**THIN-FILM CRYOGENIC PRESSURE TRANSUDER**

**mV/V Output**

- 0-15 to 0-1000 psi
- 0-1 to 0-70 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

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**PX1005 Series**

**All Ranges**

- High Performance
- High Reliability
- 0.1% Stability for 18 Months
- Operates From -196 to 149°C (-320 to 300°F)
- Exceptional Calibration Stability

OMEGA's PX1005 sputtered thin-film pressure transducer was designed for cryogenic service; it can operate in temperatures from -196 to 149°C (-320 to 300°F). Yet, even in these extreme temperatures, it provides outstanding accuracy, long-term calibration stability, and reliability.

Static accuracy is ±0.25%, and thermal zero and sensitivity shifts over the compensated range of -196 to 27°C (-320 to 80°F) are less than ±0.01%/°F. The all-welded stainless steel pressure cavity and double-isolated case ensure reliability in the inherently tough environments of cryogenic service.

OMEGA’s thin-film technology makes this premium performance possible. The strain gages are sputter-deposited, forming a molecular bond with the substrate. There is virtually no shift, drift, or creep to cause the transducer’s calibration to change.

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**Applications**

- Liquid-Fuel Engines and Test Stands
- Launch System Ground Support Equipment
- Space Systems
- Cryogenic Process Instrumentation Tested to -196°C (-320°F)

OMEGA’s PX1005 is available in many standard ranges from 15 psi to 1000 psi. A calibration record is supplied with every unit.

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**To Order**

<table>
<thead>
<tr>
<th>RANGE</th>
<th>MODEL NO.</th>
<th>COMPATIBLE METERS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute Pressure</td>
<td></td>
<td>(All Ranges Available in Sealed Gage Pressure)</td>
</tr>
<tr>
<td>0 to 15 psi</td>
<td>PX1005L1-015AV</td>
<td>DP41-S, DP25B-S</td>
</tr>
<tr>
<td>0 to 25 psi</td>
<td>PX1005L1-025AV</td>
<td>DP41-S, DP25B-S</td>
</tr>
<tr>
<td>0 to 50 psi</td>
<td>PX1005L1-050AV</td>
<td>DP41-S, DP25B-S</td>
</tr>
<tr>
<td>0 to 100 psi</td>
<td>PX1005L1-100AV</td>
<td>DP41-S, DP25B-S</td>
</tr>
<tr>
<td>0 to 250 psi</td>
<td>PX1005L1-250AV</td>
<td>DP41-S, DP25B-S</td>
</tr>
<tr>
<td>0 to 500 psi</td>
<td>PX1005L1-500AV</td>
<td>DP41-S, DP25B-S</td>
</tr>
<tr>
<td>0 to 1000 psi</td>
<td>PX1005L1-1KAV</td>
<td>DP41-S, DP25B-S</td>
</tr>
</tbody>
</table>

Comes complete with 5-point calibration.

* Visit us online for compatible meters. Metric ranges available – Consult Engineering.

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

**Ordering Examples:**  
PX1005L1-100AV, 100 psi absolute pressure transducer, with MS33656-4 male pressure connection and integral electrical connector.  
PCS06E-10-6S(SR), mating connector (sold separately).  
PX1005L1-1KSV, 1000 psi sealed gage pressure transducer with MS33656-4 male pressure connection and integral electrical connector.  
PCS06E-10-6S(SR), mating connector (sold separately).

