



Model	Description	Stock No.
PS10-EX	Pressure switch with 2 sets of contacts (SPDT)	1350102
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 PS10-EX Pressure Actuated Switch is designed for the detection of a waterflow condition in automatic fire sprinkler systems located in hazardous locations classified as shown above. Typical applications are: Wet pipe systems with alarm check valves, dry pipe, preaction, or deluge valves. The PS10-EX is also suitable to provide a low pressure supervisory signal; adjustable between 4 and 20 psi (0,27 and 1,3 BAR).

1. Apply Teflon tape to the threaded male connection on the device.
(Do not use pipe dope)
2. 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 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.

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:

Both switches operate on pressure increase at:

41 ±7 kPA/.41 ±.07 BAR (6 ±1 PSI)

Both switches operate on pressure decrease at:

34 ±7 kPA/.34 ±.07 BAR (5 ±1 PSI)

Pressure Range:

27-137 kPA/.27-1.3 BAR/ 4-20 PSI

Maximum Differential (Approx.):

7 kPA/.07 BAR (1 PSI)

Maximum System 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

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)

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 PS10-EX may activate other system connected devices.

Special Conditions of Safe Use

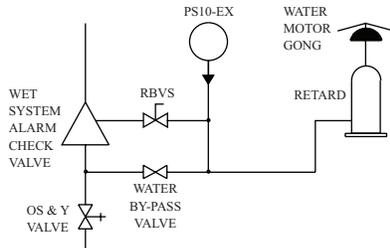
Dimensions of flameproof joints are other than the relevant minimum or maximum specified in Table 2 of EN 60079-1:2009. Pressure switches are marked with an "x" and manufacturer's drawing no. 1350102 detail the dimensions of flameproof joints.

Wet System Water Flow Alarm

(Wet System: With or Without Excess Pressure)

METHOD 1: When using PS10-EX and control unit with retard, connect the PS10-EX into alarm port piping on the input side of retard chamber and electrically connect PS10-EX to control unit that provides a retard to compensate for surges. Ensure that no shut off valves are present between the alarm check valve and the PS10-EX.

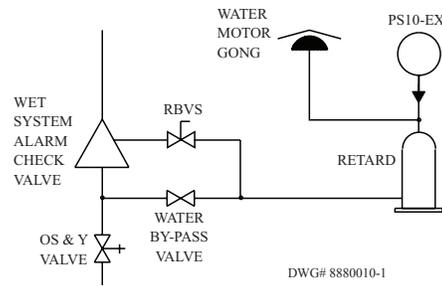
METHOD 1



DWG# 8880010-1

METHOD 2: When using the PS10-EX for local bell application or with a control that does not provide a retard feature, the PS10-EX must be installed on the alarm outlet side of the retard chamber of the Wet Pipe Alarm Valve trim.

METHOD 2



DWG# 8880010-1

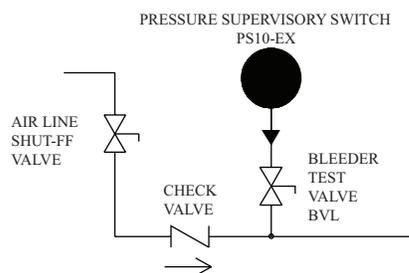
CAUTION

The closing of any shutoff valves between the alarm check valve and the PS10-EX will render the PS10-EX inoperative. To comply with the IBC, IFC, & NFPA-72 any such valve shall be electrically supervised with a supervisory switch such as Potter Model RBVS.

Dry System Supervisory Signal (Low/High air)

Connect the PS10-EX to the Dry Pipe Valve Trim piping at 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 in the alarm line to operate the switch.

DRY SYSTEM



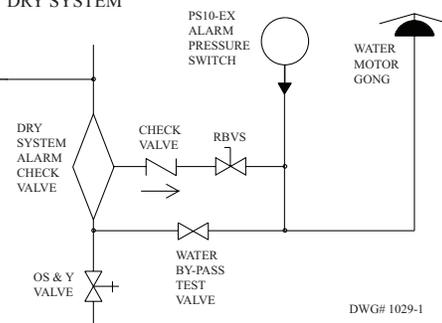
DWG# 1029-1

Dry System Water Flow Alarm

Connect the PS10-EX into the piping that extends from the intermediate chamber of the dry sprinkler valve. Install on the outlet side of the in-line check valve of the piping. Insure that no shut off valves are present between the dry sprinkler valve and the PS10-EX.

Testing: Accomplished by opening the water by-pass test valve.

DRY SYSTEM

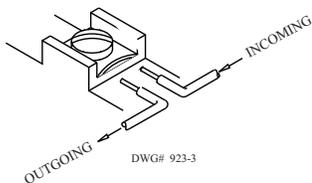


DWG# 1029-1

CAUTION

The closing of any shutoff valves between the alarm check valve and the PS10-EX will render the PS10-EX inoperative. To comply with the IBC, IFC, & NFPA-72 any such valve shall be electrically supervised with a supervisory switch such as Potter Model RBVS.

