



CUL, UL AND CSFM Listed, FM Approved and NYMEA Accepted CENELEC, DEMKO NO. 03 ATEX 0311298X, EN60079-0:2009, EN60079-1:2009

Dimensions: 152mm Dia. x 178mm H (6" Dia. x 7" H)

Enclosure: Cast aluminum

Pressure Connection: 1/2" NPT male brass fitting

Conduit Entrance: 1/2" NPT female conduit opening

To maintain type "d" component protection use an Ex component conduit sealing device.

Factory Setting:

One switch operates on pressure decrease at: 206 kPa/2.1 BAR/30 PSI

One switch operates on pressure increase at: 344 kPa/3.5 BAR/50 PSI

Pressure Range:

69 kPa/.69 BAR/10 PSI to 1207 kPa/12.07 BAR/175 PSI

Maximum Differential (Approx.):

14 kPa/.14 BAR/2 PSI at 138 kPa/1.38 BAR/20 PSI

34 kPa/.34 BAR/5 PSI at 1207 kPa/12.07 BAR/175 PSI

Maximum Proof Pressure: 1724 kPa/17.24 BAR/250 PSI

Switch Contacts: Two Sets of SPDT (Form C)

15.0 Amps at 125/250 VAC

2.0 Amps at 30 VDC



Model	Description	Stock No.
PS40-EX	Pressure switch with 2 sets of contacts (SPDT)	1350402
BVL	Bleeder Valve	1000018
	HEX Key (For cover removal)	5250074
	HEX Key (For pressure adjustment access)	5250073

Service Use: Automatic Sprinkler: NFPA-13

National Fire Alarm Code: NFPA-72

Check with local AHJ for additional Codes & Standards

Installation

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

1. Connect the PS40-EX 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)

Adjustments

If the pressure needs to be adjusted from the factory settings, adjust the system pressure to the desired trip point. Use an ohmmeter on the appropriate contact (COM and NC for pressure decrease and COM and NO for pressure increase). Adjust the knurled knob until the meter changes

Environmental Specifications:

For use in hazardous locations classified by CENELEC: Ex d IIB T6 Gb

Class I: Div 1 & Div. 2 Groups B, C, D

Class II: Div. 1 & Div. 2 Groups E, F, G,

Class III: Div. 1 & Div. 2

Enclosure Ratings: IP66/NEMA 4,9

Temperature Range: -40°C to 60°C (-40°F to 140°F)

state. At that point the switch is set for that particular pressure. When the adjustments are complete, raise and lower the system pressure to ensure the switch is properly set and make final adjustments if necessary.

Testing

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

⚠ CAUTION

Testing the PS40-EX may activate other system connected devices.

Special Conditions of Safe Use

Dimensions of flameproof joints are other than the relevant minimum or maximum specified in Table 2 of EN 60079-1:2009. Pressure switches are marked with an "x" and manufacturer's drawing no. 1350402 detail the dimensions of flameproof joints.

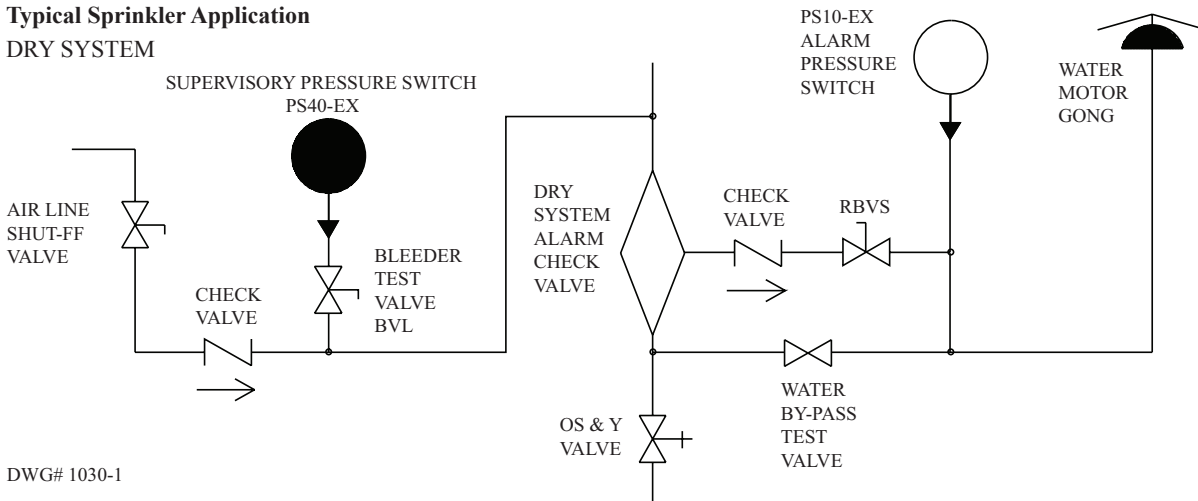
Dry System: Supervisory Signal (Low/High air):

Connect the PS40-EX to the Dry Pipe Valve Trim piping on the system side of any shutoff or check valve in the supervisory Air/Gas Dry Pipe Valve supply line connected to the DPV. A Model BVL

bleeder valve as supplied by Potter Electric Signal St. Louis, MO. or equivalent shall be connected between the air line and the device to provide a means of testing the operation of the supervisory switch. (*Low Air Only*) To test the High setting, the system pressure must be increased to operate the switch.

