

MICRO-MACHINED SILICON TRANSDUCERS

WET/DRY DIFFERENTIAL PRESSURE MODELS

mV/V, 0 to 5 or 0 to 10 Vdc, or 4 to 20 mA Outputs
Uni-Directional Ranges
0-25 mbar to 0-70 bar



PXM409 Differential Series

- ✓ 5-Point NIST Traceable Calibration
- ✓ Precision Micro-Machined Silicon Core
- ✓ High Stability, Low Drift
- ✓ Welded Stainless Steel Construction
- ✓ 316L SS Wetted Parts on Wet Side—Clean Dry Gases in Dry Side
- ✓ Digital Dynamic Thermal Compensation Across Temperature and Pressure Range
- ✓ Premium Temperature Performance
- ✓ Broad Compensated Temperature Range
- ✓ Durable, 1 Million Cycle Life
- ✓ Ruggedized with Secondary Containment
- ✓ Customized Specifications Available

These rugged stainless steel transducers are ideal for industrial, automotive, or aerospace applications where only one side of the transducer is exposed to wet media. These wet/dry transducers deliver the great performance characteristics of the Micro-Machined Silicon Series Transducers at a lower price than the wet/wet models. They can be used in test benches, filter monitoring, air flow, factory or pneumatic air, pitot tubes, air speed and other industrial or aerospace applications requiring a very rugged wet/dry transducer. The solid state silicon core will provide long, reliable service life with excellent long term stability. To obtain their high accuracy and stability, the PXM409 Series use state of the art digital mapping of the temperature, pressure and output performance of the silicon sensor in conjunction with a custom ASIC to provide dynamic thermal compensation across the temperature and pressure parameters.

COMMON SPECIFICATIONS

Accuracy: 0.08% BSL linearity, hysteresis and repeatability combined

Minimum Resistance Between Transducer Body and Any Wire: 100 MΩ @ 50 VDC

Operating Temperature:

mV/V and 5 to 10 Vdc Output: -45 to 121°C (-49 to 250°F)
mA Output: -45 to 115°C (-49 to 239°F)

Compensated Temperature Range:

25 to 350 mb: -17 to 85°C (1 to 185°F)
1 to 70 bar: -29 to 85°C (-20 to 185°F)

Thermal Accuracy: **Zero** **Span**

% Span Shift over compensated temperature range

25 to 350 mb: ±1.00% ±1.00%
1 to 70 bar: ±0.50% ±0.50%

Pressure Cycles: 1 million minimum

Long Term Stability (1-Year): ±0.1% full scale typical

Metric Series

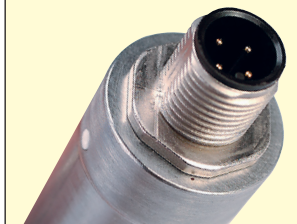


PXM409-001BDDUV,
1 bar range,
10 mV/V output,
shown smaller than
actual size.

**High 0.08%
Accuracy**

**Fast Delivery!
Stock to 2 Weeks
On Most Models**

M12 connector IP65
environmental rating.



PXM459, M12 connector

Electrical Termination Styles



PXM409, 2 m (6') cable.

IP65 environmental
rating.



PXM419, mini DIN.

MICRO-MACHINED SILICON TRANSDUCERS WET/DRY DIFFERENTIAL PRESSURE MODELS

Bandwidth: DC to 1 kHz typical

Response Time: <1 ms

CE Compliant: Meets EN61326-1: 2006 for industrial locations

Shock: 50 g, 11 mS half sine, vertical and horizontal axis

Vibration: 5-2000-5 Hz, 30 minute cycle, Curve L, Mil-Spec 810 figure 514-2-2, vertical and horizontal axis

Media Compatibility:

High Side: All fluids and gases compatible with 316L SS

Low Side: Clean, dry, non-ionic gases

Line/Static Pressure: 35 bar maximum applied to both sides simultaneously

Proof Pressure (Differential):

25 mb range = 10 times range

70 mb range = 6 times range

170 mb to 50 bar ranges = 4 times range

70 bar range = 3 times range

Hi Side Containment Pressure (Differential):

Ranges 25 mb to 350 mb: to 70 bar

Ranges 1 to 70 bar: to 200 bar

Pressure Ports: G $\frac{1}{4}$ male

Electrical Terminations:

