HIGH-PERFORMANCE PRESSURE TRANSUCER
ULTRA-HIGH LONG-TERM STABILITY

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 = 1.014 bar

PX5000 Series

- High Shock and Vibration Resistance
- 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 NIST Calibration Standard

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

OMEGA’s PX5000 Series pressure transducers have earned a reputation for high performance, reliability, and stability in tough, real-world applications. These outstanding transducers use 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. Each molecule interacts 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 weaken at higher temperatures.

The PX5000 transducer excels in adverse 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.

To Order
Models with mV/V Output, MS33656-4 Fitting and Integral Connector

<table>
<thead>
<tr>
<th>RANGE</th>
<th>MODEL NO.</th>
<th>COMPATIBLE METERS*</th>
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</thead>
<tbody>
<tr>
<td>ABSOLUTE PRESSURE</td>
<td></td>
<td></td>
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<tr>
<td>(Note: All Ranges Available in Absolute Pressure)</td>
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<td></td>
</tr>
<tr>
<td>0 to 15 psi 0 to 1.0 bar</td>
<td>PX5000L1-015AV</td>
<td>DP41-S, DP25B-S</td>
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<tr>
<td>0 to 25 psi 0 to 1.7 bar</td>
<td>PX5000L1-025AV</td>
<td>DP41-S, DP25B-S</td>
</tr>
<tr>
<td>0 to 50 psi 0 to 3.4 bar</td>
<td>PX5000L1-050AV</td>
<td>DP41-S, DP25B-S</td>
</tr>
<tr>
<td>0 to 100 psi 0 to 6.9 bar</td>
<td>PX5000L1-100AV</td>
<td>DP41-S, DP25B-S</td>
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<tr>
<td>GAGE PRESSURE</td>
<td></td>
<td></td>
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<tr>
<td>(Note: All Ranges Also Available in Sealed Gage Pressure)</td>
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<td></td>
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<tr>
<td>0 to 15 psi 0 to 1.0 bar</td>
<td>PX5000L1-015GV</td>
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Comes complete with 5-point calibration.

To order absolute pressure, replace “G” in model number with “A” (no extra charge).
To order sealed gage pressure, replace “G” in model number with “S” (no extra charge).

Ordering Examples: PX5000L1-100AV, 100 psi absolute pressure transducer, with MS33656-4 male pressure connection and integral electrical connector.
PTS06A-10-6S, mating connector.
PX5000L1-5KGV, 5000 psi gage pressure transducer, with MS33656-4 male pressure connection and integral electrical connector. PTS06A-10-6S, mating connector.
Rugged all-welded construction ensures a durable and reliable instrument. And this transducer now provides electrostatic discharge (ESD) protection to 15 kV.

Users get state-of-the-art thin-film reliability and performance with the PX5000 pressure transducer, yet it is competitively priced. The result is highest value—premium performance without 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  
2500 Ω typical, 800 Ω minimum, 3000 Ω maximum

**Input Resistance:** 2500 Ω typical, 800 Ω minimum, 3000 Ω maximum; for 350 Ω bridge, see Custom Configurations

**Insulation Resistance:** 500 MΩ 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 to 15 through 0 to 999 psi; ±0.15% FSO 1000 psi and above

**Calibration Stability:** ±0.1% for 18 months

**Reliability:** MTBF = 100,000 hours

**Operating Temp Range:** -54 to 150°C (-65 to 250°F)

**Compensated Temp Range:** -54 to 121°C (-65 to 250°F)

**Thermal Effects:**
- **Span:** ±0.005% FSO/°F
- **Zero:** ±0.005% FSO/°F

**Vibration Sensitivity:** At 35 g 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 5000 psi range, decreasing logarithmically to 5 kHz for 15 psi range

**Shock:** Qualification level of 100 g, 11 ms half sine wave without damage

**Humidity:** Qualified per MIL-STD-810

**Electrostatic Discharge (ESD):** Protected to 15 kV

**Pressure:** 2 times rated pressure or 15,000 psi, whichever is less, will not cause rupture of the pressure containment cavity

**Weight:** 145 g (5 oz) maximum

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**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 (sold separately)

**Output Resistance:** 3000 Ω maximum

**Input Resistance:** 30 mV typical, 26 mV minimum

**Output:** 10 Vdc

**Excitation:** 10 ± 0.25 Vdc

**Functions:**
- **POSITIVE INPUT**
- **NEGATIVE INPUT**
- **POSITIVE OUTPUT**
- **NEGATIVE OUTPUT**
- **SHORTED TO "D"**
- **SHORTED TO "C"**

**Dimensions:** mm (inch)

**Reliability:** MTBF = 100,000 hours

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