

HIGH- AND VERY-HIGH-TEMPERATURE PRESSURE TRANSDUCERS

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/cm² = 14.22 psi

1 atmosphere = 14.7 psi = 29.93

inHg = 760.2 mmHg = 1.014 bar

Starts at
\$1850



PX1009L0-1KAV, \$2500,
shown actual size.



PX1004L1-1KAV, \$1850,
shown actual size.

- ✓ Two Versions That Operate from -54 to 232°C (-65 to 450°F) (PX1004) or -54 to 343°C (-65 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 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 $\pm 0.25\%$, and thermal zero and sensitivity shifts over their compensated ranges are less than $\pm 0.01\%/^{\circ}\text{F}$.

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 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 $\pm 5\%$ FSO at zero pressure

Input Resistance: 400 Ω nominal

Output Resistance: 400 Ω nominal

Insulation Resistance:

PX1004: 100 M Ω or greater @ 45 Vdc

PX1009: 50 M Ω or greater @ 45 Vdc

Electrical Connections:

PX1004: Bendix PCIH0-10-6P or equivalent

PX1009: Color-coded pigtail leads, 0.8 m (30") long, minimum

Sensing Element:

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

Accuracy: Combined linearity, hysteresis and repeatability: $\pm 0.25\%$ FSO, BSL (over the compensated temperature range)

[Note: Performance is determined at 25°C $\pm 1^{\circ}\text{C}$ (77°F $\pm 2^{\circ}\text{F}$), open circuit, rated excitation, unless otherwise specified]

Operating Temp Range:

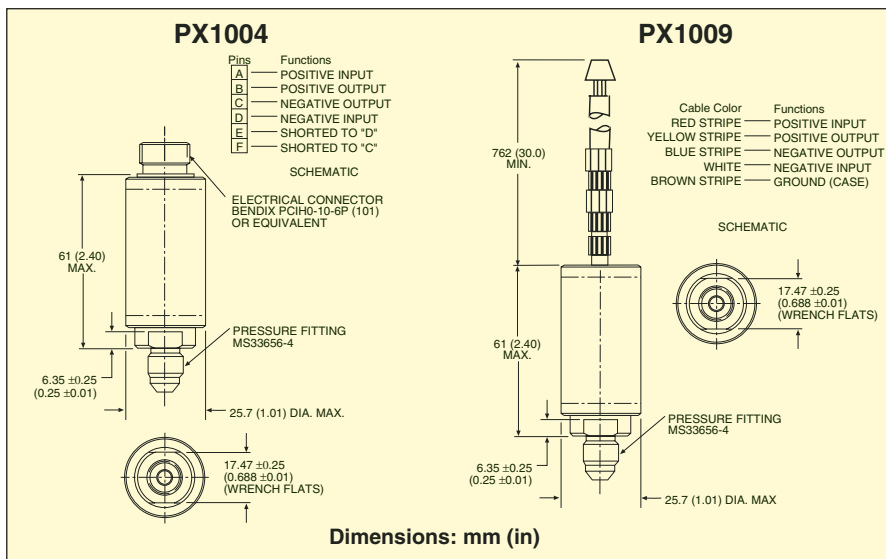
PX1004: -54 to 232°C (-65 to 450°F)

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)



HIGH AND VERY HIGH TEMPERATURE PRESSURE TRANSDUCERS

Thermal Effects:

Span: $\pm 0.01\%$ FSO/ $^{\circ}$ F

Zero: $\pm 0.01\%$ FSO/ $^{\circ}$ 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 $\frac{1}{2}$ " 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: 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 psia. 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:

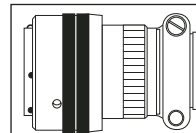
$\frac{1}{8}$ -20 male per MS33656-4

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

Mating Connector (PX1004):

PCS06E-10-6S(SR) (not included)

Weight: 145 g (5 oz) maximum



Mating
Connector
PCS06E-10-6S(SR)
\$135

MOST POPULAR MODELS HIGHLIGHTED!