PX409: 2 m (6') cable

PX409C: 2 m (6') cable with $\frac{1}{2}$ NPT conduit thread

PX419: mini DIN

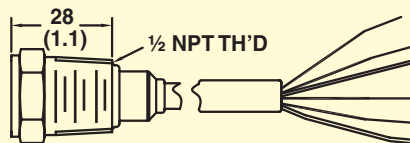
(mating connector included)

PX459: M12 connector

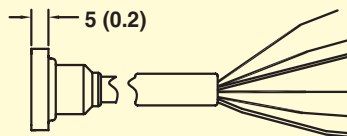
Weight: 200 g (7 oz) maximum

Dimensions: mm (inch)

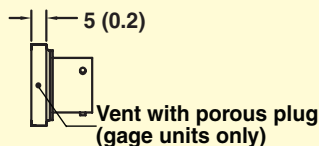
Conduit backend PXM409C



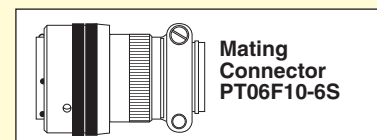
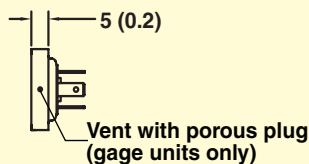
Integral cable backend PXM409



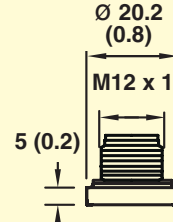
Twist-lock backend PXM429



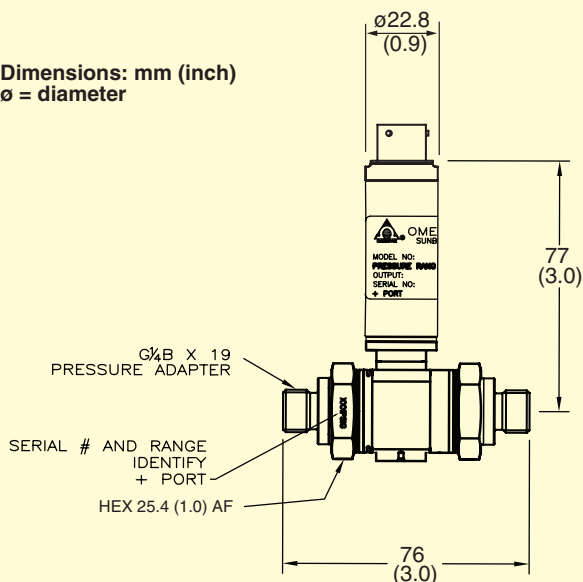
mini DIN backend PXM419



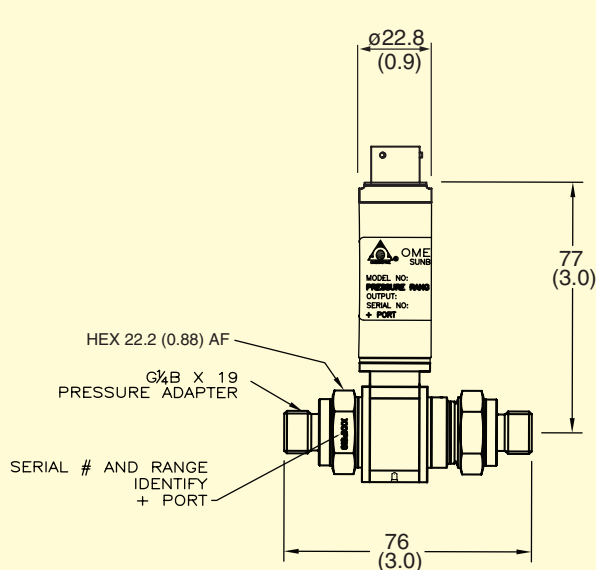
M12 connector backend PXM459



Dimensions: mm (inch)
Ø = diameter



1 BAR AND BELOW



2 BAR AND ABOVE

WET/DRY DIFFERENTIAL PRESSURE MODELS

UNI-DIRECTIONAL RANGES WITH mV/V OUTPUTS

UNI-DIRECTIONAL mV/V SPECIFICATIONS

Output: 10 mV/V ratiometric

Supply Voltage: 5 to 10 Vdc

Current Draw: 5 mA @ 10 Vdc

Input Impedance: 1000 to 5000 Ω

Output Impedance: 5000 Ω \pm 10% typical

Zero Balance:

