PRESSURE SWITCH

Model PS10-EX

Explosion proof supervisory pressure switch



PRODUCT DESCRIPTION

The pressure switch model PS10-EX can be used in fire sprinkler systems. It has been designed and approved for use in hazardous locations internationally

TECHNICAL DATA

Model	PS10-EX
Enclosure	Cast aluminium
Pressure connection	½" NPT male brass fitting
Factory setting	Both switches operate on pressure increase at: 0,41 ±.07 bar (6 ±1 psi) Both switches operate on pressure decrease at: 0,34 ±.07 bar (5 ±1 psi)
Pressure range	0,27-1,3 bar (4 - 20 psi)
Maximum differential	0,07 bar (1 psi)
Maximum system pressure	17,24 bar / 250 psi
Switch Contacts	Two sets SPDT (Form C) 15 Amps at 125/250VAC 2 Amps at 30VDC
Conduit entrance	1/2" NPT female conduit opening To maintain type "d" component protection use an Eex component conduit sealing device
Environmental limitations	For use in hazardous locations classified by CENELEC: Ex d IIB T6 Gb Class I: Div 1 Groups B, C, D Class II: Div. 1 Groups E, F, G, Class III: Div. 1 Enclosure rating: NEMA 4/IP66
Temperature rating	-40ºC to 60ºC (-40ºF to 140ºF)
Cover tamper	Cover incorporates tamper resistant fastener that requires a special key for removal. One key is supplied with each device.
Service use	Automatic sprinkler NFPA-13 One or two family dwelling NFPA-13D Residential occupancy up to four stories NFPA-13R National Fire Alarm Code NFPA-72
Dimensions	Diameter: 6" (152 mm) Height: 7" (178 mm)

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INSTALLATION

The Pressure Actuated Switch model PS10-EX 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).

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 is hazardous locations. Serious injury or death could result.

ANJUSTMENT AND TESTING

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. Final adjustments should be made with a pressure gauge.

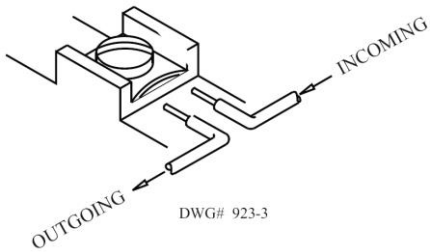
The operation of the pressure alarm/supervisory switch should be tested upon completion of installation and periodically thereafter in accordance with the applicable codes and standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently).

CAUTION: Testing the PS10-EX may activate other system connected devices.

SPECIAL CONDITION FOR SAFE USE

Dimensions of flameproof joints are other than the relevant minimum or maximum specified in Table 2 of EN 60079-1:2007. Pressure switches are marked with an “x” and manufacturer’s drawing no. 1350102 detail the dimensions of flameproof joints.

SWITCH CLAMPING PLATE TERMINAL



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.

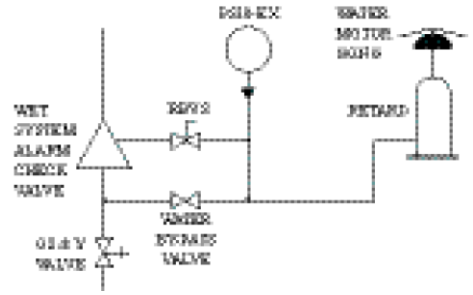
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WET SYSTEM: WITH OR WITHOUT EXCESS PRESSURE

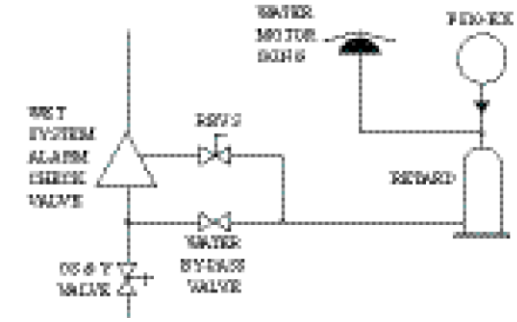
METHOD 1: When using PS10-EX and control unit with retard, connect the PS10-EX into alarm port piping on the input side of retard chamber and electrically connect PS10–EX to control unit that provides a retard to compensate for surges. Ensure that no shut off valves are present between the alarm check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

METHOD 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 1



METHOD 2



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, and NFPA-72 any such valve shall be electrically supervised with a supervisory switch such as Model RBVS.

