

MICRO-MACHINED SILICON TRANSDUCERS

WET/WET 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
- ✓ 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

Get all the great performance characteristics of the Micro-Machined Silicon Transducers in these wet/wet differential pressure models. These rugged stainless steel transducers are ideal for tough industrial automotive, or aerospace applications requiring a wet/wet transducer. They can be used in test benches, filter monitoring, hydraulic, flow, or water/wastewater applications, as well as factory or pneumatic air, pitot tubes, air speed and other industrial or aerospace applications. The solid state silicon core and all stainless steel wetted parts 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)

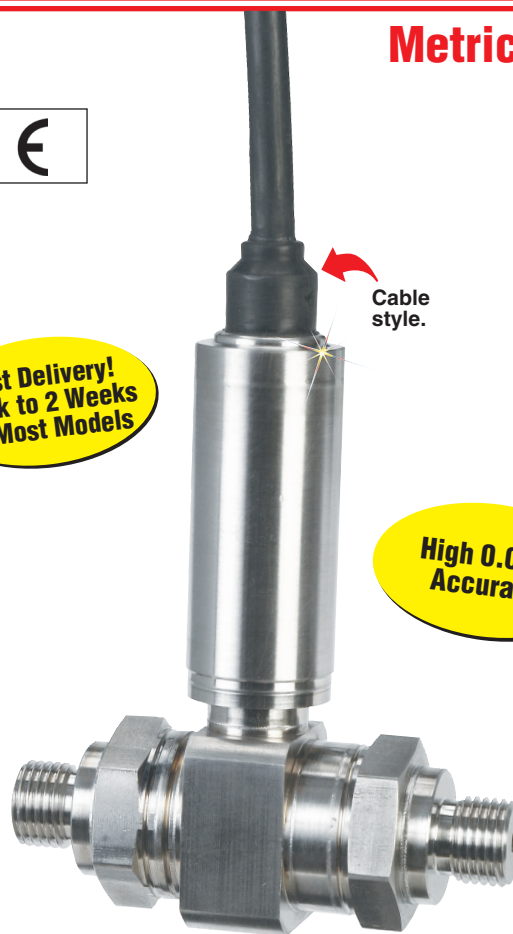
Thermal Accuracy: **Zero** **Span**

% Shift over compensated temperature range

25 to 350 mb: ±1.00% ±1.00%

1 to 70 bar: ±0.50% ±0.50%

Metric Series



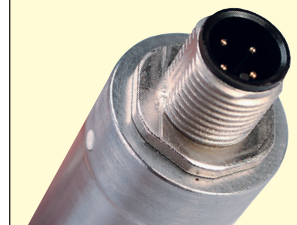
Fast Delivery!
Stock to 2 Weeks
On Most Models

Cable style.

High 0.08% Accuracy

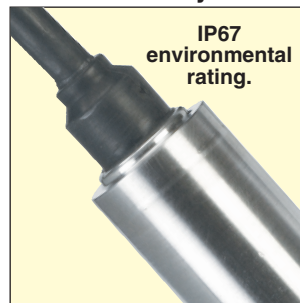
PXM409-001BDWUV,
1 bar range,
10 mV/V output,
shown smaller than
actual size.

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/WET DIFFERENTIAL PRESSURE MODELS

Pressure Cycles: 1 million minimum

Long Term Stability (1-Year):

±0.1% full scale typical

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

Wetted Parts: 316L stainless steel

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

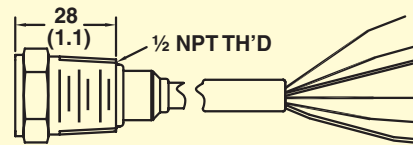
(mating connector included)

PX459: M12 connector

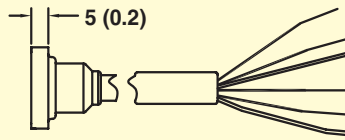
Weight: 200 g (7 oz) maximum

Dimensions: mm (inch)