**ACCESSORY**

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCS06E-10-6S(SR)</td>
<td>Mating connector for PX1005 transducers</td>
</tr>
</tbody>
</table>
**THIN-FILM CRYOGENIC PRESSURE TRANSDUCER**

**Dimensions: mm (inch)**

- 17.47 ±0.25 (0.688 ±0.01)
  
  **WRENCH FLATS**

- 6.35 ±0.25 (0.25 ±0.01)

- 61 MAX (2.40)

- 25.7 MAX (1.01)

  **DIA.**

**ELECTRICAL CONNECTOR**

- PCIH0-10-6P (101)
  
  **(OR EQUIVALENT)**

**PRESSURE FITTING**

- MS33656-4

**SPECIFICATIONS**

- **Excitation:** 10 Vdc
- **Full Range Output:** 30 mV nominal, 26 mV minimum
- **Residual Unbalance:** 0 mV ±5% FSO at zero pressure
- **Input Resistance:** 400 Ω nominal
- **Output Resistance:** 400 Ω nominal
- **Insulation Resistance:** 100 MΩ or greater @ 45 Vdc
- **Shunt Calibration:** Provisions for single-arm, external shunt calibration
- **Sensing Element:** 4-active-arm bridge using sputter-deposited thin-film elements.
- **Accuracy:** Combined linearity, hysteresis and repeatability: ±0.25% FSO, BSL [Note: Performance is determined at 25°C ±1°C (77°F ±2°F), open circuit, rated excitation, unless otherwise specified]
- **Operating Temp Range:** -196 to 149°C (-320 to 300°F)
- **Compensated Temp Range:** -196 to 27°C (-320 to 80°F)
- **Thermal Effects:**
  - **Span:** ±0.01% FSO/F
  - **Zero:** ±0.01% FSO/F
- **Vibration Sensitivity:** At 35 g peak from 10 Hz to 2000 Hz (¾ D.A.), the output shall not exceed 0.04% FSO/g for 15 psi units decreasing logarithmically to 0.003% FSO/g for 1000 psi units
- **Natural Frequency:** 35 kHz at 1000 psi decreasing logarithmically 5 kHz at 15 psi
- **Shock:** 100 g, 11 ms half sine wave without calibration shift or damage
- **Humidity:** Per MIL-STD-810, method 507.1
- **Standard Ranges:** 0 to 15, 25, 50, 100, 250, 500 and 1000 psia
- **Proof Pressure:** 200% of rated pressure will not cause changes in performance beyond the specified tolerances
- **Burst Pressure:** 3 times rated pressure
- **Wetted Parts:** 17-4 PH vacuum melt or 15-5 PH stainless steel
- **Pressure Fitting:** MS33656-4
- **Mounting Isolation:** Case isolation ensures that the sensing element will not be affected by external stresses
- **Mating Connector:** PCS06E-10-6S(SR) (sold separately)
- **Weight:** 145 g (5 oz) maximum

**CUSTOM CONFIGURATIONS**

<table>
<thead>
<tr>
<th>PX1005 SERIES</th>
<th>PRESSURE PORT CONNECTION</th>
<th>RANGE</th>
<th>UNITS</th>
<th>OUTPUT</th>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>L = MS33656-4</td>
<td>PCIH0-10-6P (or equal).</td>
<td>015 psi</td>
<td>A, S</td>
<td>V = mV/V Output</td>
<td></td>
</tr>
<tr>
<td>025</td>
<td>A, S</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>050</td>
<td>A, S</td>
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<tr>
<td>100</td>
<td>A, S</td>
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<tr>
<td>250</td>
<td>A, S</td>
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<td></td>
<td></td>
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<tr>
<td>500</td>
<td>A, S</td>
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<td></td>
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<tr>
<td>1K</td>
<td>A, S</td>
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</tbody>
</table>

Metric ranges available – Consult Engineering.

**Ordering Examples:**
- PX1005L1-100AV, MS33656-4 male pressure port, PCIH0-10-6P connector, 100 psi absolute pressure range and mV/V output. PCS06E-10-6S(SR), mating connector (sold separately).
- PX1005L1-015SV, MS33656-4 male pressure port, PCIH0-10-6P style connector, 15 psi sealed gage pressure range and mV/V output. PCS06E-10-6S(SR), mating connector (sold separately).
- PX1005L1-1KSV, MS33656-4 male pressure port, PCIH0-10-6P connector, 1000 psi sealed gage pressure range and mV/V output. PCS06E-10-6S(SR), mating connector (sold separately).

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