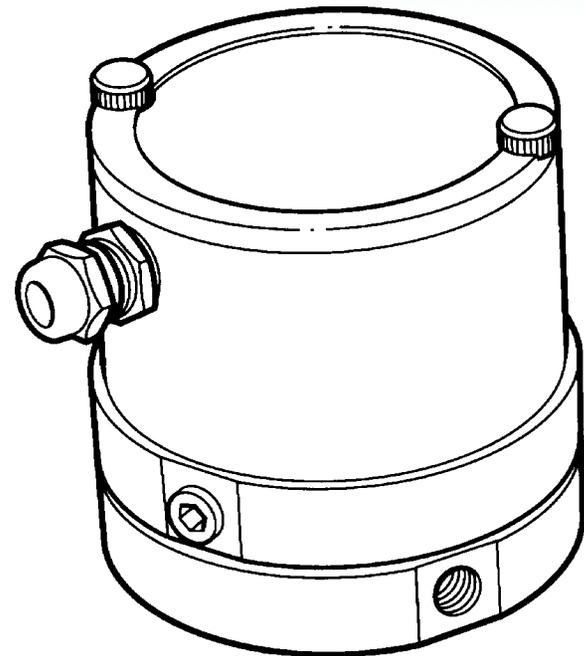


# User's Guide

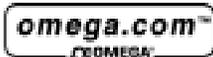
PX938

High Accuracy

Wet/Wet Differential Sensor



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2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

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2. Model and serial number of the product, and
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## Installation

### CAUTION:

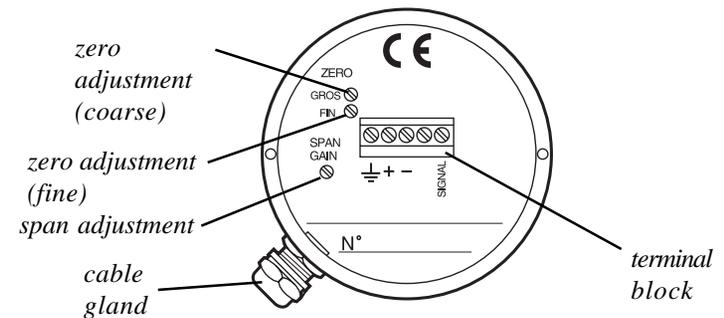
1. INCORRECT ELECTRICAL CONNECTIONS CAN, IN CERTAIN CIRCUMSTANCES, DESTROY THE ELECTRONIC OUTPUT CIRCUIT.
2. BEFORE APPLYING ELECTRICAL POWER, MAKE SURE THE SUPPLY VOLTAGE IS TO THE CORRECT RATING.
3. THIS IS A VERY SENSITIVE SENSOR, ONLY APPLY PRESSURE WITHIN THE PRESSURE RANGE.

### 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. For very low pressure sensors (less than 0.08 inH<sub>2</sub>O) the recommended mounting is horizontal.



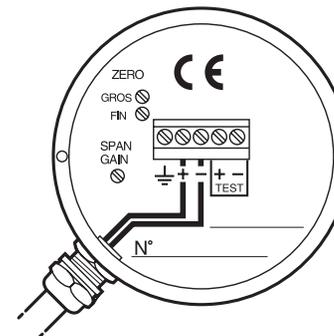
Internal detail

### Electromagnetic Interference

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

### Electrical Connections

#### PX938 Series (current output)

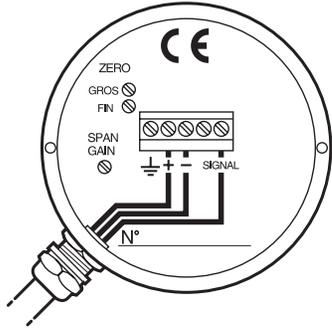


The maximum allowable load resistance is calculated to the formula:

$$R_{Max} = 0.05 (V_{supply} - 10) kW$$

Where: R Max in kW and V in Volts

**PX938 Series (Unidirectional voltage output)**

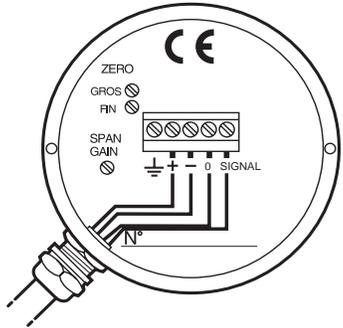


*Note:*  
Connections 5 and 6 are common.