Ranges \leq 170 mbar: \pm 1% typical (2% maximum)

Ranges $>$ 170 mbar: \pm 0.5% typical (1% maximum)

Span Setting:

Ranges \leq 170 mbar: \pm 1% typical (2% maximum)

Ranges $>$ 170 mbar: \pm 0.5% typical (1% maximum)

CABLE TERMINATION*

To Order

RANGE (Metric)	MODEL No. G 1/4 Male th'd	DESCRIPTION
WET/DRY DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM409-025HDDUV	25 mbar w/d Diff Pressure
70 mbar (hPa)	PXM409-070HDDUV	70 mbar w/d Diff Pressure
170 mbar (hPa)	PXM409-170HDDUV	170 mbar w/d Diff Pressure
350 mbar (hPa)	PXM409-350HDDUV	350 mbar w/d Diff Pressure
1 bar	PXM409-001BDDUV	1 bar w/d Diff Pressure
2 bar	PXM409-002BDDUV	2 bar w/d Diff Pressure
3.5 bar	PXM409-3.5BDDUV	3.5 bar w/d Diff Pressure
7 bar	PXM409-007BDDUV	7 bar w/d Diff Pressure
10 bar	PXM409-010BDDUV	10 bar w/d Diff Pressure
17.5 bar	PXM409-17.5BDDUV	17.5 bar w/d Diff Pressure
35 bar	PXM409-035BDDUV	35 bar w/d Diff Pressure
50 bar	PXM409-050BDDUV	50 bar w/d Diff Pressure
70 bar	PXM409-070BDDUV	70 bar w/d Diff Pressure

* To order conduit fitting backend change model number from "PXM409" to "PXM409C", no additional cost.

MINI DIN TERMINATION

RANGE (Metric)	MODEL No. G 1/4 Male th'd	DESCRIPTION
WET/DRY DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM419-025HDDUV	25 mbar w/d Diff Pressure
70 mbar (hPa)	PXM419-070HDDUV	70 mbar w/d Diff Pressure
170 mbar (hPa)	PXM419-170HDDUV	170 mbar w/d Diff Pressure
350 mbar (hPa)	PXM419-350HDDUV	350 mbar w/d Diff Pressure
1 bar	PXM419-001BDDUV	1 bar w/d Diff Pressure
2 bar	PXM419-002BDDUV	2 bar w/d Diff Pressure
3.5 bar	PXM419-3.5BDDUV	3.5 bar w/d Diff Pressure
7 bar	PXM419-007BDDUV	7 bar w/d Diff Pressure
10 bar	PXM419-010BDDUV	10 bar w/d Diff Pressure
17.5 bar	PXM419-17.5BDDUV	17.5 bar w/d Diff Pressure
35 bar	PXM419-035BDDUV	35 bar w/d Diff Pressure
50 bar	PXM419-050BDDUV	50 bar w/d Diff Pressure
70 bar	PXM419-070BDDUV	70 bar w/d Diff Pressure



Cable style.

Fast Delivery!
Stock to 2 Weeks
On Most Models

PXM409-002BDDUV,
2 bar range,
10 mV/V output,
shown smaller
than actual size.

M12 TERMINATION

RANGE (Metric)	MODEL No. G 1/4 Male th'd	DESCRIPTION
WET/DRY DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM459-025HDDUV	25 mbar w/d Diff Pressure
70 mbar (hPa)	PXM459-070HDDUV	70 mbar w/d Diff Pressure
170 mbar (hPa)	PXM459-170HDDUV	170 mbar w/d Diff Pressure
350 mbar (hPa)	PXM459-350HDDUV	350 mbar w/d Diff Pressure
1 bar	PXM459-001BDDUV	1 bar w/d Diff Pressure
2 bar	PXM459-002BDDUV	2 bar w/d Diff Pressure
3.5 bar	PXM459-3.5BDDUV	3.5 bar w/d Diff Pressure
7 bar	PXM459-007BDDUV	7 bar w/d Diff Pressure
10 bar	PXM459-010BDDUV	10 bar w/d Diff Pressure
17.5 bar	PXM459-17.5BDDUV	17.5 bar w/d Diff Pressure
35 bar	PXM459-035BDDUV	35 bar w/d Diff Pressure
50 bar	PXM459-050BDDUV	50 bar w/d Diff Pressure
70 bar	PXM459-070BDDUV	70 bar w/d Diff Pressure

Comes complete with 5-point NIST traceable calibration certificate.

