

# HIGH ACCURACY TRANSDUCERS

## MICRO-MACHINED SILICON WITH VACUUM PRESSURE RANGES

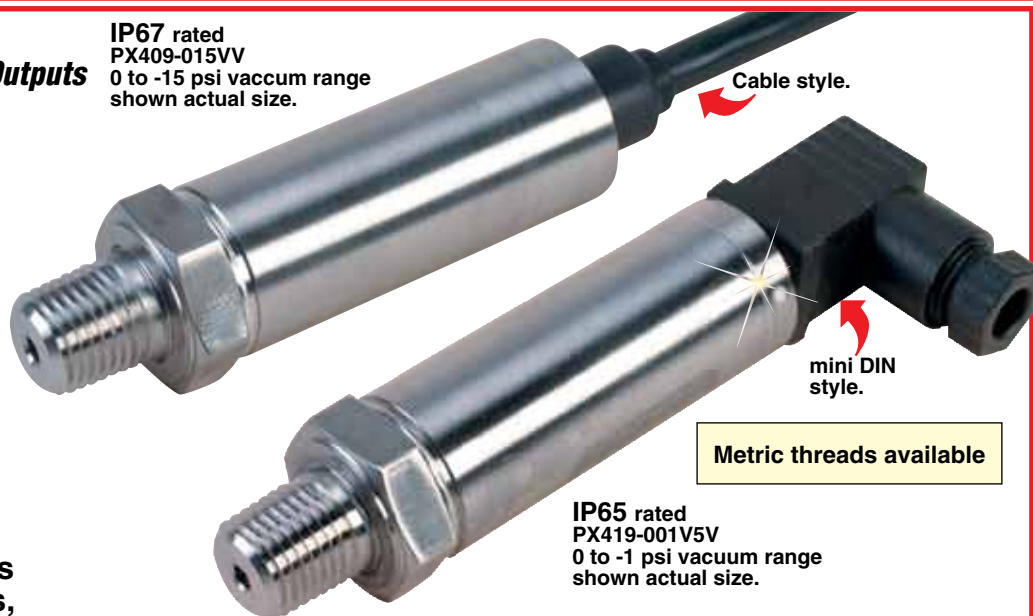
**Vacuum Pressure Ranges**  
mV/V, Voltage or Current Outputs

IP67 rated  
PX409-015VV  
0 to -15 psi vacuum range  
shown actual size.

### PX409 Series



Standard



IP65 rated  
PX419-001V5V  
0 to -1 psi vacuum range  
shown actual size.

- ✓ High Accuracy  
±0.08% BSL Includes Linearity, Hysteresis, and Repeatability
- ✓ Broad Temperature Compensated Range  
-29 to 85°C (-20 to 185°F)
- ✓ Premium Temperature Performance Span:  
±0.5% Over Compensated Range
- ✓ 5-Point NIST Traceable Calibration Included
- ✓ All Stainless Steel Wetted Parts
- ✓ Fast Response Time
- ✓ Solid State Reliability and Stability
- ✓ 400% Proof Pressure Minimum

OMEGA's PX409 Series high accuracy uni-directional vacuum range (negative gage pressure) models have all stainless steel wetted parts and welded construction and premium temperature compensation which makes them suitable for use in tough industrial environments. Vacuum models measure negative gage pressure with increasing output for increasing negative pressure. Ranges are from -10 inH<sub>2</sub>O to -15 psi with uni-directional outputs of 10 mV/V, 0 to 5 Vdc and 4 to 20 mA (ambient set at 4 mA).

### SPECIFICATIONS

#### Output:

Millivolt: 0 to 10 mV/V for vacuum

Amplified Voltage: 0 to 5 Vdc for vacuum

Current Loop: 4 to 20 mA

#### Power Requirements:

Millivolt: 5 to 10 Vdc (2 mA @ 10 Vdc)

Amplified Voltage: 10 to 30 Vdc @ 10 mA

Current Loop: 9 to 30 Vdc  
[max loop res = [(Vs-9) x 50]  
[9 to 20 Vdc above 105°C (229°F)]

CE Compliant: Meets industrial emission and immunity standard EN61326

Accuracy (Combined Linearity, Hysteresis and Repeatability): ±0.08% BSL max

Zero Balance: ±0.5% FS typical  
1% max (1% typical, 2% max for ranges 1 psi and below)

Span Setting: ±0.5% FS typical 1% max (1% typical, 2% max for ranges 1 psi and below) calibrated in vertical direction with fitting down

Operating Temperature Range: -45 to 121°C (-49 to 250°F)  
[-45 to 115°C (-49 to 240°F) for voltage or current outputs]

#### Compensated Temperature:

Ranges >5 psi: -29 to 85°C (-20 to 185°F)

Ranges ≤5 psi: -17 to 85°C (0 to 185°F)

#### Thermal Effects Zero (@ 0 psig Over Compensated Range):

Ranges >5 psi: ±0.5% span

Ranges ≤5 psi: ±1.0% span

#### Thermal Effects Span (Over Compensated Range):

Ranges >5 psi: ±0.5% span

Ranges ≤5 psi: ±1.0% span

#### Long Term Stability (1-Year):

±0.1% FS typical

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

Response Time: <1 ms

Bandwidth: DC to 1 kHz typical

#### Proof Pressure (positive direction):

10 inH<sub>2</sub>O: 10 times full scale

1 psi: 6 times full scale

2.5 psi and Higher: 4 times full scale (Negative direction 4 times or 1 atmosphere whichever is greater)

#### Burst Pressure:

10 inH<sub>2</sub>O to 15 psi: 1000 psi

#### Electrical Termination:

PX409: Integral 2 m (6') cable

PX419: mini DIN

PX429: Twist-lock

PX459: M12 4-pins

#### Mating Connectors:

PX419: CX5302 (included)

