

# RUGGED SOLID STATE PRESSURE TRANSMITTERS SMALL LIGHTWEIGHT PACKAGE

**Vacuum to 25,000 psig**  
**Vacuum to 1724 bar Gage Pressure**  
**15 psia to 200 psia**  
**1 bar to 14 bar Absolute Pressure**

## PX170 Series



UL Ranges >100 PSI

- ✓ **Small, Lightweight Package Fits in Tight Places**
- ✓ **Extremely Rugged Sputtered or CVD Thin Film Technology**
- ✓ **Exceptional Long Term Stability**
- ✓ **Reverse Polarity and Over Voltage Protected**
- ✓ **IP67 Environmental Ratings**
- ✓ **Stainless Steel Body and Wetted Parts for Harsh Environments**
- ✓ **Excellent Shock and Vibration Ratings**
- ✓ **0 to 5 Vdc or 4 to 20 mA Outputs Available**

Designed for heavy duty service, OMEGA's PX170 Series industrial pressure transmitters utilize two of our precision manufacturing techniques. Low range, models to 50 psi gage and all absolute ranges, use our precision CVD technology which deposits an extremely durable, precision solid state sensor directly on small beam that is actuated by the diaphragm. High range models, above 50 psi gage, have the solid state sensors sputtered directly onto the diaphragm forming an extremely rugged molecular bond.

These models are designed to give long term stability and high performance in industrial applications. The low range models have  $\pm 0.5\%$  zero and  $\pm 1\%$  span interchangeability and the high range models have  $\pm 0.5\%$  zero and span interchangeability. All models have industrial RFI, EMI and ESD protection and their solid state construction give them long life in high cycle applications, typically 100M cycles.



PX171 IP67

Mating connector included.



PX172 IP67

All models shown actual size.



PX173 IP67

Mating cable sets sold separately.

### SPECIFICATIONS

**Output:** 0 to 5 Vdc, 3-wire  
**Excitation:** 8 to 30 Vdc @ 4.5 mA  
**Output:** 4 to 20 mA 2-wire  
**Excitation:** 8 to 24 Vdc (at the input to the transducer)  
**Load Resistance:** 50 x (supply voltage - 7.5) in ohms  
**Accuracy:** 0.25% full scale  
**Long Term Stability:** <0.2% full scale/year (non-cumulative)  
**Operating Temperature:**  
**Ranges  $\leq 50$  psig and All Absolute** -40 to 125°C (-40 to 257°F)  
**Ranges >50 psig:** -40 to 120°C (-40 to 250°F)  
**Compensated Temperature:**  
**Ranges  $\leq 50$  psig and All Absolute** -20 to 100°C (-4 to 212°F)  
**Ranges >50 psig:** -40 to 120°C (-40 to 250°F)  
**Thermal Error:**  
**Ranges  $\leq 50$  psig and All Absolute Ranges:**  $\pm 1\%$  maximum/80°C (176°F)  
**Ranges >50 psig:**  $\pm 1\%$  typical  $\pm 1.5\%$  maximum/100°C (212°F)

**Fatigue Life:** >100 m cycles  
**Setting Tolerance:**  
**Ranges  $\leq 50$  psig and All Absolute Ranges:** Span:  $\pm 1\%$  of span maximum  
Zero:  $\pm 0.5\%$  of span maximum  
**Ranges >50 psig:** Span:  $\pm 0.5\%$  of span maximum; Zero:  $\pm 0.5\%$  of span maximum  
**Shock:** BSEN 60068-2-27 (Ea) 50 g, 11 ms  
**Vibration:** BSEN 60068-2-6 (FC), BSEN 60068-2-64 (FH)  
**Proof Pressure:**  
**Ranges  $\leq 300$  psi:** 2 x full scale  
**Ranges 500 to 15,000 psi:** 2 x full scale  
**Ranges >15,000 psi:** 1.4 x full scale  
**Burst Pressure:**  
**Ranges to 6000 psi:** >10 x full scale  
**Ranges >6000 psi:** 60,000 psi  
**Pressure Fitting:**  
**Ranges to 10,000 psi:**  $\frac{1}{8}$  - 27 NPT male  
**Ranges >10,000 psi:** M12 x 1.5 (6 g)  
**Electrical Termination:** M12 4-pin connector, 9.4 mm mini-DIN, Packard MetriPack  
**Environmental Rating:** M12, Packard Termination and mini-DIN Termination IP67  
**Wetted Parts:** 17-4 PH stainless steel  
**Weight:** 35 to 150 gm (1.2 to 5 oz)

MODEL	PX171	PX172	PX173
<b>5 Vdc</b>			
Pin 1 (C)	V supply	V supply	V out
Pin 2 (A)	Common	V out	Common
Pin 3 (B)	V out	Common	V Supply
Pin 4	no connect	no connect	n/a
<b>4 to 20 mA</b>			
Pin 1 (C)	V supply	V supply	no connect
Pin 2 (A)	Return	no connect	Return
Pin 3 (B)	no connect	Return	V supply

