User's Guide

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PX835
M-5089/0112

PX835 EXPLOSION/FLAME PROOF PRESSURE TRANSMITTER INSTRUCTION SHEET M-5089/0112

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⚠ WARNING! READ ⚠ BEFORE INSTALLATION

1. GENERAL:
A failure resulting in **injury** or **damage** may be caused by excessive overpressure, excessive vibration or pressure pulsation, excessive instrument temperature, corrosion of the pressure containing parts, or other misuse.

2. OVERPRESSURE:
Pressure spikes in excess of the rated overpressure capability of the transducer may cause **irreversible electrical and/or mechanical damage** to the pressure measuring and containing elements.

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.

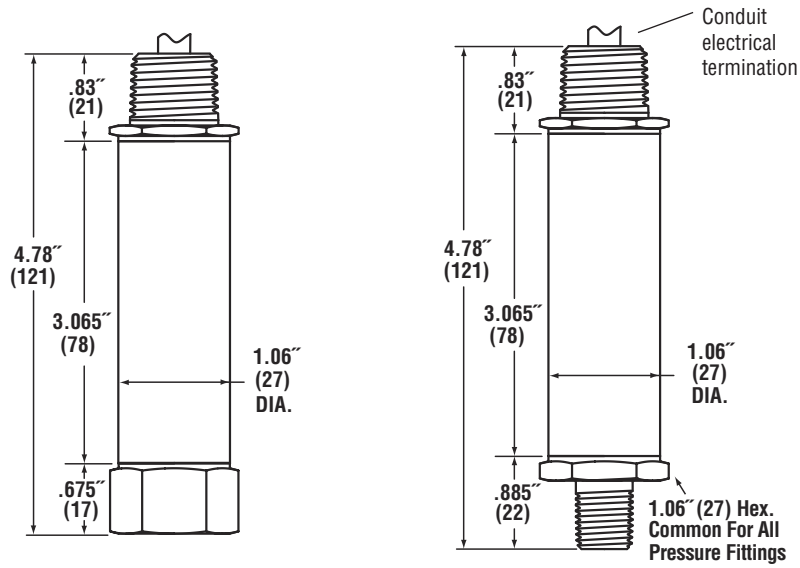
Symptoms of fluid hammer and surge's damaging effects:
- Pressure transducer exhibits an output at zero pressure (large zero offset).
- Pressure transducer output remains constant regardless of pressure
- In severe cases, there will be no output.

FREEZING:
Prohibit freezing of media in pressure port. Unit should be drained (mount in vertical position with electrical termination upward) to prevent possible overpressure damage from frozen media.

3. STATIC ELECTRICAL CHARGES:
Any electrical device may be susceptible to damage when exposed to static electrical charges. To avoid damage to the transducer observe the following:
- Operator/installer should follow the proper ESD (electrostatic discharge) protection procedures before handling the pressure transducer.
- Ground the body of the transducer BEFORE making any electrical connections
- When disconnecting, remove the ground LAST!

Note: The shield and drain wire in the cable (if supplied) is not connected to the transducer body, and is not a suitable ground.

Omega® PX835 Pressure Transmitter, Typical Dimensions and Construction*



***Dimensions and construction details may vary based on product specified.**

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Mounting

The PX835 transmitter requires no special mounting hardware, and can be mounted in any plane with negligible position error.

Although the unit can withstand normal vibration without damage or significant output effects, it is always good practice to mount the transducer where there is minimum vibration.

For units with NPT type pressure fittings apply Teflon® tape or an equivalent sealant to the threads before installing.

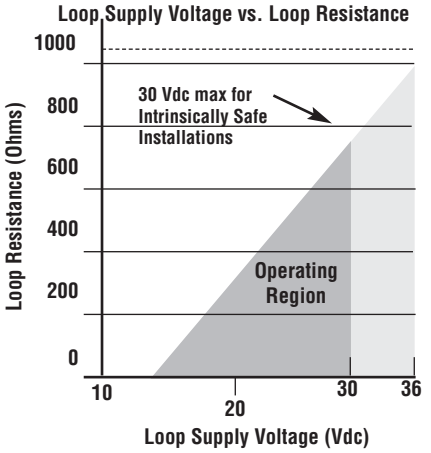
When tightening, apply a wrench to the hex wrench flats located just above the pressure fitting. **DO NOT** tighten by using a pipe wrench on the housing.

Power Supply

	Power Supply Voltage	
Output Signal	**Min**	**Max**
1-5Vdc	10V	30V
4-20mA*	12V	36V**

* For transmitters with 4-20mA output signal, the minimum voltage at the teminals is 12Vdc. However, the minimum supply voltage should be calculated using the following graph and formula.

