

# 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



**Metric 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

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

**High 0.08% Accuracy**



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

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

**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)

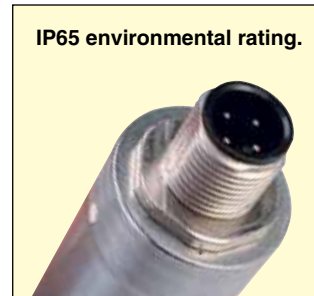
**1 to 70 bar:** -29 to 85°C (-20 to 185°F)

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

% Shift over compensated temperature range

**25 to 350 mb:**      ±1.00%      ±1.00%

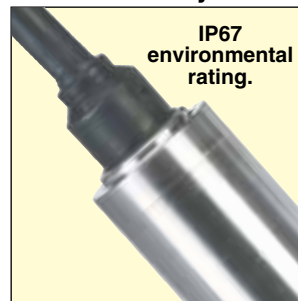
**1 to 70 bar:**      ±0.50%      ±0.50%



IP65 environmental rating.

PXM459, M12 connector.

### Electrical Termination Styles



IP67 environmental rating.

PXM409, 2 m (6') cable.



IP65 environmental rating.

PXM419, mini DIN.

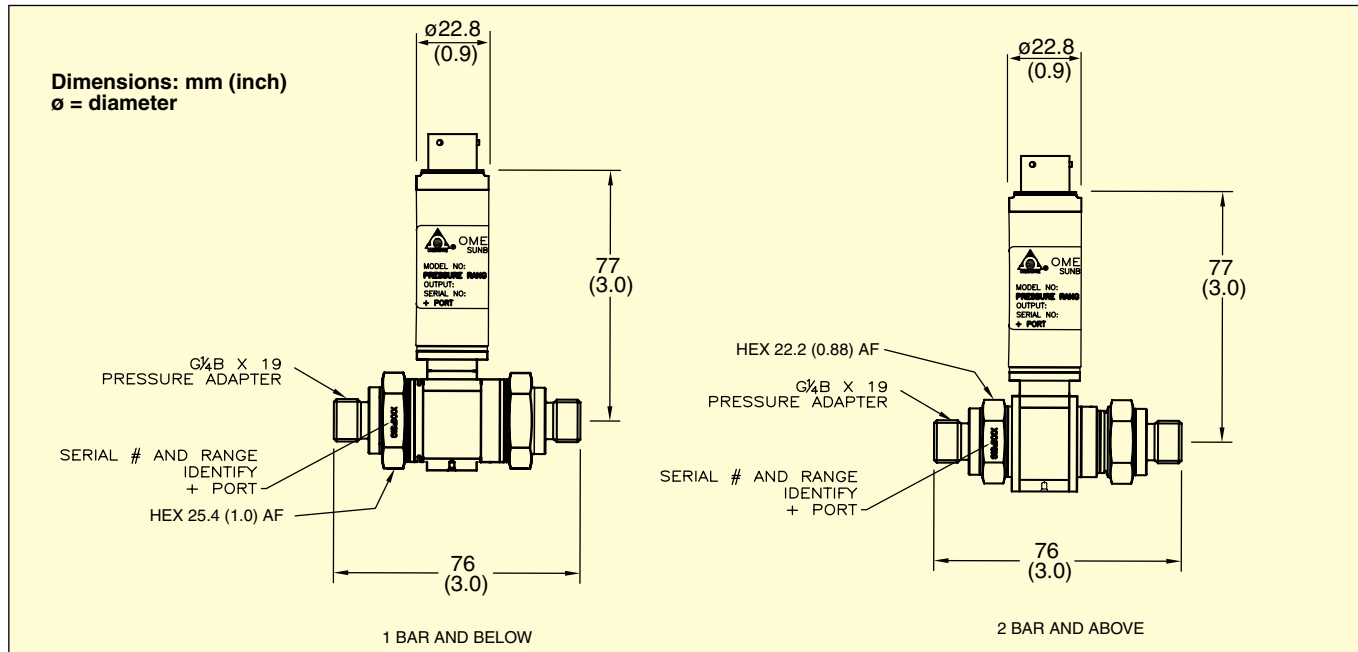
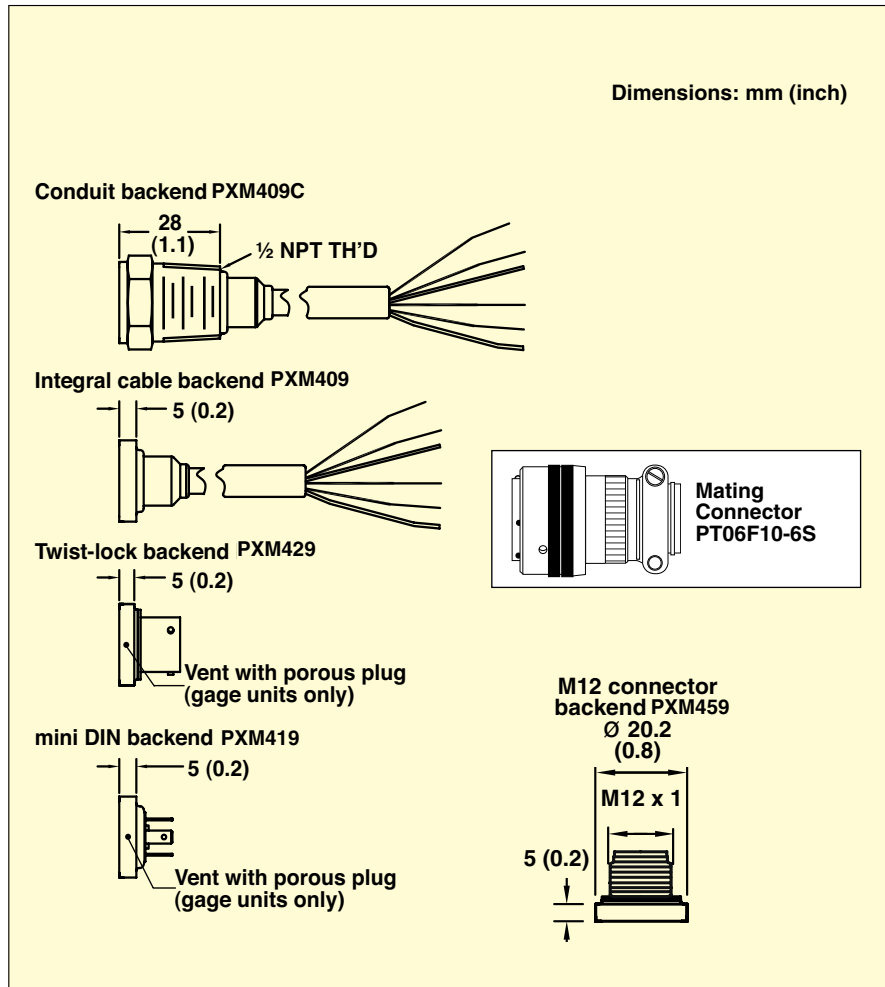
DIFFERENTIAL PRESSURE TRANSDUCERS **B**



