

HIGH PERFORMANCE PRESSURE TRANSDUCER

ULTRA HIGH LONG TERM STABILITY



PX5000 Series

mV/V Output

0-15 to 0-10,000 psi

0-1 to 0-700 bar

1 bar = 14.5 psi

1 kg/cm² = 14.22 psi

1 Atmosphere = 14.7 psi =

29.93 inHg = 760.2 mmHg

- ✓ High Shock and Vibration
- ✓ 100,000 Hour MTBF
- ✓ 0.1% Stability for 18 months
- ✓ High Operating Temperature -54° to 150°C (-65° to 300°F)
- ✓ Solid State Reliability
- ✓ 5 Point Calibration Standard

Applications

- ✓ Automotive Testing
- ✓ Gas Turbine Engines
- ✓ Flight Testing
- ✓ Aircraft
- ✓ Space Launch Vehicles and Satellites
- ✓ Weapon Systems

OMEGA's PX5000 Series pressure transducer has earned a reputation for high performance, reliability and stability in tough, real-world applications. This outstanding transducer uses OMEGA's advanced sputtered thin-film sensor technology.

In the sputtering process, gage material is accelerated in a vacuum chamber toward a sensor substrate, molecule by molecule. They impact with an energy of several thousand electron volts - sufficient to penetrate a few atomic layers and produce the most stable and reliable bond possible. This unique molecular gage bonding provides superior long-term calibration stability and reliability, since the

sensors have no cement bonds to degrade with time, or weakened at higher temperatures.

The PX5000 transducer excels in tough operating environments. The photo-etched gage pattern makes the sensing element components very small, with short interconnecting leads. This micro-geometry reduces vibration mass, making this transducer much less susceptible to vibration and shock failures and errors. Rugged all-welded construction ensures a durable and reliable instrument.

PX5000
\$750
 Model Shown



Model PX5000L1-3KGV Shown Actual Size

And, this transducer now provides Electrostatic Discharge (ESD) protection to 15kV.

You get state-of-the-art thin-film reliability and performance with the

To Order: (Specify Model Number)			
Models with mV/V Output, MS33656-4 Fitting and Integral Connector			
RANGE (psi)	MODEL NUMBER	PRICE	COMPATIBLE METERS
Absolute Pressure: (Note: All Ranges Available in Absolute Pressure)			
0 to 15	PX5000L1-015AV	\$750	DP41-S, DP25-S
0 to 25	PX5000L1-025AV	750	DP41-S, DP25-S
0 to 50	PX5000L1-050AV	750	DP41-S, DP25-S
0 to 100	PX5000L1-100AV	750	DP41-S, DP25-S
Gage Pressure: (Note: All Ranges also Available in Sealed Gage Pressure)			
0 to 15	PX5000L1-015GV	750	DP41-S, DP25-S
0 to 25	PX5000L1-025GV	750	DP41-S, DP25-S
0 to 50	PX5000L1-050GV	750	DP41-S, DP25-S
0 to 100	PX5000L1-100GV	750	DP41-S, DP25-S
0 to 250	PX5000L1-250GV	750	DP41-S, DP25-S
0 to 500	PX5000L1-500GV	750	DP41-S, DP25-S
0 to 1,000	PX5000L1-1KGV	750	DP41-S, DP25-S
0 to 1,500	PX5000L1-1.5KGV	750	DP41-S, DP25-S
0 to 2,500	PX5000L1-2.5KGV	750	DP41-S, DP25-S
0 to 3,000	PX5000L1-3KGV	750	DP41-S, DP25-S
0 to 5,000	PX5000L1-5KGV	750	DP41-S, DP25-S
0 to 10,000	PX5000L1-10KGV	750	DP41-S, DP25-S

Metric Ranges Available - Consult Engineering

To order Absolute Pressure, change "G" in the part number to "A". No additional charge. To order Sealed Gage Pressure, change "G" in the part number to "S". No additional charge.

Ordering Examples:

1.) PX5000L1-100AV is a 100 psi Absolute Pressure transducer, with a male pressure connection per MS33656-4 and an integral electrical connector, \$750. Mating Connector, PTS06A-10-6S, \$47.00.

2.) PX5000L1-5KSV is a 5,000 psi Sealed Gage Pressure transducer, with a male pressure connection per MS33656-4 and an integral electrical connector, \$750. Mating Connector, PTS06A-10-6S, \$47.00.

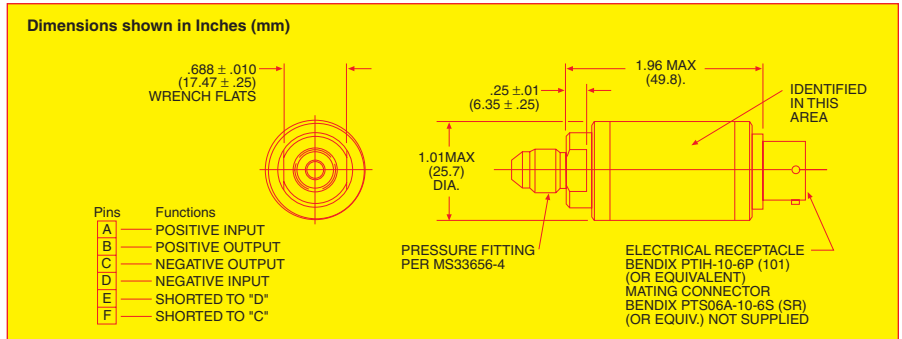


MILLIVOLT OUTPUT
 PRESSURE TRANSDUCERS
B

PX5000 pressure transducer, yet it is competitively priced. The result is highest value - premium performance without paying a premium price. This transducer is also available with an optional 11 point NIST traceable calibration.

