

# HIGH-PERFORMANCE THIN-FILM TRANSMITTER

## STANDARD AND METRIC MODELS

**4 to 20 mA Output**  
**0-15 to 0-10,000 psi-Standard Models**  
**0-1 to 0-600 bar-Metric Models**

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



**STANDARD**  
**PX5500L1-100GI,**  
 shown actual size.

## PX5500/PXM5500 Series



OMEGA's PX5500/PXM5500 transducer series provides high performance in demanding industrial and research applications where accuracy, reliability, and price are important. These transducers have a 10-year MTBF rate and are stable to 0.1% of FS over an 18-month period. This translates into less downtime, fewer test reruns, more time between calibrations, and more reliable pressure data. When recalibration is impossible, relying on the high stability of a PX5500/PXM5500 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/PXM5500 sensing element results in a very small, low-mass sensor that reduces effects of mechanical vibration and shock. The PX5500/PXM5500 delivers accuracy, reliability, and stability at competitive prices.

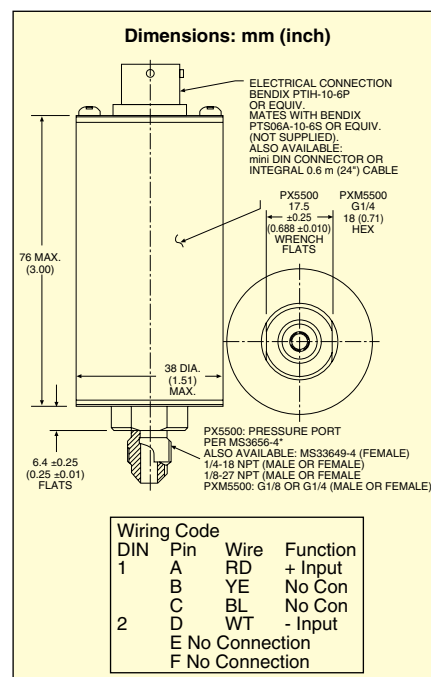
### SPECIFICATIONS

**mA Models**  
**Excitation:** 10 to 40 Vdc unregulated, reverse polarity protected  
**Output (FS):** 4 to 20 mA ±0.8 mA adj  
**Zero Balance:** 4 mA ±0.4 mA adj  
**Input Current:** 20 mA max with no load

- ✓ High 0.1% Accuracy
- ✓ 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



**Load Impedance:** 50 (V – 10) Ω max where V is supply voltage (40 Vdc max)

**Insulation Resistance:** 100 MΩ @ 45 Vdc between all pins shorted together and case

**Electrostatic Discharge:** Protected to 15 kV max

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

**Accuracy (Combined Linearity, Hysteresis and Repeatability):** ±0.10% FS (BFSL) <1000 psi  
 ±0.15% FS 1000 psi and above

**Vibration Sensitivity:** At 20 g peak sinusoidal vibration from 10 to 2000 Hz (½" D.A.), the output shall not exceed 0.04% FS/g for 15 psi range, decreasing to 0.003% FS/g for 1000 psi and above

**Natural Frequency:** 5 kHz for 15 psi, increasing logarithmically to 50 kHz for 5000 psi

# SPUTTERED SILICON TECHNOLOGY

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

**Operating Temp Range:** -40 to 85°C (-40 to 185°F)

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

**Thermal Effects (Over the Compensated Range):**

**Span:** ±0.02% FS/°F  
**Zero:** ±0.02% FS/°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

**Pressure Port:** See dimensional drawings on page B-215

**Electrical Connection:** PTIH-10-6P standard

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

**Weight:** 225 g (8 oz) maximum



CURRENT OUTPUT PRESSURE TRANSDUCERS  
**B**

## STANDARD CUSTOM CONFIGURATIONS

PX5500 SERIES	PRESSURE PORT [ 1 ]	ELECTRICAL CONNECTION [ 2 ]	RANGE (psi) [ 3 ]	UNITS [ 4 ]	OUTPUT [ 5 ]	OPTIONS [ 6 ]
	<b>A</b> = 1/8-27 NPT male		015	A, G, S	<b>Base Price PX5500</b> I = 4 to 20 mA	<b>CAL11</b> = 11-pt cal + cost ( )ft = Optional cable length in feet
	<b>B</b> = 1/8-27 NPT female		025	A, G, S		
	<b>C</b> = 1/4-18 NPT male		050	A, G, S		
	<b>D</b> = 1/4-18 NPT female		100	A, G, S		
	<b>L</b> = MS33656-4		250	A, G, S		
	<b>M</b> = MS33649-4		500	A, G, S		
			1K	A, G, S		
	<b>0</b> = 0.6 m (2') cable		1.5K	A, G, S		
			<b>add cost per/ft</b> over 0.6 m (2')	2.5K	A, G, S	
	<b>1</b> = PTIH-10-6P connector		3K	A, G, S		
	(or equal, no charge).		5K	A, G, S		
	Mating connector		10K	A, G, S		
	(sold separately), order					
	<b>PTS06A-10-6S</b>					
	<b>6</b> = mini DIN connector					

