Installation
The Potter PS10 Series Pressure Actuated Switches are designed for the detection of a \textit{waterflow condition} in automatic fire sprinkler systems of particular designs such as wet pipe systems with alarm check valves, dry pipe, preaction, or deluge valves. The PS10 is also suitable to provide a low pressure supervisory signal; adjustable between \textit{4 and 15 psi (0,27 and 1,03 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). 
3. Run wires through an approved conduit connector and affix the connector to the device. 
4. Connect the wires to the appropriate terminal connections for the service intended. See Figures 2, 4, 5, and 6. See Fig 7 for two switch, one conduit wiring. 

Wiring Instructions 
1. Carefully place a screwdriver on the edge of the knockout and sharply apply a force sufficient to dislodge the knockout plug. See Fig 9. 
2. Run wires through an approved conduit connector and affix the connector to the device. 
3. Connect the wires to the appropriate terminal connections for the service intended. See Figures 2, 4, 5, and 6. See Fig 7 for two switch, one conduit wiring. 

Testing 
The operation of the pressure alarm 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). 

Wet System 
\textit{Method 1}: When using PS10 and control unit with retard - connect PS10 into alarm port piping on the input side of retard chamber and electrically connect PS10 to control unit that provides a retard to compensate for surges. Insure that no unsupervised shut-off valves are present between the alarm check valve and PS10. 
\textit{Method 2}: When using the PS10 for local bell application or with a control that does not provide a retard feature - the PS10 must be installed on the alarm outlet side of the retard chamber of the sprinkler system. 
\textit{Testing}: Accomplished by opening the inspector's end-of-line test valve. Allow time to compensate for system or control retard. 
\textit{Note}: Method 2 is not applicable for remote station service use, if there is an unsupervised shut-off valve between the alarm check valve and the PS10. 

Dry System 
Connect PS10 into alarm port piping that extends from the intermediate chamber of the alarm check valve. Install on the outlet side of the in-line check valve of the alarm port piping. Insure that no unsupervised shut-off valves are present between the alarm check valve and the PS10. 
\textit{Testing}: Accomplished by opening the water by-pass test valve. 
\textit{Note}: The above tests may also activate any other circuit closer or water motor gongs that are present on the system. 

Ordering Information
\begin{tabular}{|l|l|} 
\hline Model & Description & Stock No. \\
\hline PS10-1 & Pressure switch with one set & 1340103 \\
& SPDT contacts & \\
PS10-2 & Pressure switch with two sets & 1340104 \\
& SPDT contacts & \\
& Hex Key & 5250062 \\
& Cover Tamper Switch Kit & 0090200 \\
\hline 
\end{tabular}
Typical Sprinkler Applications

WET SYSTEM WITH EXCESS PRESSURE

WET SYSTEM WITHOUT EXCESS PRESSURE

DRY SYSTEM

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.

CAUTION

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

Low Pressure Signal Connection

Waterflow Signal Connection

Local Bell For Waterflow Connection
One Conduit Wiring
Fig. 7
Break out thin section of divider to provide path for wires when wiring both switches from one conduit entrance.

Changing Pressure
Fig. 8
For low pressure use:
Com and Terminal 1
W/ Pressure Applied

For waterflow use:
Com and Terminal 2
W/O Pressure Applied

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.

Engineer/Architect Specifications Pressure Type

Waterflow Switch
Pressure type waterflow switches; shall be a Model PS10 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 ½” NPT male pressure connection and shall be connected to the alarm port outlet of; Wet Pipe Alarm Valves, Dry Pipe Valves, Pre-Action Valves, or Deluge Valves. The pressure switch shall be actuated when the alarm line pressure reaches 4 - 8 PSI (0,27 - 0,55 BAR).

Pressure type waterflow switches shall have a maximum service pressure rating of 300 PSI (20,68 BAR) and shall be factory adjusted to operate on a pressure increase of 4 - 8 PSI (0,27 - 0,55 BAR).

Pressure switch shall have one or two form C contacts, switch contact rating 10.1 Amps at 125/250 VAC, 2.0 Amps at 30 VDC.

Pressure type waterflow 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 type waterflow switch shall be Zinc die-cast with rain lip and shall attach with one tamper resistant screw. The Pressure type waterflow switch shall be suitable for indoor or outdoor service with a NEMA 4/IP55 rating.

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

Adjustment And Testing
The operation of the pressure supervisory 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 10 and 60 PSI (0.7 - 4.1 BAR) 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.

Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Stock No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS40-1</td>
<td>Pressure switch with one set SPDT contacts</td>
<td>1340403</td>
</tr>
<tr>
<td>PS40-2</td>
<td>Pressure switch with two sets SPDT contacts</td>
<td>1340404</td>
</tr>
<tr>
<td></td>
<td>Hex Key</td>
<td>5250062</td>
</tr>
<tr>
<td></td>
<td>Cover Tamper Switch Kit</td>
<td>0090200</td>
</tr>
<tr>
<td>BVL</td>
<td>Bleeder valve</td>
<td>1000018</td>
</tr>
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</table>

Notes:
- 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

Installation
The Potter PS40 Series 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 system, pre-action air/nitrogen supervision, pressure tanks, air supplies, and water supplies. The PS40 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 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 fitting. (Threaded connection down)

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.

Environment Specifications:
- NEMA 4/IP55 Rated Enclosure - indoor or outdoor when used with NEMA 4 conduit fittings.
- Temperature range: +40°F to 140°F (+40°C to 60°C)
- Pressure Range: 10-60 PSI (.7 - 4.1 BAR)
- Differential: Typical 1 lb. at 10 PSI (.07 at .7 BAR)
- 4 lbs at 60 PSI (.28 at 4.1 BAR)

Potter Electric Signal Company • 2081 Craig Road, St. Louis, MO, 63146-4161 • Phone: 800-325-3936/Canada 888-882-1833 • www.pottersignal.com
**Dimensions**

Fig. 1

<table>
<thead>
<tr>
<th>Component</th>
<th>Dimensions</th>
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</thead>
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<tr>
<td>Adjustment Knob</td>
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</tr>
<tr>
<td>1/2” NPT</td>
<td>2.87 [72.97]</td>
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<tr>
<td></td>
<td>4.22 [107.19]</td>
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<tr>
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<td>3.70 [96.89]</td>
</tr>
<tr>
<td></td>
<td>3.20 [81.28]</td>
</tr>
</tbody>
</table>

**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 NFPA-72 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.

**MODEL PS40**

PRESSURE SWITCH

PRINTED IN USA  PAGE 2 OF 3
Low Pressure Signal Connection
Fig. 5
TO FIRE ALARM PANEL

High Pressure Signal Connection
Fig. 6
TO FIRE ALARM PANEL

One Conduit Wiring
Fig. 7
Break out thin section of divider to provide path for wires when wiring both switches from one conduit entrance.

Changing Pressure
(With normal system pressure)
Fig. 8
For low pressure use: Com and Terminal 1

Removing Knockouts
Fig. 9
For water flow use: Com and Terminal 2

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 10 PSI (0.7 BAR) from normal. If two switches are provided, the second switch shall be set to operate at a pressure increase of 10 PSI (0.7 BAR) from normal.

Switch contacts shall be rated at 10.1 Amps at 125/250V AC and 2.0 Amps at 30VDC. The units shall have a maximum pressure rating of 300 PSI (20.68 BAR) and shall be adjustable from 10 to 60 PSI (0.7 to 4.1 BAR).

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/IP55 rating.

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

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.
Installation
The Potter PS100 Pressure Actuated Switches are designed primarily to detect a decrease from normal system pressure in automatic fire sprinkler systems. A typical application is for an alarm initiating device that is used on a wet system with excess pressure. The PS100-2 has two SPDT switches factory set to operate on a pressure drop at 90 PSI (6.2 BAR). See section heading Adjustments and Testing if other than factory set point is required.

1. Connect the PS100 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, 7, and 8. See Fig. 6 for two switch one conduit wiring.

Adjustment And Testing
The operation of the waterflow 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 PS100 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 PS100 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 PS100 Pressure Switch can be adjusted to any point between 25 and 175 PSI (1.7 - 12.1 BAR) by turning the adjustment knob(s) clockwise to raise the actuation point and counter clockwise to lower the actuation point. Both switches operate independent of each other. Each switch may be independently adjusted to actuate at any point acrosss 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

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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<tr>
<td>ADJUSTMENT KNOB</td>
<td>2.87 [72.97]</td>
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<tr>
<td>1/2&quot; NPT</td>
<td>4.22 [107.19]</td>
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<tr>
<td>1.60 [40.64]</td>
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</tbody>
</table>

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

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

Typical Connections
Fig. 4

Waterflow Signal Connection
Fig. 5

One Conduit Wiring
Fig. 6

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

Local Bell For Waterflow Connection
Fig. 7
Engineer/Architect Specifications Pressure Type Waterflow Switch

Pressure type waterflow switches; shall be a Model PS100-2 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 ½” NPT male pressure connection to be connected to the excess pressure supply line on the system side of any shut-off or check 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 PS100-2 to facilitate testing of the PS100-2.

