

DIFFUSED SEMICONDUCTOR PRESSURE TRANSMITTER

STANDARD AND METRIC MODELS

4 to 20 mA Output
 0-15 to 0-300 psi-Standard Models
 0-1 to 0-25 bar-Metric Models

PX6000/PXM6000 Series



- ✓ High Reliability
- ✓ Long-Term Stability
- ✓ All Stainless Steel Case
- ✓ Vacuum Range Available
- ✓ Built-In Temperature Sensor

Applications

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

TRODEKS's PX6000/PXM6000 Series pressure transducers fit easily into many applications. These low-cost transducers are small and light, and mounting requires no bulky structures. Users can select from 3 electrical terminations and 6 pressure fittings. The sensor is a small [about 2.54 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 4 to 20 mA output easily interfaces with most control and data acquisition systems. The PX6000/PXM6000 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 pressure medium. These sensors are 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 are no gel or oil columns to deteriorate.

SPECIFICATIONS

Excitation: 12 to 40 Vdc unregulated
Output: 4 to 20 mA adjustable $\pm 10\%$ FS
Load Impedance (Maximum): $50 \times (V - 10) \Omega$ where V = supply voltage (40 Vdc maximum)

Zero Balance: 4 mA adjustable $\pm 10\%$ FS

Dielectric Isolation Resistance: 100 M Ω 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

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

Temperature Coefficient: 8% minimum, 10% maximum per 55.5°C (100°F)

Accuracy: Combined linearity, hysteresis and repeatability $\leq \pm 0.25\%$ FS for all ranges

Operating Temp Range: -29 to 85°C (-20 to 185°F)

Compensated Temp Range: -29 to 85°C (-20 to 185°F)

Thermal Effects:
Span: $\leq \pm 0.02\%$ of FS/°F
Zero: $\leq \pm 0.02\%$ of FS/°F

Vibration Sensitivity: At 20 g peak sinusoidal vibration from 10 to 2000 Hz ($\frac{1}{2}$ " D.A.), the output shall not exceed 0.04% FS/g for 15 psi range to 0.005% FS/g for 100 psi and above



STANDARD
 PX6000L1-100GI,
 shown actual size.

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

Shock: 100 g, 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

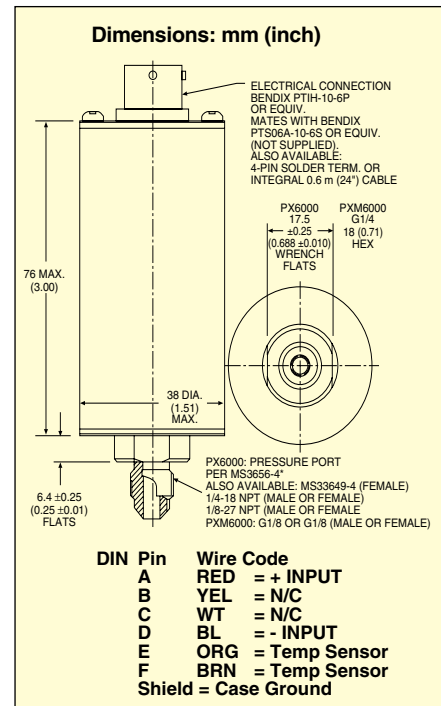
Wetted Parts: 316 stainless steel, silicon, Pyrex® glass, epoxy, Kovar®

Electrical Connection: PTIH-10-6P (standard), 0.6 m (2') cable or 4-pin solder terminal header (optional)

