



Elasto-Valve Rubber Products Inc.  
1691 Pioneer Rd.  
Sudbury, Ont. Canada  
P3G-1B2

Tel 1-705-523-2026  
Fax 1-705-523-2033  
Toll Free 1-800-461-6331

## **PRESSURE SENSORS**

THREADED PRESSURE SENSOR (TPS) & WAFER PRESSURE SENSOR (WPS)

### **INSTALLATION, OPERATION, MAINTENANCE INSTRUCTIONS**



WPS



TPS

## **OPERATION**

1. E.V.R. pressure sensors consist of a molded elastomer sleeve, which features an integral flange gasket. As a result process fluids do not contact the sensor body or retaining rings, eliminating the requirement for special materials or alloys in corrosive situations.

This molded elastomer sleeve acts to both isolate the process fluid from sensitive instrumentation and transmit the fluid pressure changes. The process fluid pressure is transmitted to a liquid sealed between the metal housing and the flexible elastomer element and measured using standard pressure indicating instrumentation such as gauges, transmitter switches and recorders.

2. E.V.R. pressure sensor sleeves use an "O" Ring type of seal and allow metal to metal contact between retaining rings and sensor body eliminating any sealing area susceptible to high pressure blow out and loss of fill liquid.

## **MAINTENANCE**

E.V.R. pressure sensors should be periodically inspected for wear or aging of the elastomer sleeve. The pressure sensor may be supplied with instruments (transducers, pressure switches etc.) Consult the specific manufacturers literature for proper maintenance procedures.

## **STORAGE**

1. E.V.R. spare pressure sensors and sensor replacement sleeves must be kept in a cool, dark place. Exposure to heat, extreme cold or sunlight will damage the sleeve.

2. **DO NOT STORE SENSOR** near active electrical equipment. If the sensor will be in storage for a long period, it is advisable to coat the face and inside of the sleeve twice yearly with silicone spray or liquid.

3. For Control Instruments, refer to instrument maintenance manuals for the proper storage procedures.

## **INSTALLATION**

1. Pressure sensors frequently handle reactive and abrasive fluids which may cause the elastomer sleeve to wear out over a period of time. Sensor and gauge liquids (if supplied with a liquid filled gauge) must be compatible with the process fluid. Caution must be taken when handling these liquids. Mixing these liquids may cause a violent chemical reaction resulting in personal injury and/or equipment damage.

2. Instruments (transducers, pressure switches etc.) must be pressure rated within the design operating conditions and be compatible with the sensing fluid. Consult the specific manufacturers literature for correct design conditions and installation procedures.

3. Inspect the sensor before installation. While Elasto-Valve takes steps to prevent shipment damage, such damage is possible and should be discovered and reported before the unit is installed.

**DO NOT INSTALL A DAMAGED PRESSURE SENSOR.** The pressure sensor should not show any indication of leakage. The elastomer sleeve should be free of any cracks, cuts and blisters and be replaced if necessary.

4. The operating pressures must be within the sensor rating and its instruments specifications. The rubber compound must be compatible with both the chemical reactivity and temperature of the process fluid.

5. E.V.R. pressure sensor can be installed with the flow in either direction. Install in a straight run of pipe.

6. If the pressure sensor is supplied with a gauge, the gauge may be rotated to face the most convenient direction for viewing. It is recommended that the gauge be rotated **CLOCKWISE** only up to three quarters of one revolution.

7. The pressure sensor is vacuum transfer liquid filled at the factory to insure the highest possible accuracy in the operation of the gauge or auxiliary instrumentation. **DO NOT DISASSEMBLE UNLESS NECESSARY FOR REPAIRS.**

8. E.V.R. pressure sensors should be mated with full face, flat faced, serrated face flanges to achieve optimum performance. The use of slip-on or raised face flanges can cut the rubber surface causing leakage.

9. To install, sandwich the pressure sensor between two flanges in the process pipeline.

- center the pressure sensor as carefully as possible
- no gasket is required
- do not distort rubber face of pressure sensor when inserting between flanges
- insert the flange bolts
- tighten flange bolts in a "criss cross" pattern

## **SLEEVE REPLACEMENT**

1. Remove pressure sensor from process line.
2. Remove any instruments (gauge etc.) as not to damage the equipment.
3. Remove the drain plug and drain the sensing fluid from the pressure sensor.
4. Peel back outer rubber sleeve flange to expose counter sunk screws.
5. Remove the counter sunk screws from end plates.

6. Remove end plates (2 per body).
7. To remove the sleeve, collapse and pull through the body.
8. Clean all components thoroughly. Flush out gauge.
9. Collapse new sleeve and pull through body and work seal lips into body groove.
10. Peel over sleeve flanges and reinstall end plates. Do not pinch seal lips.
11. Fasten screws in criss-cross pattern.
12. Fill with sensing liquid. See Fill Procedure.
13. Replace drain plug.
14. Reinstall pressure sensor in line making sure the mating flanges are free of any sharp edges which may cut the sensor sleeve.

## **FILL PROCEDURE**

### **A. Conventional Filling**

1. With the gauge (or any other instruments) attached to the sensor, invert the sensor body (fill port up).
2. Support the instruments adequately as not to damage them during the filling process.
3. Using a syringe or similar instrument and slowly pour sensing liquid into the sensor body.
4. Allow as much air to escape as possible.
5. With the sensor still inverted, replace the drain plug and knead the inside rubber surface to force out trapped air bubbles.
6. Remove the drain plug and slowly pour some more sensing liquid until full.
7. Repeat steps 5 & 6 until liquid level remains unchanged..
8. Replace the drain plug & tighten.

### **B. Vacuum Filling**

Since vacuum filling eliminates air pockets in gauge or auxiliary instrumentation, this is the preferred method of filling and insuring the highest possible accuracy in gauge reading. For vacuum filling, use any commercially available electric vacuum pump.

### **Notes**

1. All pipe threads must be covered with thread sealer (i.e. TFE tape).
2. All hardware must be tight and checked at regular intervals for looseness due to pipe vibration.