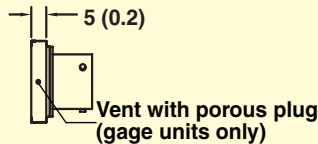
Conduit backend PXM409C



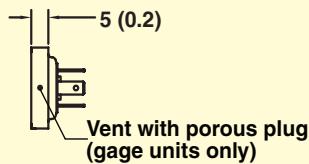
Integral cable backend PXM409



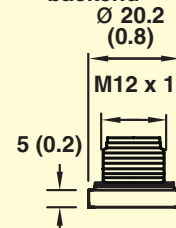
Twist-lock backend PXM429



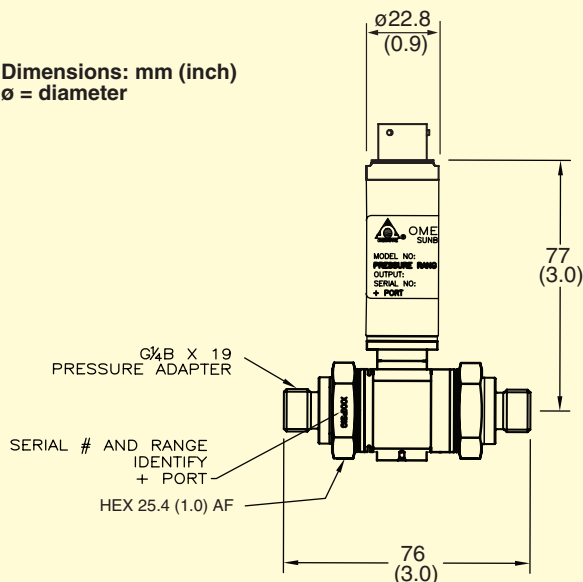
mini DIN backend PXM419



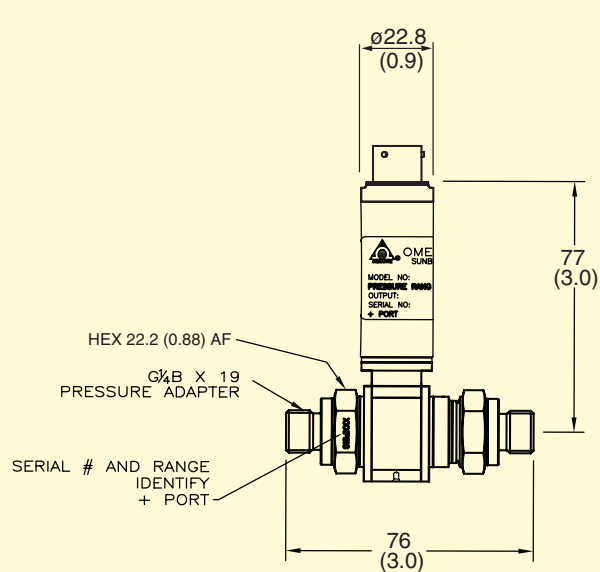
M12 connector backend PXM459



Dimensions: mm (inch)
ø = diameter



1 BAR AND BELOW



2 BAR AND ABOVE

WET/WET 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 $\Omega \pm 10\%$ typical

Zero Balance:

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

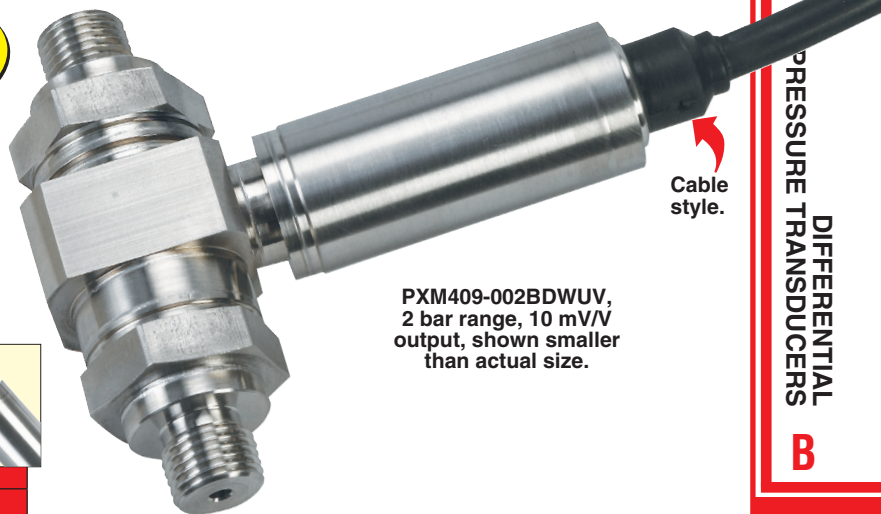
Ranges > 170 mb: $\pm 0.5\%$ typical (1% maximum)

Span Setting:

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

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

Fast Delivery!
Stock to 2 Weeks
On Most Models



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

DIFFERENTIAL
PRESSURE TRANSDUCERS
B

CABLE TERMINATION*

To Order

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

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



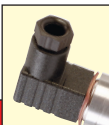
M12 TERMINATION

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



MINI DIN TERMINATION

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



Comes complete with 5-point NIST traceable calibration certificate.

