



OMNI Pressure Detector

General Instructions

This instruction covers installation, process connection, electrical connection and calibration of the SOR® Omni pressure detectors.

Static“O”Ring Type (prefaced by 5, 6, 9 or 1)

The Static“O”Ring type pressure detector with optional wetted parts is suitable for a wide variety of process applications. This type is not recommended for high-pressure fluid power applications where high shock pressure and high cycle rates are expected. Use the SOR Pivot Seal type (prefaced by 2 or 3) for fluid power applications.

The pressure sensing element of the Static“O”Ring type pressure detector is a force-balanced, piston-actuated assembly sealed by a flexible diaphragm and o-ring. Media pressure on the area of the piston counteracts the force of the range spring, adjustable by the adjusting screw, which moves the piston shaft only a few thousandths of an inch to directly actuate the electrical snap-action detecting element. This principle of operation virtually eliminates friction and resultant wear.



Pivot Seal Type (prefaced by 2 or 3)

The Pivot Seal type pressure detector is generally suitable for fluid power hydraulic applications where high shock pressures and high cycle rates are expected and where only normally industrial clean hydraulic fluid is used. Use Static“O”Ring type for other process applications.

The pressure sensing element of the Pivot Seal type pressure detector is a force-balanced, piston-actuated assembly sealed by an o-ring. The piston reciprocates a maximum of .020 inches. This results in minimal o-ring wear. Media pressure on the area of the piston counteracts the force of a range spring, adjustable by the adjusting screw, which moves the piston shaft and the force transmitter to directly actuate the electrical snap-action detecting element. This principle of operation greatly reduces the friction and resultant wear normally associated with piston-type pressure detectors.

NOTE: If you suspect that a product is defective, contact the factory or the SOR Representative in your area for a return authorization number (RMA). This product should only be installed by trained and competent personnel.

*Design and specifications are subject to change without notice.
For latest revision, go to www.sorfinc.net*

Installation

The pressure detector may be line mounted by either rigid process piping or the electrical conduit. The body of the pressure detector should be clamped to a suitable support member on applications where either rigid process piping or electrical conduit is not available.



When rigid process piping or rigid electrical conduit is used it is important that no bending or torsional forces be imposed on the pressure detector.

Safety Integrity Level (SIL) Installation Requirements

The SOR pressure detectors have been evaluated as Type-A safety related hardware. To meet the necessary installation requirements for the SIL system, the following information must be utilized:

- Proof Test Interval shall be one year.
- Units may only be installed for use in Low Demand Mode.
- Products have a HFT (Hardware Fault Tolerance) of 0, and were evaluated in a 1oo1 (one out of one) configuration.

Form 1538 (03.12) ©2012 SOR Inc.

Process Connection

Use two wrenches when connecting process pipe: a 1-1/8" open-end wrench to hold the hex pressure port while connecting the process pipe, the other wrench to tighten the process pipe or tube fitting.



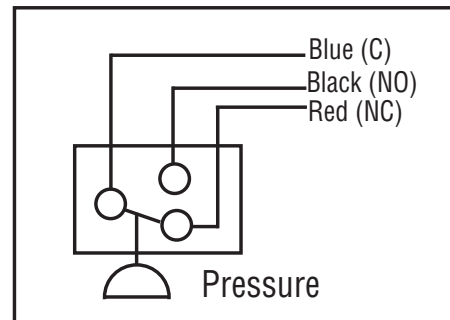
Do not use a pipe wrench or strap wrench on the round body or square detecting assembly while tightening the process pipe or tube fitting. Use wrench flats on process port only!

Electrical Connection

Omni pressure detectors have 18" potted free leads of 18 AWG stranded copper wire. They are marked NC – Normally Closed; NO – Normally Open; and C – Common.

Electrical detecting elements are snap action Single-Pole, Double-Throw (SPDT). (Termination: 1/2NPT(M) conduit connection with free leads)

Use a 1-1/4" open-end wrench to hold the square portion near the electrical connection while conduit fitting is being tightened. Connect free leads as desired.



Care must be taken to ensure clearance is provided to prevent sharp objects from cutting or abrading wire insulation.