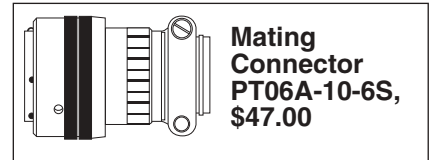
SPECIFICATIONS:

Excitation: 10 Vdc
Output: 30 mV typical, 26 mV minimum
Input Resistance: 1000 Ω typical, 800 Ω minimum, 1500 Ω maximum
Output Resistance: 1000 Ω ±200 Ω. For 350 ohm bridge see custom configurations
Insulation Resistance: 500 megohms minimum @ 45 Vdc over the compensated range
Sensing Element: 4 active-arm bridge using sputter-deposited thin-film elements
Accuracy: Combined Linearity, Hysteresis and Nonrepeatability: ±0.10% FSO 0-15 thru 0-999 psi ±0.15% FSO 1,000 psi and above
Calibration Stability: ±0.1% for 18 months
Reliability: MTBF = 100,000 hours
Operating Temp Range: -54° to 150°C (-65° to 300°F)
Compensated Temp Range: -54° to +121° (-65°to+250°F)



Thermal Effects:
Span: ±0.005% FSO/°F
Zero: ±0.005% FSO/°F
Vibration Sensitivity: At 35g peak sinusoidal vibration from 10 Hz to 2000 Hz (½" D.A.) , the output shall not exceed 0.04% FSO/g for 15 psi range to 0.003% FSO/g for 1000 psi and above
Natural Frequency: 50 kHz for 5,000 psi range, decreasing logarithmically to 5kHz for 15 psi range
Shock: Qualification level of 100g, 11 msec half sine wave without damage
Humidity: Qualified per MIL-STD-810
Electrostatic Discharge (ESD): Protected to 15kV
Pressure: 2.0 times rated pressure or 15,000 psi whichever is less, will no cause changes in performance beyond the specified tolerances
Burst Pressure: 3.0 times rated pressure or 20,000 psi whichever is less, will not cause rupture of the

pressure containment cavity.
Wetted Parts: 17-4 PH Stainless Steel or 15-5 PH Stainless Steel
Pressure Fitting: ¼"-20 male per MS33656-4
Mounting Sensitivity: Less than 0.05% FSO change in zero when mounted by the pressure port to a manifold at a torque of 15 ft-lb on a solid copper gasket
Mating Connector: PTS06A-10-6S (Not Included)
Weight: 5 oz (145g) maximum



CUSTOM CONFIGURATIONS

SERIES	PRESSURE PORT	ELECTRICAL CONNECTION	RANGE	UNITS	OUTPUT	OPTIONS
PX5000*	[1]	[2]	[3]	[4]	[5]	[6]
L = MS33656-4			015 psi	A,G,S	V = mV/V Output \$750	CAL11 = 11 point NIST traceable calibration +\$150
			025	A,G,S		
			050	A,G,S		
			100	A,G,S		
			250	A,G,S		
			500	A,G,S		
			1K	A,G,S		
			1.5K	A,G,S		
			2.5K	A,G,S		
			3K	A,G,S		
			5K	A,G,S		
			10K	A,G,S		
		1 = PT1H-10-6P Connector (or Equal) Mating Connector (not included) PTS06A-10-6S \$47.00				
Metric Ranges Available - Consult Engineering						
To Order a Custom Configuration: 1. Select a Pressure Port 2. Select Electrical Connection 3. Select a Pressure Range 4. Select Pressure Units 5. Select Output 6. Select Options and Agency Approvals						

Ordering Example:

- 1.) **PX5003L1-100AV** has a 350 ohm bridge, MS33656-4 male pressure port, Bendix connector, 100 psi Absolute Pressure Range, and a mV/V output, \$750. Mating Connector (not included) **PTS06A-10-6S, \$47.00.**
- 2.) **PX5000L1-5KSV-CAL11** has a 1000 ohm bridge, MS33656-4 male pressure port, Bendix connector, 5,000 psi Sealed Gage Pressure Range, mV/V output and an 11 point NIST traceable calibration, \$750+\$150= \$900. Mating Connector (not included) **PTS06A-10-6S, \$47.00.**
- 3.) **PX5000L1-1KGV** has a 1000 ohm bridge, MS33656-4 male pressure port, Bendix connector, 1,000 psi gage, a mV/V output and the standard 5 point NIST Traceable Calibration, \$750. Mating Connector (not included) **PTS06A-10-6S, \$47.00.**