

# HIGH ACCURACY TRANSDUCERS

## MICRO-MACHINED SILICON

### FOR BAROMETRIC PRESSURE MEASUREMENT

**Barometric Pressure Absolute Pressure**  
**Outputs: mV/V, 0 to 5V, 0 to 10V**  
**or 4 to 20 mA**  
**0 to 32, 16 to 32 or 26 to 32 inHg**  
**0 to 1100, 550 to 1100, 880 to 1100 hPa**

## PX409 Series



Standard

- ✓ High Accuracy  
±0.08% BSL Includes Linearity, Hysteresis, and Repeatability
- ✓ Broad Temperature Compensated Range  
-18 to 85°C (0 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

OMEGA's PX409 series electronic barometers are high-accuracy barometers available in three ranges: 16 to 32 inHg, 26 to 32 inHg, or 0 to 32 inHg (absolute pressure) for laboratory or industrial test applications. Models with integral cables (PX409) are IP67 while connector styles (PX419 and PX429) are IP65 rated. They feature all stainless steel construction, which makes them ideal for harsh industrial environments. Their high operating

temperature, broad compensated range, and excellent temperature compensation allow stable readings in applications with fluctuating temperatures commonly found where barometric pressure must be monitored. Models are available with millivolt, voltage or current outputs.

Metric threads available

IP67 rated  
PX409-32BV

Cable style

M12 Connector also Available See To Order Chart

IP65 rated  
PX429-26BI

Twist-lock style

IP65 rated  
PX419-16B5V

mini DIN style

All shown actual size.

## SPECIFICATIONS

### Output:

**Millivolt:** 10 mV/V (100 mV @ 10 Vdc)

**Amplified Voltage:** 0 to 5 Vdc or 0 to 10 Vdc

**Current Loop:** 4 to 20 mA

### Power Requirements:

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

### Amplified Voltage:

**0 to 5 Vdc Supply Voltage:**

10 to 30 Vdc @ 10 mA

**0 to 10 Vdc Supply Voltage:**

15 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)]

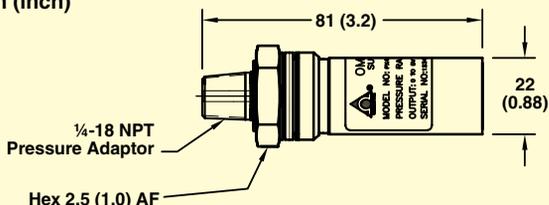
### Accuracy (Combined Linearity, Hysteresis and Repeatability):

±0.08% BSL

**Zero Balance:** ±0.5% FS typical, 1% max

**Span Setting:** ±0.5% FS typical, 1% max; calibrated in vertical direction with fitting down

Dimensions: mm (inch)



# HIGH ACCURACY, MICRO-MACHINED SILICON TRANSDUCERS

All models shown smaller than actual size.



IP67 rated  
PX409-32BV



IP65 rated  
PX419-16B5V



IP65 rated  
PX429-26BI

| 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       |



VOLTAGE OUTPUT  
PRESSURE TRANSDUCERS

B

**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: -18 to 85°C (0 to 185°F)

**Thermal Effects Span (Over Compensated Range):**  
Ranges > 5 psi: ±0.5% span  
Ranges ≤ 5 psi: ±1% 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:** 400% of span

**Burst Pressure:** 1000 psia

**Electrical Termination:**

PX409: Integral 2 m (6') cable

PX419: mini DIN

PX429: Twist-lock

**Mating Connectors:**

PX419: CX5302 (included)

PX429: PT06F10-6S

(sold separately)

**Environmental Protection:**

PX409: IP67

PX419: IP65

PX429: IP65

PX459: IP65

**Wetted Parts:** 316 SS

**Pressure Port:** ¼-18 NPT male

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

## To Order

| CALIBRATED RANGE                             |                 | mV/V OUTPUT   | 5 Vdc** OUTPUT | 4 to 20 mA OUTPUT |
|--|-----------------|---------------|----------------|-------------------|
| inHg   | hPa             |               |                |                   |
| <b>BAROMETRIC RANGES (Absolute Pressure)</b> |                 |               |                |                   |
| 0 to 32 inHg                                 | —               | PX4[*]9-32BV  | PX4[*]9-32B5V  | PX4[*]9-32BI      |
| 16 to 32 inHg                                | —               | PX4[*]9-16BV  | PX4[*]9-16B5V  | PX4[*]9-16BI      |
| 26 to 32 inHg                                | —               | PX4[*]9-26BV  | PX4[*]9-26B5V  | PX4[*]9-26BI      |
| —  | 0 to 1100 hPa   | PX4[*]9-32HBV | PX4[*]9-32HB5V | PX4[*]9-32HBI     |
| —  | 550 to 1100 hPa | PX4[*]9-16HBV | PX4[*]9-16HB5V | PX4[*]9-16HBI     |
| —  | 880 to 1100 hPa | PX4[*]9-26HBV | PX4[*]9-26HB5V | PX4[*]9-26HBI     |

## ACCESSORIES

| MODEL NO.        | DESCRIPTION  |
|------------------|--|
| PT06F10-6S       | Mating connector for PX429 series, sold separately   |
| CX5302           | Spare mating connector for PX419 series; one included with each unit   |
| 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, fits 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, fits PX459 |
| -MB              | Mounting bracket, factory installed  |

\*\* For 0 to 10 Vdc output replace "5V" with "10V" in model number.

[\*] Select Electrical Termination (no extra charge).

Insert "0" for 2 m (6') cable with flying leads.

For ½ NPT conduit connector order **PX409CS**.

Insert "1" for Mini DIN connector (mating connector included).

Insert "2" for Twist-lock connector (mating connector **PT06F10-6S** sold separately).

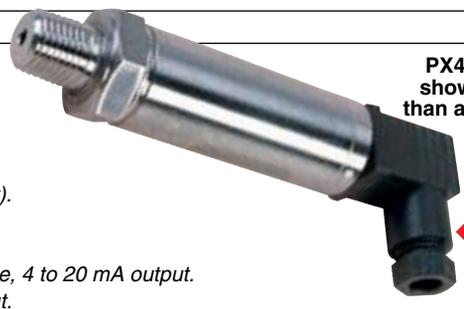
Insert "5" for M12 connector, M12 cables sold separately.

Custom configurations also available.

**Ordering Examples:** **PX409-32BI**, cable termination, 0 to 32 inHg barometric range, 4 to 20 mA output.

**PX459-32HB5V**, M12 connector, 0 to 1100 hPa barometric range, 0 to 5 Vdc output.

**PX419-16HBV** mini DIN termination, 550 to 1100 hPa barometric range, mV/V output.



PX419-26B5V, shown smaller than actual size.

mini DIN style