Ordering Examples: PXM409C-007BDDUV, 0 to 7 bar uni-directional wet/dry differential pressure range, 10 mV/V output, 0.08% accuracy, G 1/4 fittings, 2 m (6') cable with 1/2 NPT conduit fitting.
PXM419-001BDDUV, 0 to 1 bar uni-directional wet/dry differential pressure range, 10 mV/V output, 0.08% accuracy, G 1/4 fittings, mini DIN connector.

PXM459-025HDDUV, 0 to 25 mbar uni-directional wet/dry differential pressure range, 10 mV/V output, 0.08% accuracy, G 1/4 fittings, M12 connector.

CONNECTIONS—mV/V OUTPUT

PXM459 M12		PXM419 MINI DIN		PXM409 CABLE	
Pin A	+EXC	Pin 1	+EXC	Red	+EXC
Pin B	-EXC	Pin 2	-EXC	Black	-EXC
Pin C	+SIG	Pin 3	+SIG	White	+SIG
Pin D	-SIG	Pin 4	-SIG	Green	-SIG

DIFFERENTIAL PRESSURE TRANSDUCERS

B

WET/DRY DIFFERENTIAL PRESSURE MODELS

UNI-DIRECTIONAL RANGES WITH 0 to 5 Vdc OUTPUTS

UNI-DIRECTIONAL VOLTAGE OUTPUT SPECIFICATIONS

Output Voltage/Supply Voltage: 0 to 5 Vdc/
10 to 30 Vdc; 0 to 10 Vdc/15 to 30 Vdc
(change "5V" to "10V" in model number)

Current Draw: 10 mA maximum

Maximum Current Output: 2 mA (= 2500 Ω
minimum load resistance)

Output Impedance: 100 Ω

Zero Balance:

Ranges > 170 mb: $\pm 0.5\%$ typical (1% maximum)

Ranges \leq 170 mb: $\pm 1\%$ typical (2% maximum)

Span Setting:

Ranges > 170 mb: $\pm 0.5\%$ typical (1% maximum)

Ranges \leq 170 mb: $\pm 1\%$ typical (2% maximum)