Load: 2kW minimum

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 0V at a point furthest from the sensor.

**PX938 Series bidirectional operation using bipolar power supply ( $\pm 12$  Vdc) with bidirectional output ( $0 \pm 5$  Vdc or  $0 \pm 2.5$  Vdc)**



Minimum load 1k w

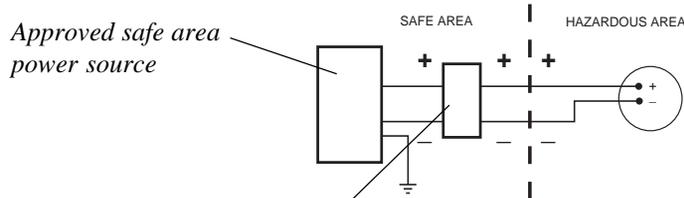
Connect the power supply to + for positive, - for negative, and 0 for neutral; connect the output to signal for positive and 0 for negative signal.

**WARNING: CONNECTION OF THIS SENSOR MUST ONLY BE CARRIED OUT WITH ALL POWER SUPPLIES ISOLATED.**

The wiring used must meet the requirements of inductance and, the inductance/resistance ratio.

To avoid electrical interference use shielded cable with the shield connected to the ground of the non-hazardous area.

DO NOT CONNECT the shield to ground at both ends - this does not comply with the requirements of intrinsically safe installations.



Barriers must be of the same polarity (i.e. both +ve or both -ve) and must be approved

**Pressure connections**

The high pressure connection is marked HI and the low pressure connection marked LO.

**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 HI 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:.....  $\pm 0.04$  inH<sub>2</sub>O to  $\pm 300$  psid

**Pressure media:**

X750 Inconel diaphragm  
Any fluids, compatible with stainless steel (316L), X750 Inconel, 600 Inconel, Loctite Master joint 510

Beryllium copper diaphragm Any fluids, compatible with stainless steel (316L), beryllium copper, brass and soft solder, Loctite Master joint 510

Accuracy (including linearity, hysteresis and repeatability) .....  $\pm 0.1\%$  BSL

Long term stability:.....  $\pm 0.1\%$  over 1 year at stabilized temperature

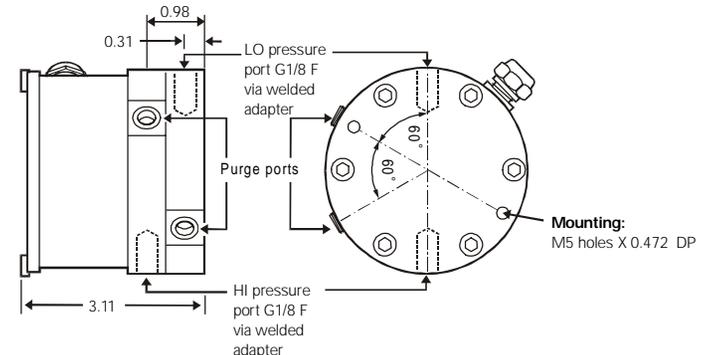
Weight (approximate) ..... 3.4 to 4.2 lbs

Dimensions..... see below

**Power supply**

..... 10 to 30 V d.c.  
PX 938 (0 to 10 V d.c. output)..... 16 to 30 V d.c.

PX938 (0 to  $\pm 5$  V output) .....  $\pm 12$  V d.c.



**Dimensions**