



Models: PS40-1 VDS
PS40-2 VDS

Service Use

Automatic Sprinkler
One or two family dwelling
Residential Occupancy up to four stories
National Fire Alarm Code

NFPA-13
NFPA-13D
NFPA-13R
NFPA-72

Installation

The Potter PS40 Series Supervisory Pressure Actuated Switches are designed primarily to detect an increase and/or decrease from normal system pressure in automatic fire sprinkler systems. Typical applications are: Dry pipe systems, pre-action air/nitrogen supervision, pressure tanks, air supplies, and water supplies. The PS40 switch is factory set for 2,8 BAR (40 PSI) normal system pressure. The switch marked with the word LOW is set to operate at a pressure decrease of ,7 BAR (10 PSI) at 2,1 BAR (30 PSI). The switch marked with the word HIGH is set to operate at a pressure increase of ,7 BAR (10 PSI) at 3,5 BAR (50 PSI). See section heading **Adjustments and Testing** if other than factory set point is required.

1. Connect the PS40 to the system side of any shutoff or check valve.
2. Apply Teflon tape to the threaded male connection on the device.
(Do not use pipe dope)
3. Device should be mounted in the upright position.
(Threaded connection down)
4. Tighten the device using a wrench on the flats on the device.

Wiring Instructions

1. Remove the tamper resistant screw with the special key provided.
2. Carefully place a screwdriver on the edge of the knockout and sharply apply a force sufficient to dislodge the knockout plug. See Fig. 9
3. Run wires through an approved conduit connector and affix the connector to the device. A NEMA-4 rated conduit fitting is required for outdoor use.
4. Connect the wires to the appropriate terminal connections for the service intended. See Figures 2,4,5,6, and 8

UL, cUL, and CSFM Listed, FM and LPC Approved, NYMEA Accepted, CE Marked, VdS

Dimensions: (9,6cm) 3.78" W x (8,1cm) 3.20" D x (10,7cm) 4.22" H

Conduit Entrance: Two knockouts provided for 1/2" conduit. Individual switch compartments and ground screw suitable for dissimilar voltages.

Enclosure: Cover- Die-cast with textured red powdercoat finish, single cover screw and rain lip.
Base- Die-cast

Pressure Connection: Nylon 1/2" NPT male

Factory Adjustment: PS40-1 operates on decrease at 2,1 BAR (30 PSI)
PS40-2 operates in increase at 3,5 BAR (50 PSI) and on decrease at 2,1 BAR (30 PSI)

Pressure Range: 0,7 - 4,1 BAR (10-60 PSI)

Differential: Typical 0,07 at 0,7 BAR (1 lb. at 10 PSI)
0,28 at 4,1 BAR (4 lbs. at 60 PSI)

Maximum System Pressure: 17,2 BAR (250 PSI)

Switch Contacts: SPDT (Form C)
10.1 Amps at 125/250VAC, 2.0 Amps at 30VDC
One SPDT in PS40-1, Two SPDT in PS40-2

Environmental Specifications:

NEMA 4/IP66 Rated Enclosure - indoor or outdoor when used with NEMA 4 conduit fittings.
Temperature range: -40°C to 60°C (-40°F - 140°F)

Tamper: Cover incorporates tamper resistant fastener that requires a special key for removal. One key is supplied with each device. For optional cover tamper switch kit, order Stock No. 0090200. See bulletin #5401200 PSCTSK.

Adjustment And Testing

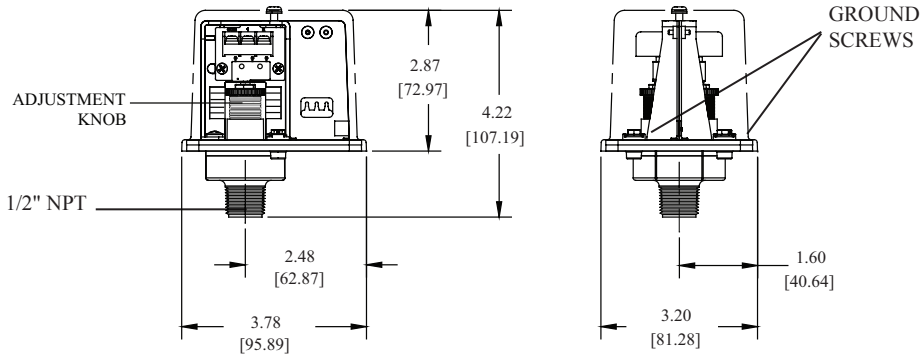
The operation of the supervisory pressure switch should be tested upon completion of installation and periodically thereafter in accordance with the applicable NFPA codes and standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently).

Note: Testing the PS40 may activate other system connected devices. The use of a Potter BVL (see product bulletin 8900067 for details) is recommended to facilitate setting and testing of the PS40 pressure switch. When a BVL (bleeder valve) is used, the pressure to the switch can be isolated and bled from the exhaust port on the BVL without effecting the supervisory pressure of the entire system. See Fig. 3

The operation point of the PS40 Pressure Switch can be adjusted to any point between 0,7 - 4,11 BAR (10 and 60 PSI) by turning the adjustment knob(s) clockwise to raise the actuation point and counter clockwise to lower the actuation point. In the case of the PS40-2, both switches operate independent of each other. Each switch may be independently adjusted to actuate at any point across the switch adjustment range. Initial adjustment can be made with a visual reference from the top of the adjustment knob across to the printed scale on the switch bracket. Final adjustments should be verified with a pressure gauge.