CABLE TERMINATION*

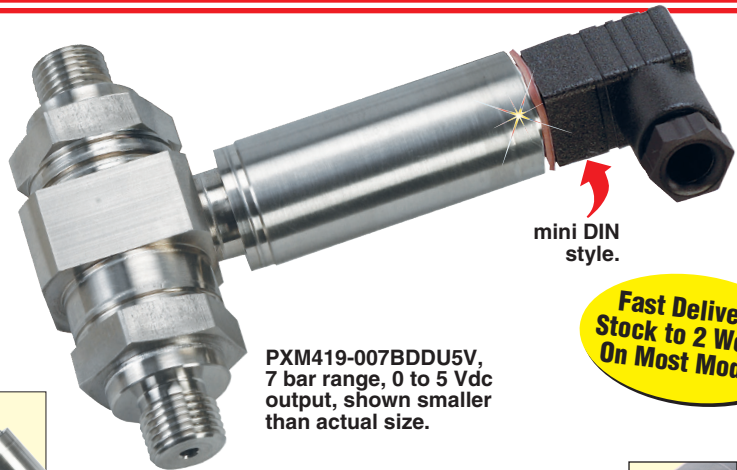
To Order

RANGE (Metric)	MODEL No. G 1/4 Male th'd	DESCRIPTION
WET/DRY DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM409-025HDDU5V	25 mbar w/d Diff Pressure
70 mbar (hPa)	PXM409-070HDDU5V	70 mbar w/d Diff Pressure
170 mbar (hPa)	PXM409-170HDDU5V	170 mbar w/d Diff Pressure
350 mbar (hPa)	PXM409-350HDDU5V	350 mbar w/d Diff Pressure
1 bar	PXM409-001BDDU5V	1 bar w/d Diff Pressure
2 bar	PXM409-002BDDU5V	2 bar w/d Diff Pressure
3.5 bar	PXM409-3.5BDDU5V	3.5 bar w/d Diff Pressure
7 bar	PXM409-007BDDU5V	7 bar w/d Diff Pressure
10 bar	PXM409-010BDDU5V	10 bar w/d Diff Pressure
17.5 bar	PXM409-17.5BDDU5V	17.5 bar w/d Diff Pressure
35 bar	PXM409-035BDDU5V	35 bar w/d Diff Pressure
50 bar	PXM409-050BDDU5V	50 bar w/d Diff Pressure
70 bar	PXM409-070BDDU5V	70 bar w/d Diff Pressure

* To order conduit fitting backend change model number from "PXM409" to "PXM409C", no additional cost.

MINI DIN TERMINATION

RANGE (Metric)	MODEL No. G 1/4 Male th'd	DESCRIPTION
WET/DRY DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM419-025HDDU5V	25 mbar w/d Diff Pressure
70 mbar (hPa)	PXM419-070HDDU5V	70 mbar w/d Diff Pressure
170 mbar (hPa)	PXM419-170HDDU5V	170 mbar w/d Diff Pressure
350 mbar (hPa)	PXM419-350HDDU5V	350 mbar w/d Diff Pressure
1 bar	PXM419-001BDDU5V	1 bar w/d Diff Pressure
2 bar	PXM419-002BDDU5V	2 bar w/d Diff Pressure
3.5 bar	PXM419-3.5BDDU5V	3.5 bar w/d Diff Pressure
7 bar	PXM419-007BDDU5V	7 bar w/d Diff Pressure
10 bar	PXM419-010BDDU5V	10 bar w/d Diff Pressure
17.5 bar	PXM419-17.5BDDU5V	17.5 bar w/d Diff Pressure
35 bar	PXM419-035BDDU5V	35 bar w/d Diff Pressure
50 bar	PXM419-050BDDU5V	50 bar w/d Diff Pressure
70 bar	PXM419-070BDDU5V	70 bar w/d Diff Pressure



PXM419-007BDDU5V,
7 bar range, 0 to 5 Vdc
output, shown smaller
than actual size.

Fast Delivery!
Stock to 2 Weeks
On Most Models

M12 TERMINATION

RANGE (Metric)	MODEL No. G 1/4 Male th'd	DESCRIPTION
WET/DRY DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM459-025HDDU5V	25 mbar w/d Diff Pressure
70 mbar (hPa)	PXM459-070HDDU5V	70 mbar w/d Diff Pressure
170 mbar (hPa)	PXM459-170HDDU5V	170 mbar w/d Diff Pressure
350 mbar (hPa)	PXM459-350HDDU5V	350 mbar w/d Diff Pressure
1 bar	PXM459-001BDDU5V	1 bar w/d Diff Pressure
2 bar	PXM459-002BDDU5V	2 bar w/d Diff Pressure
3.5 bar	PXM459-004BDDU5V	3.5 bar w/d Diff Pressure
7 bar	PXM459-007BDDU5V	7 bar w/d Diff Pressure
10 bar	PXM459-010BDDU5V	10 bar w/d Diff Pressure
17.5 bar	PXM459-17.5BDDU5V	17.5 bar w/d Diff Pressure
35 bar	PXM459-035BDDU5V	35 bar w/d Diff Pressure
50 bar	PXM459-050BDDU5V	50 bar w/d Diff Pressure
70 bar	PXM459-070BDDU5V	70 bar w/d Diff Pressure

Comes complete with 5-point NIST traceable calibration certificate.

Note: To order 0 to 10 Vdc output, change "5V" to "10V" in model number, no additional cost.

Ordering Examples: PXM409-007BDDU10V, 0 to 7 bar uni-directional wet/dry differential pressure range, 0 to 10 Vdc output, 0.08% accuracy, G $\frac{1}{4}$ fitting, 2 m (6') cable.

PXM419-001BDDU5V, 0 to 1 bar uni-directional wet/dry differential pressure range, 0 to 5 Vdc output, 0.08% accuracy, G $\frac{1}{4}$ fitting, mini DIN connector.

