PX1004/PX1009 Series

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. The all-welded stainless steel pressure cavity and double-isolated case ensure pressure integrity and reliability in adverse environments.

These high-temperature transducers are available in many standard ranges from 15 psi to 10,000 psi. A NIST-traceable calibration record is available for these units.

**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

**Applications**

- Engine and Test Stands
- High-Temperature Testing
- Process Monitoring
- Ground Support Equipment
- High-Temperature Geothermal Generators

OMEGA’s PX1004 and PX1009 sputtered thin-film pressure transducers are designed for high-temperature service. These instruments can operate in temperatures from -54 to 232°C or 343°C (-65 to 450°F or 650°F).

Yet even in these extreme temperatures, they provide outstanding accuracy, long-term calibration stability, and reliability. Static accuracy is ±0.25%, and thermal zero and sensitivity shifts over their compensated ranges are less than ±0.01%/°F.
**High and Very High Temperature Pressure Transducers**

**Thermal Effects:**
- Span: ±0.01% FSO/°F
- Zero: ±0.01% FSO/°F

**Natural Frequency:**
- 50 kHz at 5000 psi decreasing logarithmically to 5 kHz at 15 psi

**Vibration Sensitivity:** At 35 g peak from 10 Hz to 2000 Hz (limited to ¼ D.A.), the output shall not exceed:
- PX1004
  - 15 psi: 0.04% FSO/g
  - 50 psi: 0.02% FSO/g
  - 100 psi: 0.015% FSO/g
  - 500 psi: 0.006% FSO/g
  - 1000 psi: 0.003% FSO/g
- PX1009
  - 15 psi: 0.05% FSO/g
  - 50 psi: 0.02% FSO/g
  - 100 psi: 0.015% FSO/g
  - 500 psi: 0.006% FSO/g
  - 1000 psi: 0.003% FSO/g

**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, 1000, 1500, 2000, 2500, 5000 and 10,000 psi. Sealed gage available in ranges of 100 psi and above.

**Proof Pressure:**
- PX1004: 200% of rated pressure
- PX1009: 150% of rated pressure

**Burst Pressure:**
- PX1004: 300% of rated pressure
- PX1009: 200% of rated pressure

**Wetted Parts:** 17-4 PH vacuum melt or 15-5 stainless steel

**Pressure Fitting:**
- ½-20 male per MS33656-4

**Mounting Isolation:** Case isolation ensures that the sensing element will not be affected by external stresses

**Mating Connector (PX1004):**
- PCS06E-10-6S(SR) (sold separately)

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

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**To Order**

**RANGE** | **MODEL NO. PX1004** | **MODEL NO. PX1009** | **COMPATIBLE METERS**
---|---|---|---
0 to 15 psi | 0 to 1.0 bar | PX1004L1-015AV | DP41-S, DP25B-S
0 to 25 psi | 0 to 1.7 bar | PX1004L1-025AV | DP41-S, DP25B-S
0 to 50 psi | 0 to 3.4 bar | PX1004L1-050AV | DP41-S, DP25B-S
0 to 100 psi | 0 to 6.9 bar | PX1004L1-100AV | DP41-S, DP25B-S
0 to 250 psi | 0 to 17.2 bar | PX1004L1-250AV | DP41-S, DP25B-S
0 to 500 psi | 0 to 34.5 bar | PX1004L1-500AV | DP41-S, DP25B-S
0 to 1000 psi | 0 to 68.9 bar | PX1004L1-1KAV | DP41-S, DP25B-S
0 to 1500 psi | 0 to 103 bar | PX1004L1-1.5KAV | DP41-S, DP25B-S
0 to 2000 psi | 0 to 138 bar | PX1004L1-2KAV | DP41-S, DP25B-S
0 to 2500 psi | 0 to 172 bar | PX1004L1-2.5KAV | DP41-S, DP25B-S
0 to 5000 psi | 0 to 345 bar | PX1004L1-5KAV | DP41-S, DP25B-S
0 to 10,000 psi | 0 to 689 bar | PX1004L1-10KAV | DP41-S, DP25B-S

**ABSOLUTE PRESSURE (All Ranges Available in Sealed Gage Pressure)**

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

**Ordering Examples:** PX1004L1-100AV, 100 psi absolute pressure transducer with male pressure connection per MS33656-4 and PCH10-10-6P electrical connector. PCS06E-10-6S(SR), mating connector (sold separately). PX1009L0-1KSV, 1000 psi sealed gage pressure transducer with MS33656-4 male pressure connection and 0.8 m (30”) high-temperature cable.

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**CUSTOM CONFIGURATIONS**

**PRESSURE PORT** | **ELECTRICAL CONNECTION** | **RANGE** | **UNITS** | **OUTPUT** | **OPTIONS**
---|---|---|---|---|---
L = MS33656-4 | | | | | | |
015 psi | A | V = mV/V Output
025 | A
050 | A
100 | A, S
250 | A, S
500 | A, S
1K | A, S
2K | A, S
2.5K | A, S
5K | A, S
10K | A, S

**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

**ACCESSORY**

**MODEL NO.** | **DESCRIPTION**
---|---
PCS06E-10-6S(SR) | Mating connector for PX1004 transducers

**Ordering Examples:** PX1004L1-100AV, MS33656-4 male pressure port, twist-lock connector, 100 psi absolute pressure range and mV/V output. PCS06E-10-6S(SR), mating connector (sold separately). PX1004L1-015AV, MS33656-4 male pressure port, twist-lock connector, 15 psi sealed gage pressure range and mV/V output. PCS06E-10-6S(SR), mating connector (sold separately).

PX1009L1-1KSV-CAL11, MS33656-4 male pressure port, 0.8 m (30”) high-temperature cable, 1000 psi sealed gage pressure range, mV/V output and optional 11-point NIST-traceable calibration.

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**To the 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 Examples:** PX1004L1-100AV, MS33656-4 male pressure port, twist-lock connector, 100 psi absolute pressure range and mV/V output. PCS06E-10-6S(SR), mating connector (sold separately). PX1004L1-015AV, MS33656-4 male pressure port, twist-lock connector, 15 psi sealed gage pressure range and mV/V output. PCS06E-10-6S(SR), mating connector (sold separately).