

THIN-FILM CRYOGENIC PRESSURE TRANSDUCER

mV/V Output

0-15 to 0-1000 psi

0-1 to 0-70 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

PX1005 Series All Ranges



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

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 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.



Shown larger than actual size.

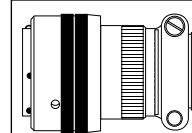


PX1005L1-1KAV, shown actual size.

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



Mating Connector
PCS06E10-6S
(non-RoHS)

To Order

Models with mV/V Output and Bendix Connector

RANGE		MODEL NO.	COMPATIBLE METERS*
Absolute Pressure (All Ranges Available in Sealed Gage Pressure)			
0 to 15 psi	0 to 1.0 bar	PX1005L1-015AV	DP41-S, DP25B-S
0 to 25 psi	0 to 1.7 bar	PX1005L1-025AV	DP41-S, DP25B-S
0 to 50 psi	0 to 3.4 bar	PX1005L1-050AV	DP41-S, DP25B-S
0 to 100 psi	0 to 6.9 bar	PX1005L1-100AV	DP41-S, DP25B-S
0 to 250 psi	0 to 17.2 bar	PX1005L1-250AV	DP41-S, DP25B-S
0 to 500 psi	0 to 34.5 bar	PX1005L1-500AV	DP41-S, DP25B-S
0 to 1000 psi	0 to 68.9 bar	PX1005L1-1KAV	DP41-S, DP25B-S

Comes complete with 5-point calibration.

* Visit us online for compatible meters.

Metric ranges available – Consult Engineering.

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.

PCS06E10-6S, mating connector (sold separately).

PX1005L1-1KS, 1000 psi sealed gage pressure transducer with MS33656-4 male pressure connection and integral electrical connector. PCS06E10-6S, mating connector (sold separately).

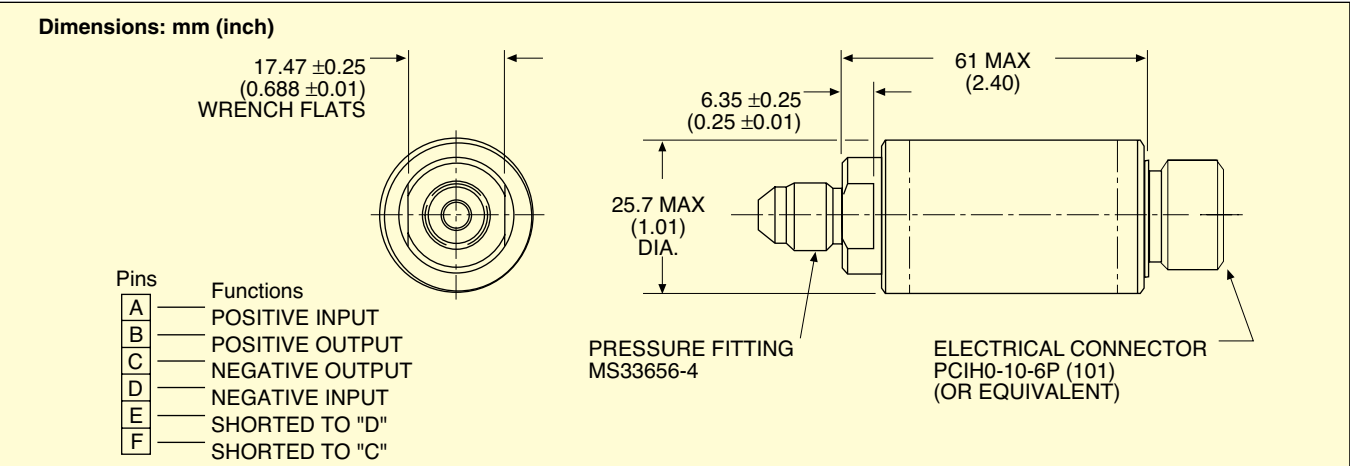
ACCESSORY

MODEL NO.	DESCRIPTION
PCS06E10-6S	Mating connector for PX1005 transducers (non-RoHS)

THIN-FILM CRYOGENIC PRESSURE TRANSDUCER



MILLIVOLT OUTPUT
PRESSURE TRANSDUCERS
B



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: 100 M Ω 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: \pm 0.25% FSO, BSL [Note: Performance is

determined at 25°C \pm 1°C (77°F \pm 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: \pm 0.01% FSO/°F
Zero: \pm 0.01% FSO/°F
Vibration Sensitivity: At 35 g peak from 10 Hz to 2000 Hz ($\frac{1}{2}$ " 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: $\frac{7}{16}$ -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 (non-RoHS) (sold separately)
Weight: 145 g (5 oz) maximum

CUSTOM CONFIGURATIONS

PX1005 SERIES	PRESSURE PORT [1]	ELECTRICAL CONNECTION [2]	RANGE [3]	UNITS [4]	OUTPUT [5]	OPTIONS [6]
	L = MS33656-4		015 psi	A, S	V = mV/V Output	
			025	A, S		
			050	A, S		
			100	A, S		
			250	A, S		
			500	A, S		
			1K	A, S		
	1 = PCIH0-10-6P connector (or equal). Mating connector (sold separately), order PCS06E10-6S					
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: PX1005L1-100AV, MS33656-4 male pressure port, PCIH0-10-6P connector, 100 psi absolute pressure range and mV/V output. PCS06E10-6S, mating connector (sold separately).
PX1005L1-015SV, MS33656-4 male pressure port, PCIH0-10-6P style connector, 15 psi sealed gage pressure range and mV/V output. PCS06E10-6S, mating connector (sold separately).
PX1005L1-1KSV, MS33656-4 male pressure port, PCIH0-10-6P connector, 1000 psi sealed gage pressure range and mV/V output. PCS06E10-6S, mating connector (sold separately).