

# THIN-FILM CRYOGENIC PRESSURE TRANSDUCER

## PX1005 Series

mV/V Output

0-15 to 0-1000 psi

0-1 to 0-70 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

All Ranges  
**\$1500**



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

## 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 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

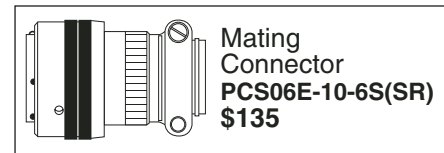


PX1005L1-1KAV, \$1500, shown actual size.

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.

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



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

### MOST POPULAR MODELS HIGHLIGHTED!

#### To Order (Specify Model Number)

Models with mV/V Output and Bendix Connector

RANGE	MODEL NO.	PRICE	COMPATIBLE METERS*	
<b>Absolute Pressure (All Ranges Available in Sealed Gage Pressure)</b>				
0 to 15 psi	0 to 1.0 bar	PX1005L1-015AV	\$1500	DP41-S, DP25B-S
0 to 25 psi	0 to 1.7 bar	PX1005L1-025AV	1500	DP41-S, DP25B-S
0 to 50 psi	0 to 3.4 bar	PX1005L1-050AV	1500	DP41-S, DP25B-S
0 to 100 psi	0 to 6.9 bar	PX1005L1-100AV	1500	DP41-S, DP25B-S
0 to 250 psi	0 to 17.2 bar	PX1005L1-250AV	1500	DP41-S, DP25B-S
0 to 500 psi	0 to 34.5 bar	PX1005L1-500AV	1500	DP41-S, DP25B-S
0 to 1000 psi	0 to 68.9 bar	PX1005L1-1KAV	1500	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:** PX1005L1-100AV, 100 psi absolute pressure transducer, with MS33656-4 male pressure connection and integral electrical connector, \$1500.

PCS06E-10-6S(SR), mating connector (not included), \$135. PX1005L1-1KSV, 1000 psi sealed gage pressure transducer with MS33656-4 male pressure connection and integral electrical connector, \$1500. PCS06E-10-6S(SR), mating connector (not included), \$135.

#### ACCESSORY

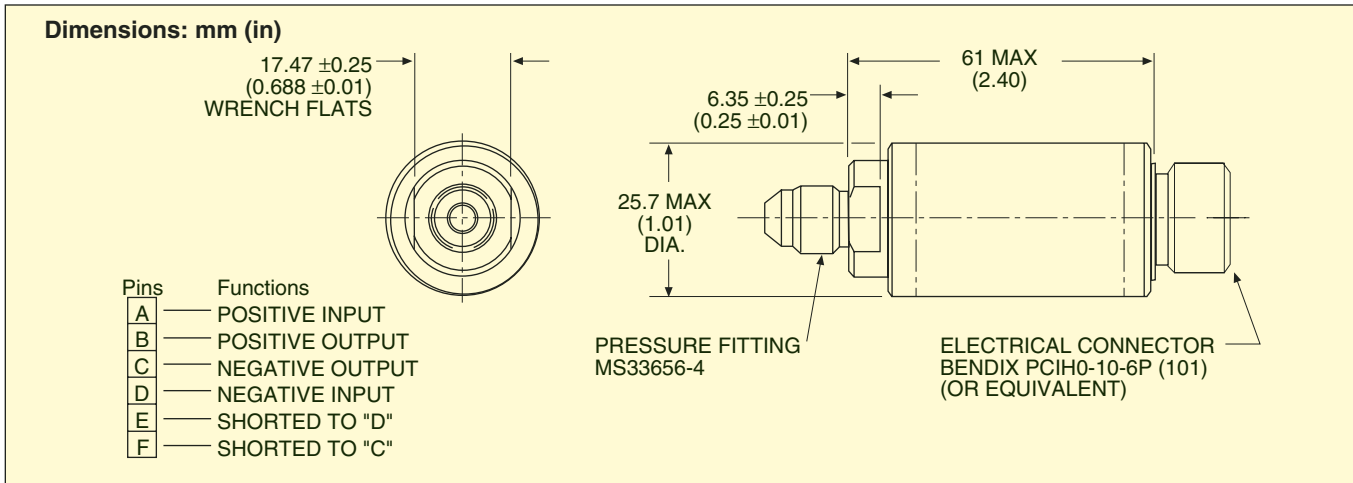
MODEL NO.	PRICE	DESCRIPTION
EE-2582	110	Reference Book: Mechanical Variables Measurement

# THIN-FILM CRYOGENIC PRESSURE TRANSDUCER



MIL-STD-883C  
PRESSURE TRANSDUCERS

B



## 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 (½" 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:**

¼"-20 male per MS33656-4

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

**Mating Connector:**

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

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

## CUSTOM CONFIGURATIONS

SERIES	PRESSURE PORT	ELECTRICAL CONNECTION	RANGE	UNITS	OUTPUT	OPTIONS
[ 1 ]	[ 2 ]	[ 3 ]	[ 4 ]	[ 5 ]	[ 6 ]	
PX1005	[ 1 ]	[ 2 ]	[ 3 ]	[ 4 ]	[ 5 ]	[ 6 ]
	L = MS33656-4		015 psi	A, S	V = mV/V Output	\$1500
			025	A, S		
			050	A, S		
			100	A, S		
			250	A, S		
			500	A, S		
			1K	A, S		
	1 = PTIH0-10-6P connector (or equal). Mating connector (not included), order PCS06E-10-6S(SR) \$135.					
<p><b>To order a custom configuration:</b></p> <ol style="list-style-type: none"> <li>1. Select a pressure port</li> <li>2. Select electrical connection</li> <li>3. Select a pressure range</li> <li>4. Select pressure units</li> <li>5. Select output</li> <li>6. Select options and agency approvals</li> </ol>						

Metric ranges available – by quotation.

**Ordering Examples:** PX1005L1-100AV, MS33656-4 male pressure port, Bendix connector, 100 psi absolute pressure range and mV/V output, \$1500. PCS06E-10-6S(SR), mating connector (not included), \$135. PX1005L1-015SV, MS33656-4 male pressure port, Bendix style connector, 15 psi sealed gage pressure range and mV/V output, \$1500. PCS06E-10-6S(SR), mating connector (not included), \$135. PX1005L1-1KSV, MS33656-4 male pressure port, Bendix connector, 1000 psi sealed gage pressure range and mV/V output, \$1650. PCS06E-10-6S(SR), mating connector (not included), \$135.