

# HIGH-PERFORMANCE PRESSURE TRANSDUCER

## LONG-TERM RELIABILITY

**PX5500 Series**  
**mV/V Output**  
**0-15 to 0-10,000 psi**  
**0-1 to 0-700 bar**

PX5500L1-100GV,  
 \$550, shown  
 actual size.



All Ranges  
**\$550**

- ✓ High Accuracy: 0.1%
- ✓ Solid State Reliability
- ✓ Sputtered Strain Gage Design
- ✓ High Shock and Vibration Resistance
- ✓ Low Drift
- ✓ 5-Point NIST Calibration Standard

### Applications

- ✓ Testing
- ✓ R&D/Engineering Test Laboratories
- ✓ Functional Test Systems
- ✓ Production Testing
- ✓ Product Quality Assurance
- ✓ Flight Testing
- ✓ Gas Turbine and Engine Test Standards
- ✓ Ground Support Equipment
- ✓ Hydraulic Systems
- ✓ Custody Transfer Measurements

OMEGA's PX5500 Series transducers provide high performance in demanding industrial and research applications in which accuracy, reliability, and price are important. These transducers have a 10-year MTBF rate and are stable to 0.1% of FSO over an 18-month period. This translates into less downtime, fewer test reruns, more time between calibrations, and high confidence in pressure data. When

recalibration is impossible, relying on the high stability of a PX5500 Series transducer may be the only cost-effective way to obtain pressure data over the long term. OMEGA's thin-film technology makes this premium performance possible. The strain gages and associated structures are sputter-deposited directly onto the pressure sensing element, thus eliminating the need for adhesives. The resulting molecular bond

between the sensing element and the strain gages ensures virtually no shifting, drifting, or "creep" in the performance of the transducer. The micro-geometry design of the PX5500 sensing element results in a very small, low-mass sensor that reduces effects of mechanical vibration and shock. The PX5500 gives you accuracy, reliability, and stability at competitive prices.

**MOST POPULAR MODELS HIGHLIGHTED!**

<b>To Order (Specify Model Number)</b>				
<b>Models with mV/V Output, MS33656-4 Connection, Integral Connector</b>				
RANGE		MODEL NO.	PRICE	COMPATIBLE METERS*
<b>Absolute Pressure (All Ranges Available in Absolute Pressure)</b>				
0 to 15 psi	0 to 1.0 bar	PX5500L1-015AV	\$550	DP41-S, DP25B-S
0 to 25 psi	0 to 1.7 bar	PX5500L1-025AV	550	DP41-S, DP25B-S
0 to 50 psi	0 to 3.4 bar	PX5500L1-050AV	550	DP41-S, DP25B-S
0 to 100 psi	0 to 6.9 bar	PX5500L1-100AV	550	DP41-S, DP25B-S
<b>Gage Pressure (All Ranges also Available in Sealed Gage Pressure)</b>				
0 to 15 psi	0 to 1.0 bar	PX5500L1-015GV	\$550	DP41-S, DP25B-S
0 to 25 psi	0 to 1.7 bar	PX5500L1-025GV	550	DP41-S, DP25B-S
0 to 50 psi	0 to 3.4 bar	PX5500L1-050GV	550	DP41-S, DP25B-S
0 to 100 psi	0 to 6.9 bar	PX5500L1-100GV	550	DP41-S, DP25B-S
0 to 250 psi	0 to 17.2 bar	PX5500L1-250GV	550	DP41-S, DP25B-S
0 to 500 psi	0 to 34.5 bar	PX5500L1-500GV	550	DP41-S, DP25B-S
0 to 1000 psi	0 to 68.9 bar	PX5500L1-1KGV	550	DP41-S, DP25B-S
0 to 1500 psi	0 to 103 bar	PX5500L1-1.5KGV	550	DP41-S, DP25B-S
0 to 2500 psi	0 to 172 bar	PX5500L1-2.5KGV	550	DP41-S, DP25B-S
0 to 3000 psi	0 to 207 bar	PX5500L1-3KGV	550	DP41-S, DP25B-S
0 to 5000 psi	0 to 345 bar	PX5500L1-5KGV	550	DP41-S, DP25B-S
0 to 10,000 psi	0 to 689 bar	PX5500L1-10KGV	550	DP41-S, DP25B-S

Comes with 5-point calibration.

\* See section D for compatible meters.

Metric ranges available – see Metric Section.

To order absolute pressure models, replace "G" in model number with "A". No extra charge.

To order sealed gage models, replace "G" in model number with "S". No extra charge.

**Ordering Examples:** PX5500L1-1KSV, 1000 psi sealed gage transducer with PTIH-10-6P electrical connection and MS33656-4 male pressure port, \$550. PTS06A-10-6S, mating connector (not included), \$47. PX5500L1-100AV, 100 psi absolute pressure transducer with PTIH-10-6P electrical connection and MS33656-4 male pressure port, \$550. PTS06A-10-6S, mating connector (not included), \$47.

