

# LIGHTWEIGHT INDUSTRIAL PRESSURE TRANSMITTER EXPLOSION PROOF/INTRINSICALLY SAFE

## PX880 Series



- ✓ Miniature Size
- ✓ ±0.25% Accuracy
- ✓ All Welded 316 Stainless Steel Construction
- ✓ Zero and Span Adjustability
- ✓ Full 5:1 Range Turndown
- ✓ 4 to 20 mA Output
- ✓ FM and CSA Ratings

The PX880 Series comprises the most compact, durable, accurate, cost-effective, full-featured pressure transmitters available. The 4 to 20 mA output is standard, with a 12 to 48 Vdc power supply.

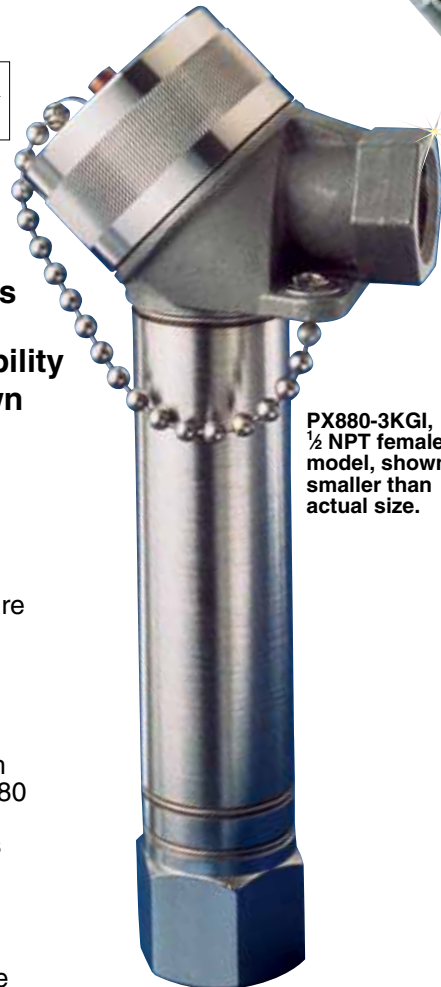
Designed for stable performance in the toughest environments, with 316 SS welded construction, PX880 transmitters are ideal for use with corrosive media and in hazardous environments.

Both models have FM and CSA approvals for intrinsic safety and meet NACE standards for offshore applications. With the cover retained by a stainless steel chain and no internal jumpers for span turndown, losses due to misplaced or dropped parts are eliminated.

The small size and light weight of both models eliminate any complicated mounting hardware or mechanical supports, which reduces installation time substantially. The integral junction box permits simple field wiring without the need for additional hardware, and adds to the speed and ease of installation.

### OPERATION

The heart of the PX880 pressure transmitter is a silicon piezoresistive sensing chip. This miniature microetched semiconductor gives



PX880-3KGI, 1/2 NPT female model, shown smaller than actual size.



PX881-015GI, flush mount model, shown smaller than actual size.

PX881-CPL, 1 1/2 in pipe coupling, sold separately, see next page.



PX881-PLUG, see next page.

a voltage output proportional to the applied pressure. The chip is isolated from the process media by a stainless steel diaphragm. Silicone oil is used to transmit the process pressure to the sensor.

An amplifier PCB enclosed in a sealed chamber is used to convert the millivolt signal from the sensor to a calibrated 4 to 20 mA transmitter output. Feed-throughs for EMI and RF protection are used between the amplifier board and the terminal housing.