# MINIATURE LIGHTWEIGHT PRESSURE TRANSMITTERS

To Order					
RANGE psi	RANGE bar	mini-DIN CONNECTOR PX171 SERIES	M12 CONNECTOR PX172 SERIES	PACKARD CONNECTOR PX173 SERIES	
<b>ABSOLUTE PRESSURE</b>					
CVD TECHNOLOGY	0 to 15	0 to 1	PX171-015A[*]	PX172-015A[*]	PX173-015A[*]
	0 to 30	0 to 2	PX171-030A[*]	PX172-030A[*]	PX173-030A[*]
	0 to 50	0 to 3	PX171-050A[*]	PX172-050A[*]	PX173-050A[*]
	0 to 100	0 to 7	PX171-100A[*]	PX172-100A[*]	PX173-100A[*]
	0 to 150	0 to 10	PX171-150A[*]	PX172-150A[*]	PX173-150A[*]
	0 to 200	0 to 14	PX171-200A[*]	PX172-200A[*]	PX173-200A[*]
	<b>GAGE PRESSURE</b>				
Vac	-1 to 0	PX171-VACV[*]	PX172-VACV[*]	PX173-VACV[*]	
Vac to +15	-1 to +1	PX171-VAC15V[*]	PX172-VAC15V[*]	PX173-VAC15V[*]	
Vac to +30	-1 to +2	PX171-VAC30V[*]	PX172-VAC30V[*]	PX173-VAC30V[*]	
Vac to +50	-1 to +3	PX171-VAC50V[*]	PX172-VAC50V[*]	PX173-VAC50V[*]	
0 to 15	0 to 1	PX171-015G[*]	PX172-015G[*]	PX173-015G[*]	
0 to 30	0 to 2	PX171-030G[*]	PX172-030G[*]	PX173-030G[*]	
0 to 50	0 to 3	PX171-050G[*]	PX172-050G[*]	PX173-050G[*]	
SPUTTERED TECHNOLOGY	Vac to +100	-1 to +7	PX171-VAC100V[*]	PX172-VAC100V[*]	PX173-VAC100V[*]
	0 to 100	0 to 7	PX171-100G[*]	PX172-100G[*]	PX173-100G[*]
	0 to 150	0 to 10	PX171-150G[*]	PX172-150G[*]	PX173-150G[*]
	0 to 200	0 to 14	PX171-200G[*]	PX172-200G[*]	PX173-200G[*]
	0 to 300	0 to 20	PX171-300G[*]	PX172-300G[*]	PX173-300G[*]
	0 to 500	0 to 34	PX171-500G[*]	PX172-500G[*]	PX173-500G[*]
	0 to 750	0 to 50	PX171-750G[*]	PX172-750G[*]	PX173-750G[*]
	0 to 1000	0 to 69	PX171-1.0KG[*]	PX172-1.0KG[*]	PX173-1.0KG[*]
	0 to 1500	0 to 100	PX171-1.5KSG[*]	PX172-1.5KSG[*]	PX173-1.5KSG[*]
	0 to 2000	0 to 138	PX171-2.0KSG[*]	PX172-2.0KSG[*]	PX173-2.0KSG[*]
	0 to 3000	0 to 200	PX171-3.0KSG[*]	PX172-3.0KSG[*]	PX173-3.0KSG[*]
	0 to 3500	0 to 240	PX171-3.5KSG[*]	PX172-3.5KSG[*]	PX173-3.5KSG[*]
	0 to 5000	0 to 345	PX171-5.0KSG[*]	PX172-5.0KSG[*]	PX173-5.0KSG[*]
	0 to 7500	0 to 515	PX171-7.5KSG[*]	PX172-7.5KSG[*]	PX173-7.5KSG[*]
	0 to 10,000	0 to 690	PX171-10KSG[*]	PX172-10KSG[*]	PX173-10KSG[*]
	0 to 15,000**	0 to 1034	PX171-15KSG[*]	PX172-15KSG[*]	PX173-15KSG[*]
0 to 20,000**	0 to 1379	PX171-20KSG[*]	PX172-20KSG[*]	PX173-20KSG[*]	
0 to 25,000**	0 to 1724	PX171-25KSG[*]	PX172-25KSG[*]	PX173-25KSG[*]	
<b>ACCESSORIES</b>					
<b>CX5302</b>	Extra 9.4 mm (0.37") DIN connector 3 contacts plus ground terminal				
<b>PX172-CABLE-1M</b>	1 m (3') cord set, M12 connector/flying leads				
<b>PX172-CABLE-3M</b>	3 m (10') cord set, M12 connector/flying leads				
<b>PX172-CABLE-5M</b>	5 m (15') cord set, M12 connector/flying leads				
<b>PX173-CABLE-1M</b>	1 m (3') cord set, packard connector/flying leads				
<b>PX173-CABLE-2M</b>	2 m (6') cord set, packard connector/flying leads				
<b>PX173-CABLE-5M</b>	4.5 m (14.5') cord set, packard connector/flying leads				

Comes complete with operator's manual.