To Order (Specify Model Number)

RANGE		MODEL NO. PX1004	PRICE	MODEL NO. PX1009	PRICE	COMPATIBLE METERS*
Absolute Pressure (All Ranges Available in Sealed Gage Pressure)						
0 to 15 psi	0 to 1.0 bar	PX1004L1-015AV	\$1850	PX1009L0-015AV	\$2500	DP41-S, DP25B-S
0 to 25 psi	0 to 1.7 bar	PX1004L1-025AV	1850	PX1009L0-025AV	2500	DP41-S, DP25B-S
0 to 50 psi	0 to 3.4 bar	PX1004L1-050AV	1850	PX1009L0-050AV	2500	DP41-S, DP25B-S
0 to 100 psi	0 to 6.9 bar	PX1004L1-100AV	1850	PX1009L0-100AV	2500	DP41-S, DP25B-S
0 to 250 psi	0 to 17.2 bar	PX1004L1-250AV	1850	PX1009L0-250AV	2500	DP41-S, DP25B-S
0 to 500 psi	0 to 34.5 bar	PX1004L1-500AV	1850	PX1009L0-500AV	2500	DP41-S, DP25B-S
0 to 1000 psi	0 to 68.9 bar	PX1004L1-1KAV	1850	PX1009L0-1KAV	2500	DP41-S, DP25B-S
0 to 1500 psi	0 to 103 bar	PX1004L1-1.5KAV	1850	PX1009L0-1.5KAV	2500	DP41-S, DP25B-S
0 to 2000 psi	0 to 138 bar	PX1004L1-2KAV	1850	PX1009L0-2KAV	2500	DP41-S, DP25B-S
0 to 2500 psi	0 to 172 bar	PX1004L1-2.5KAV	1850	PX1009L0-2.5KAV	2500	DP41-S, DP25B-S
0 to 5000 psi	0 to 345 bar	PX1004L1-5KAV	1850	PX1009L0-5KAV	2500	DP41-S, DP25B-S
0 to 10,000 psi	0 to 689 bar	PX1004L1-10KAV	1850	PX1009L0-10KAV	2500	DP41-S, DP25B-S

Comes with 5-point calibration.

* See section D for compatible meters.

Metric ranges available – by quotation.

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 Bendix electrical connector, **\$1850**. **PCS06E-10-6S(SR)**, mating connector, **\$135**. **PX1009L0-1KSV**, 1000 psi sealed gage pressure transducer with **MS33656-4** male pressure connection and 0.8 m (30") high-temperature cable, **\$2500**.

ACCESSORY

MODEL NO.	PRICE	DESCRIPTION
ME-1805	\$131	Reference Book: Instrumentation Fundamentals

CUSTOM CONFIGURATIONS

SERIES	PRESSURE PORT	ELECTRICAL CONNECTION	RANGE	UNITS	OUTPUT	OPTIONS
PX1004/1009	[1]	[2]	[3]	[4]	[5]	[6]
L = MS33656-4			015 psi	A	V = mV/V Output \$1500	CAL11 = 11-point NIST-traceable calibration +\$250
			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		
PX1004 only 1 = PCIH0-10-6P Connector (or equal). Mating connector (not included), order PCS06E-10-6S(SR) \$135 . PX1009 only 0 = color-coded cable, 0.76 m (30") min.						
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						

Metric ranges available – by quotation.

Ordering Examples: **PX1004L1-100AV**, **MS33656-4** male pressure port, Bendix connector, 100 psi absolute pressure range and mV/V output, **\$1850**. **PCS06E-10-6S(SR)**, mating connector (not included), **\$135**. **PX1004L1-015SV**, **MS33656-4** male pressure port, Bendix style connector, 15 psi sealed gage pressure range and mV/V output, **\$1850**. **PCS06E-10-6S(SR)**, mating connector (not included), **\$135**. **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 an 11-point NIST-traceable calibration, **\$2500 + \$250 = \$2750**.