Pressure Port: See dimensional drawing below

Weight: 170 g (6 oz) typical

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



CURRENT OUTPUT PRESSURE TRANSDUCERS

DIFFUSED SEMICONDUCTOR PRESSURE TRANSMITTER

STANDARD CUSTOM CONFIGURATIONS

| PX6000 SERIES | PRESSURE PORT [1] | ELECTRICAL CONNECTION [2] | RANGE (psi) [3] | UNITS [4] | OUTPUT [5] | OPTIONS [6] |
|--|------------------------|--------------------------------|---|----------------|-----------------------|--|
| A = 1/8-27 NPT male | | | 30* | VAC | I = 4 to 20 mA output | CAL11 = 11-point NIST calibration additional cost |
| B = 1/8-27 NPT female | | | 015 | A,G | | ()ft = Optional cable length in feet |
| C = 1/4-18 NPT male | | | 020 | A,G | | |
| D = 1/4-18 NPT female | | | 050 | A,G | | |
| L = MS33656-4 male | | | 100 | A,G | | |
| M = MS33649-4 female | | | 200 | A,G | | |
| | | | 300 | A,G | | |
| 0 = 0.6 m (2') PVC cable (std) additional cost/ft over 0.6 m (2') | | | * Referenced to atmospheric pressure, 30 Vac range is 30 to 0 inHg vacuum, all other ranges are psi | | | |
| 1 = PTIH-10-6P connector (or equal, no charge). Mating connector (sold separately), order PT06A-10-6S(SR) | | | 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 | | | |
| 3 = 4-pin eyelet header (no charge); temp sensor not available on 4-pin connector | | | | | | |
| 6 = mini DIN connector (no charge) no temp sensor | | | | | | |

Ordering Examples: *PX6000M1-100GI*, 100 psi vented gage pressure transducer with MS33649-4, female pressure connection, PTIH-10-6P electrical connector, 4 to 20 mA output. *PTS06A-10-6S*, mating connector (sold separately).

PX6000L1-015AI, 15 psi absolute pressure transducer with MS33656-4, male pressure connection, PTIH-10-6P, electrical connector and 4 to 20 mA output. *PTS06A-10-6S*, mating connector (sold separately).

METRIC CUSTOM CONFIGURATIONS

| PXM6000 SERIES | PRESSURE PORT [1] | ELECTRICAL CONNECTION [2] | RANGE (BAR) [3] | UNITS [4] | OUTPUT [5] | OPTIONS [6] |
|---|------------------------|--------------------------------|---|----------------|-----------------|---|
| MA = G1/8 Male | | | -1 | VAC | I = 4 to 20 mA | CAL11 = 11-point calibration certificate additional cost |
| MB = G1/8 Female | | | 1.0 | A, G | | ()m = Optional cable length in meters |
| MC = G1/8 Male | | | 1.6 | A, G | | |
| MD = G1/8 Female | | | 4.0 | A, G | | |
| | | | 6.0 | A, G | | |
| | | | 10 | A, G | | |
| | | | 16 | A, G | | |
| | | | 25 | A, G | | |
| 0 = 3 m (10') cable (std) additional cost/m over 3 m (10') | | | 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 | | | |
| 1 = PTIH-10-6P connector (or equal, no charge) Mating connector (sold separately), order PT06A-10-6S(SR) | | | | | | |
| 3 = 4-pin eyelet (no charge) no temp sensor | | | | | | |
| 6 = mini DIN connector (no charge) no temp sensor | | | | | | |

Ordering Examples: *PXM6000MB0-010BARGI*, 10 bar gage pressure transducer with G1/8 female connection and 3 m (10') cable termination.

PXM6000MD1-010BARAI, 10 bar absolute pressure transducer with G1/8 female connection and twist-lock connector. *PTS06A-10-6S*, mating connector (sold separately).



METRIC
PXM6000MC1-010BARAI,
shown actual size.