PXM459-025HDDU5V, 0 to 25 mbar uni-directional wet/dry differential pressure range, 0 to 5 Vdc output, 0.08% accuracy, G $\frac{1}{4}$ fitting, M12 connector.

CONNECTIONS—VOLTAGE OUTPUT

PXM459 M12		PXM419 MINI DIN		PXM409 CABLE	
Pin A	+EXC	Pin 1	+EXC	Red	+EXC
Pin B	-COM	Pin 2	-COM	Black	-EXC
Pin C	+SIG	Pin 3	+SIG	White	+SIG
Pin D	No Conn	Pin 4	No Conn	Green	No Conn

WET/DRY DIFFERENTIAL PRESSURE MODELS

UNI-DIRECTIONAL RANGES WITH 4 to 20 mA OUTPUTS

UNI-DIRECTIONAL mA SPECIFICATIONS

Output: 4 to 20 mA

Supply Voltage: 9 to 30 Vdc;
[9 to 20 Vdc above 105°C (229°F)]

Max Loop Resistance: (Vs-9) x 50 Ω

Zero Balance:

Ranges > 170 mb: ±0.5% typical (1% maximum)

Ranges ≤ 170 mb: ±1% typical (2% maximum)

Span Setting:

Ranges > 170 mb: ±0.5% typical (1% maximum)

Ranges ≤ 170 mb: ±1% typical (2% maximum)

CABLE TERMINATION*

To Order

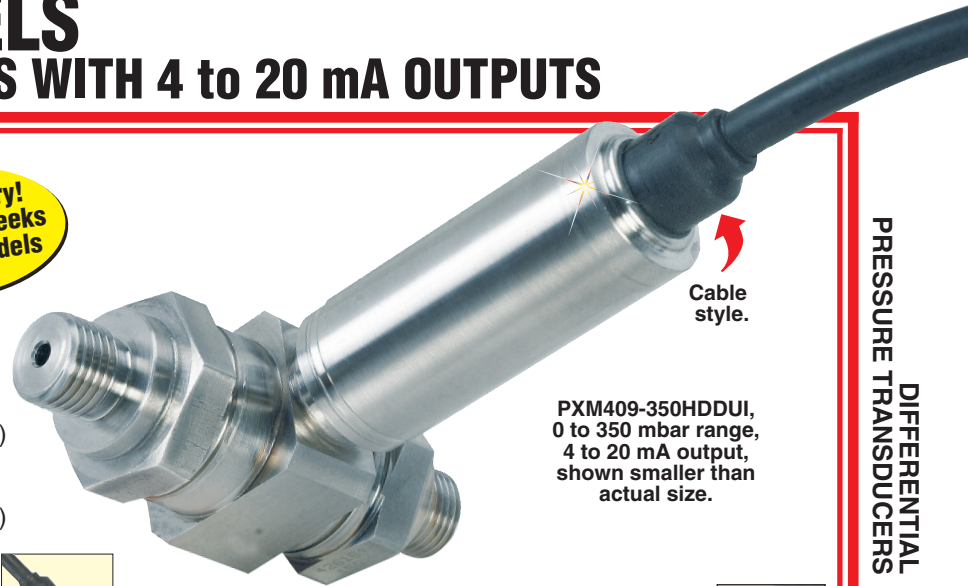
RANGE (Metric)	MODEL No. G ¼ Male th'd	DESCRIPTION
WET/DRY DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM409-025HDDUI	25 mbar w/d Diff Pressure
70 mbar (hPa)	PXM409-070HDDUI	70 mbar w/d Diff Pressure
170 mbar (hPa)	PXM409-170HDDUI	170 mbar w/d Diff Pressure
350 mbar (hPa)	PXM409-350HDDUI	350 mbar w/d Diff Pressure
1 bar	PXM409-001BDDUI	1 bar w/d Diff Pressure
2 bar	PXM409-002BDDUI	2 bar w/d Diff Pressure
3.5 bar	PXM409-3.5BDDUI	3.5 bar w/d Diff Pressure
7 bar	PXM409-007BDDUI	7 bar w/d Diff Pressure
10 bar	PXM409-010BDDUI	10 bar w/d Diff Pressure
17.5 bar	PXM409-17.5BDDUI	17.5 bar w/d Diff Pressure
35 bar	PXM409-035BDDUI	35 bar w/d Diff Pressure
50 bar	PXM409-050BDDUI	50 bar w/d Diff Pressure
70 bar	PXM409-070BDDUI	70 bar w/d Diff Pressure

* To order conduit fitting backend change model number from "PXM409" to "PXM409C", no additional cost.

