



Dual Hi-Lo Pressure Detectors

General Instructions

The pressure sensing elements are a pair of force-balanced, piston-actuated assemblies sealed by flexible diaphragms and o-rings that are static. The only wetted parts in this arrangement are the single pressure port, two sensing assembly diaphragms and o-rings.

Media pressure on the area of the pistons counteracts the force of the range spring (adjustable by the adjusting nuts), which moves the piston shafts only a few thousandths of an inch to directly actuate the electrical snap-action detecting elements.

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.

V1 Weathertight Housing



V2 Weathertight Explosion Proof Hermetically Sealed

Installation

Dual Hi-Lo Pressure Detectors may be secured to bulkheads, panels or pipe stanchions with suitable bolts. When mounting the pressure detector to an irregular or uneven flat surface, install rubber washers on the mounting bolts between the housing and the mounting surface.



Failure to place washers between the housing and the mounting surface may result in torsional forces on the housing that could cause false trips or render the pressure detector inoperative.

Failure to mount the housing on a flat mounting surface may result in torsional forces on the housing that could cause false trips or render the pressure detector inoperative.

Line mounting by either the process connection or the electrical conduit connection is not recommended.

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 1001 (one out of one) configuration.

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Process Connection

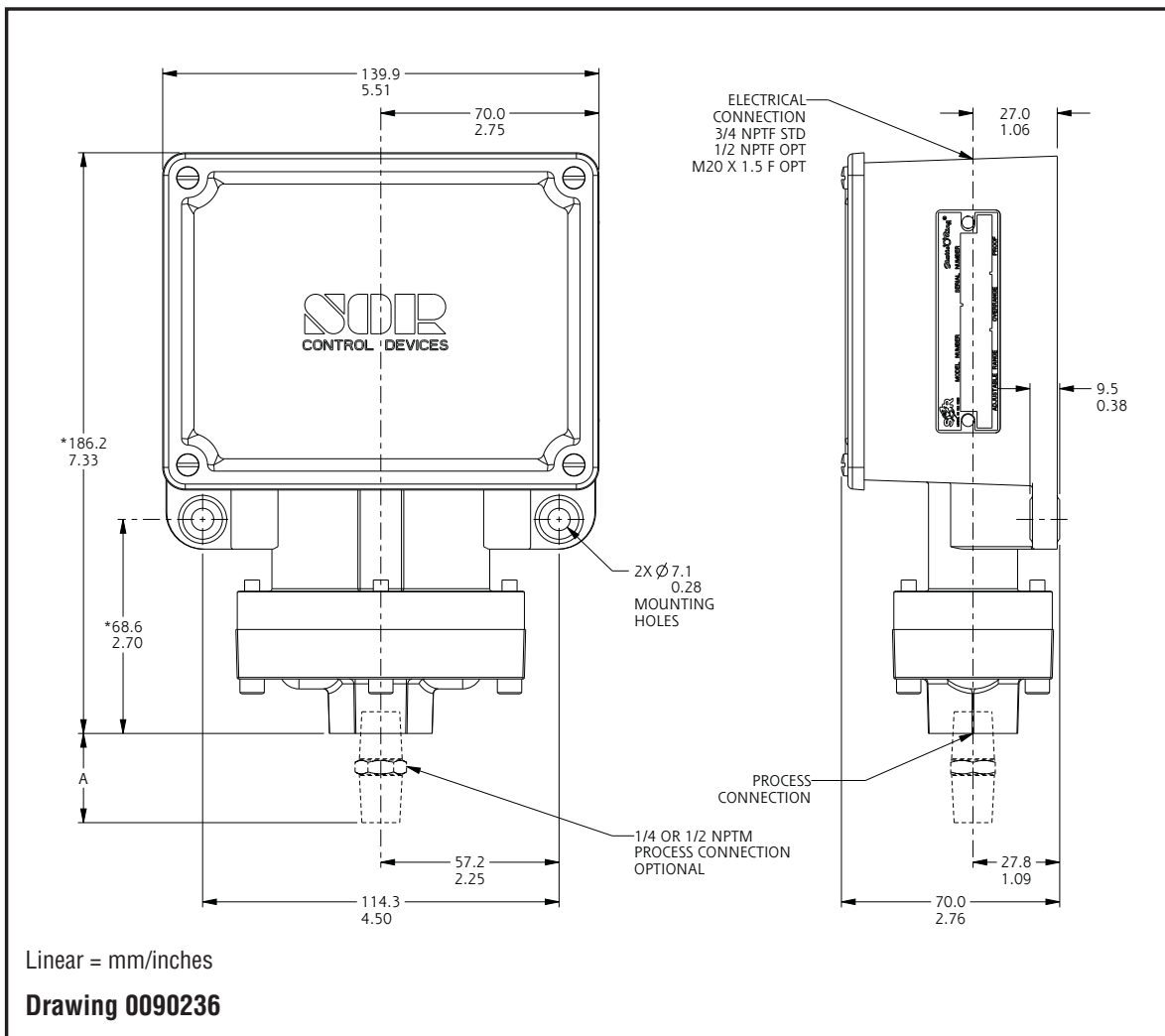
Securely connect the process line to the pressure port using two wrenches; one to hold the hexagonal flats on the pressure port, the other to tighten the process pipe or tube fitting.



