

# HIGH TEMPERATURE PRESSURE TRANSDUCERS



Model PX1009L0-1KAV  
Shown Actual Size



Model PX1004L1-1KAV  
Shown Actual Size

## PX1004/PX1009 Series

mV/V Output

0-15 to 0-10,000 psi

0-1 to 0-700 bar

1 bar = 14.5 psi

1 kg/cm<sup>2</sup> = 14.22 psi

1 Atmosphere = 14.7 psi =

29.93 in-Hg = 760.2 mm-Hg =

1.014 bar

## Features

- ✓ Two Versions that Operate from -54°C to 232°C (-65°F to +450°F) (PX1004) or -54°C to 343°C (-65°F to +650°F) (PX1009)
- ✓ High Performance
- ✓ Proven High Reliability
- ✓ Exceptional Calibration Stability

## 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°C to 232°C or 343°C (-65°F to +450°F or +650°F).

Yet, even in these difficult 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 range are less than ±0.01%/°F.

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 ensures pressure integrity and reliability in these tough 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.

PX1004  
**\$1850**  
Model Shown

## 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:**

PX1004: 100 MΩ or greater

@ 45 Vdc. PX1009: 50 MΩ or greater

@ 45 Vdc.

**Electrical Connections:**

PX1004: Bendix PCIH0-10-6P or

equivalent. PX1009: Color coded pigtail leads, 30 inches (.8m) long, minimum.

## To Order: (Specify Model Number)

RANGE (psi)	MODEL NUMBER PX1004	PRICE	MODEL NUMBER PX1009	PRICE	COMPATIBLE METER
<b>Absolute Pressure (All Ranges Available in Sealed Gage Pressure)</b>					
0 to 15	PX1004L1-015AV	\$1850	PX1009L0-015AV	\$2500	DP41-S, DP25-S
0 to 25	PX1004L1-025AV	1850	PX1009L0-025AV	2500	DP41-S, DP25-S
0 to 50	PX1004L1-050AV	1850	PX1009L0-050AV	2500	DP41-S, DP25-S
0 to 100	PX1004L1-100AV	1850	PX1009L0-100AV	2500	DP41-S, DP25-S
0 to 250	PX1004L1-250AV	1850	PX1009L0-250AV	2500	DP41-S, DP25-S
0 to 500	PX1004L1-500AV	1850	PX1009L0-500AV	2500	DP41-S, DP25-S
0 to 1000	PX1004L1-1KAV	1850	PX1009L0-1KAV	2500	DP41-S, DP25-S
0 to 1500	PX1004L1-1.5KAV	1850	PX1009L0-1.5KAV	2500	DP41-S, DP25-S
0 to 2000	PX1004L1-2KAV	1850	PX1009L0-2KAV	2500	DP41-S, DP25-S
0 to 2500	PX1004L1-2.5KAV	1850	PX1009L0-2.5KAV	2500	DP41-S, DP25-S
0 to 5000	PX1004L1-5KAV	1850	PX1009L0-5KAV	2500	DP41-S, DP25-S
0 to 10000	PX1004L1-10KAV	1850	PX1009L0-10KAV	2500	DP41-S, DP25-S

Metric Ranges Available - Consult Engineering

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

### Ordering Examples:

1.) **PX1004L1-100AV** is a 100 psi Absolute Pressure transducer, with a male pressure connection per MS33656-4 and a Bendix electrical connector, **\$1850.**

Mating Connector, **PCS06E-10-6S(SR)**, **\$135.00.**

2.) **PX1009L0-1KSV** is a 1,000 psi Sealed Gage Pressure transducer, with a male pressure connection per MS33656-4 and a 30 inch long high temperature cable, **\$2500.**



MILLIVOLT OUTPUT  
PRESSURE TRANSDUCERS

**B**

**Sensing Element:**

4 active-arm bridge using sputter-deposited thin film elements.

**Accuracy:** Combined Linearity, Hysteresis and Repeatability: ±0.25% FSO, BSL (over the compensated temperature range)

(Note: Performance is determined at 25°C ± 1°C (77°F ± 2°F), open circuit, rated excitation, unless otherwise specified)

**Operating Temp Range:**

PX1004: -54 to 232°C (-65 to 450°F)  
 PX1009: -54 to 343°C (-65 to 650°F)

**Compensated Temp Range:**

PX1004: +24 to 204°C (+75 to 400°F)  
 PX1009: +24 to 316°C (+75 to 600°F)

