

# DIFFUSED SEMICONDUCTOR PRESSURE TRANSDUCER

## 1/4 NPT FITTING

### PX6000 Series

0-5 Vdc Output

0-15 to 0-300 psi

0-1 to 0-20 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  
**\$560**



- ✓ High Reliability
- ✓ Long-Term Stability
- ✓ All Stainless Steel Case
- ✓ Vacuum Range Available

### Applications

- ✓ Automotive Testing
- ✓ Research and Development
- ✓ Engineering Testing and Evaluation
- ✓ Production Testing
- ✓ Flight Recorders
- ✓ Engine Monitoring
- ✓ Ground Support Equipment
- ✓ Built-In Temperature Sensor

OMEGA's PX6000 pressure transducer fits easily into your application. This low-cost transducer is small and light, and mounting requires no bulky structures. You select from 3 electrical terminations and 6 pressure fittings. The sensor is a small [about 2.5 mm (0.1")] square silicon chip with 4 diffused strain gages, mounted in the stainless steel case. Laser-trimmed resistors provide temperature compensation and adjust zero balance and span. The 0 to 5 Vdc output is compatible

PX6000C1-100G5T,  
\$560, shown actual size.



with most control and data acquisition systems.

The PX6000 Series uses solid state media isolation for improved reliability. Thin films of chemically inert materials are deposited or grown on the chip surface to provide electrical isolation between the sensor and the pressure medium. The sensor is less sensitive to vibration and more dependable in high-shock environments because the films add no significant mass. Corrosion resistance is outstanding, and the isolation will remain effective because there is no gel or oil column to deteriorate.

### SPECIFICATIONS

#### 0 to 5 Vdc Models

**Excitation:** 12 to 40 Vdc unregulated

**Output:** 0 to 5 Vdc ±0.1Vdc adjustable ±10% FSO

#### Input Current:

15 mA max with no load

**Output Resistance:** Less than 200 Ω

**Zero Balance:** 0 V ±0.1 Vdc Adjustable ±5% FSO

**Dielectric Isolation Resistance:** 100 MΩ minimum at 45 Vdc applied between the case or a conductive medium and the bridge circuit

**Sensing Element:** 4-active-arm bridge using a micro-machined diffused silicon diaphragm sensor, thin-film media and dielectric isolation barriers

**MOST POPULAR MODELS HIGHLIGHTED!**

### To Order (Specify Model Number)

Models with 0 to 5 Vdc Output, 1/4 NPT-M Pressure Connection

RANGE	MODEL NO.	PRICE	COMPATIBLE METERS*
<b>VACUUM</b>			
30 to 0 inHg	102 to 0 kPa	PX6000C[*]1-30VAC5T	\$560 DP41-E, DP25B-E, DP24-E
<b>ABSOLUTE PRESSURE</b>			
0 to 15 psi	0 to 1.0 bar	PX6000C[*]-015A5T	\$560 DP41-E, DP25B-E, DP24-E
0 to 20 psi	0 to 1.4 bar	PX6000C[*]-020A5T	560 DP41-E, DP25B-E, DP24-E
0 to 50 psi	0 to 3.4 bar	PX6000C[*]-050A5T	560 DP41-E, DP25B-E, DP24-E
0 to 100 psi	0 to 6.9 bar	PX6000C[*]-100A5T	560 DP41-E, DP25B-E, DP24-E
0 to 200 psi	0 to 13.8 bar	PX6000C[*]-200A5T	560 DP41-E, DP25B-E, DP24-E
0 to 300 psi	0 to 20.7 bar	PX6000C[*]-300A5T	560 DP41-E, DP25B-E, DP24-E
<b>GAGE PRESSURE</b>			
0 to 15 psi	0 to 1.0 bar	PX6000C[*]-015G5T	\$560 DP41-E, DP25B-E, DP24-E
0 to 20 psi	0 to 1.4 bar	PX6000C[*]-020G5T	560 DP41-E, DP25B-E, DP24-E
0 to 50 psi	0 to 3.4 bar	PX6000C[*]-050G5T	560 DP41-E, DP25B-E, DP24-E
0 to 100 psi	0 to 6.9 bar	PX6000C[*]-100G5T	560 DP41-E, DP25B-E, DP24-E
0 to 200 psi	0 to 13.8 bar	PX6000C[*]-200G5T	560 DP41-E, DP25B-E, DP24-E
0 to 300 psi	0 to 20.7 bar	PX6000C[*]-300G5T	560 DP41-E, DP25B-E, DP24-E

Comes with 5-point calibration.

[\*] Insert "0" for 0.6 m cable, "1" for twist-lock connector or "6" for DIN connector.

\* See section D for compatible meters.

Metric ranges available – consult Engineering.

**Ordering Examples:** PX6000C1-050G5T, 50 psi gage pressure transducer with 0 to 5 Vdc output, PTIH-10-6P electrical connection and MS33656-4 male pressure port, \$560.

PTS06A-10-6S, mating connector (not included), \$47. PX6000C1-015A5T, 15 psi absolute

pressure transducer with 0 to 5 Vdc output, PTIH-10-6P electrical connection and MS33656-4 male pressure port, \$560. PTS06A-10-6S, mating connector (not included), \$47.