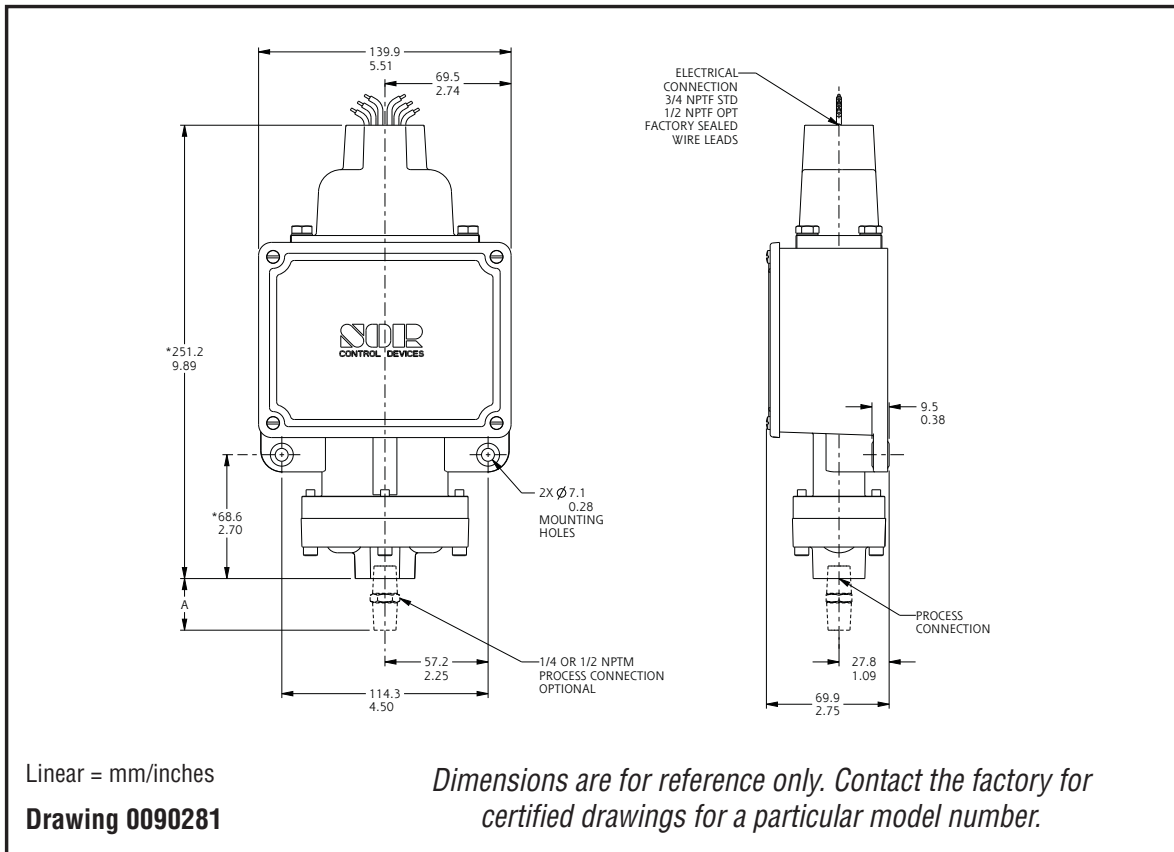
Ensure that the process connection is tightened and positioned so that bending and torsional forces imposed on the pressure detector are minimal. DO NOT loosen the pressure port from the body, because leakage could result or the pressure detector could be rendered inoperative.

Dimensions

V1 WEATHERTIGHT



V2 EXPLOSION PROOF, HERMETICALLY SEALED



Electrical Connection



Units in hazardous locations— Prior to removal from service, make sure that the work area is declassified. Failure to do so could result in severe personal injury or substantial property damage.

Ensure that wiring conforms to all applicable local and national electrical codes and install unit(s) according to relevant national and local safety codes.

V1 WEATHERTIGHT

Common

Normally Open

Normally Closed

SPDT: Screw terminal block with marked insulation. Left and right positions.

No. 1 (Left side)

C1

N01

NC1

No. 2 (Right side)

C2

N02

NC2

2-SPDT (DPDT): Left and right positions

Nos. 1 & 2 (Left side)

C1

N01

NC1

C2

N02

NC2

Nos. 3 & 4 (Right side)

C3

N03

NC3

C4

N04

NC4

“V2 EXPLOSION PROOF 18” 18 AWG color-coded and marked wire leads with 3/4” NPT (F) conduit connection.

	Common	Normally Open	Normally Closed
SPDT			
No. 1 (Left side)	C1 Blue	NO1 Black	NC1 Red
No. 2 (Right side)	C2 Blue	NO2 Black	NC2 Red
2-SPDT (DPDT)			
Nos. 1 & 2 (Left side)	C1 Blue	NO1 Black	NC1 Red
	C2 Yellow	NO2 Brown	NC2 Orange
Nos. 3 & 4 (Right side)	C3 Blue	NO3 Black	NC3 Red
	C4 Yellow	NO4 Brown	NC4 Orange

GR - Ground (Earth) Green wire connected to each hermetically sealed detecting element capsule.

NOTE: *Transpose NO and NC on vacuum detectors when set points are in the vacuum range.*



Overtravel has been preset at the factory, i.e. the detecting element assembly has been precisely positioned in the housing for optimum performance. It normally should not be changed in the field. Should adjustment be necessary, factory approved procedures must be closely followed. Any inadvertent movement or replacement in the field will degrade performance, void the warranty and could render the device inoperative.

Calibration

- 1 Remove the housing cover.
- 2 To increase the set point at which the No. 1 (left side) detecting element(s) actuates, turn the hex adjusting nut clockwise with a 3/4-inch open-end wrench.
- 3 Sight across the flat top of the adjusting nut to the calibration scale at the bottom of the housing for an approximate set point. Use a 1/4% external pressure gauge to more precisely calibrate the pressure detector.
- 4 Repeat steps 2 and 3 for the No. 2 (right side) set point. There is no interaction, so it is not critical whether the left or right side is set first.
- 5 Replace the housing cover. The pressure detector can be placed in service.



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