### ACCESSORY

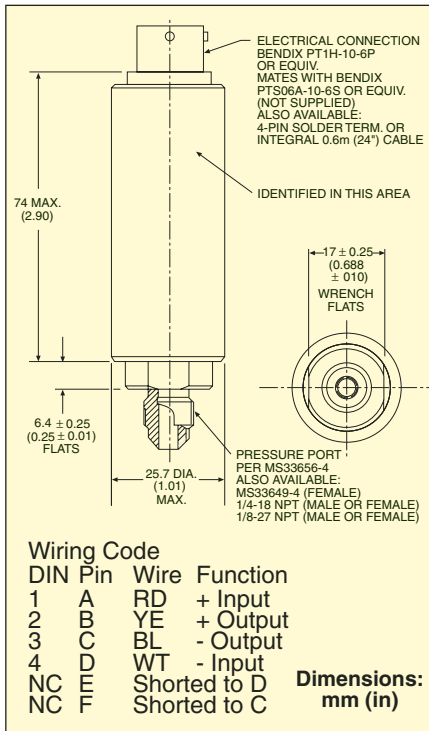
MODEL NO.	PRICE	DESCRIPTION
ES-2132	\$125	Reference Book: Hydraulic Design Handbook



# SOLID STATE STABILITY



MILLIVOLT OUTPUT  
PRESSURE TRANSDUCERS  
**B**



## SPECIFICATIONS

### mV/V MODELS

**Excitation:** 10 Vdc

**Output FSO:**

30 mV typical, 26 mV minimum

**Input Resistance:** 2500 Ω typical,

800 Ω minimum, 3000 Ω maximum.

For 350 Ω bridge models see Custom Configurations.

**Output Resistance:** 2500 Ω typical,

800 Ω minimum, 3300 Ω maximum

**Insulation Resistance:** 500 MΩ @ 45 Vdc over the compensated range

**Sensing Element:**

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

**Accuracy:** Combined linearity,

hysteresis and nonrepeatability:

±0.10% FSO (BFSL) <1000 psi

±0.15% FSO 1000 psi and above

**Calibration Stability:**

±0.1% for 18 months

**Vibration Sensitivity:** At 35 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,

decreasing to 0.003% FSO/g for

1000 psi and above

**Natural Frequency:** 5 kHz for 15 psi,

increasing logarithmically to 50 kHz for

5000 psi

**Shock:** Qualification level of 100g,

11 ms half sine wave without damage

**Electrostatic Discharge (ESD):**

Protected to 15 kV

**Operating Temp Range:**

-54 to 150°C (-65 to 300°F)

**Compensated Temp Range:**

-18 to 82°C (0 to 180°F)

**Thermal Effects:**

**Span:** ±0.0025% FSO/°F

**Zero:** ±0.0025% FSO/°F

**Proof Pressure:**

2 times rated pressure or 15,000 psi,

whichever is less, will not cause

changes in performance beyond the

specified tolerance

**Burst Pressure:** 3 times rated

pressure or 20,000 psi, whichever is

less, will not cause rupture of the

pressure containment cavity

**Wetted Parts:**

17-4 PH or 15-5 PH stainless steel

**Electrical Connection:** PT1H-10-6P

standard – see Custom Configurations

**Pressure Port:** MS33656-4 (male),

standard – see Custom Configurations

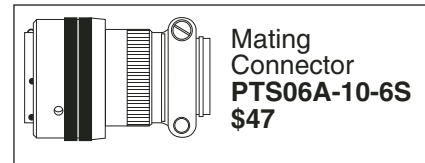
**Optional:** MS33649-4, ¼-18 NPT

male/female, ¼-27 NPT male/female

**Mating Connector:**

PTS06A-10-6S (not included)

**Weight:** 200 g (7 oz) maximum



## CUSTOM CONFIGURATIONS

SERIES	PRESSURE PORT	ELECTRICAL CONNECTION	RANGE	UNITS	OUTPUT	OPTIONS
PX5500*	[ 1 ]	[ 2 ]	[ 3 ]	[ 4 ]	[ 5 ]	[ 6 ]
<b>A</b> = ¼-27 NPT Male			015 psi	A, G, S	<b>V</b> = mV/V \$550	<b>CAL11</b> = 11-pt cal
<b>B</b> = ¼-27 NPT Female			025	A, G, S	<b>5T</b> = 0 to 5V \$695	<b>+ \$250</b>
<b>C</b> = ¼-18 NPT Male			050	A, G, S	<b>I</b> = 4 to	
<b>D</b> = ¼-18 NPT Female			100	A, G, S	20mA \$695	
<b>L</b> = MS33656-4			250	A, G, S		
<b>M</b> = MS33649-4			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		
	<b>0</b> = 0.6 m (2') cable \$4.50/ft over 0.6 m (2')					
	<b>1</b> = PT1H-10-6P connector (or equal). Mating connector (not included), order <b>PTS06A-10-6S \$47.</b>					
	<b>3</b> = 4-pin eyelet header					
	<b>6</b> = DIN connector					
<p><b>*For a 350 Ω bridge change model number to PX5503.</b></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>						

Comes with 5-point calibration.

Metric ranges available – see Metric Section.

**Ordering Examples:** PX5503A1-015AV, 350 Ω bridge, ¼-27 NPT male pressure port, Bendix style connector, 15 psi absolute pressure range and mV/V output, \$550. PTS06A-10-6S, mating connector (not included), \$47. PX5500M1-10KG5T, MS33649-4 female pressure port, Bendix style connector, 10,000 psi gage pressure range and 0 to 5 Vdc output, \$695. PTS06A-10-6S, mating connector (not included), \$47. PX5500L0-015A1-25FT, MS33656-4 male pressure port, 8 m (25') lead wire, 15 psi absolute pressure range and 4 to 20 mA output, \$695 + 109 = \$804.