

**OMEGA**  
ENGINEERING, INC.  
An OMEGA Technologies Company  
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# PX811 SERIES HIGH ACCURACY WET ABSOLUTE PRESSURE TRANSDUCERS

Call OMEGA Toll Free\*

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Customer Service: 1-800-622-2378 / 1-800-622-BEST

Engineering Assistance: 1-800-872-9436 / 1-800-USA-WHEN

\*In CT: (203) 359-1660 CABLE: OMEGA EASYLINK: 62968934  
And International TELEX: 996404 FAX: (203) 359-7700

## GENERAL DESCRIPTION

The OMEGA® PX811 is a rugged solid-state transducer that measures true absolute pressure of fluids and gases. For fast response and high accuracy, the PX811 utilizes a four-arm strain gage embedded in a silicon crystal. The transducer is free from hysteresis with high output at low strain. A stainless steel isolating diaphragm assures compatibility with a wide variety of liquid media.

## FEATURES

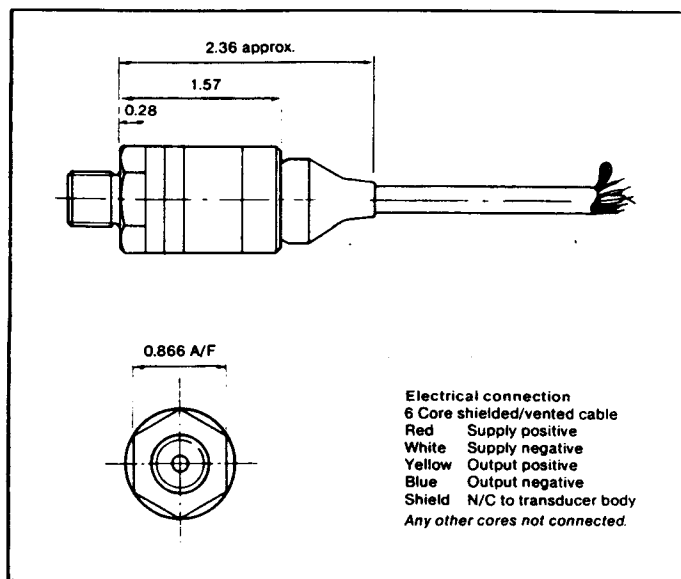
- High Accuracy 0.1% BFUL for Ranges  $\leq$  900 PSIA
- Excellent Overpressure Rating
- Wide Compensated Range  $-5^{\circ}$  to  $175^{\circ}$  ( $-20^{\circ}$  to  $80^{\circ}$ C)

## SPECIFICATIONS

MODEL	RANGE PSIA	MODEL	RANGE PSIA
PX811-005GAV	0 to 5	PX811-150GAV	0 to 150
PX811-010AV	0 to 10	PX811-200AV	0 to 200
PX811-015AV	0 to 15	PX811-300AV	0 to 300
PX811-020AV	0 to 20	PX811-500AV	0 to 500
PX811-030AV	0 to 30	PX811-900AV	0 to 900
PX811-050AV	0 to 50		
PX811-100AV	0 to 100		

<b>EXCITATION:</b>	10 Vdc regulated at 5 mA, 12 Vdc max.
<b>OUTPUT:</b>	50 mV for 5 psi range; 100 mV for 10 psi range and above
<b>OUTPUT IMPEDANCE:</b>	2000 ohms nominal
<b>LOAD IMPEDANCE:</b>	> 100 kilohms for rated performance
<b>PERFORMANCE ACCURACY:</b>	Combined non-linearity, hysteresis, and repeatability .1% B.S.L.
<b>ZERO BALANCE:</b>	$\pm 3$ mV
<b>SPAN SETTING:</b>	$\pm 10$ mV standard; units of the same range are better than $\pm 3$ mV from each other.
<b>COMPENSATED TEMPERATURE RANGE:</b>	$-5^{\circ}$ to $175^{\circ}$ F ( $-20^{\circ}$ to $80^{\circ}$ C)
<b>TEMPERATURE EFFECTS:</b>	$\pm 0.5\%$ total error $32^{\circ}$ to $122^{\circ}$ F (0 to $50^{\circ}$ C); $\pm 1.5\%$ total error $-5^{\circ}$ to $175^{\circ}$ F ( $-20^{\circ}$ to $80^{\circ}$ C)
<b>OVERPRESSURE:</b>	The rated pressure can be exceeded by 4X (up to 2000 psi max.) causing negligible calibration change.
<b>BURST PRESSURE:</b>	10x (3000 psi max.)
<b>NATURAL FREQUENCY:</b>	10.5 kHz for 5 psi range increasing to 210 kHz for 900 psi
<b>MECHANICAL SHOCK:</b>	1000g for 1 ms
<b>ACCELERATION:</b>	0.04% FSO/g for 5 psi decreasing to 0.0003% FSO/g for 900 psi

## OUTSIDE DIMENSIONS/ELECTRICAL CONNECTIONS



## SPECIFICATIONS (Cont'd)

<b>VIBRATION:</b>	0.5% FS/g @ 30g peak 10Hz-2KHz
<b>CONSTRUCTION PRESSURE MEDIA:</b>	All media compatible with 316 stainless steel and Hastelloy C276
<b>TRANSDUCTION PRINCIPLE:</b>	Integrated silicon gage bridge
<b>PRESSURE PORT:</b>	¼-18 NPT
<b>ELECTRICAL CONNECTIONS:</b>	3 feet 4-wire shielded cable
<b>WEIGHT:</b>	4.2 oz. nominal

### WARNING! READ BEFORE INSTALLATION

Fluid hammer and surges can destroy any pressure transducer and must always be avoided. A pressure snubber should be installed to eliminate the damaging hammer effects.

Fluid hammer occurs when a liquid flow is suddenly stopped, as with quick closing solenoid valves. Surges occur when flow is suddenly begun, as when a pump is turned on at full power or a valve is quickly opened.

Liquid surges are particularly damaging to pressure transducers if the pipe is originally empty. To avoid damaging surges, fluid lines should remain full (if possible), pumps should be brought up to power slowly, and valves opened slowly. To avoid damage from both fluid hammer and surges, a surge chamber should be installed, and a pressure snubber should be installed on every transducer.

Symptoms of fluid hammer and surge's damaging effects:

- Pressure transducer exhibits an output at zero pressure (large zero offset). If zero offset is less than 10% FS, user can usually re-zero meter, install proper snubber and continue monitoring pressures.
- Pressure transducer output remains constant regardless of pressure.
- In severe cases, there will be no output.

### WARRANTY

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of 13 months from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that our customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. Our Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

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