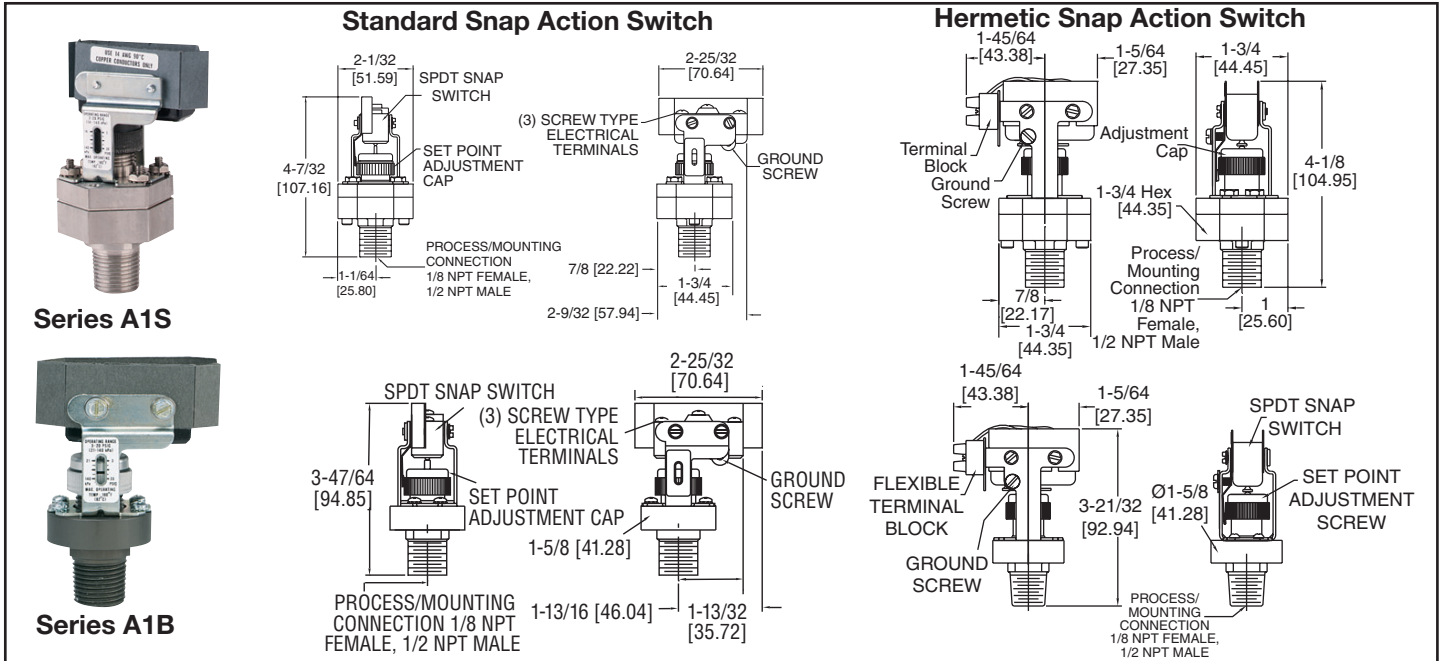




Series A1 Compact OEM Pressure Switch

Specifications - Installation and Operating Instructions



Mercoïd Series A1 Compact OEM Pressure Switches are ideal for panel mounting wherever a high-quality, economical open-case or weatherproof control is required.

Installation

- 1. Location:** Select a location where the temperature limits of -40°F to 180°F (-40 to 82°C) will not be exceeded. Locate the switch as close as possible to the pressure source. Long lengths of piping will not affect accuracy of the actuation point but will slightly add to response time.
- 2. Mounting and Processing Connection:** Avoid mounting surfaces with excess vibration which could cause false actuation when pressure is near setpoint. The switch should be mounted within 20° of vertical for proper operation. Mount the switch by connecting it to the process piping using either 1/8" NPT Female or 1/2" Male connection. Pipe joint compound or Teflon® thread tape should be used to prevent leakage.
- 3. Electrical Connections:** The SPDT snap switch includes normally open, normally closed and common connections. The common and normally open contacts will close and the common and normally closed contacts will open when pressure increases to the setpoint. The actions will reverse when pressure decreases below the setpoint minus the deadband. A green grounding screw is provided on the switch bracket. All wiring should be in accordance with local codes.

Setpoint Adjustment

- Determine the setpoint pressure. The approximate actuation point can be set by turning the adjustment cap up or down, aligning the top of the O-ring, located above the cap, with the appropriate scale graduation.
- Connect tubing or piping from the pressure port on bottom of switch to one leg of a tee. Connect the second leg to a pressure test gage of known accuracy and in an appropriate range. The third leg should be connected to a controllable source of pressure.
- Connect a volt/ohm meter or other circuit tester to the snap action terminals to indicate when switching occurs.
- Slowly apply pressure to the system and note the pressure at which switching occurs.
- Operate the switch through several cycles to confirm proper actuation point.
- Remove test apparatus and attach switch to pressure source and control circuit wiring. Place switch in service.