MINI DIN TERMINATION

RANGE (Metric)	MODEL No. G ¼ Male th'd	DESCRIPTION
WET/DRY DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM419-025HDDUI	25 mbar w/d Diff Pressure
70 mbar (hPa)	PXM419-070HDDUI	70 mbar w/d Diff Pressure
170 mbar (hPa)	PXM419-170HDDUI	170 mbar w/d Diff Pressure
350 mbar (hPa)	PXM419-350HDDUI	350 mbar w/d Diff Pressure
1 bar	PXM419-001BDDUI	1 bar w/d Diff Pressure
2 bar	PXM419-002BDDUI	2 bar w/d Diff Pressure
3.5 bar	PXM419-3.5BDDUI	3.5 bar w/d Diff Pressure
7 bar	PXM419-007BDDUI	7 bar w/d Diff Pressure
10 bar	PXM419-010BDDUI	10 bar w/d Diff Pressure
17.5 bar	PXM419-17.5BDDUI	17.5 bar w/d Diff Pressure
35 bar	PXM419-035BDDUI	35 bar w/d Diff Pressure
50 bar	PXM419-050BDDUI	50 bar w/d Diff Pressure
70 bar	PXM419-070BDDUI	70 bar w/d Diff Pressure

Fast Delivery!
Stock to 2 Weeks
On Most Models



PXM409-350HDDUI,
0 to 350 mbar range,
4 to 20 mA output,
shown smaller than
actual size.

M12 TERMINATION

RANGE (Metric)	MODEL No. G ¼ Male th'd	DESCRIPTION
WET/DRY DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM459-025HDDUI	25 mbar w/d Diff Pressure
70 mbar (hPa)	PXM459-070HDDUI	70 mbar w/d Diff Pressure
170 mbar (hPa)	PXM459-170HDDUI	170 mbar w/d Diff Pressure
350 mbar (hPa)	PXM459-350HDDUI	350 mbar w/d Diff Pressure
1 bar	PXM459-001BDDUI	1 bar w/d Diff Pressure
2 bar	PXM459-002BDDUI	2 bar w/d Diff Pressure
3.5 bar	PXM459-3.5BDDUI	3.5 bar w/d Diff Pressure
7 bar	PXM459-007BDDUI	7 bar w/d Diff Pressure
10 bar	PXM459-010BDDUI	10 bar w/d Diff Pressure
17.5 bar	PXM459-17.5BDDUI	17.5 bar w/d Diff Pressure
35 bar	PXM459-035BDDUI	35 bar w/d Diff Pressure
50 bar	PXM459-050BDDUI	50 bar w/d Diff Pressure
70 bar	PXM459-070BDDUI	70 bar w/d Diff Pressure

Comes complete with 5-point NIST traceable calibration certificate.

Ordering Examples: PXM409-007BDDUI, 0 to 7 bar uni-directional wet/dry differential pressure range, 4 to 20 mA output, 0.08% accuracy, G¼ NPT fitting, 2 m (6") cable with ½ NPT conduit fitting.

PXM419-001BDDUI, 0 to 1 bar psi uni-directional wet/dry differential pressure range, 4 to 20 mA output, 0.08% accuracy, G¼ fitting, mini DIN connector.

PXM459-025HDDUI, 0 to 25 mbar uni-directional wet/dry differential pressure range, 4 to 20 mA output, 0.08% accuracy, G¼ fitting, M12 connector.

CONNECTIONS—CURRENT OUTPUT

PXM459 M12		PXM419 MINI DIN		PXM409 CABLE	
Pin A	+SUP	Pin 1	+SUP	Red	+SUP
Pin B	-SUP	Pin 2	-SUP	Black	-SUP
Pin C	No Conn	Pin 3	No Conn	White	No Conn
Pin D	No Conn	Pin 4	No Conn	Green	No Conn

DIFFERENTIAL
PRESSURE TRANSDUCERS
B