

# HIGH-PERFORMANCE THIN-FILM TRANSMITTER STANDARD AND METRIC MODELS

## PX5500/PXM5500 Series

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

All Ranges  
**\$695**



**STANDARD**  
PX5500L1-100GI,  
\$695, shown  
actual size.



Standard

- ✓ 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

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. NEWPORT'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

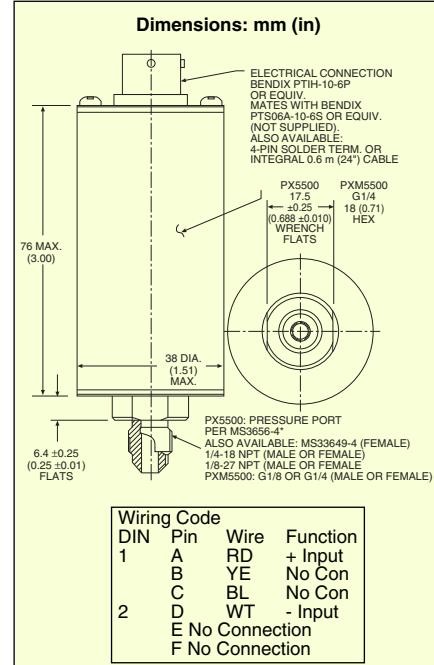
#### mA Models

**Excitation:** 10 to 40 Vdc unregulated, reverse polarity protected

**Output (FS):** 4 to 20 mA  $\pm 0.8$  mA adj

**Zero Balance:** 4 mA  $\pm 0.4$  mA adj

**Input Current:** 20 mA max with no load



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

**Insulation Resistance:** 100 M $\Omega$  @ 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):

$\pm 0.10\%$  FS (BFSL) <1000 psi

$\pm 0.15\%$  FS 1000 psi and above

**Vibration Sensitivity:** At 20 g peak sinusoidal vibration from 10 to 2000 Hz (1/8" 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:

**Operating Temp Range:**

**Compensated Temp Range:**

**Compensated Temp R**

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

Span:  $\pm 0.02\% \text{ FS}/^\circ\text{F}$   
Zero:  $\pm 0.02\% \text{ FS}/^\circ\text{F}$

**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:**

**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

## STANDARD CUSTOM CONFIGURATIONS

PX5500 SERIES	PRESSURE PORT [ 1 ]	ELECTRICAL CONNECTION [ 2 ]	RANGE (psi) [ 3 ]	UNITS [ 4 ]	OUTPUT [ 5 ]	OPTIONS [ 6 ]
	A = 1/8-27 NPT male		015	A, G, S	Base Price PX5500	CAL11 = 11-pt cal
	B = 1/8-27 NPT female		025	A, G, S	I = 4 to 20 mA	+\$250
	C = 1/4-18 NPT male		050	A, G, S	\$695	( )ft = Optional
	D = 1/4-18 NPT female		100	A, G, S		cable length
	L = MS33656-4		250	A, G, S		in feet
	M = 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 \$2/ft over 0.6 m (2')					
	<b>1</b> = PTIH-10-6P connector (or equal, no charge).					
	Mating connector (sold separately), order <b>PTS06A-10-6S</b> \$47.					
	<b>3</b> = 4-pin eyelet header					
	<b>6</b> = mini DIN connector					

**Ordering Examples:** **PX5500A1-015AV**, 1/8-27 NPT male pressure port, twist-lock connector, 15 psi absolute pressure range and mV/V output, \$550. **PTS06A-10-6S**, mating connector (sold separately), \$47. **PX5500M1-10KG5T**, MS33649-4 female pressure port, twist-lock connector, 10,000 psi gage pressure range and 0 to 5 Vdc output, \$625. **PTS06A-10-6S**, mating connector (sold separately), \$17.

**PX5500L0-015AI-25FT**, MS33656-4 male pressure port, 8 m (25') lead wire, 15 psi absolute pressure range and 4 to 20mA output, \$695. **PXS06A-10-6S**, mating connector (sold separately), \$695 + 16 = **\$741**

## METRIC CUSTOM CONFIGURATIONS

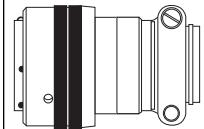
PXM5500 SERIES	PRESSURE PORT [ 1 ]	ELECTRICAL CONNECTION [ 2 ]	RANGE (BAR)	UNITS [ 3 ]	OUTPUT [ 5 ]	OPTIONS [ 6 ]
MA = G½B Male	+\$20		1.0	A, G, S		
MB = G½B Female	no charge		1.6	A, G, S		
MC = G½B Male	+\$20		4.0	A, G, S		
MD = G½B Female	no charge		6.0	A, G, S		
			10	A, G, S		
			16	A, G, S		
			25	A, G, S		
			40	A, G, S		
			60	A, G, S		
			100	A, G, S		
			160	A, G, S		
			250	A, G, S		
			400	A, G, S		
			600	A, G, S		
<b>0</b> = 0.6 m (2') cable (std)						
<b>\$6.50/m</b> over 0.2 m (2')						
<b>1</b> = PTIH-10-6P connector						
(or equal, no charge)						
<b>3</b> = 4-pin eyelet						
<b>6</b> = mini DIN connector						

**Ordering Examples:** **PXM5500MB0-010BARS5T**, 10 bar sealed gage pressure transducer with G $\frac{1}{8}$ B female connection and 0.6 m (2') cable termination. \$695.

