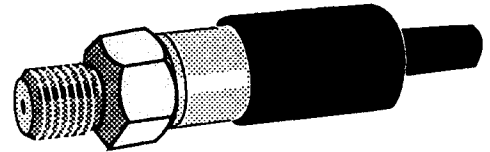




PX800 Series

Pressure Transducers

Operator's Manual: M0630/0493



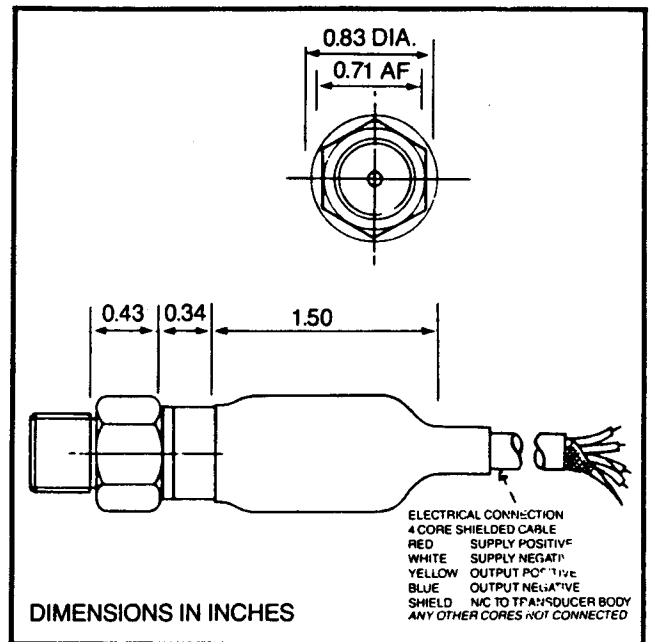
GENERAL DESCRIPTION

The OMEGA® PX800 is an extremely high accuracy, rugged, solid-state transducer. Excellent for use in adverse environments, the PX800's fully encapsulated sensing element consists of a four arm strain gage bridge diffused into the surface of a single crystal silicon diaphragm. The silicon diaphragm has excellent mechanical and electrical properties; combined linearity and hysteresis accuracy less than 0.1% BFSL, fast response, and maximum acceleration sensitivity.

FEATURES

- High Accuracy up to 0.1%
- Temperature Compensated, -5° to 175°F
- Rugged Construction, Well Suited for Shock and Vibration
- Excellent Overpressure Rating 4X Full Scale, Depending on Range
- Crystal Silicon Diaphragm for Fast Response Time

OUTLINE DIMENSIONS/ELECTRICAL CONNECTIONS



SPECIFICATIONS

MODEL	RANGE PSIG	MODEL	RANGE PSIG
PX800-001GV	0 to 1	PX800-100GV	0 to 100
PX800-002GV	0 to 2.5	PX800-150GV	0 to 150
PX800-005GV	0 to 5	PX800-200GV	0 to 200
PX800-010GV	0 to 10	PX800-300GV	0 to 300
PX800-015GV	0 to 15	PX800-500GV	0 to 500
PX800-020GV	0 to 20	PX800-900GV	0 to 900
PX800-030GV	0 to 30	PX800-2KSV*	0 to 2K
PX800-050GV	0 to 50		

* SV= sealed gage model

EXCITATION: 10 Vdc at 15 mA

OUTPUT: 17 mV for 1 psi range; 25 mV for 2.5 psi range; 50 mV for 5 psi range; 100 mV for 10 psi range and above

OUTPUT IMPEDANCE: 1000 ohms nominal

LOAD IMPEDANCE: > 100 kilohm for rated performance

ACCURACY: ±0.1% BFSL for 1 to 900 psi ranges; ±0.2% BFSL for 1K and 2K psi ranges (combined non-linearity and hysteresis)

SPECIFICATIONS (cont'd.)

ZERO BALANCE:	±3 mV
SPAN SETTING:	±10 mV standard; units of the same range are better than ±3 mV from each other
COMPENSATED TEMPERATURE RANGE:	-5° to 175°F (-20° to 80°C)
TEMPERATURE EFFECTS:	±0.5% total error 32° to 122°F (0° to 50°C); ±1.5% total error -5° to 175°F (-20° to 80°C); 1 psi range, ±0.5% total error band 50° to 105°F (10° to 40°C)
OVERPRESSURE RATING:	10x for 1 and 2.5 psi ranges; 6x for 5 psi ranges; 4x for 10 psi to 2K psi ranges
NATURAL FREQUENCY:	28 kHz for 5 psi range; 360 kHz for 500 psi range
MECHANICAL SHOCK:	1000g for 1 ms
ACCELERATION:	0.006% FSO/g for 5 psi decreasing to 0.002% FSO/g for 500 psi
PRESSURE MEDIA:	Fluids compatible with quartz and titanium
TRANSDUCTION PRINCIPLE:	Integrated silicon gage bridge
PRESSURE PORT:	¼-18 NPT
ELECTRICAL CONNECTION:	36" 4-wire shielded cable
WEIGHT:	1.8 oz.

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 traces.

We are glad to offer suggestions on the use of our various products. Nevertheless OMEGA only warrants that the parts manufactured by it will be as specified and free of defects.

OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

LIMITATION OF LIABILITY: The remedies of buyer set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

Every precaution for accuracy has been taken in the preparation of this manual, however, OMEGA ENGINEERING, INC. neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages that result from the use of the products in accordance with the information contained in the manual.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. That way our customers get the latest in technology and engineering.

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RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to OMEGA's Customer Service Department. Call toll free in the USA and Canada: 1-800-622-2378, FAX: 203-359-7811; International: 203-359-1660, FAX: 203-359-7807.

BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, YOU MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OUR CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems you are having with the product.

FOR NON-WARRANTY REPAIRS OR CALIBRATION, consult OMEGA for current repair/calibration charges. Have the following information available BEFORE contacting OMEGA:

1. Your P.O. number to cover the COST of the repair/calibration,
2. Model and serial number of the product,
3. Repair instructions and/or specific problems you are having with the product.