### ACCESSORY

MODEL NO.	PRICE	DESCRIPTION
CH-5656	\$80	Reference Book: Observers in Control Systems



VOLTAGE OUTPUT PRESSURE TRANSDUCERS

**B**



# DIFFUSED SEMICONDUCTOR TRANSDUCER

**Temperature Sensor:** Output resistance @ 24°C (75°F) 900 to 1500 Ω

**Temperature Coefficient:** 8% min, 10% max per 55.5°C (100°F)

**Accuracy:** Combined linearity, hysteresis and repeatability ≤ ±0.25% FSO for all ranges

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

**Compensated Temp Range:** -18 to 82°C (0 to 180°F)

**Thermal Effects:**

**Span:** ≤ ±0.03% of FSO/°F

**Zero:** ≤ ±0.03% of FSO/°F

**Vibration Sensitivity:** At 20 g peak sinusoidal vibration from 10 Hz to 2000 Hz (½" D.A.), the output shall not exceed 0.04% FSO/g for 15 psi range to 0.005% FSO/g for 100 psi and above

**Natural Frequency:** Greater than 35 kHz for 100 psi and above

**Shock:** 100g, 11 ms half sine wave without damage

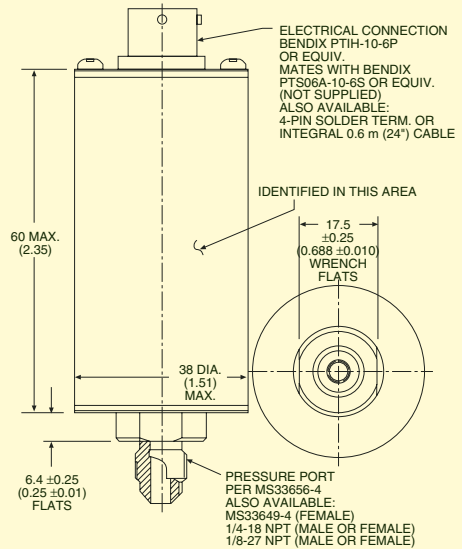
**Proof Pressure:**

2 times rated pressure will not cause changes in performance beyond the specified tolerances

**Burst Pressure:** 3 times rated pressure for pressure ranges below 200 psi, or 2.5 times rated pressure for pressure ranges above 200 psi will not cause rupture of the pressure sensor

DIN	Pin	Wire Code
1	A	RED = + Input
3	B	YEL = + Output
	C	BL = Common
2	D	WT = Common
	E	= Temp. Sensor
	F	= Temp. Sensor
		Shield = Case Ground

Dimensions: mm (in)



**Wetted Parts:** 316 stainless steel, silicon, Pyrex® glass, epoxy, Kovar®

**Electrical Connection:**

**Standard:** PTIH-10-6P

**Optional:** 0.6 m (2') cable or 4-pin solder terminal header

**Pressure Port:**

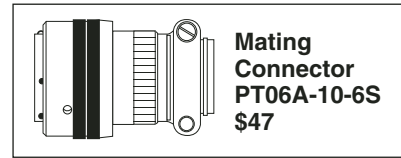
**Standard:** MS33656-4

½-27 NPT male

**Optional:** MS33649-4 ¼-18 female

**Weight:** 170 g (6 oz) typical

**Mating Connector:** PTS06A-10-6S (not included)



## CUSTOM CONFIGURATIONS

SERIES PX6000	PRESSURE PORT [ 1 ]	ELECTRICAL CONNECTION [ 2 ]	RANGE (psi) [ 3 ]	UNITS [ 4 ]	OUTPUT [ 5 ]	OPTIONS [ 6 ]
	A = ½-27 NPT male B = ½-27 NPT female C = ¼-18 NPT male D = ¼-18 NPT female L = MS33656-4 male M = MS33649-4 female		30* 015 020 050 100 200 300	VAC G,A G,A G,A G,A G,A	V = mV/V output \$420 all ranges 5T = 0 to 5 Vdc output \$560 all ranges I = 4 to 20 mA output \$550 all ranges	CAL11 = 11-point NIST calibration +\$250 xxFT = Extra length of cable, \$4.50/ft over 0.9 m (3')
<p>0 = 0.6 m (2') cable (std) +\$4.50/ft over 0.6 m (2')</p> <p>1 = PTIH-10-6P connector (or equal, no charge). Mating connector (not included), order PT06A-10-6S(OR) \$47.</p> <p>3 = 4-pin eyelet header (no charge); temp sensor not available on 4-pin connector</p> <p>6 = DIN connector</p> <p>* Referenced to atmospheric pressure, 30 Vac range is 30 to 0 inHg vacuum, all other ranges are psi.</p> <p>Metric ranges available – consult Engineering.</p>						
<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>						

**Ordering Examples:** PX6000M1-100G5T, 100 psi vented gage pressure transducer with MS33649-4, female pressure connection, PTIH-10-6P, electrical connector and 0 to 5 V output, \$550. PTS06A-10-6S, mating connector (not included), \$47.

PX6000A0-30VAC5T-25FT, 30 to 0 inHg vacuum transducer with a ½-27 NPT male pressure connection, a reverse-acting (30 inHg vacuum = full scale output) 0 to 5 output, and 7.6 m (25') cable, \$420 + 99 = \$519. PX6000L1-015A5T, 15 psi absolute pressure transducer with MS33656-4, male pressure connection, PTIH-10-6P, electrical connector and 0 to 5 Vdc output, \$560. PTS06A-10-6S, mating connector (not included), \$47.

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