Ordering Examples: PXM409-007BDWUV, 0 to 7 bar uni-directional wet/wet differential pressure range, 10 mV/V output, 0.08% accuracy, G 1/4 fittings, 2 m (6') cable.

PXM419-001BDWUV, 0 to 1 bar uni-directional wet/wet differential pressure range, 10 mV/V output, 0.08% accuracy, G 1/4 fittings, mini DIN connector.

PXM459-025HDWUV, 0 to 25 mbar uni-directional wet/wet 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

WET/WET 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*

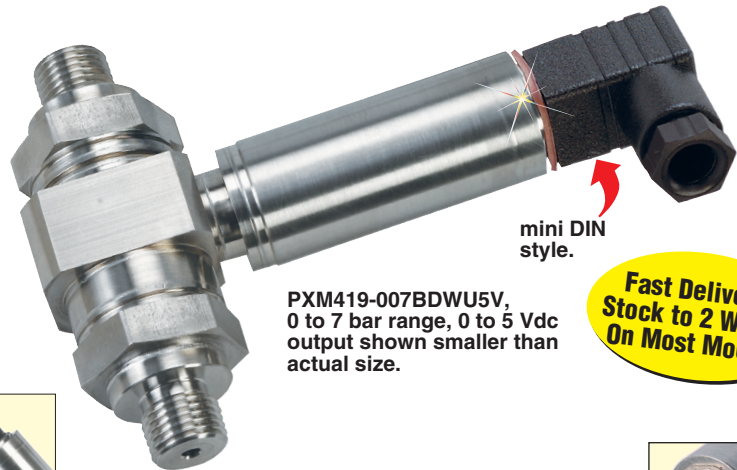
To Order

RANGE (Metric)	MODEL No. G 1/4 Male th'd	DESCRIPTION
WET/WET DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM409-025HDWU5V	25 mbar w/w Diff Pressure
70 mbar (hPa)	PXM409-070HDWU5V	70 mbar w/w Diff Pressure
170 mbar (hPa)	PXM409-170HDWU5V	170 mbar w/w Diff Pressure
350 mbar (hPa)	PXM409-350HDWU5V	350 mbar w/w Diff Pressure
1 bar	PXM409-001BDWU5V	1 bar w/w Diff Pressure
2 bar	PXM409-002BDWU5V	2 bar w/w Diff Pressure
3.5 bar	PXM409-3.5BDWU5V	3.5 bar w/w Diff Pressure
7 bar	PXM409-007BDWU5V	7 bar w/w Diff Pressure
10 bar	PXM409-010BDWU5V	10 bar w/w Diff Pressure
17.5 bar	PXM409-17.5BDWU5V	17.5 bar w/w Diff Pressure
35 bar	PXM409-035BDWU5V	35 bar w/w Diff Pressure
50 bar	PXM409-050BDWU5V	50 bar w/w Diff Pressure
70 bar	PXM409-070BDWU5V	70 bar w/w 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/WET DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM419-025HDWU5V	25 mbar w/w Diff Pressure
70 mbar (hPa)	PXM419-070HDWU5V	70 mbar w/w Diff Pressure
170 mbar (hPa)	PXM419-170HDWU5V	170 mbar w/w Diff Pressure
350 mbar (hPa)	PXM419-350HDWU5V	350 mbar w/w Diff Pressure
1 bar	PXM419-001BDWU5V	1 bar w/w Diff Pressure
2 bar	PXM419-002BDWU5V	2 bar w/w Diff Pressure
3.5 bar	PXM419-3.5BDWU5V	3.5 bar w/w Diff Pressure
7 bar	PXM419-007BDWU5V	7 bar w/w Diff Pressure
10 bar	PXM419-010BDWU5V	10 bar w/w Diff Pressure
17.5 bar	PXM419-17.5BDWU5V	17.5 bar w/w Diff Pressure
35 bar	PXM419-035BDWU5V	35 bar w/w Diff Pressure
50 bar	PXM419-050BDWU5V	50 bar w/w Diff Pressure
70 bar	PXM419-070BDWU5V	70 bar w/w Diff Pressure