Typical Sprinkler Application

DRY SYSTEM

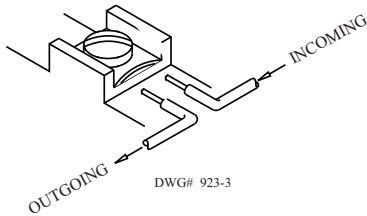


DWG# 1030-1

CAUTION

The closing of any shutoff valves between the alarm check valve and the PS40-EX will render the PS40-EX inoperative. To comply with the IBC, IFC, and NFPA-72 any such valve shall be electrically supervised with a supervisory switch such as Potter Model RBVS.

Typical Electrical Connections



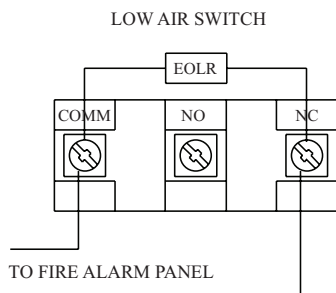
DWG# 923-3

CAUTION

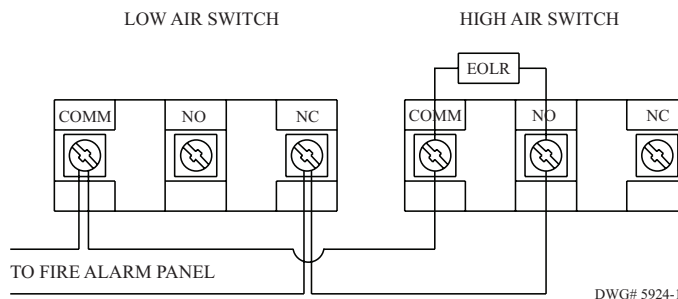
An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire becomes dislodged from under the terminal.

Typical Electrical Connections

Note: Low Air Only

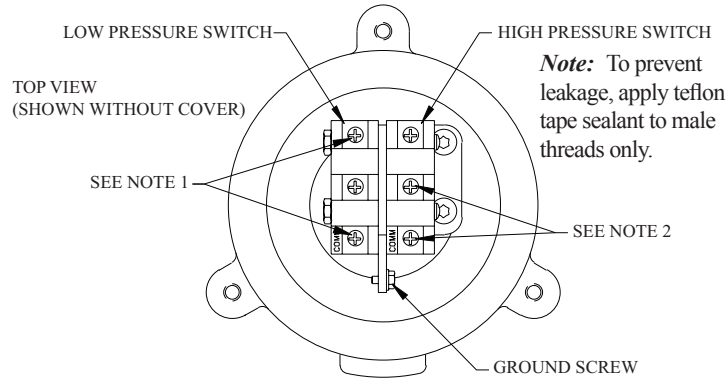


Note: Low and High Air on the Same Zone



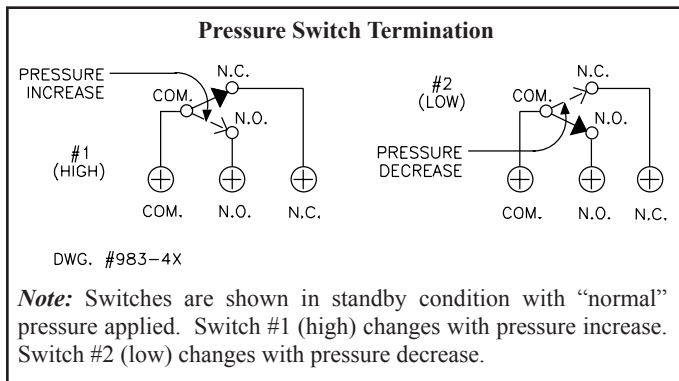
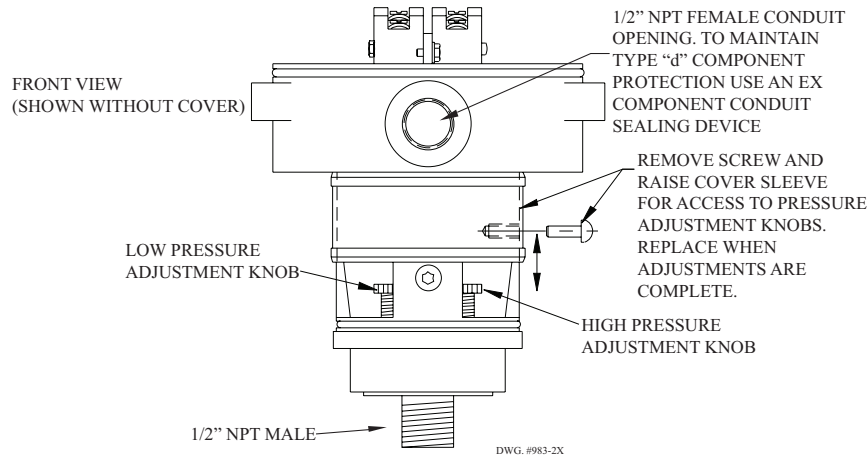
Note: High switch changes with pressure increase. Low switch changes with pressure decrease.

