearity, hysteresis and repeatability. Long term stability better than 0.25% FS over twelve (12) months.

Overpressure/Proof Pressure:

400% for up to 500 psi (3.45 MPa) [34 Bar]. 200% for higher ranges.

Burst Pressure:

Lower of 4000 psi (27.58 MPa) [275 Bar] or 600% for ranges ≤ 2,000 psi (13.79 MPa) [137 Bar]; 20,000 psi (137.90 MPa) [1379 Bar] for ranges >2,000 psi (13.79 MPa) [137 Bar].

Response Time:

Frequency response better than 2 kHz.

Temperature:

Storage: -65 to 200°F (-54 to 93°C).
Operating: -40 to 180°F (-40 to 82°C).
Compensated: -20 to 160°F (-29 to 71°C).

Total Thermal Effects Over Compensated Range:

±2% FS TEB except ±4% FS TEB for ±30 in. H₂O range.

Environmental Effect:

Humidity: *No effect.*
Mounting: *Position/orientation has negligible effect.*
Shock/Vibration: *Negligible effect unless severe.*

Physical:

Enclosure: *Weather Resistant (IP65).*
Body: *316 stainless steel.*
Meets NACE MR01-75.
Wetted Parts: *316L stainless steel.*
Process Connection: *1/4 NPT female.*
Electrical Cable: *Integral; 36 in. (914 mm); vented.*

PXMS Power Requirements:

Typically 24 VDC is required. Using the Loop Resistance Graph, 9-30 VDC.

PXDGS Power Requirements:

6-30 VDC, 2 mA typical.

PXMS Series Transmitter Output:

4-20 mA, 2-wire.

PXDGS Series Transducer Output:

1-5 VDC, 3-wire.

Insulation: Greater than 10 Mohms @ 500 VDC.

RFI Protection: Included.

Voltage Surge/Spike: Protected against a 600 V spike to IEC 60-2. Reverse polarity protected.

Zero Offset and Span Setting: ±0.5% FS. Field adjustable ±5.0% FS via potentiometer.

Sealed or Vented:

Vented for ranges ≤ 1000 psi (6.89 MPa) [68 Bar].

Sealed at one atmosphere at sea level for ranges > 1000 psi (6.89 MPa) [68 Bar].

* Laboratory Approvals:

UL/cUL Class I, Div. 1, Groups A, B, C, D. Class II, Division 1, Groups E, F, G; when installed with approved barrier per drawings 05-08-0006 for PXMS models or 05-08-0747 PXDGS models (units through 6000 psi [34.48 MPa] [344 bar] only).

Shipping Weight: 0.90 lb. (408 g).

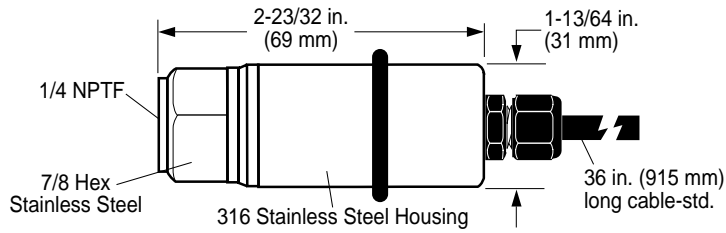
Shipping Dimensions: 5 x 5 x 5 inches (127 x 127 x 127 mm).

Warranty

A one-year limited warranty on materials and workmanship is given with this Murphy product. Details are available on request and are packed with each unit.

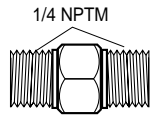
Dimensions

PXMS and PXDGS Dimensions



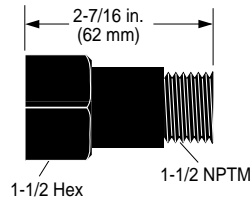
Order These Options Separately

SSA-XM Stainless Steel Pressure Adapter (86031205)



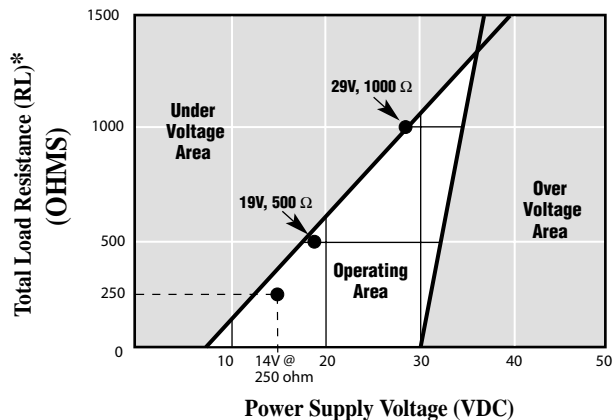
NOTE: Maximum working pressure: 5,000 psi (34.48 MPa) [344 Bar].

1/2 NPT Conduit Connector (05004538)



Loop Resistance Graph

Supply voltage for the PXMS must be within range of 9-30 VDC. The Graph below shows the minimum supply voltage (VDC) required for a given load resistance (RL).



*NOTE: Cable resistance effect included in RL.

How to Order

To order, please use the part number designation below.

Part number example: **PXMS-5000**

Model

PXMS = Pressure transmitter (4-20 mA output).

PXDGS = Pressure transducer (1-5 VDC output).

Pressure Range†:

Specify For this range

30V30WC	-30 to +30" H ₂ O (-76 to +76 cm H ₂ O)
30V30	-30" Hg to +30 psig (-76 cm Hg to 207 kPa) [2.07 Bar]
30V100	-30" Hg to +100 psig (-76 cm Hg to 689 kPa) [6.89 Bar]
5	0-5 psi (34 kPa) [0.34 Bar]
15	0-15 psi (103 kPa) [1.03 Bar]
30	0-30 psi (207 kPa) [2.07 Bar]
60	0-60 psi (414 kPa) [4.14 Bar]
100	0-100 psi (689 kPa) [6.89 Bar]
200	0-200 psi (1.38 MPa) [13.80 Bar]
300	0-300 psi (2.07 MPa) [20.70 Bar]
400	0-400 psi (2.75 MPa) [27.50 Bar]
600	0-600 psi (4.14 MPa) [41 Bar]
1000	0-1,000 psi (6.89 MPa) [68 Bar]
2000	0-2,000 psi (13.79 MPa) [137 Bar]
3000	0-3,000 psi (20.69 MPa) [206 Bar]
5000	0-5,000 psi (34.48 MPa) [344 Bar]
6000	0-6,000 psi (41.37 MPa) [413 Bar]
7500	0-7,500 psi (51.71 MPa) [517 Bar]
10000	0-10,000 psi (68.95 MPa) [689 Bar]

†NOTE: Conversions are approximate.

Replacement Parts—Order Separately

05052626 = stainless steel adapter bushing 1 NPSM x (2) 1/4 NPTF

05050459 = carbon steel adapter bushing 1 NPSM x (2) 1/4 NPTF