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It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, patient-connected applications.



WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA's 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 OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's 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. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been 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 are not warranted, including but not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only 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, EXPRESS 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 purchaser 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.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S 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.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

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

1. Purchase Order 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 relative to the product.

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

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PX105 Series

Pressure Transducer

INSTRUCTION
SHEET

M0211/1101

General

The Model PX105 pressure transducer ia a high gain strain gage device with a hybrid amplifier providing a conditioned output. The 5 volt output is capable of driving control, indicator, or alarm circuitry directly without external amplification.

A unique stainless steel pressure chamber designed insures circuit protection from corrosive measurand while the outer case of Valox protects against harsh environments. This combination assures the Model PX105 performance to continue within original specification limits.

Typical media used with the PX105 include oil, gases, saline solution, blood, hydraulic fluids, alcohol, acids, and gasoline.



Installation

The Model PX105 may be easily mounted on a printed circuit board using the two mounting holes or by supporting it from the stainless steel pressure port. Many applications require a threaded pressure port. For these we recommend the use of adapters similar to the Swagelok type. The internal voltage regulator allows the use of economical unregulated power sources from 8-20 Vdc.

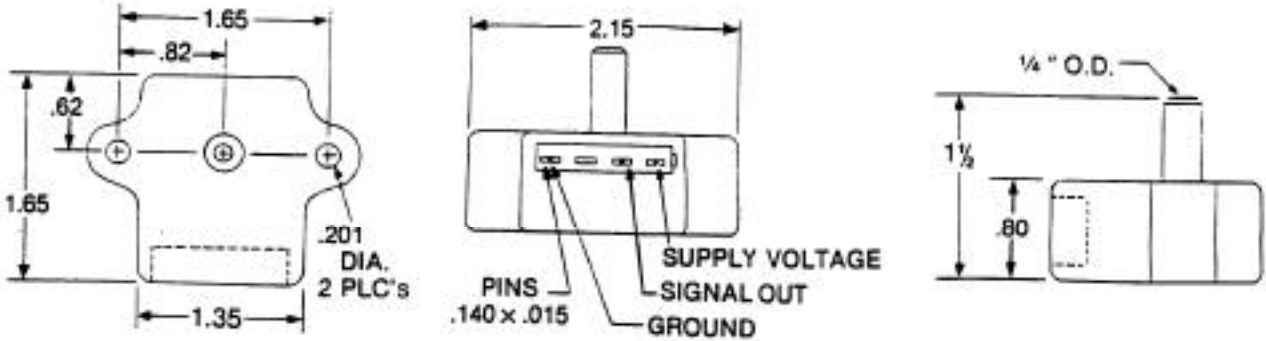


Figure 1. Mechanical: Ranges 0-6 to 0-50 PSI

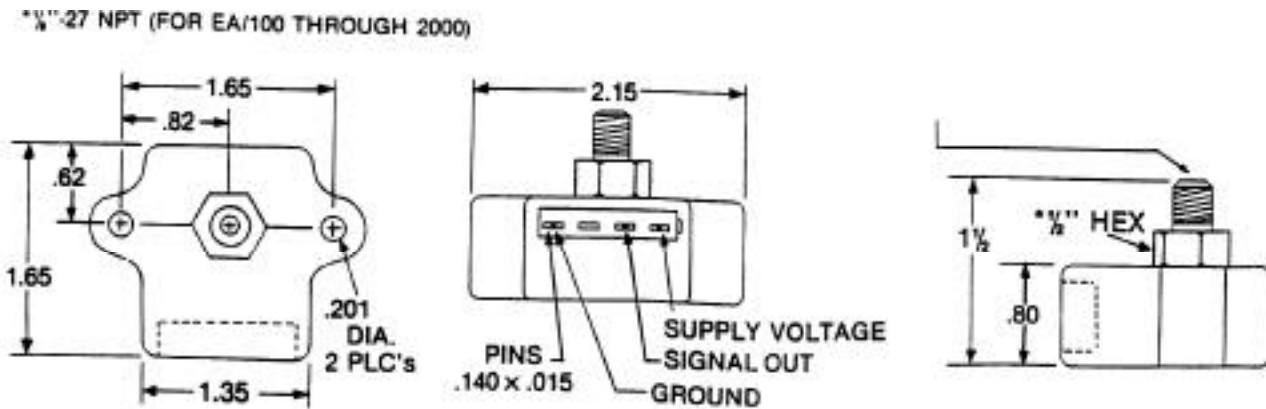
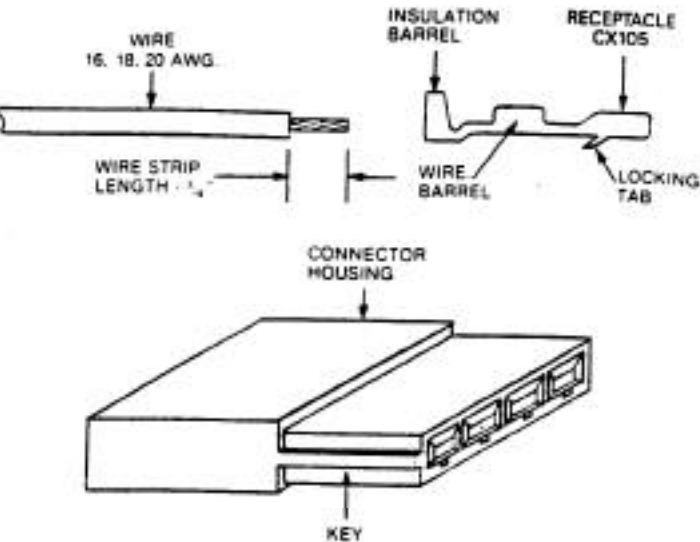