# 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



# 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  $\Omega$
- Output Impedance: 5000  $\Omega$   $\pm$ 10% typical
- Zero Balance:
  - Ranges  $\leq$  170 mb:  $\pm$ 1% typical (2% maximum)
  - Ranges  $>$  170 mb:  $\pm$ 0.5% typical (1% maximum)
- Span Setting:
  - Ranges  $\leq$  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
<b>WET/WET DIFFERENTIAL PRESSURE</b>		
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.

### MINI DIN TERMINATION



RANGE (Metric)	MODEL No. G 1/4 Male th'd	DESCRIPTION
<b>WET/WET DIFFERENTIAL PRESSURE</b>		
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

### M12 TERMINATION



RANGE (Metric)	MODEL No. G 1/4 Male th'd	DESCRIPTION
<b>WET/WET DIFFERENTIAL PRESSURE</b>		
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

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  $\Omega$   
minimum load resistance)

**Output Impedance:** 100  $\Omega$

**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\*

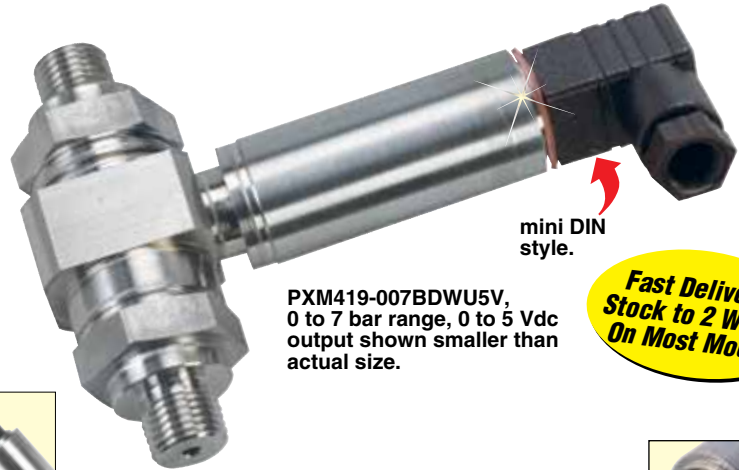
#### To Order

RANGE (Metric)	MODEL No. G 1/4 Male th'd	DESCRIPTION
<b>WET/WET DIFFERENTIAL PRESSURE</b>		
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
<b>WET/WET DIFFERENTIAL PRESSURE</b>		
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



mini DIN style.

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
<b>WET/WET DIFFERENTIAL PRESSURE</b>		
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, G1/4 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, G1/4 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, G1/4 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**



**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
<b>WET/WET DIFFERENTIAL PRESSURE</b>		
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
<b>WET/WET DIFFERENTIAL PRESSURE</b>		
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**

## MINI DIN TERMINATION

RANGE (Metric)	MODEL No. G ¼ Male th'd	DESCRIPTION
<b>WET/WET DIFFERENTIAL PRESSURE</b>		
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



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.

## 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