** For Intrinsically Safe Installations max, supply voltage is 30Vdc.

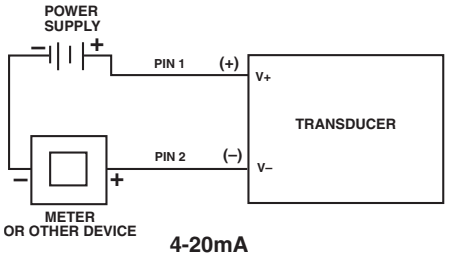


Vmin = 12V+ (.022A x R_L) (includes a 10% safety factor)
$R_L = R_S + R_W$
R_L = Loop Resistance (ohms)
R_S = Sense Resistance (ohms)
R_W = Wire Resistance (ohms)

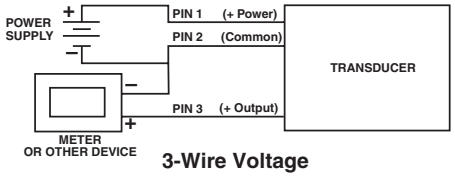
Noise

For minimum noise susceptibility, avoid running the transducer's leads in a conduit that contains high current AC power cables. Where possible avoid running the cable near inductive equipment..

PX835 Wiring Diagrams



4-20mA



3-Wire Voltage

PX835 transducer has internal transient protection: for safety, limit line-to-ground voltage to 36 Vdc max.

HAZARDOUS AREA CERTIFICATIONS

Explosion Proof* – cUL: Specify A2X
Class I, Div. 1 & 2, Groups A, B, C and D
Class II, Div. 1 & 2, Groups E, F and G

Flame Proof* – ATEX: Specify A2X
CE Ex II 2 GD
Ex d IIC T4
Ex nC IIC T4

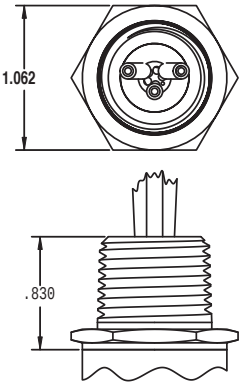
Intrinsically Safe (applies to 4-20mA) FM/CSA:

Intrinsic Safety: Class I, II and III Div.1 and 2, See Omega drawing #825A027

Non-Incendive: Class I, II and III Div.1 and 2, Groups A, B, C, D, F and G, no barriers needed

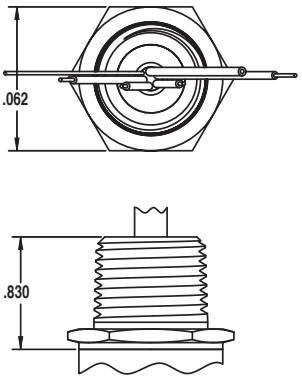
* Model PS835 enclosure is intended for installation using metallic conduit and requires installer to comply with appropriate codes to complete proper installation to meet the assigned hazardous area designation.

Wire Color	Voltage Output	Current Output
Red	(+) Power	(+) Power
White	(+) Output	None
Black	(–) Power	(–) Power



FLYING LEADS
ELECTRICAL TERMINATION
CONDUIT - 1/2 NPT MALE

Wire Color	Voltage Output	Current Output
Red	(+) Power	(+) Power
White	(+) Output	None
Black	(–) Power	(–) Power



SHIELDED CABLE (PIG TAIL)
ELECTRICAL TERMINATION
CONDUIT - 1/2NPT MALE

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Servicing North America:

U.S.A.: ISO 9001 Certified
Omega Engineering, Inc., One Omega Drive, P.O. Box 4047
Stamford, CT 06907-0047
Toll-Free: 1-800-826-6342 Tel: (203) 359-1660
FAX: (203) 359-7700 e-mail: info@omega.com

Canada:
976 Bergar
Laval (Quebec), Canada H7L 5A1
Toll-Free: 1-800-826-6342 TEL: (514) 856-6928
FAX: (514) 856-6886 e-mail: info@omega.ca

For immediate technical or application assistance:

U.S.A. and Canada: Sales Service: 1-800-826-6342/1-800-TC-OMEGA®
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info@omega.com.mx e-mail:espanol@omega.com

Servicing Europe:

Benelux:
Managed by the United Kingdom Office
Toll-Free: 0800 099 3344 TEL: +31 20 347 21 21
FAX: +31 20 643 46 43 e-mail: sales@omega.nl

Czech Republic:
Frystatska 184
733 01 Karviná, Czech Republic
Toll-Free: 0800-1-66342 TEL: +420-59-6311899
FAX: +420-59-6311114 e-mail: info@omegashop.cz

France:
Managed by the United Kingdom Office
Toll-Free: 0800 466 342 TEL: +33 (0) 161 37 29 00
FAX: +33 (0) 130 57 54 27 e-mail: sales@omega.fr

Germany/Austria: Daimlerstrasse 26, D-75392 Deckenpfronn, Germany
Toll-Free: 0 800 6397678 TEL: +49 (0) 7059 9398-0
FAX: +49 (0) 7056 9398-29 e-mail: info@omega.de

United Kingdom: ISO 9001 Certified
OMEGA Engineering Ltd.
One Omega Drive, River Bend Technology Centre, Northbank
Irlam, Manchester M44 5BD England
Toll-Free: 0800-488-488 TEL: +44 (0)161 777-6611
FAX: +44 (0)161 777-6622 e-mail: sales@omega.co.uk

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WARNING: These products are not designed for use in, and should not be used for, human 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 in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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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.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:
1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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