Dimensions

Fig. 1



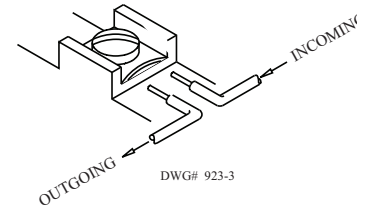
NOTE: To prevent leakage, apply teflon tape sealant to male threads only.

WARNING

Use of pipe joint cement may result in obstruction of the aperture and loss of signal.

Switch Clamping Plate Terminal

Fig. 2



WARNING

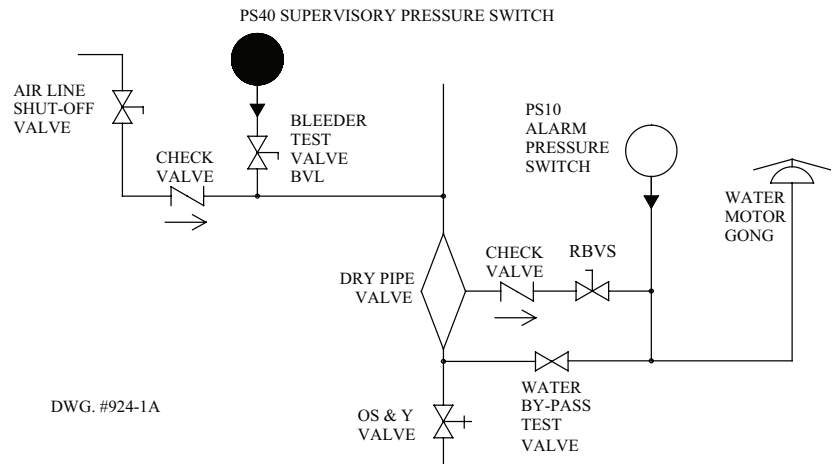
An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire becomes dislodged from under the terminal.

Typical Sprinkler Applications

Fig. 3

CAUTION

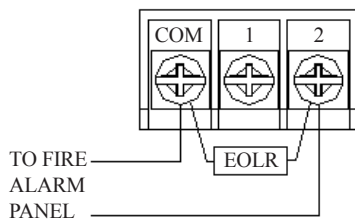
Closing of any shutoff valves between the alarm check valve and the PS10 will render the PS10 inoperative. To comply with IBC, IFC, and NFPA-13, any such valve shall be electrically supervised with a supervisory switch such as Potter Model RBVS.



Typical Connections

Fig. 4

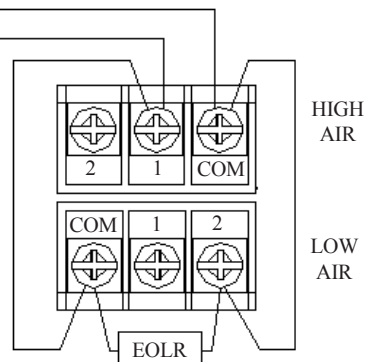
WITH NORMAL SYSTEM PRESSURE APPLIED LOW - TERMINAL 2 CLOSES ON PRESSURE DROP.



PS40-1

PS40-2

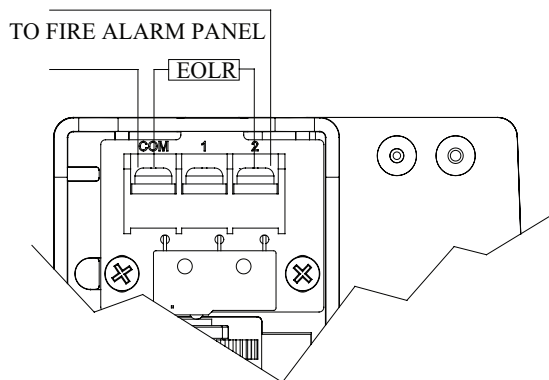
TO FIRE ALARM PANEL



WITH NORMAL SYSTEM PRESSURE APPLIED HIGH - TERMINAL 1 WILL CLOSE ON PRESSURE INCREASE.