DRY SYSTEM: SUPERVISORY SIGNAL (LOW / HIGH AIR)

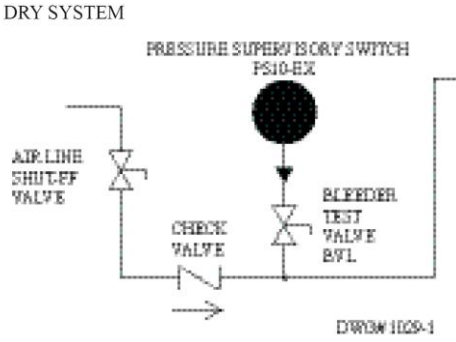
Connect the PS10-EX to the Dry Pipe Valve Trim piping on the system side of any shutoff or check valve in the supervisory Air/Gas Dry Pipe Valve supply line connected to the DPV. A Model BVL bleeder valve shall be connected between the air line and the device to provide a means of testing the operation of the supervisory switch. (Low Air Only) To test the High setting, the system pressure must be increased to operate the switch.

DRY SYSTEM: WATER FLOW ALARM

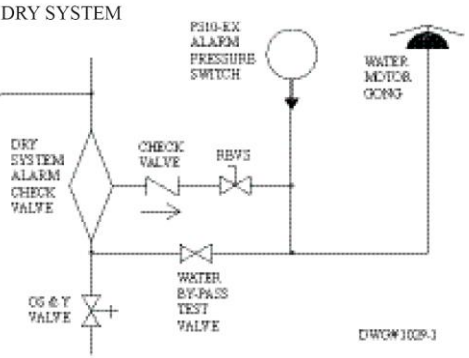
Connect the PS10-EX into the piping that extends from the intermediate chamber of the dry sprinkler valve. Install on the outlet side of the in-line check valve of the piping. Insure that no shut off valves are present between the dry sprinkler valve and the PS10-EX.

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

DRY SYSTEM



DRY SYSTEM

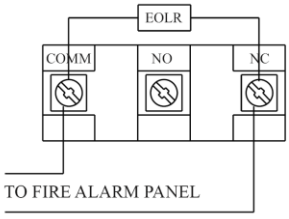


CAUTION: The closing of any shutoff valves between the alarm check valve and the PS10-EX will render the PS10-EX inoperative. To comply with the IBC, IFC, and NFPA-72 any such valve shall be electrically supervised with a supervisory switch such as Model RBVS.

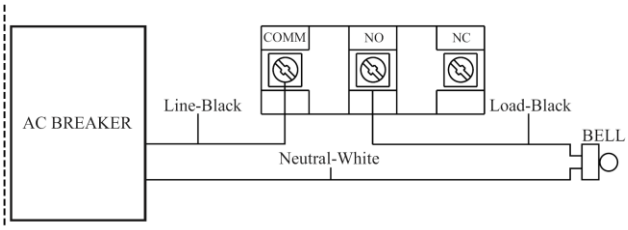
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TYPICAL CONNECTIONS

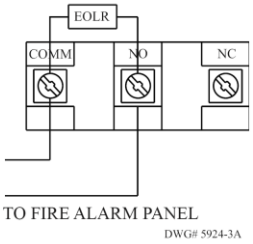
Note: For low pressure signal used on dry or pre-action systems with less than 20 psi only.

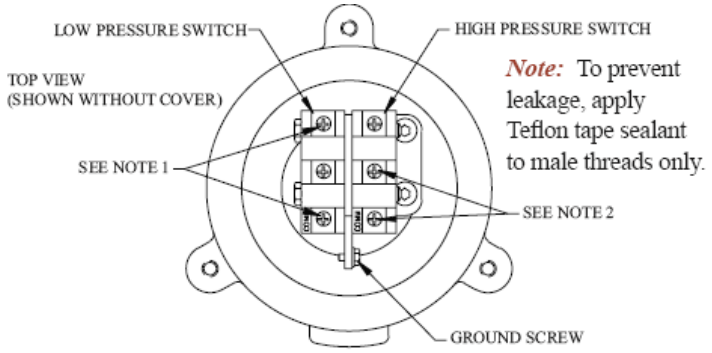


Note: To ring a local bell for waterflow.



