

# SPUTTERED THIN FILM PRESSURE TRANSDUCER

## GAGE/ABSOLUTE/SEALED GAGE



**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 inHg = 760.2 mmHg = 1.014 bar

### PX1000 Series



- ✓ Proven Sensor Design
- ✓ Rugged Dual Case Isolation
- ✓ High Performance
- ✓ Highly Reliable
- ✓ Long-Term Stability

The OMEGA® PX1000 Sputtered Thin Film Transducer is noted for high accuracy and excellent long-term stability and reliability. Performance stability is ±0.1% for any combination of constant pressure and temperature within the operating range. The thermal error band performance is typically better than 0.25% within any 50°F temperature band.

Highly stable sensing elements are achieved by sputtered film deposition which—coupled with advanced structural design—create transducers with maximum, combined nonlinearity, hysteresis and nonrepeatability error of 0.25% FSO.

Available in many standard ranges from 15 psi to 10,000 psi, the basic design of the PX1000 features all welded construction with proven strain isolation.

The PX1000 sputtered gage pressure transducers are manufactured in accordance with the program quality requirements of MIL-Q-9858A

### SPECIFICATIONS

#### ELECTRICAL

**Excitation:** 10 Vdc rated (15 Vdc maximum)  
**Output:** 30 mV typical, 26 mV minimum  
**Residual Unbalance:** Within ±2% FSO  
**Bridge Resistance:** 400 Ω nominal



PX1000L1-100AV, shown actual size.

**Combined Linearity, Hysteresis and Nonrepeatability:** ±0.25% FSO, BSL  
**Insulation Resistance:** 500MΩ or greater at 50Vdc

**Breakdown Voltage:** 100 Vdc or pk ac between case and any terminal without damage

**Shunt Calibration:** Provisions for single-arm, external shunt calibration

**Sensing Element:** 4-active-arm bridge using sputter-deposited thin-film elements

#### ENVIRONMENTAL

**Operating Temp Range:** -54 to 150°C (-65 to 300°F)

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

#### Thermal Effects:

**Span:** ±0.005% FSO/°F  
**Zero:** ±0.005% FSO/°F

#### Thermal Stability:

**Span:** 0.10% FSO  
**Zero:** 0.15% FSO

**Vibration Sensitivity:** At 35 g peak from 10 Hz to 2000 Hz (½" D.A. maximum), the output shall not exceed 0.04% FSO/g for 15 psi units decreasing logarithmically to less than 0.001% FSO/g for 10,000 psi units

**Natural Frequency:** 80 kHz for 10,000 psi decreasing logarithmically to 5 kHz at 15 psi

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

**Humidity:** Absolute, sealed per MIL-STD-810; Vented gage – external case limited to dry, non-corrosive, non-conductive gasses

**Performance Stability:** ±0.1% FSO for a minimum of 24 hours when subjected to any combination of constant temperature and pressure within specified limits

#### PRESSURE

**Standard Ranges:** 0 to 15, 25, 50, 100, 250, 500, 1000, 1500, 2000, 2500, 5000 and 10,000 psia, Absolute and Sealed. gage available in ranges of 100 psi and above.

**Proof of Pressure:** 200% times rated pressure not to exceed 15,000 psi, will not cause changes in performance beyond the specified tolerances

**Burst Pressure:** 300% of rated pressure not to exceed 20,000 psi

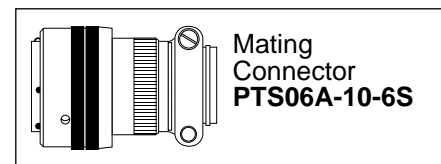
#### MECHANICAL

**Wetted Parts:** 17-4 PH stainless steel

**Pressure Fitting:** ⅜"-20 male per MS33656-4

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

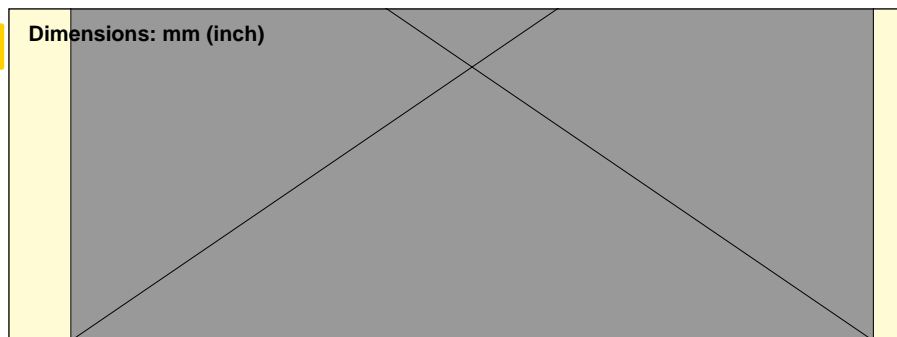
**Mating Connector:** PTS06A-10-6S (sold separately)