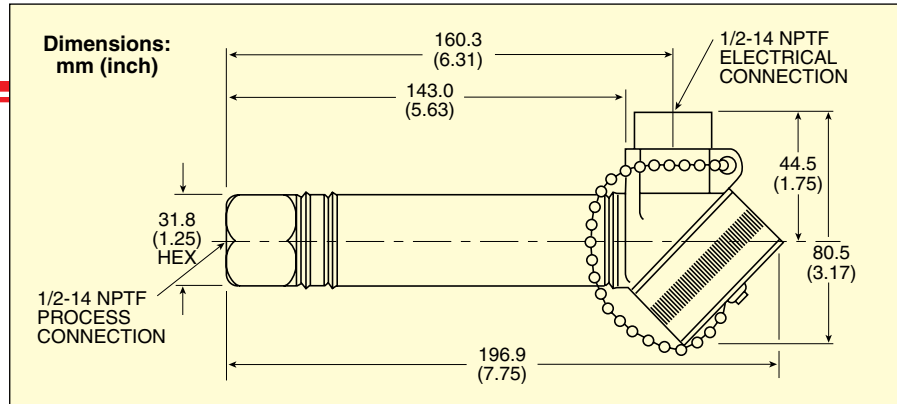
Each transmitter is tested over both pressure and temperature ranges. A compensator circuit is used to bring the output of the sensor into specification. After compensation,

every transmitter is tested a second time for pressure and temperature effects to ensure that it meets performance specifications. The transmitters are calibrated to the upper ranges listed in the order box, but end users can recalibrate them to different ranges. Recalibration is done via 3 screw potentiometers inside the transmitter's head. Recalibrating to any range between the 2 listed for a particular sensor can be accomplished with a known pressure source.

The PX881 is flush diaphragm pressure transmitter, designed to mount flush against process media and to prevent any media particles from collecting at the diaphragm.



### PX880 1/2 NPT Series



## SPECIFICATIONS

**Excitation:** 12 to 40 Vdc with reverse polarity protection

**Output:** 4 to 20 mA (2 wire)

**Accuracy:** ±0.2% of calibrated span including linearity, hysteresis and repeatability

**Max Loop Resistance:** 600 Ω @ 24 Vdc  
max Ω = (supply voltage – 12) x 50

**Storage Temperature:**  
-40 to 100°C (-40 to 212°F)

**Operating Temperature:**  
-40 to 100°C (-40 to 212°F)

**Compensated Temperature:**  
-29 to 82°C (-20 to 180°F)

**Thermal Effects:** Zero and span combined ±0.02% upper range/°F (30 to 130°F) ±0.032% upper range/°F (-20 to 180°F)

**Proof Pressure:** 200% upper range

**Stability:** ±0.5% of upper range for 6 months

**Vibration:** 0.1% upper limit for 3 g @ 200 Hz

**Approvals:** FM (Intrinsically Safe for Class 1, 2, 3 Div 1 Groups A, B, C, D, E, G; Explosion proof for Class 1, 2, 3 Div 1, Groups B, C, D, E, G NEMA 4 enclosure)

CSA (Intrinsic Safety for Class 1, 2, 3, Div 1 Groups A, B, C, D, E, F, G; Explosion proof for Class 1, 2, 3 Div 1, Groups B, C, D, E, F, G Enclosure 4)