STANDARD MODELS

| To Order | | | |
|--|---------------|-------------------|-------------------------|
| Models with 4 to 20 mA Output, ¼ NPT-M Pressure Connection, Integral Connector | | | |
| RANGE | | MODEL NO. | COMPATIBLE METERS* |
| VACUUM | | | |
| 30 to 0 inHg | 102 to 0 kPa | PX6000L[*]-30VACI | DP41-E, DP25B-E, DP24-E |
| ABSOLUTE PRESSURE | | | |
| 0 to 15 psi | 0 to 1.0 bar | PX6000L[*]-015AI | DP41-E, DP25B-E, DP24-E |
| 0 to 20 psi | 0 to 1.4 bar | PX6000L[*]-020AI | DP41-E, DP25B-E, DP24-E |
| 0 to 50 psi | 0 to 3.4 bar | PX6000L[*]-050AI | DP41-E, DP25B-E, DP24-E |
| 0 to 100 psi | 0 to 6.9 bar | PX6000L[*]-100AI | DP41-E, DP25B-E, DP24-E |
| 0 to 200 psi | 0 to 13.8 bar | PX6000L[*]-200AI | DP41-E, DP25B-E, DP24-E |
| 0 to 300 psi | 0 to 20.7 bar | PX6000L[*]-300AI | DP41-E, DP25B-E, DP24-E |
| GAGE PRESSURE | | | |
| 0 to 15 psi | 0 to 1.0 bar | PX6000L[*]-015GI | DP41-E, DP25B-E, DP24-E |
| 0 to 20 psi | 0 to 1.4 bar | PX6000L[*]-020GI | DP41-E, DP25B-E, DP24-E |
| 0 to 50 psi | 0 to 3.4 bar | PX6000L[*]-050GI | DP41-E, DP25B-E, DP24-E |
| 0 to 100 psi | 0 to 6.9 bar | PX6000L[*]-100GI | DP41-E, DP25B-E, DP24-E |
| 0 to 200 psi | 0 to 13.8 bar | PX6000L[*]-200GI | DP41-E, DP25B-E, DP24-E |
| 0 to 300 psi | 0 to 20.7 bar | PX6000L[*]-300GI | 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.

Ordering Examples: PX6000L1-050GI, 50 psi gage 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).

PX6000L1-015AI, 15 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

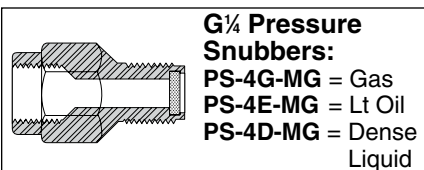
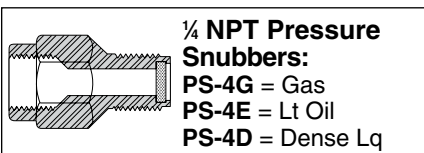
| Models with G ¼ Male Pressure Connection, Cable or mini DIN and 4 to 20 mA Output | | | |
|---|--------------|------------------------|--------------------|
| RANGE | | MODEL NO. | COMPATIBLE METERS* |
| ABSOLUTE PRESSURE | | | |
| 0 to 1 bar | 0 to 15 psi | PXM6000MC[*]-001BARAI | DP41-S, DP25B-S |
| 0 to 1.60 bar | 0 to 23 psi | PXM6000MC[*]-1.60BARAI | DP41-S, DP25B-S |
| 0 to 4 bar | 0 to 58 psi | PXM6000MC[*]-004BARAI | DP41-S, DP25B-S |
| 0 to 6 bar | 0 to 87 psi | PXM6000MC[*]-006BARAI | DP41-S, DP25B-S |
| 0 to 10 bar | 0 to 145 psi | PXM6000MC[*]-010BARAI | DP41-S, DP25B-S |
| 0 to 16 bar | 0 to 232 psi | PXM6000MC[*]-016BARAI | DP41-S, DP25B-S |
| GAGE PRESSURE | | | |
| 0 to 1 bar | 0 to 15 psi | PXM6000MC[*]-001BARGI | DP41-S, DP25B-S |
| 0 to 1.60 bar | 0 to 23 psi | PXM6000MC[*]-1.60BARGI | DP41-S, DP25B-S |
| 0 to 4 bar | 0 to 58 psi | PXM6000MC[*]-004BARGI | DP41-S, DP25B-S |
| 0 to 6 bar | 0 to 87 psi | PXM6000MC[*]-006BARGI | DP41-S, DP25B-S |
| 0 to 10 bar | 0 to 145 psi | PXM6000MC[*]-010BARGI | DP41-S, DP25B-S |
| 0 to 16 bar | 0 to 232 psi | PXM6000MC[*]-016BARGI | DP41-S, DP25B-S |
| 0 to 25 bar | 0 to 363 psi | PXM6000MC[*]-025BARGI | DP41-S, DP25B-S |

Comes complete with 5-point 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.

Ordering Example: PXM6000MC0-004BARGI, 4 bar gage pressure transmitter with 4 to 20 mA output, 0.6 m (2') cable and G ¼ male pressure port.



ACCESSORY

| MODEL NO. | DESCRIPTION |
|--------------|---|
| PTS06A-10-6S | Mating connector for PX6000 units with PTIH-10-6P electrical connection |