**To order a custom configuration:**

1. Select a pressure port
2. Select electrical connection
3. Select a pressure range
4. Select pressure units – Absolute, Gage or Sealed gage
5. Select output
6. Select options and agency approvals

**Ordering Examples:** **PX5500A1-015AV**, 1/8-27 NPT male pressure port, twist-lock connector, 15 psi absolute pressure range and mV/V output. **PTS06A-10-6S**, mating connector (sold separately). **PX5500M1-10KG5T**, MS33649-4 female pressure port, twist-lock connector, 10,000 psi gage pressure range and 0 to 5 Vdc output. **PTS06A-10-6S**, mating connector (sold separately). **PX5500L0-015AI-25FT**, MS33656-4 male pressure port, 8 m (25') lead wire, 15 psi absolute pressure range and 4 to 20mA output.

## METRIC CUSTOM CONFIGURATIONS

PXM5500 SERIES	PRESSURE PORT [ 1 ]	ELECTRICAL CONNECTION [ 2 ]	RANGE (BAR) [ 3 ]	UNITS [ 4 ]	OUTPUT [ 5 ]	OPTIONS [ 6 ]
	<b>MA</b> = G1/8B Male <b>cost</b>		1.0	A, G, S	<b>Base price</b> <b>PXM5500</b> I = 4 to 20 mA	<b>CAL11</b> = 11-point calibration certificate ( )m = Optional cable length in meters
	<b>MB</b> = G1/8B Female no charge		1.6	A, G, S		
	<b>MC</b> = G1/8B Male <b>cost</b>		4.0	A, G, S		
	<b>MD</b> = G1/8B Female no charge		6.0	A, G, S		
			10	A, G, S		
	<b>0</b> = 0.6 m (2') cable (std)		16	A, G, S		
			<b>add cost per/m</b> over 0.2 m (2')	25	A, G, S	
	<b>1</b> = PTIH-10-6P connector		40	A, G, S		
	(or equal, no charge)		60	A, G, S		
	<b>6</b> = mini DIN connector		100	A, G, S		
			160	A, G, S		
			250	A, G, S		
			400	A, G, S		
			600	A, G, S		

**To order a custom configuration:**

1. Select a pressure port
2. Select electrical connection
3. Select a pressure range
4. Select pressure units – Absolute, Gage or Sealed gage
5. Select output
6. Select options and agency approvals

**Visit us online for additional options including extended compensated temperatures.**

**Ordering Examples:** **PXM5500MB0-010BARS5T**, 10 bar sealed gage pressure transducer with G1/8B female connection and 0.6 m (2') cable termination.

**PXM5500MD1-010BARA5T**, 10 bar absolute pressure transducer with G1/8B female connection and twist-lock connector. **PTS06A-10-6S**, mating connector (sold separately).

## STANDARD MODELS

### To Order

Models with 4 to 20 mA Output, MS33656-4 Connection, Twist-Lock Connector

RANGE		MODEL NO.	COMPATIBLE METERS*
<b>Absolute Pressure (All Ranges Available in Absolute Pressure)</b>			
0 to 15 psi	0 to 1.0 bar	PX5500L[*]-015AI	DP41-E, DP25B-E, DP24-E
0 to 25 psi	0 to 1.7 bar	PX5500L[*]-025AI	DP41-E, DP25B-E, DP24-E
0 to 50 psi	0 to 3.4 bar	PX5500L[*]-050AI	DP41-E, DP25B-E, DP24-E
0 to 100 psi	0 to 6.9 bar	PX5500L[*]-100AI	DP41-E, DP25B-E, DP24-E
<b>Gage Pressure (All Ranges Also Available in Sealed Gage Pressure)</b>			
0 to 15 psi	0 to 1.0 bar	PX5500L[*]-015GI	DP41-E, DP25B-E, DP24-E
0 to 25 psi	0 to 1.7 bar	PX5500L[*]-025GI	DP41-E, DP25B-E, DP24-E
0 to 50 psi	0 to 3.4 bar	PX5500L[*]-050GI	DP41-E, DP25B-E, DP24-E
0 to 100 psi	0 to 6.9 bar	PX5500L[*]-100GI	DP41-E, DP25B-E, DP24-E
0 to 250 psi	0 to 17.2 bar	PX5500L[*]-250GI	DP41-E, DP25B-E, DP24-E
0 to 500 psi	0 to 34.5 bar	PX5500L[*]-500GI	DP41-E, DP25B-E, DP24-E
0 to 1000 psi	0 to 68.9 bar	PX5500L[*]-1KGI	DP41-E, DP25B-E, DP24-E
0 to 1500 psi	0 to 103 bar	PX5500L[*]-1.5KGI	DP41-E, DP25B-E, DP24-E
0 to 2500 psi	0 to 172 bar	PX5500L[*]-2.5KGI	DP41-E, DP25B-E, DP24-E
0 to 3000 psi	0 to 207 bar	PX5500L[*]-3KGI	DP41-E, DP25B-E, DP24-E
0 to 5000 psi	0 to 345 bar	PX5500L[*]-5KGI	DP41-E, DP25B-E, DP24-E
0 to 10,000 psi	0 to 689 bar	PX5500L[*]-10KGI	DP41-E, DP25B-E, DP24-E

Comes complete with 5-point NIST traceable calibration.

