WIRELESS TRANSMITTER SILICON-ON-SAPPHIRE LONG TERM RELIABILITY

PX921 Series

4-20 mA Output
0-5 to 0-15,000 psi
0-0.5 to 0-1000 bar

$1095
All Models

- **Silicon-on-Sapphire Sensor Assures High Stability and Repeatability**
- **Low Power Radio Transmitter Built-in with Range of 152 m (500')**
- **High Accuracy 12 bit**
- **No License is Required**
- **IP65/NEMA 4 Stainless Steel Body**
- **Solid State Reliability**
- **High Shock and Vibration**

Typical Applications

- **Mechanical and Civil Engineering Projects**
- **Process Plants**
- **Production Test Facilities**
- **Water Resource Management**
- **Power Generation**

Required Accessory

To Order *(Specify Model No.)*		
MODEL	**PRICE**	**DESCRIPTION**
PX921-R (Required)	**$875**	Receiver/ retransmitter

Accessory

To Order *(Specify Model No.)*		
MODEL	**PRICE**	**DESCRIPTION**
OP-6	**$340**	Reference Book: Fundamentals of Temperature, Pressure and Air Flow Measurement

OMEGA's PX921 Series wireless transmitters are designed for safe operation in tough industrial installation—without the need for hard wiring! The PX921 operates by radio telemetry. A low power RF transmitter safely transmits the signal up to 152 m (500') to a receiver / retransmitter where it is converted into a 4 to 20 mA signal.

Rugged stainless steel constructed and featuring S.O.S. technology with a custom IC amplifier give the PX921 series high stability, low drift and long life.

SOS construction uses very stable solid state silicon strain gages on a Sapphire carrier which is glass bonded to a titanium diaphragm. This combination provides a very durable transducer which has excellent stability over a wide temperature range. Additionally, the titanium diaphragm and Stainless Steel wetted parts provide maximum durability and corrosion resistance to harsh industrial chemicals.

PX921-100GI, $1095. shown smaller than actual size.

CUSTOM BUILT TO ORDER

To Order *(Specify Model Number)*			
RANGE (psig)	**MODEL NO.**	**PRICE**	**COMPATIBLE METERS**
30 inHg to 0	**PX921-30VACI**	**$1095**	**DP41-E, DP25-E, DP24-E**
0 to 5	**PX921-005GI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 10	**PX921-010GI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 15	**PX921-015GI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 30	**PX921-030GI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 60	**PX921-060GI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 100	**PX921-100GI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 150	**PX921-150GI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 200	**PX921-200GI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 300	**PX921-300GI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 600	**PX921-600GI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 1K	**PX921-1KGI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 1.5K	**PX921-1.5KGI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 3K	**PX921-3KGI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 6K	**PX921-6KGI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 10K	**PX921-10KGI**	**1095**	**DP41-E, DP25-E, DP24-E**
0 to 15K	**PX921-15KGI**	**1095**	**DP41-E, DP25-E, DP24-E**

Comes with complete operator's manual.
Metric Ranges Available - Consult Engineering

Ordering Example: PX921-1KGI, *1000 psi transducer, 4 to 20 mA output, PG9 cable gland and internal terminal block electrical connection with ½ Male NPT pressure port, and* ***PX921-R,*** *receiver/retransmitter, $1095 + 875 =* ***$1970.***

WIRELESS TRANSMITTER
SILICON-ON SAPPHIRE TECHNOLOGY

SPECIFICATIONS

(PX921 TRANSDUCER)

Excitation:
Internal Battery: 10.5 to 15 Vdc (not supplied)
External Supply: 10.5 to 30 Vdc

Output:
Local Test Voltage: 0.5 to 2.0 Vdc FS
Data Transmission: Serial bit stream
Data Speed: 4800/9600 baud

Accuracy:
Resolution: 12 bit ADC
Linearity and Hysteresis: 0.3%

Sensing Element: 4 active-arm bridge using Silicon-on Sapphire thin-film elements

Operating Temp Range:
-20° to 80°C (-4° to 176°F)

Compensated Temp Range:
0° to 80°C (32° to 176°F)

Thermal Effects:
(Over the compensated range)

Span: ±0.03% FS/°C

Zero: ±0.02% FS/°C

Proof Pressure:
1.5 times rated pressure will not cause changes in performance beyond the specified tolerance