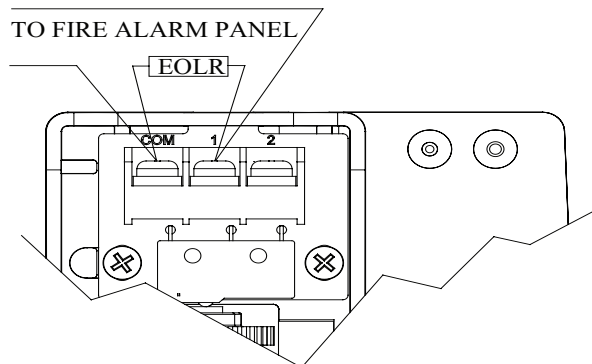
Low Pressure Signal Connection

Fig. 5



High Pressure Signal Connection

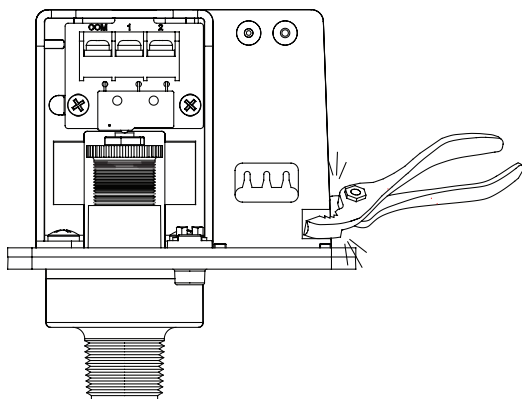
Fig. 6



One Conduit Wiring

Break out thin section of divider to provide path for wires when wiring both switches from one conduit entrance.

Fig. 7



Switch Operation

(With normal system pressure)

Fig. 8

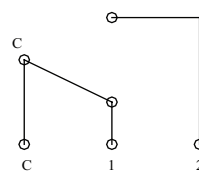
Terminal

C: Common

1: Closed when installed under normal system pressure.

2: Open when installed under normal system pressure. Closes on pressure drop. Use for low air signal.

LOW PRESSURE SWITCH

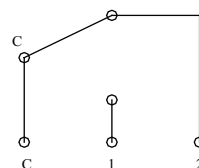


Terminal

1: Open when installed under normal system pressure. Closes on increase in pressure. Use for high air signal.

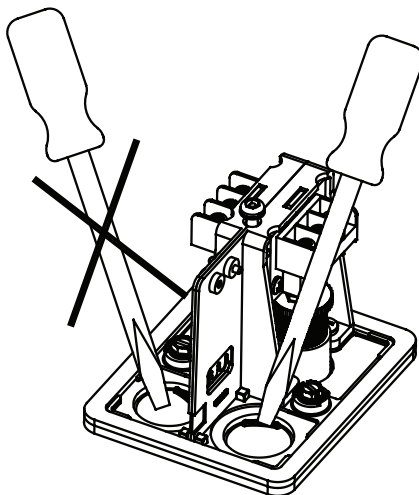
2: Closed under normal system pressure.

HIGH PRESSURE SWITCH



Removing Knockouts

Fig. 9



WARNING

- Installation must be performed by qualified personnel and in accordance with all national and local codes and ordinances.
- Shock hazard. Disconnect power source before servicing. Serious injury or death could result.
- Read all instructions carefully and understand them before starting installation. Save instructions for future use. Failure to read and understand instructions could result in improper operation of device resulting in serious injury or death.
- Risk of explosion. Not for use in hazardous locations. Serious injury or death could result.

CAUTION

- Do not tighten by grasping the switch enclosure. Use wrenching flats on the bushing only. Failure to install properly could damage the switch and cause improper operation resulting in damage to equipment and property.
- To seal threads, apply Teflon tape to male threads only. Using joint compounds or cement can obstruct the pressure port inlet and result in improper device operation and damage to equipment.
- Do not over tighten the device, standard piping practices apply.
- Do not apply any lubricant to any component of the pressure switch.

Engineer/architect Specifications Pressure Type Waterflow Switch

Pressure type supervisory switches; shall be a Model PS40 as manufactured by Potter Electric Signal Company, St. Louis, MO., and shall be installed on the fire sprinkler system as shown and or specified herein.

Switches shall be provided with a 1/2" NPT male pressure connection to be connected into the air supply line on the system side of any shut-off valve. A Model BVL bleeder valve as supplied by Potter Electric Signal Company of St. Louis, MO., or equivalent shall be connected in line with the PS40 to provide a means of testing the operation of the supervisory switch. (See Fig. 3)

The switch unit shall contain SPDT (Form C) switch(es). One switch shall be set to operate at a pressure decrease of 0,7 BAR (10 PSI) from normal. If two switches are provided, the second switch shall be set to operate at a pressure increase of 0,7 BAR (10 PSI) from normal.

Switch contacts shall be rated at 10.1 Amps at 125/250VAC and 2.0 Amps at 30VDC. The units shall have a maximum pressure rating of 17,2 BAR (250 PSI) and shall be adjustable from 0,7 to 4,1 BAR (10 to 60 PSI).

Pressure switches shall have two conduit entrances, one for each individual switch compartment to facilitate the use of dissimilar voltages for each individual switch.

The cover of the pressure switch shall be zinc die-cast with rain lip and shall attach with one tamper resistant screw. The pressure switch shall be suitable for indoor or outdoor service with a NEMA-4/IP66 rating.

The pressure switch shall be UL, ULC, and CSFM listed, FM and LPC approved and NYMEA accepted.

Ordering Information

Model	Description	Stock No.
PS40-1	Pressure switch with one set SPDT contacts	1320031
PS40-2	Pressure switch with two sets SPDT contacts	1320041
	Hex Key	5250062
	Cover Tamper Switch Kit	0090200
BVL	Bleeder valve	1000018