Mating Connector  
 PTS06A-10-6S



Dimensions: mm (inch)





DP25B-S shown smaller than actual size. Visit [omega.com/dp25b\\_s](http://omega.com/dp25b_s)

To Order		
Models with mV/V Output, MS33656-4 Fitting and Integral Connector		
RANGE	MODEL NO.	COMPATIBLE METERS*
<b>ABSOLUTE PRESSURE (Note: All Ranges Available in Absolute Pressure)</b>		
0 to 15 psi	PX1000L1-015AV	DP25B-S, DP41-S
0 to 25 psi	PX1000L1-025AV	DP25B-S, DP41-S
0 to 50 psi	PX1000L1-050AV	DP25B-S, DP41-S
0 to 100 psi	PX1000L1-100AV	DP25B-S, DP41-S
<b>GAGE PRESSURE (Note: All Ranges Also Available in Sealed Gage Pressure)</b>		
0 to 15 psi	PX1000L1-015GV	DP25B-S, DP41-S
0 to 25 psi	PX1000L1-025GV	DP25B-S, DP41-S
0 to 50 psi	PX1000L1-050GV	DP25B-S, DP41-S
0 to 100 psi	PX1000L1-100GV	DP25B-S, DP41-S
0 to 250 psi	PX1000L1-250GV	DP25B-S, DP41-S
0 to 500 psi	PX1000L1-500GV	DP25B-S, DP41-S
0 to 1000 psi	PX1000L1-1KGV	DP25B-S, DP41-S
0 to 1500 psi	PX1000L1-1.5KGV	DP25B-S, DP41-S
0 to 2500 psi	PX1000L1-2.5KGV	DP25B-S, DP41-S
0 to 3000 psi	PX1000L1-3KGV	DP25B-S, DP41-S
0 to 5000 psi	PX1000L1-5KGV	DP25B-S, DP41-S
0 to 10,000 psi	PX1000L1-10KGV	DP25B-S, DP41-S

interchangeable with CEC Model 1000 Metric ranges available – Consult Engineering.

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

**Ordering Examples:** PX1000L1-100AV, is a 100 psi absolute pressure transducer, with a male pressure connection per MS33656-4 and an integral electrical connector. Mating connector, PTS06A-10-6S.

PX1000L1-5KGV, 5000 psi sealed gage pressure transducer, with a male pressure connection per MS33656-4 and an integral electrical connector. Mating connector, PTS06A-10-6S.

### CUSTOM CONFIGURATIONS

SERIES	PRESSURE PORT	ELECTRICAL CONNECTION	RANGE	UNITS	OUTPUT	OPTIONS
PX1000*	[ 1 ]	[ 2 ]	[ 3 ]	[ 4 ]	[ 5 ]	[ 6 ]
L = MS33656-4			015 psi	A,G	V = mV/V output	CAL5 = 5-point NIST-traceable calibration
			025	A,G		CAL11 = 11-point NIST-traceable calibration
			050	A,G		
			100	A,G,S		
			250	A,G,S		
			500	A,G,S		
			1K	A,G,S		
			1.5K	A,G,S		
			2.5K	A,G,S		
			3K	A,G,S		
			5K	A,G,S		
			10K	A,G,S		
		1 = PTIH-10-6P connector (or equal). Mating connector (not included), order PTS06A-10-6S.				
						<b>To order a custom configuration:</b>
						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

Interchangeable with CEC Model

1000 Metric ranges available – Consult Engineering.

**Ordering Examples:** PX1000L1-100AV, has an, MS33656-4 male pressure port, Bendix connector, 100 psi absolute pressure range and a mV/V output. Mating connector (not included) PTS06A-10-6S.

PX5000L1-100SV, has an, MS33656-4 male pressure port, Bendix connector, 100 psi sealed gage pressure range, and a mV/V output. Mating connector (not included) PTS06A-10-6S.

PX1000L1-5KSV-CAL11, has an, MS33656-4 male pressure port, Bendix connector, 5000 psi sealed gage pressure range, and a mV/V output. and an 11-point NIST-traceable calibration. Mating connector (not included) PTS06A-10-6S.