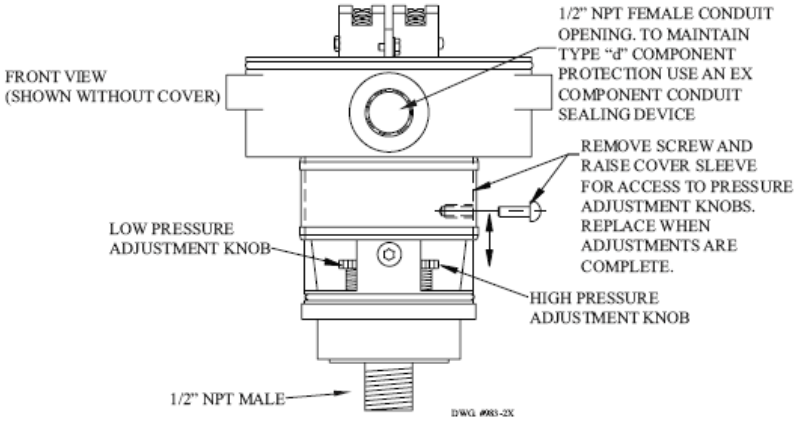
Note: For waterflow signal.



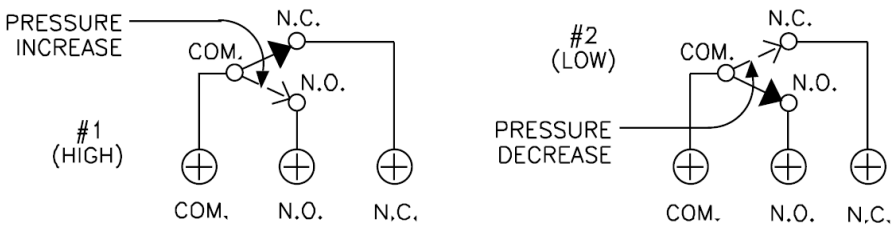


Note: To prevent leakage, apply Teflon tape sealant to male threads only.

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



PRESSURE SWITCH INSTALLATION



Note: Switches are shown in standby condition with "normal" pressure applied. Switch #1 (high) changes with pressure increase. Switch #2 (low) changes with pressure decrease.

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CAUTION:

- 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.

NOTICE: Pressure Switches have a normal service life of 10-15 years. However, the service life may be significantly reduced by local environmental conditions.

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.

ORDERING INFORMATION

MODEL	CODE
PS10-EX	SY1350102
PS10-EX-CENELEC	SY1350001

Specify:

Model	
Quantity	
Optional cover tamper switch kit	It must be ordered separately

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  - Accessories
- System Valves
  - Wet
  - Dry
  - Preaction Equipment
  - Accessories
- Spray System Open Nozzles
  - High Velocity Nozzles
  - Medium Velocity Nozzles
  - Window Nozzles
  - Hydroshield Nozzles
  - Mushroom Type Nozzles
- Foam equipment
  - Tanks
  - Proportioners
  - Foam Discharge Equipment
  - Foam Concentrates
- Deluge equipment for Water Spray and Foam
  - Clapper Deluge Valves
  - Diaphragm Deluge Valves
- Monitors
  - Manual Monitors
  - Remote Monitors
  - Monitor Nozzles
  - Towers and Trolleys
- Valves
  - Butterfly Valves
  - Gate Valves
  - Check Valves
  - Pressure Control Valves
  - Test and Drain
  - Hose, Hydrant and Fire Connection Valves
  - Fire Department Connections

The equipment presented in this data sheet is to be installed in accordance with the latest published Standards of the national fire protection association (NFPA), FM Global, LPCB, VdS or other similar organizations, also with the provisions of governmental codes or ordinances whenever applicable.
This documentation is not contractual. AG Fire Sprinkler reserves the right to any kind of change without notice.

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