DWG# 5924-1



NOTES:

1. THESE CONTACTS CLOSE ON A PRESSURE DECREASE
2. THESE CONTACTS CLOSE ON A PRESSURE INCREASE



Field Adjustments

The operating point of the switches on the PS40-EX can be adjusted to any point between 69 kPA/.69 BAR/10 PSI to 1207 kPA/12.07 BAR/175 PSI by turning the adjustment knob(s) clockwise to raise the actuation point, and counter-clockwise to lower the actuation point. The two switches operate completely independently of one another, and each switch may be adjusted to actuate at any point the system requires. Final adjustment should be made with a pressure gauge.

⚠ CAUTION

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

 **WARNING**

When this device is to be installed in an area that is classified as “HAZARDOUS”, the person responsible for safety in the area shall be contacted to determine if the tools and operations required for the installation of the device and associated components are permitted in the area. To reduce the risk of ignition of hazardous atmospheres, disconnect supply circuits before opening cover. Keep cover tight while circuits are live.

The mating surfaces of the cover and housing are designed and machined to meet the hazardous location requirements of the applicable listing agencies. These surfaces shall be protected from any damage and shall be clean and free of all foreign matter. No gasket or sealant of any type is allowed on these surfaces. The use of any type of gasket, sealant, or damage to these surfaces will void the hazardous rating of the device and can lead to explosion and death. These surfaces are not repairable and the cover is not replaceable. If any damage has occurred to either surface or a gasket or sealant has been applied to either surface, the entire device must be immediately removed from service and replaced. All foreign matter must be removed. If mating surfaces are damaged, do not place the device in service.

Important: When reinstalling the cover during installation or maintenance, wipe the mating cover and housing surfaces with a soft clean lint free cloth. Carefully inspect the surfaces for any damage or foreign matter. Firmly push the cover on the housing to fully seat the mating surfaces. Initially tighten each of the (3) cover screws evenly to 5 in-lbs (.56 n-m) to ensure that the cover is fully seated. Next, torque each cover screw to a final torque of 50 in-lbs (5.7 n-m). Failure to follow these instructions may result in injury or death.

Engineer/Architect Specifications

Pressure Supervisory Switch for Dry Pipe and Pre-action Systems

UL, CUL Listed/FM, ATEX Approved and CE Marked pressure supervisory switches shall be furnished and installed at the system pressure connection of each dry pipe valve and pre-action system and where indicated on the drawings and plans and as required by applicable local and national codes and standards.

Connection to the system shall be via a 1/2" bleeder valve installed between the pressure supervisory switch and the pressure source to permit testing. Pressure supervisory switches shall be diaphragm type devices consisting of a brass 1/2" NPT male nipple for connection to the sprinkler system, dual non-corrosive pressure chambers and diaphragms, independently adjustable pressure settings, one 1/2" threaded conduit entrance and two Single Pole Double Throw (SPDT) switches.

The device shall be approved for use in hazardous locations classified as EEx d IIB T6, (Class I: Groups B, C, D, Div. 1 & 2, Class II: Groups E, F, G, Div. 1 & 2, Class III: Div. 1 & 2). The enclosure shall be IP66 (NEMA 4 & 9) rated. It shall be possible to install an optional cover tamper switch to detect removal of the enclosure.

Factory settings shall be 207 kPA/2.07 BAR (30PSI) for low pressure and 345 kPA/3.45 BAR (50 PSI) for high pressure. The device shall be listed for pressures up to 1724 kPA/17.24 BAR (250 PSI). The adjustable range shall be 69 kPA/.69 BAR (10 PSI) to 1207 kPA/12.07 BAR (175 PSI) and it shall be possible to change the factory set operating point of the pressure switch without the use of any tools. It shall be possible to change the pressure setting of either switch without affecting the pressure setting of the other switch.

The switch contacts shall be rated at 15A, 125/250VAC and 2A, 30VDC. Pressure supervisory switch shall be model PS40-EX, bleeder valve shall be model BVL manufactured by Potter Electric Signal Company LLC.