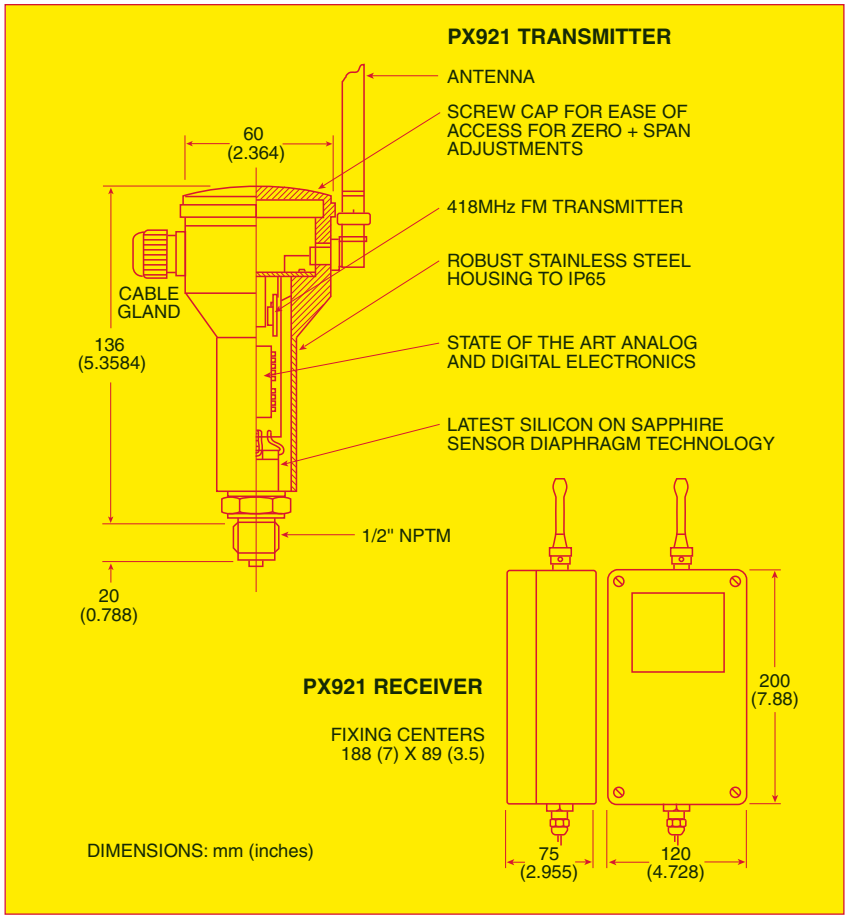
Wetted Parts:
17-4 PH and 304 Stainless Steel and Titanium Diaphragm

Body: 300 Series Stainless Steel, sealed to IP65 (NEMA 4)

Electrical Connection:
Internal Screw Terminals via gland

Pressure Port: ½ NPT Male

Weight: 1.2 kg (2.65 lb) maximum



(PX921 RECEIVER)

Input:
Data Transmission: Serial bit stream from PX921
Data Speed: 4800/9600 baud

Output:
Analog: 4 to 20 mA dc
Load Driving: 1500Ω maximum

Accuracy:
Resolution: 12 bit DAC
Linearity and Hysteresis: ±0.3% FS

Body: Polycarbonate enclosure sealed to IP65 (NEMA 4X)

Excitation: 10.5 to 30 Vdc

UHF Radio Transmitter/Receiver:
Carrier Frequency: 418 mHz
Modulation Type: FM

OPERATION:

The PX921 pressure transmitter converts pressure measurements to a digital code which is processes by the onboard microcontroller. The microcontroller generates a coded data frame in accordance with the protocol. This frame is then transmitted by UHF to the PX921-R where it is decoded, validated and converted to an analog 4 to 20 mA signal. This signal can then be transmitted and interface with all standard 20 mA loop instruments.

DATA TRANSMISSION:

Data is transmitted as a bit stream data frame using asynchronous protocol. a random delay between transmissions minimizes collisions between adjacent streams. Data error detection is employed to allow error free operation in high interference environments. Indication of receipt of uncorrupted data is provided on the PX921-R unit.

RADIO LICENSE:

No license is required with this equipment.
Data transmission is via a radio transmitter operating at a designated low power UHF telemetry frequency. It operates in the 418 MHz region @ 0.25 mW.

INSTALLATION:

The PX921 is simple to install and does not require additional configuration tools. Once the PX921 has been connected to the process fitting, configuration is easily carried out by setting a series of miniature switches which are under the cover of the transducer. At this stage it is possible to check the calibration of the unit locally by measuring the voltage across tow test points, which can then be adjusted with the zero and span trimmers if required.

POWER SUPPLY

Units may be powered by either an internal battery (10.5 to 15 Vdc) or by an external supply voltage (10.5 to 30 Vdc). In battery mode, a duty cycle power saving system is employed to extend battery life.

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