#### Wetted Parts:

**PX880:** 316 SS

**PX881:** 316 SS, PTFE gasket and Hastelloy diaphragm

#### Pressure Port:

**PX880:** 1/2 NPTF

**PX881:** Weldolet pipe coupling

**Electrical Connection:** 1/2 NPTF

**Body Material:** 316 SS

**Cast Head:** CF-8M (316 cast SS) with Buna-N O-ring

**Fluid Fill:** DC 200 silicone oil

**Response Time:** 20 ms

**Weight:** 725 g (1.6 lb)

## ACCESSORIES

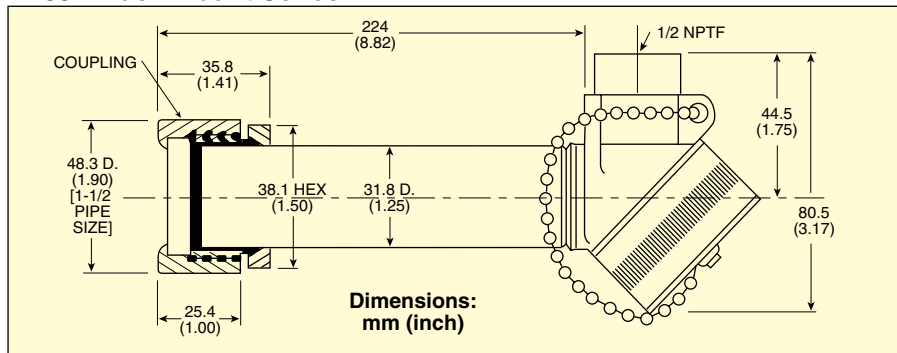
MODEL NO.	DESCRIPTION
PX881-CPL	38.1 mm (1.5") pipe coupling
PX881-PLUG	Plug

### PX880 Series 1/2 NPT Female Connection Transmitter

**To Order Visit [omega.com/px880](http://omega.com/px880) for Pricing and Details**

5:1 Turndown		PX880 1/2 NPT Female Connection	
RANGE psig	RANGE bar	MODEL NO.	COMPATIBLE METERS
0-30 to 0-150 inH <sub>2</sub> O	0-75 to 0-373 mbar	<b>PX880-150WCGI</b>	DP41-E, DP25B-E, DP24-E
0-6 to 0-15	0-0.4 to 0-1	<b>PX880-015GI</b>	DP41-E, DP25B-E, DP24-E
0-15 to 0-30	0-1 to 0-2	<b>PX880-030GI</b>	DP41-E, DP25B-E, DP24-E
0-20 to 0-100	0-1.4 to 0-6.9	<b>PX880-100GI</b>	DP41-E, DP25B-E, DP24-E
0-60 to 0-300	0-4.1 to 0-20.7	<b>PX880-300GI</b>	DP41-E, DP25B-E, DP24-E
0-200 to 0-1000	0-13.8 to 0-68.9	<b>PX880-1KGI</b>	DP41-E, DP25B-E, DP24-E
0-600 to 0-3000	0-41.4 to 0-207	<b>PX880-3KGI</b>	DP41-E, DP25B-E, DP24-E
0-1000 to 0-5000	0-68.9 to 0-345	<b>PX880-5KGI</b>	DP41-E, DP25B-E, DP24-E
3 to 15	0.2 to 1.0	<b>PX880-X15GI</b>	DP41-E, DP25B-E, DP24-E

### PX881 Flush Mount Series



### PX881 Series Flush Mount Transmitter

5:1 Turndown		PX881 FLUSH MOUNT*	
RANGE psig	RANGE bar	MODEL NO.	COMPATIBLE METERS
0-3 to 0-15	0-0.2 to 0-1.0	<b>PX881-015GI</b>	DP41-E, DP25B-E, DP24-E
0-6 to 0-30	0-0.41 to 0-2.1	<b>PX881-030GI</b>	DP41-E, DP25B-E, DP24-E
0-20 to 0-100	0-1.4 to 0-6.9	<b>PX881-100GI</b>	DP41-E, DP25B-E, DP24-E
0-60 to 0-300	0-4.1 to 20.7	<b>PX881-300GI</b>	DP41-E, DP25B-E, DP24-E

*Comes complete with operator's manual.*

**Note:** Units are shipped calibrated to highest range.

A pressure snubber should be used with all PX880 Series transmitters to suppress destructive waterhammer shock waves. Snubbers are determined by the pressure media. **PS-2G** for gaseous media, air, steam, etc. **PS-2E** for water and light oils, **PS-2D** for dense liquid, motor oil.

\* Requires **PX881-CPL** 38.1 mm (1 1/2") coupling.

**Ordering Example:** **PX881-030GI**, flush mount transmitter with a 0-6 to 0-30 psig range, and **PX881-CPL**, coupling.