\* Visit us online for compatible meters.

[\*] = Insert "0" for 0.6 m (2') cable, "1" for twist-lock connector, or "6" for mini DIN connector.

To order absolute pressure models, change "G" in model number to "A" (no extra charge).

To order sealed gage models, change "G" in model number to "S" (no extra charge).

**Ordering Examples:** PX5500L1-1KSI, 1000 psi sealed gage transducer with 4 to 20 mA output, PTIH-10-6P electrical connector and MS33656-4, male pressure port.

PTS06A-10-6S, mating connector (sold separately).

PX5500L1-100AI, 100 psi absolute pressure transducer with 4 to 20 mA output, PTIH-10-6P electrical connector and MS33656-4, male pressure port. PTS06A-10-6S, mating connector (sold separately).

### METRIC MODELS

Models with G 1/4 Male Pressure Connection, Cable or Connector and 4 to 20 mA Output

RANGE		MODEL NO.	COMPATIBLE METERS*
<b>GAGE PRESSURE</b>			
0 to 1 bar	0 to 15 psi	PXM5500MC[*]-001BARGI	DP41-E, DP25B-E, DP24-E
0 to 1.60 bar	0 to 23 psi	PXM5500MC[*]-1.60BARGI	DP41-E, DP25B-E, DP24-E
0 to 4 bar	0 to 58 psi	PXM5500MC[*]-004BARGI	DP41-E, DP25B-E, DP24-E
0 to 6 bar	0 to 87 psi	PXM5500MC[*]-006BARGI	DP41-E, DP25B-E, DP24-E
0 to 10 bar	0 to 145 psi	PXM5500MC[*]-010BARGI	DP41-E, DP25B-E, DP24-E
0 to 16 bar	0 to 232 psi	PXM5500MC[*]-016BARGI	DP41-E, DP25B-E, DP24-E
0 to 25 bar	0 to 363 psi	PXM5500MC[*]-025BARGI	DP41-E, DP25B-E, DP24-E
0 to 40 bar	0 to 580 psi	PXM5500MC[*]-040BARGI	DP41-E, DP25B-E, DP24-E
0 to 60 bar	0 to 870 psi	PXM5500MC[*]-060BARGI	DP41-E, DP25B-E, DP24-E
0 to 100 bar	0 to 1450 psi	PXM5500MC[*]-100BARGI	DP41-E, DP25B-E, DP24-E
0 to 160 bar	0 to 2321 psi	PXM5500MC[*]-160BARGI	DP41-E, DP25B-E, DP24-E
0 to 250 bar	0 to 3626 psi	PXM5500MC[*]-250BARGI	DP41-E, DP25B-E, DP24-E
0 to 400 bar	0 to 5802 psi	PXM5500MC[*]-400BARGI	DP41-E, DP25B-E, DP24-E
0 to 600 bar	0 to 8702 psi	PXM5500MC[*]-600BARGI	DP41-E, DP25B-E, DP24-E

Comes complete with 5-point NIST traceable calibration.

\* Visit us online for compatible meters.

[\*] = Insert "0" for 0.6 m (2') cable, "1" for twist-lock connector, or "6" for mini DIN connector.

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).

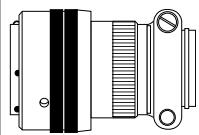
**Ordering Examples:** PXM5500MC0-060BARSI, 60 bar sealed gage transmitter with 4 to 20 mA output, 0.6 m (2') cable connection and G 1/4 male pressure port.

PXM5500MC6-1.60BARAI, 1.6 bar absolute pressure transmitter with 4 to 20 mA output, mini-DIN connection and G 1/4 male pressure port. Mating connector included.

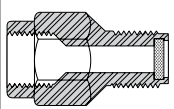
Twist-lock style.



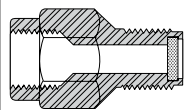
**STANDARD**  
PX5500L1-100GI,  
shown actual size.



Mating  
Connector  
PTS06A-10-6S



1/4 NPT Pressure  
Snubbers:  
PS-4G = Gas  
PS-4E = Lt Oil  
PS-4D = Dense Lq



G 1/4 Pressure  
Snubbers:  
PS-4G-MG = Gas  
PS-4E-MG = Lt Oil  
PS-4D-MG = Dense  
Liquid

### ACCESSORY

MODEL NO.	DESCRIPTION
PTS06A-10-6S	Mating connector for PX5500 units with integral twist-lock connector