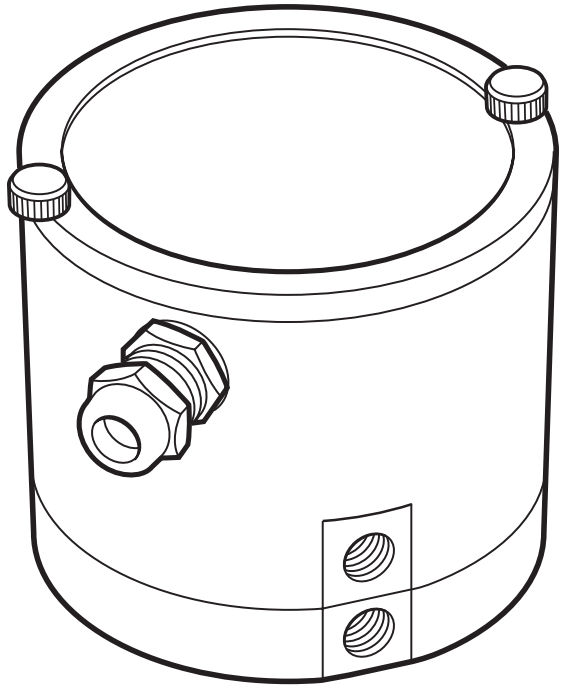
User's Guide

PX838

High Media Compatibility
Wet/Wet Differential Sensor



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M-3296/0300

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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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Installation

CAUTION:

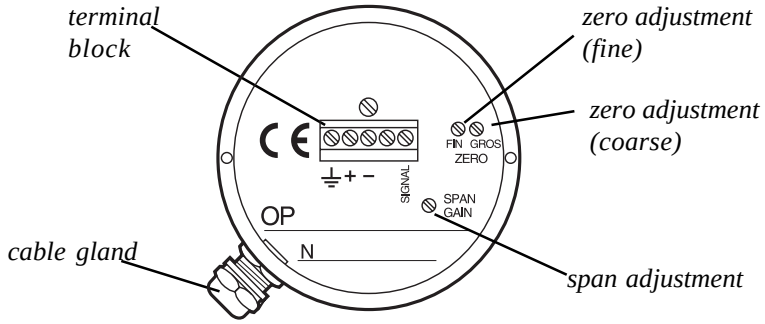
1. INCORRECT ELECTRICAL CONNECTIONS CAN, IN CERTAIN CIRCUMSTANCES, DESTROY THE ELECTRONIC OUTPUT CIRCUIT.
2. BEFORE APPLYING ELECTRICAL POWER, MAKE SURE THE SUPPLY VOLTAGE IS TO THE CORRECT RATING.
3. THIS A VERY SENSITIVE SENSOR. ONLY APPLY PRESSURE WITHIN THE PRESSURE RANGE.

Mounting

Two M5 threaded holes in the base of the sensor provide mounting points.

Note: The screws must not enter the holes more than 0.472" into the sensor body.

The installed position of the sensor should be away from sudden temperature variations, shocks and vibrations and should not be close to strong electromagnetic fields (transformers, motors etc.). The sensor can be mounted in any position, but mounting at an angle may require zero adjustment.



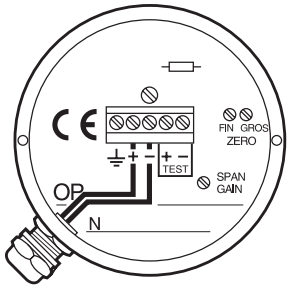
Internal detail

Electromagnetic Interference

To avoid electrical interference, use shielded cable with the shield connected to the earth ground at both ends. The ground of the sensor can be the casing or the ground terminal screw.