**Thermal Effects:**

**Span:** ±0.01% FSO/°F  
**Zero:** ±0.01% FSO/°F

**Natural Frequency:**

50 kHz at 5000 psi decreasing logarithmically 5 kHz at 15 psi

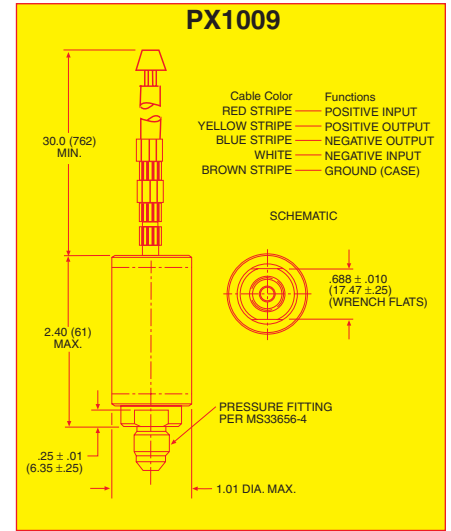
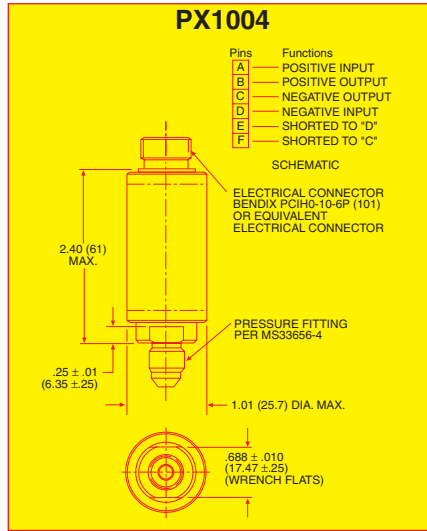
**Vibration Sensitivity:** At 35g peak from 10 Hz to 2000 Hz (limited to 1/2" D.A.), the output shall not exceed:

	PX1004	PX1009
15 psi	0.04% FSO/g	0.15% FSO/g
50 psi	0.02% FSO/g	0.07% FSO/g
100 psi	0.015% FSO/g	0.05% FSO/g
500 psi	0.006% FSO/g	0.02% FSO/g
≥1000 psi	0.003% FSO/g	0.02% FSO/g

**Shock:** 100g, 11 msec half sine wave without calibration shift or damage

**Humidity:**

Per MIL-STD-810, Method 507.1



Dimensions shown in Inches (mm)

Standard Ranges: 0-15, 25, 50, 100, 250, 500, 1000, 1500, 2000, 2500, 5000 and 10,000 psia. Sealed gage available in ranges from 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:**

1/16"-20 male per MS33656-4

**Mounting Isolation:** Case isolation assures that the sensing element will

not be affected by external stresses

**Mating Connector (PX1004):**

PCS06E-106S(SR) (not included)

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

**Mating Connector**  
**PCS06E-10-6S(SR)**  
**\$135.00**

**CUSTOM CONFIGURATIONS**

SERIES	PRESSURE PORT [ 1 ]	ELECTRICAL CONNECTION [ 2 ]	RANGE [ 3 ]	UNITS [ 4 ]	OUTPUT [ 5 ]	OPTIONS [ 6 ]
PX1004/1009	L = MS33656-4	PX1004 only 1 = PCIH0-10-6P Connector (or Equal) Mating Connector (not included) PCS06E-10-6S(SR) \$135 PX1009 only 0 = color coded cable, .76 m (30") min.	015 psi	A	V = mV/V Output \$1500	CAL5 = 5 point NIST traceable Calibration +\$75 CAL11 = 11 point NIST traceable calibration +\$150
			025	A		
			050	A		
			100	A, S		
			250	A, S		
			500	A, S		
			1K	A, S		
			1.5K	A, S		
			2K	A, S		
			2.5K	A, S		
5K	A, S					
10K	A, S					

*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 Examples:**

- 1.) **PX1004L1-100AV** has a MS33656-4 male pressure port, Bendix connector, 100 psi Absolute Pressure Range, and a mV/V output, \$1850. Mating Connector (not included) **PCS06E-10-6S(SR)**, \$135.00.
- 2.) **PX1004L1-015SV** has a MS33656-4 male pressure port, Bendix style connector, 15 psi Sealed Gage Pressure Range, and a mV/V output, \$1850. Mating Connector (not included) **PCS06E-10-6S(SR)**, \$135.00.
- 3.) **PX1009L1-1KSV-CAL11** has a MS33656-4 male pressure port, 30" (.8m) high temperature cable, 1,000 psi Sealed Gage Pressure Range, mV/V output and an 11 point NIST traceable calibration, \$2500+\$150=\$2650.