PX429: PT06F10-6S (sold separately)

#### Environmental Protection:

PX409: IP67

PX419, PX429 and PX459: IP65

#### Wetted Parts: 316 SS

Pressure Port: ¼-18 NPT male

Calibration: Comes with 5-point calibration certificate

Weight: 115 to 200 g (4 to 7 oz) depending upon configuration



MILLIVOLT OUTPUT  
PRESSURE TRANSDUCERS

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# HIGH ACCURACY TRANSDUCERS WITH VACUUM PRESSURE RANGES



PX409-005V5V



PX419-015VI



PX429-015VV

PX409 and PX409C CABLE CONNECTION			
COLOR	mV	5/10V	mA
Black	- EXC	Common	- Supply
White	+ SIG	+ Output	NC
Green	- SIG	NC	NC
Red	+ EXC	+ EXC	+ Supply

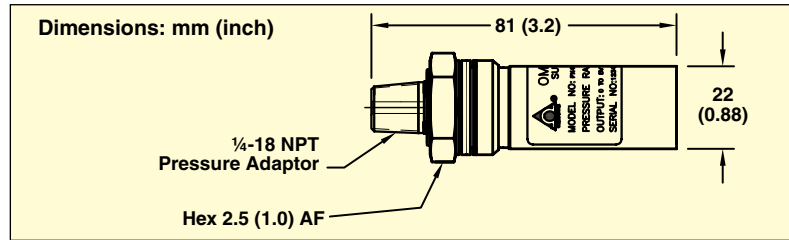
PX419 and PX459 PIN OUT			
PIN	mV	5/10V	mA
1	+ EXC	+ EXC	+ Supply
2	- EXC	Common	- Supply
3	+ SIG	+ Output	NC
4	- SIG	NC	NC

PX429 TWIST LOCK PINOUT			
PIN	mV	5/10V	mA
A	+ EXC	+ EXC	+ Supply
B	- EXC	Common	- Supply
C	+ SIG	+ Output	NC
D	- SIG	NC	NC
E	NC	NC	NC
F	NC	NC	NC

All models shown smaller than actual size.

Metric threads available

Custom Models Available!



To Order					
VACUUM (NEGATIVE GAGE) RANGES					
RANGE		2 m (6') CABLE TERMINATION MODEL NO.*	mini DIN TERMINATION MODEL NO.	TWIST-LOCK TERMINATION MODEL NO.	M12 CONN. TERMINATION MODEL NO.
psi VACUUM NEGATIVE GAGE PRESSURE	mbar GAGE PRESSURE				
<b>0 to 100 mV (@ 10 Vdc) OUTPUT</b>					
0 to -10 inH <sub>2</sub> O	0 to -25	PX409-10WVV	PX419-10WVV	PX429-10WVV	PX459-10WVV
0 to -1	0 to -69	PX409-001VV	PX419-001VV	PX429-001VV	PX459-001VV
0 to -2.5	0 to -172	PX409-2.5VV	PX419-2.5VV	PX429-2.5VV	PX459-2.5VV
0 to -5	0 to -345	PX409-005VV	PX419-005VV	PX429-005VV	PX459-005VV
0 to -15	0 to -1034	PX409-015VV	PX419-015VV	PX429-015VV	PX459-015VV
<b>0 to 5 Vdc OUTPUT**</b>					
0 to -10 inH <sub>2</sub> O	0 to -25	PX409-10WV5V	PX419-10WV5V	PX429-10WV5V	PX459-10WV5V
0 to -1	0 to -69	PX409-001V5V	PX419-001V5V	PX429-001V5V	PX459-001V5V
0 to -2.5	0 to -172	PX409-2.5V5V	PX419-2.5V5V	PX429-2.5V5V	PX459-2.5V5V
0 to -5	0 to -345	PX409-005V5V	PX419-005V5V	PX429-005V5V	PX459-005V5V
0 to -15	0 to -1034	PX409-015V5V	PX419-015V5V	PX429-015V5V	PX459-015V5V
<b>4 to 20 mA OUTPUT</b>					
0 to -10 inH <sub>2</sub> O	0 to -25	PX409-10WVI	PX419-10WVI	PX429-10WVI	PX459-10WVI
0 to -1	0 to -69	PX409-001VI	PX419-001VI	PX429-001VI	PX459-001VI
0 to -2.5	0 to -172	PX409-2.5VI	PX419-2.5VI	PX429-2.5VI	PX459-2.5VI
0 to -5	0 to -345	PX409-005VI	PX419-005VI	PX429-005VI	PX459-005VI
0 to -15	0 to -1034	PX409-015VI	PX419-015VI	PX429-015VI	PX459-015VI

## ACCESSORIES

MODEL NO.	DESCRIPTION
M12C-PVC-4-S-F-5	PVC cable, straight 4-pin M12 female connector one end, flying leads one end, 5 m (16.4') long, for PX459
M12C-PVC-4-R-F-5	PVC cable, right angled 4-pin M12 female connector one end, flying leads one end, 5 m (16.4') long, for PX459

Comes complete with 5-point NIST traceable calibration, calibrated with electrical connection up.

\* To order cable version with 1/2 NPT conduit fitting, specify model PX409C, no extra cost.

\*\* To order with 0 to 10 Vdc output change "5V" to "10V" in model number, no extra cost.

Metric threads and ranges also available.

Ordering Examples: PX409-015VV, cable termination, 0 to -15 psig vacuum range, 10 mV/V output.

PX459-001V5V, M12 termination, 0 to -1 psi vacuum range, 0 to 5 Vdc output.

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