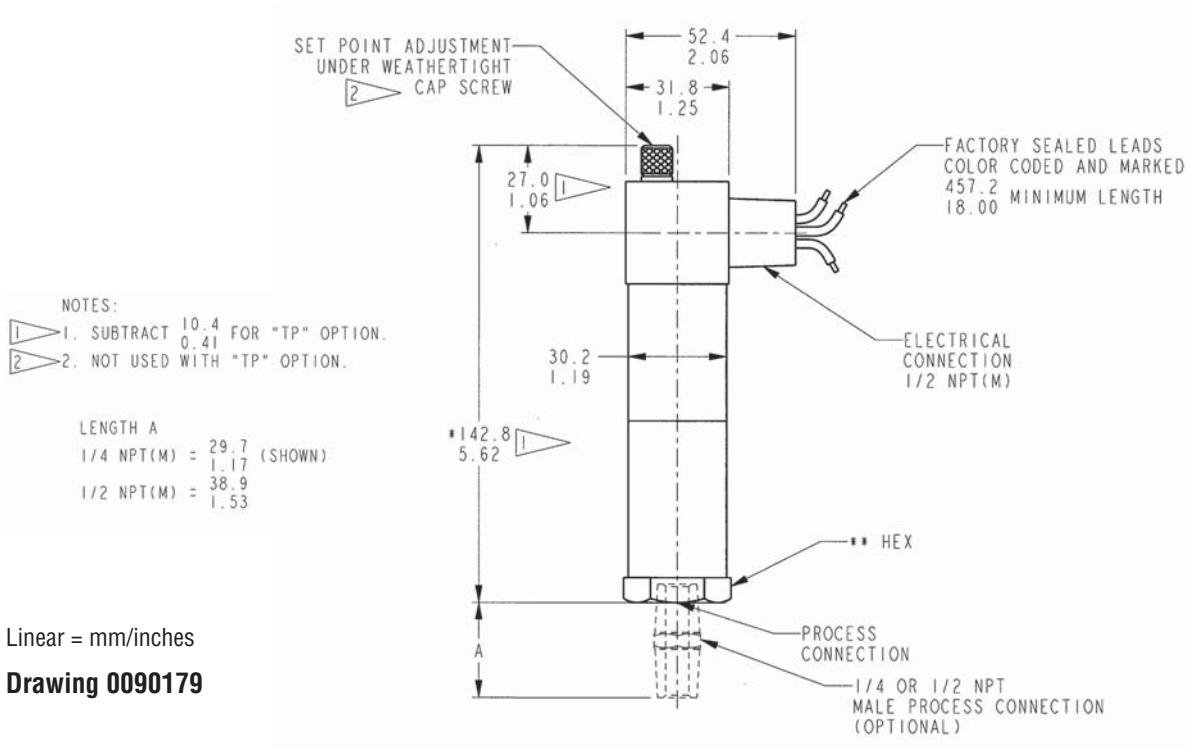
Calibration

- Factory Preset units have been set at the SOR factory to customer specifications and are tamper-proof. The set point is locked and sealed. It cannot be changed in the field. TP accessory designator indicates factory preset.
- Field Adjustable units have a recessed Allen screw for set point adjustment. Remove knurled cap and adjust the set point as follows:
 - ① Use 1/8" hex Allen wrench to turn adjusting screw to achieve desired set point.
 - ② Turn adjusting screw clockwise (in) to increase set point.
 - ③ Turn adjusting screw counterclockwise (out) to decrease set point.
 - ④ Use an external pressure measuring device to accurately calibrate set points.

NOTE: SOR discourages field modifications, change-out of wetted parts, or repair. It is preferred that products be returned to SOR for inspection or repair. Contact the factory for return authorization. Field repair should be performed by qualified instrument technicians with adherence to SOR procedures.

Dimensions

Dimensions are for reference only.
Contact the factory for certified drawings for a particular model number.



| PROCESS CONN SIZE | * LENGTH 1, 5, 6, 9 | * LENGTH 2, 3 | * LENGTH 56 | ** HEX 1, 5, 6, 9, 56 | ** HEX 2, 3 |
|-------------------|---------------------|------------------|------------------|-----------------------|--------------|
| 1/4 NPT(F) | SHOWN | ADD 14.0 0.55 | ADD 18.3 0.72 | 28.7 1.13 | 28.7 1.13 |
| 1/2 NPT(F) | ADD 13.2 0.52 | ADD 24.1 0.95 | | | 38.1 1.50 |
| 9/16 SAE | SHOWN | ADD 14.0 0.55 | N/A | | 28.7 1.13 |
| 3/4 NPT(M) | ADD 23.1 0.91 | N/A | | | N/A |



sorinc.net

14685 West 105th Street, Lenexa, KS 66215 ■ 913-888-2630 ■ 800-676-6794 USA ■ Fax 913-888-0767