Typical Electrical Connections



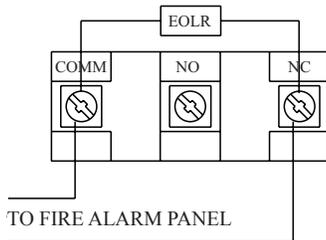
DWG# 923-3

CAUTION

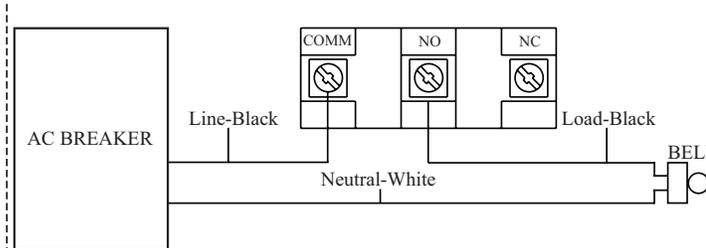
An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire becomes dislodged from under the terminal.

Typical Electrical Connections

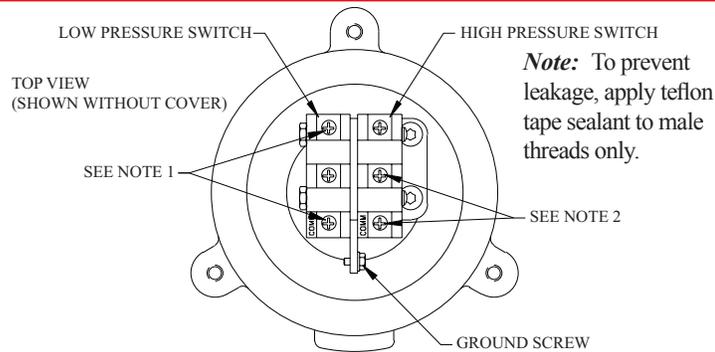
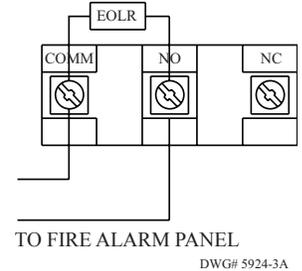
Note: For low pressure signal used on dry or pre-action systems with less than 20 psi only.



Note: To ring a local bell for waterflow.

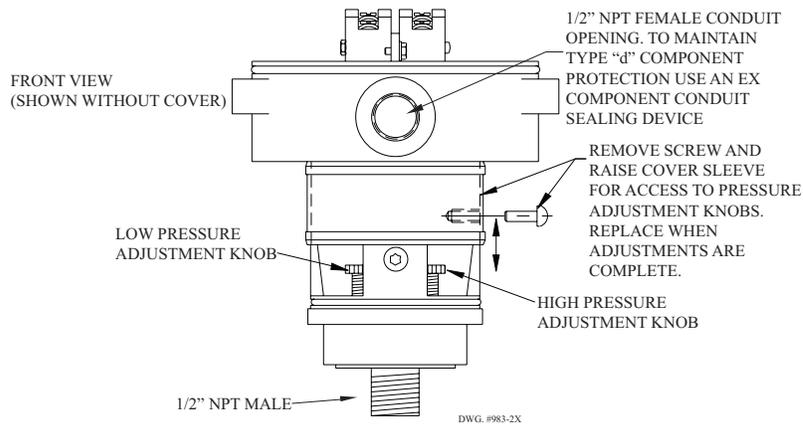


Note: For waterflow signal.

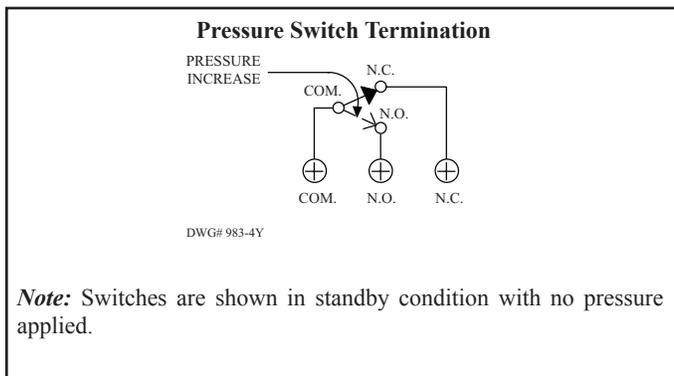


Note: To prevent leakage, apply teflon tape sealant to male threads only.

- NOTES:
 1. THESE CONTACTS CLOSE ON A PRESSURE DECREASE
 2. THESE CONTACTS CLOSE ON A PRESSURE INCREASE



DWG. #983-2X



Field Adjustments

The operating point of the switches on the PS10-EX can be adjusted to any point between 27-137 kPa/.27-1.3 BAR/4-20 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 type waterflow switches shall be a Model PS10-EX as manufactured by Potter Electric Signal Co. of St. Louis, Mo. and shall be installed on the sprinkler systems as shown on the drawings and/or specified herein.

Switches shall be provided with a 1/2" NPT male pressure connection to be connected into the alarm check valve of a “wet” sprinkler system or into the intermediate chamber of a “dry” pipe system and shall be actuated by any flow of water to or in excess of the discharge from one sprinkler head.

Switches shall have a maximum service pressure rating of 17.2 BAR (250 PSI) and shall be factory adjusted to operate on pressure increase at $.41 \pm .07$ BAR (6 ± 1 PSI). There shall be two (2) SPDT contacts rated at 15.0 Amps at 125/250VAC and 2.0 Amps at 30VDC. The switch housing shall be weather proof and oil resistant with a NEMA 4,9 rating.

The unit shall be listed by Underwriters Laboratories, Inc. and CSFM and approved by Factory Mutual. It shall be rated for use in hazardous locations classified as Class I, Div. 1 & 2, Groups B, C, D; Class II, Div. 1 & 2, Groups E, F, G; Class III, Div. 1 & 2.