PXM419-007BDWU5V,
0 to 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/WET DIFFERENTIAL PRESSURE		
25 mbar (hPa)	PXM459-025HDWU5V	25 mbar w/w Diff Pressure
70 mbar (hPa)	PXM459-070HDWU5V	70 mbar w/w Diff Pressure
170 mbar (hPa)	PXM459-170HDWU5V	170 mbar w/w Diff Pressure
350 mbar (hPa)	PXM459-350HDWU5V	350 mbar w/w Diff Pressure
1 bar	PXM459-001BDWU5V	1 bar w/w Diff Pressure
2 bar	PXM459-002BDWU5V	2 bar w/w Diff Pressure
3.5 bar	PXM459-3.5BDWU5V	3.5 bar w/w Diff Pressure
7 bar	PXM459-007BDWU5V	7 bar w/w Diff Pressure
10 bar	PXM459-010BDWU5V	10 bar w/w Diff Pressure
17.5 bar	PXM459-17.5BDWU5V	17.5 bar w/w Diff Pressure
35 bar	PXM459-035BDWU5V	35 bar w/w Diff Pressure
50 bar	PXM459-050BDWU5V	50 bar w/w Diff Pressure
70 bar	PXM459-070BDWU5V	70 bar w/w 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: PXM409-007BDWU5V, 0 to 7 bar
uni-directional wet/wet differential pressure range, 0 to 5 Vdc output,
0.08% accuracy, G 1/4 fittings, 2 m (6') cable.

PXM419-001BDWU5V, 0 to 1 bar uni-directional wet/wet differential
pressure range, 0 to 5 Vdc output, 0.08% accuracy, G 1/4 fittings, mini
DIN connector.

PXM459-025HDWU5V, 0 to 25 mbar uni-directional wet/wet
differential pressure range, 0 to 5 Vdc output, 0.08% accuracy,
G 1/4 fittings, 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/WET 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)

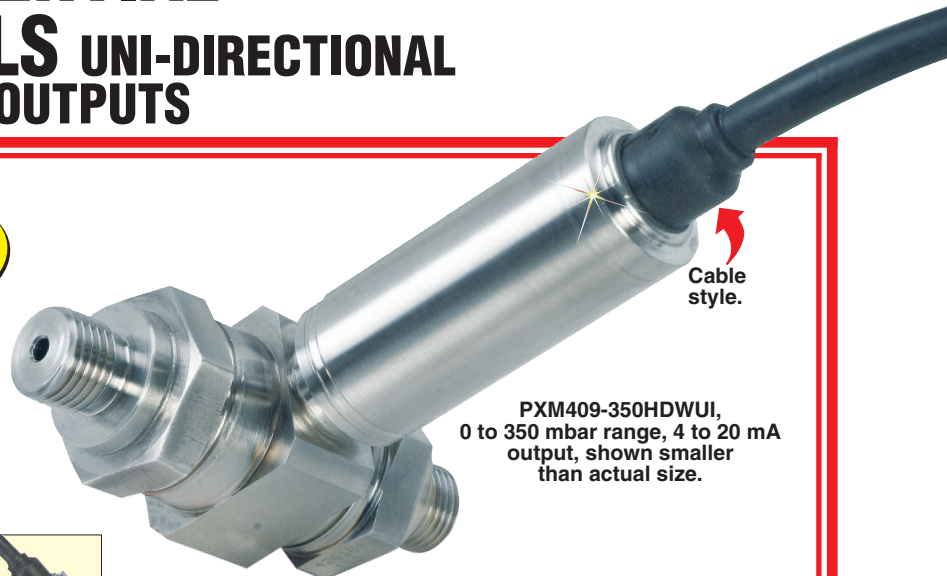
Ranges ≤ 170 mb: ±1% typical (2% maximum)

Span Setting:

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

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

Fast Delivery!
Stock to 2 Weeks
On Most Models



Cable style.

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

CABLE TERMINATION*

To Order

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

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



M12 TERMINATION

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



B

Comes complete with 5-point NIST traceable calibration certificate.

Ordering Examples: PXM409-007BDWUI, 0 to 7 bar uni-directional wet/wet differential pressure range, 4 to 20 mA output, 0.08% accuracy, G¼ fittings, 2 m (6') cable.

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

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

MINI DIN TERMINATION

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



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