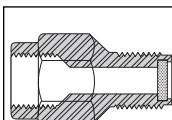
**PTSM5500MD1-010BARA5T**, 10 bar absolute pressure transducer with G $\frac{1}{4}$ B female connection and twist-lock connector, **\$695**.  
**PTSO6A-10-6S**, mating connector (sold separately), **\$26.50**.



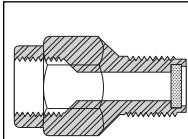
**STANDARD**  
PX5500L1-100GI,  
\$695, shown  
actual size.



Mating  
Connector  
**PTS06A-10-6S**  
\$47



**1/4 NPT Pressure Snubbers:** \$12.75  
PS-4G = Gas  
PS-4E = Lt Oil  
PS-4D = Dense Lq



**G1/4 Pressure Snubbers:** \$12.75  
PS-4G-MG = Gas  
PS-4E-MG = Lt Oil  
PS-4D-MG = Dense Liquid

#### ACCESSORY

MODEL NO.	PRICE	DESCRIPTION
PTS06A-10-6S	\$47	Mating connector for PX5500 units with integral twist-lock connector

#### To Order (Specify Model Number)

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

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	<b>PX5500L[*]-015AI</b>	\$695
0 to 25 psi	0 to 1.7 bar	<b>PX5500L[*]-025AI</b>	695
0 to 50 psi	0 to 3.4 bar	<b>PX5500L[*]-050AI</b>	695
0 to 100 psi	0 to 6.9 bar	<b>PX5500L[*]-100AI</b>	695
<b>Gage Pressure (All Ranges Also Available in Sealed Gage Pressure)</b>			
0 to 15 psi	0 to 1.0 bar	<b>PX5500L[*]-015GI</b>	\$695
0 to 25 psi	0 to 1.7 bar	<b>PX5500L[*]-025GI</b>	695
0 to 50 psi	0 to 3.4 bar	<b>PX5500L[*]-050GI</b>	695
0 to 100 psi	0 to 6.9 bar	<b>PX5500L[*]-100GI</b>	695
0 to 250 psi	0 to 17.2 bar	<b>PX5500L[*]-250GI</b>	695
0 to 500 psi	0 to 34.5 bar	<b>PX5500L[*]-500GI</b>	695
0 to 1000 psi	0 to 68.9 bar	<b>PX5500L[*]-1KGI</b>	695
0 to 1500 psi	0 to 103 bar	<b>PX5500L[*]-1.5KGI</b>	695
0 to 2500 psi	0 to 172 bar	<b>PX5500L[*]-2.5KGI</b>	695
0 to 3000 psi	0 to 207 bar	<b>PX5500L[*]-3KGI</b>	695
0 to 5000 psi	0 to 345 bar	<b>PX5500L[*]-5KGI</b>	695
0 to 10,000 psi	0 to 689 bar	<b>PX5500L[*]-10KGI</b>	695

Comes complete with 5-point NIST traceable calibration.

\* See section D 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, **\$695**.

**PTS06A-10-6S**, mating connector (sold separately), **\$47**.

**PX5500L1-100AI**, 100 psi absolute pressure transducer with 4 to 20 mA output, PTIH-10-6P electrical connector and MS33656-4, male pressure port, **\$695**. **PTS06A-10-6S**, mating connector (sold separately), **\$47**.

#### METRIC MODELS

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

RANGE	MODEL NO.	PRICE	COMPATIBLE METERS*
<b>GAGE PRESSURE</b>			
0 to 1 bar	0 to 15 psi	<b>PXM5500MC[*]-001BARGI</b>	\$695
0 to 1.60 bar	0 to 23 psi	<b>PXM5500MC[*]-1.60BARGI</b>	695
0 to 4 bar	0 to 58 psi	<b>PXM5500MC[*]-004BARGI</b>	695
0 to 6 bar	0 to 87 psi	<b>PXM5500MC[*]-006BARGI</b>	695
0 to 10 bar	0 to 145 psi	<b>PXM5500MC[*]-010BARGI</b>	695
0 to 16 bar	0 to 232 psi	<b>PXM5500MC[*]-016BARGI</b>	695
0 to 25 bar	0 to 363 psi	<b>PXM5500MC[*]-025BARGI</b>	695
0 to 40 bar	0 to 580 psi	<b>PXM5500MC[*]-040BARGI</b>	695
0 to 60 bar	0 to 870 psi	<b>PXM5500MC[*]-060BARGI</b>	695
0 to 100 bar	0 to 1450 psi	<b>PXM5500MC[*]-100BARGI</b>	695
0 to 160 bar	0 to 2321 psi	<b>PXM5500MC[*]-160BARGI</b>	695
0 to 250 bar	0 to 3626 psi	<b>PXM5500MC[*]-250BARGI</b>	695
0 to 400 bar	0 to 5802 psi	<b>PXM5500MC[*]-400BARGI</b>	695
0 to 600 bar	0 to 8702 psi	<b>PXM5500MC[*]-600BARGI</b>	695

Comes complete with 5-point NIST traceable calibration.

\* See section D 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:** **PXM5500MC0-060BARS1**, 60 bar sealed gage transmitter with 4 to 20 mA output, 0.6 m (2') cable connection and G 1/4 male pressure port, **\$695**.

**PXM5500MC6-1.60BARI**, 1.6 bar absolute pressure transmitter with 4 to 20 mA output, mini-DIN connection and G 1/4 male pressure port, **\$695**. Mating connector included.