



# OMEGA PX178 SERIES

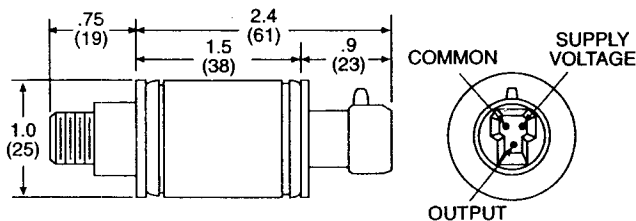
## Pressure Transducer

Instruction Sheet M1626/0593

### SPECIFICATIONS

<b>EXCITATION:</b>	5 Vdc $\pm$ 0.25 Vdc, @20 mA (regulated) (reverse polarity protected)	<b>PROOF PRESSURE:</b>	150% FS
<b>OUTPUT:</b>	0.5 to 4.5 Vdc (ratiometric)	<b>BURST PRESSURE:</b>	5x FS
<b>ACCURACY:</b>	1% FS (includes repeatability, linearity BFSL, and hysteresis)	<b>MIN. LOAD</b>	
<b>ZERO BALANCE:</b>	0.5 $\pm$ 0.1 Vdc	<b>RESISTANCE:</b>	20K ohms
<b>SPAN TOLERANCE:</b>	1%	<b>SHOCK</b>	
<b>OPERATING TEMP.:</b>	-40 to 221°F -40 to 105°C	<b>RESISTANCE:</b>	50 g's peak @5 ms
<b>COMPENSATED</b>	0 to 180°F	<b>WETTED PARTS:</b>	Brazed assembly of 300 series SS and nickel plated carbon steel
<b>TEMP.:</b>	-18 to 82°C	<b>PRESSURE PORT:</b>	1/8 NPT
<b>THERMAL EFFECTS:</b>	total (zero and span) 3% FS total including accuracy 4% FS	<b>ELECTRICAL CONNECTION:</b>	Weather tight connector included
		<b>WEIGHT:</b>	4 oz

### DIMENSIONS



XX.XX = INCHES  
(XX.XX) = (mm)

Mates with No. 12065287  
Packard Metri-pack connector

### VOLTAGE REQUIREMENTS

Excitation voltage is regulated +5 Vdc. The transducer's output is ratiometric; it responds to fluctuations in the power supply. For a consistent output, use a well-regulated supply. Figures 1 and 2 show how the transducer responds to small changes in output load or excitation voltage.

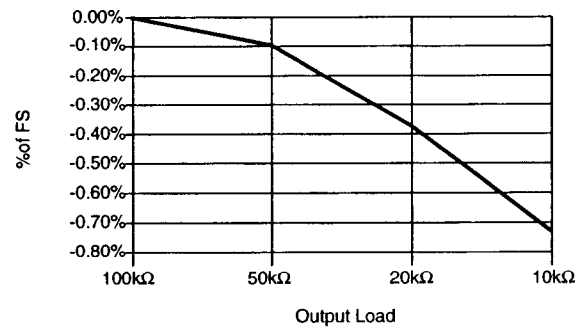


Figure 1. Typical Span Change vs. Load

### MEDIA COMPATIBILITY

The pressure port of the unit is a brazed assembly of nickel plated carbon steel and 300 series stainless steel. The braze used is Handy & Harmon's #505 which generally has the same corrosion resistance as 300 series stainless steels. Typical media include water, oil, gases, hydraulic fluids, alcohol, some acids and gasoline. This assembly is resistant to contaminated fluorocarbons and ammonia.

### PRECAUTIONS

- Do not use the case of the unit to apply torque to make or break the pressure connection. Always use a wrench on the hex head directly behind the threaded port.
- Do not subject the transducer to high temperature as a result of soldering, brazing, or welding of the system plumbing. In high humidity environments where condensation may occur, mount the transducer so that the connector attaches from the bottom or side. This prevents creating a moisture trap.
- Guard against subjecting the unit to temperatures above its specified maximum during operation.

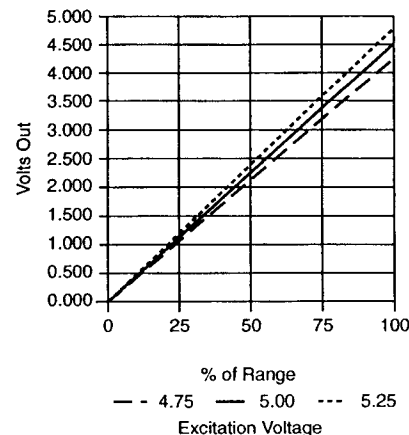


Figure 2. Ratiometric Output.  
Span vs. Pressure at Different Excitation Voltages

## WARNING - READ BEFORE INSTALLATION

- Fluid hammer and surges can destroy any pressure transducer and must always be avoided. Install a pressure snubber 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, keep fluid lines full (if possible), bring pumps up to power slowly, and open valves slowly. To avoid damage from both fluid hammer and surges, install a surge chamber and a pressure snubber on every transducer.
- Symptoms of fluid hammer and surge's damaging effects:
  - a) Pressure transducer exhibits an output at zero pressure (large zero offset). If zero offset is less than 10% FS, you can usually re-zero the meter, install the proper snubber and continue monitoring pressures.
  - b) Pressure transducer output remains constant regardless of pressure.
  - c) In severe cases, there will be no output.

## WIRING INSTRUCTIONS

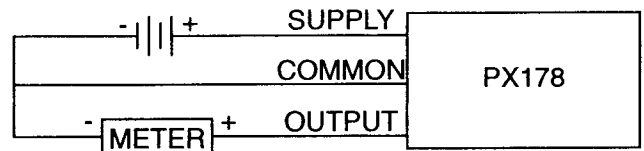
The unit requires three wires for supply voltage, output, and common. See DIMENSIONS for wiring connections. Conventional color codes are as follows: red is supply voltage, black is common, and white is output. The mating connector is Packard connector #12065287. To attach wires to the mating connector:

1. Slide wires through holes and attach wires to the crimp pins.
2. Before inserting a pin into its slot, orient the pin so the notch on the bottom will snap over the tab on one side of the slot.
3. Then push the pin into the slot so it locks; see MATING CONNECTOR, opposite.

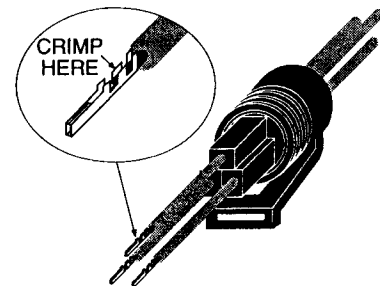
Before attaching the connector to the transducer, make sure the corrugated rubber sleeve is on the connector. This ensures a tight connection and environmental seal.

1. Position the connector so its slotted arm is aligned with the post on the transducer barrel. The slotted arm snaps over the post.
2. Push the connector in until the arm snaps in place.

## WIRING



## MATING CONNECTOR



## 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.

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.

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## RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA ENGINEERING 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. 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.

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