SPECIFICATIONS

Wetted Materials:

Pressure Chamber: Aluminum with Teflon® impregnated anodized coating, brass, or 316 SS.

Diaphragm: 316 SS on A1S, Buna N on A1B.

O-ring: Viton® on A1S, Buna N on A1B.

Temperature Limit: -40 to 180°F (-40 to 82°C).

Pressure Limits: 750 psig (51 bar).

Enclosure Rating: O, and OP enclosure none. PC, PN, SC, and SN enclosures meet NEMA 4X standards.

Switch Type: Type 1: SPDT snap switch. Type 1HS: SPDT hermetically sealed snap switch.

Electrical Rating: Switch Type 1: 15A @ 120/240/480 VAC, 1/8 HP @ 125 VAC, 1/4 HP @ 250 VAC. Switch Type 1HS: 5A @ 120/240 VAC.

Process Connection: 1/8" female NPT and 1/2" male NPT. OP style has 1/8" female NPT and 1/2" male straight pipe thread (NPSM).

Mounting Orientation: Within 20° of vertical.

Set Point Adjustment: Knurled screw cap with indicating scale.

Deadband: Fixed, See deadband chart.

Weight: A1S: 9 oz (.25 kg), A1B: 6 oz (.17 kg).

Electrical Connection: Screw terminals on Type 1 switch, terminal block on Type 1HS switch.

Approvals: UL508.

Maintenance

The moving parts of these switches require no routine maintenance or lubrication. The switch setpoint is the only user adjustment.

Units in need of repair should be returned to the factory at the address below, freight paid. Be sure to include a brief explanation of the problem, plus any relevant application information available.

Send to:

Mercoïd, a Division of Dwyer Instruments, Inc.

Attn: Repair Department

102 Indiana Highway 212

Michigan City, IN 46360

Example of how to order:

A1S - O - AL - 1 - 4
1 2 3 4 5

1. Product Designation:
 - S - Basic Model with 316SS Diaphragm/Viton® O-ring
 - B - Basic Model with Buna-N Diaphragm/O-ring
2. Enclosure Designation:
 - O - Open Construction No Enclosure
 - OP- Open Construction, No Enclosure. Has 1/2" straight pipe thread and flush bottom, includes gasket and mounting nut.
 - (A1B with brass chamber only).
 - PC - Polycarbonate Enclosure/SS Base/Conduit Hub
 - PN - Polycarbonate Enclosure/SS Base/Liquid Tight Cable Entry
 - SC - 316SS Enclosure/SS Base/Conduit Hub
 - SN - 316SS Enclosure/SS Base/Liquid Tight Cable Entry
3. Housing Material Designation
 - AL - Aluminum with Teflon® Impregnated Hard Coat
 - SS - 316SS
 - BR - Brass
4. Switch Designation
 - 1-SPDT Snap Action Switch
 - 1HS - SPDT Hermetic Snap Action Switch
5. Operating Pressure Range Designation
 - 1 - 2 to 20 psig (A1S) or 3 to 20 psig (A1B)
 - 2 - 15 to 150 psig
 - 3 - 25 to 250 psig
 - 4 - 50 to 500 psig

Series A1S and A1B Deadband Chart-psig (bar)

Model	Range	Deadband at Minimum Range	Deadband at Maximum Range
A1S with Type1 Switch	2-20 (.14-1.4)	1 (.07)	3 (.21)
	15-150 (1.0-10.3)	5 (.34)	15 (1.0)
	25-250 (1.7-17.2)	8 (.55)	25 (1.7)
	50-500 (3.4-34.5)	15 (1.0)	50 (3.5)
A1B with Type 1 Switch	3-20 (.21-1.4)	1 (.07)	3 (.21)
	15-150 (1.0-10.3)	5 (.34)	15 (1.0)
	25-250 (1.7-17.2)	8 (.55)	25 (1.7)
	50-500 (3.4-34.5)	15 (1.0)	50 (3.5)
A1S with Type 1HS Switch	2-20 (.14-1.4)	1.5 (.10)	4 (.28)
	15-150 (1.0-10.3)	10.5 (.72)	40 (2.8)
	25-250 (1.7-17.2)	9 (.62)	50 (3.5)
	50-500 (3.45-34.5)	14.5 (.99)	42 (2.9)
A1B with Type 1HS Switch	3-20 (.21-1.4)	2 (.14)	6 (.41)
	15-150 (1.0-10.3)	6 (.41)	25 (1.7)
	25-250 (1.7-17.2)	17 (1.17)	50 (3.5)
	50-500 (3.4-34.5)	12.5 (.86)	44 (3.0)