Electrical Connections

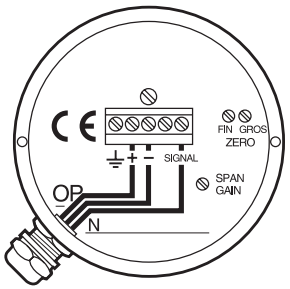
PX838 Series (current output)



The maximum allowable load resistance is calculated to formula:

R Max = 0.05 (V supply - 10) kW
Where: R Max in kW and V in Volts

PX838 Series (Unidirectional voltage output)



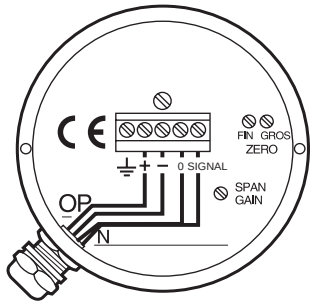
Minimum load 2kW

Note: Connections 5 and 6 are common.

If the output cable passes through an area of electrical disturbance, use a recommended load impedance of between 2 kW and 10 kW. Connect the load resistance between the wires corresponding to signal and - terminal at a point furthest from the sensor; this produces a circulating current.

PX838 Series bidirectional operation using bipolar power supply (±12 Vdc) with bidirectional output (0±5 Vdc or 0±2.5 Vdc)

Connect the power supply to + for positive,
- for negative, and 0 for neutral; connect the output to signal for positive and 0 for negative signal.



Purging or de-gassing the sensor

Two 5 mm hexagonal socket bleed screws are located on the outer casing and can be loosened to bleed the two pressure connections. Make sure that these screws are tightened after this operation.

Note: It is possible to changeover the bleed screws and pressure connections enabling easier access or for installation in a difficult position.

Adjustments

The following equipment is required to carry out the adjustments:

- ❒ Power supply
- ❒ Voltmeter or
- ❒ Milli-ammeter
- ❒ Pressure standard

◆ Connect the sensor as shown in Installation. The sensor should be put in its normal operating position (vertical or horizontal). Remove the cover to gain access to the zero and span adjustment potentiometers.

Zero adjustment

◆ Zero adjustment is carried out with no pressure applied.

◆ Depending on the model, set the zero adjustment to: 0.00 V, 2.50 V, 4.00 mA or 12.00 mA

Span adjustment

◆ Span adjustment is carried out with the required span pressure applied to the + pressure connector.

◆ Depending on the model, set the span adjustment to: 5.00 V, 10.00 V or 20.00 mA.

◆ Release the pressure.

Completion

Check the output at zero pressure and if necessary, repeat the zero and span adjustments.

- ❒ Release the pressure and disconnect the equipment.
- ❒ Refit the cover.

Specification

Pressure range:.....4 inH_2O to ±150 psid

Pressure media:

X750 diaphragm — Any fluids, compatible with stainless steel (316L), X750 Inconel, 600 Inconel and viton.

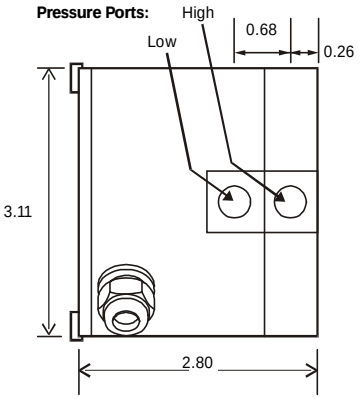
Beryllium copper diaphragm — Any fluids, compatible with stainless steel (316L), beryllium copper, brass and soft solder and viton.

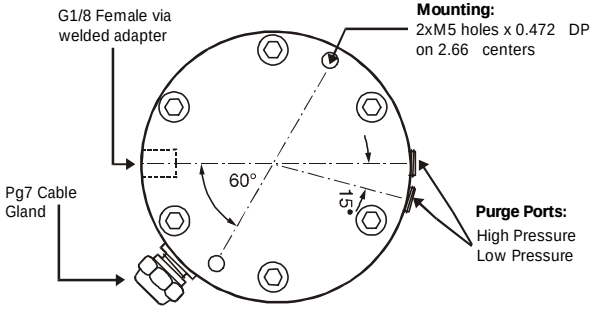
Accuracy:.....±0.25% FS BSL
(including linearity, hysteresis and repeatability)

Long term stability:.....±0.3% over 1 year at stabilized temperature
Weight *(approximate)*.....3.3 lbs
Dimensions.....see below

Power supply

.....10 to 30V d.c.
PX838 (0 to 10V output).....16 to 30V d.c.
PX838 (0 to ±5V output).....±12V d.c.





Dimensions