[\*] Insert "5V" for 0 to 5 Vdc output or insert "I" for 4 to 20 mA Output (no additional cost).

\*\* Ranges  $\geq 15,000$  are available only with M12 x 1.5 Thread

**Ordering Examples:** PX171-100G5V, mini DIN model, 100 psi range, gage pressure, 0 to 5 Vdc output.

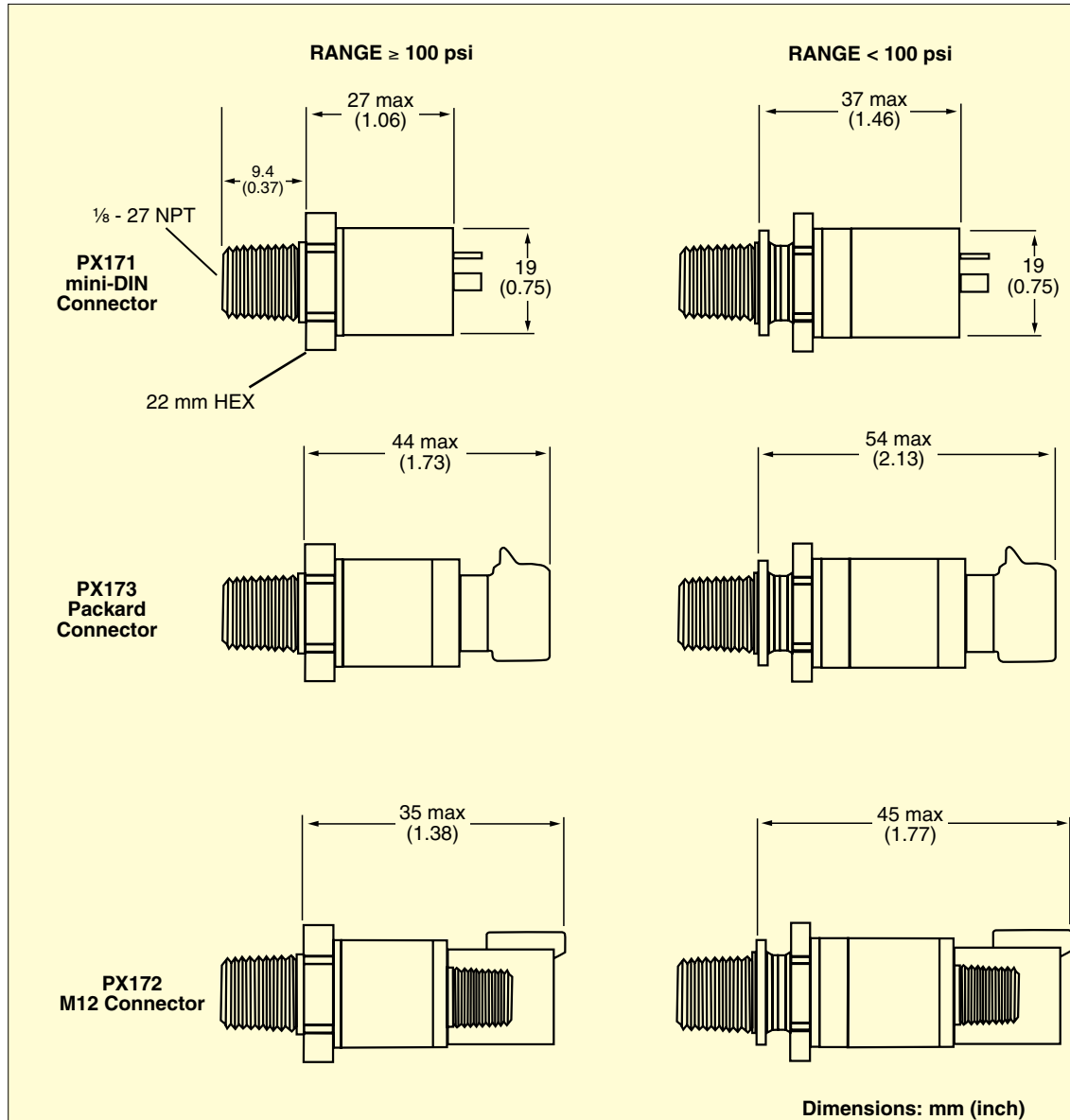
PX172-015AI, M12 model, 15 psi range, absolute pressure, 4 to 20 mA output and PX172-CABLE-M3, 3 m (10') mating cable for PX172.

PX173-1.0KGI, packard termination, 1000 psi range, gage pressure, 4 to 20 mA output and PX173-CABLE-5M, 4.5 m (14.5') mating cable for PX173.

# RUGGED SOLID STATE PRESSURE TRANSMITTERS

## PX171/PX172/PX173

### PX170 SERIES DIMENSIONS



### WIRING DIAGRAM