Figure 2. Mechanical: Ranges 0-100 to 0-5000 PSI

CONNECTOR ASSEMBLY INSTRUCTIONS



- 1. CRIMPRECEPTACLE TO WIRE USING AMP TOOL CR-100 OR EQUIVALENT
- 2. LOOKING AT THE FRONT OF THE CONNECTOR HOUSING, (KEY ON LEFT SIDE). INSERT RECEPTACLE WITH LOCKING TAB FACING DOWN, MAKING SURE LOCKING TAB IS FULLY ENGAGED INTO HOUSING.

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:

- a) 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.
- b) Pressure transducer output remains constant regardless of pressure.
- c) In severe cases, there will be no output.

Pressure Overloads

PX105 transducers will withstand high overloads. If the overload rating is exceeded, electrical failure may occur. As a safety feature, the transducers have been designed to withstand much higher burst pressure than the pressure which will cause permanent damage.

Important: Both static and dynamic overloads must be considered when selecting a pressure transducer. Pressure fluctuations exist in most systems. These fluctuations can have very large and very fast peak pressures, as in water hammer effects. If the transducer is connected to a slow responding instrument, such pressure peaks may not be observed. An oscilloscope is a convenient tool for determining if high pressure transients exist in a system. Where pressure pulses are expected, the transducer rating should be high enough to prevent overload by the peak pressure. Where high pressure transients are unavoidable, use either a higher range transducer or a snubber, which will reduce the peak pressure applied to the transducer. The life of the transducer will be reduced if it is repeatedly overloaded, particularly under dynamic conditions.

NOTES:

PX105 SPECIFICATIONS AT 25°C

PARAMETER	PRESSURE RANGE									UNITS
	6, 15, 25			50, 100,200			500, 1K, 2K			
	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
Full Scale Output (FSO)	4.90	4.95-5.05	5.10	4.90	4.95-5.05	5.10	4.90	4.95-5.05	5.10	Vdc
Null Offset	.85	.95-1.05	1.15	.85	.95-1.05	1.15	.85	.95-1.05	1.15	Vdc
Linearity (Best Fit)		±.5	±.10		±.2	±.5		±.2	±.5	% FSO
Hysteresis		±.25			±.25			±.25		% FSO
Temperature Error										
Null 0° to 85°C		±.01	±.02		±.01	±.02		±.01	±.02	% FSO/°C
-55° to 0°C + 85°C TO 125°C		±.02			±.02			±.02		% FSO/°C
Sensitivity 0° to 85°C		±.01	±.02		±.01	±.02		±.01	±.02	% Rdg/°C
-55° to 0°C + 85°C TO 125°C		±.02			±.02			±.02		% Rdg/°C
Stability (1 Year)		±.10			±.10			±.10		% FSO
Frequency Response		10			10			10		KHz
Supply Voltage (Vs)	8		20	8		20	8		20	Vdc
Supply Current (Quiescent)		15			15			20		mA
Output Current										
Source	10			10			10			mA
Sink	5			5			5			mA
Pressure Overload			2x			2x			1.5x	Rated Pressure
Burst Pressure	20x			10x			5x			Rated Pressure
Operating Temperature	-55° to 125°C									
Storage Temperature	-65° to 150°C									

*FSO is the voltage change between minimum and rated pressure.
For Example: NOM V₀ = 1.00 V @ Null Pressure, NOM V₀ = 6.00 V @ Rated Pressure, FSO = (6.00-1.00) = 5.00 V.