Pressure type waterflow switches shall have a maximum service pressure rating of 300 PSI (20.68 BAR) and shall be factory adjusted to operate on a pressure decrease of 10 PSI (14.5 BAR).

Pressure switch shall have two Form C contacts, switch contact rating at 10.1 Amps at 125/250 VAC. 2.0 Amps at 30 VDC.

Pressure type waterflow 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 type waterflow switch shall be zinc die-cast with rain lip and shall attach with one tamper resistant screw. The pressure type waterflow switch shall be suitable for indoor or outdoor service with a NEMA-4/IP55 rating.

The pressure type waterflow switch shall be UL, ULC, and CSFM listed, FM and LPC approved and NYMEA accepted.
**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. See Fig. 7 for two switch one conduit wiring.

**Adjustment And Testing**

The operation of the pressure supervisory 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 PS120 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 PS120 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 PS120 Pressure Switch can be adjusted to any point between 25 and 175 PSI (1.7 - 12.1 BAR) 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 PS120-2, 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.
**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.

**CAUTION**

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

**Typical Sprinkler Applications**

Fig. 3

![Sprinkler Applications Diagram]

**Typical Connections**

Fig. 4

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

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

---

**Dimensions**

Fig. 1

![Dimensions Diagram]

**Switch Clamping Plate Terminal**

Fig. 2

![Clamping Plate Terminal Diagram]
Low Pressure Signal Connection
Fig. 5

TO FIRE ALARM PANEL

High Pressure Signal Connection
Fig. 6

TO FIRE ALARM PANEL

One Conduit Wiring
Fig. 7

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

Changing Pressure
(With normal system pressure)
Fig. 8

For low pressure use: Com and Terminal 1

LOW PRESSURE SWITCH

C NC

NO

C 1 2

For water flow use: Com and Terminal 2

HIGH PRESSURE SWITCH

C NC

NO

C 1 2

Removing Knockouts
Fig. 9

Engineer/Architect Specifications Pressure Type Waterflow Switch

Pressure type supervisory switches, shall be a Model PS120 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 ½" 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 PS120 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 10 PSI (0.7 BAR) from normal. If two switches are provided, the second switch shall be set to operate at a pressure increase of 10 PSI (0.7 BAR) from normal.

Switch contact 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 300 PSI (20.68 BAR) and shall be adjustable from 25 to 175 PSI (1.7 to 12.1 BAR).

**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.
Waterflow Alarm Switch With Retard For Supervision Of Wet Alarm Check Valve

The Model WFSR-F is a pressure operated switch with an adjustable, instantly recycling pneumatic retard to prevent false alarms due to water pressure variation. The WFSR-F is connected into the alarm port of a wet sprinkler system alarm check valve (see "WARNING", page 2).

Installation
A male 1/2" NPT pipe fitting is provided for connection to the alarm port of the alarm check valve. No additional mounting or support is required. Allow 5" (12.7cm) to the front of the unit for removal of the cover. Install with the pressure connection down.

Testing
Operation of the unit is checked by opening the by-pass test valve or inspector's test valve. The frequency of the inspection and testing for the Model WFSR-F and its associated protective monitoring system should be in accordance with applicable NFPA Codes and Standards and/or authority having jurisdiction (manufacturer recommends quarterly or more frequently).

Fig. 1 WFSR-F

Fig. 2 Typical Electrical Connections

Note: For supervised circuits see “Switch Terminal Connections” drawing and caution note (Fig. 4).
Retard Adjustment:
To change time turn knob (either direction) for desired time delay. Use the minimum amount of retard necessary to prevent false alarms, a “B” setting is usually adequate for this. Factory set at “B”.

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.

The system should be tested on a quarterly basis or more frequently to insure proper operation.
**Installation And Test Procedure**

The Potter PS10-EXF 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, of particular designs such as wet systems with alarm check valves or dry pipe systems. It may also be used to provide a low pressure supervisory signal. It can be adjusted to operate on pressure between 28 kPA/.28 BAR (4 PSI) and 138 kPA/1.38 BAR (20 PSI).

**Mounting:** Device should be mounted in upright position (threaded connection down).

**Testing:** The operation of the pressure alarm switch and its associated protective system 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).

**Wet System**

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

**METHOD 2:** When using the PS10-EXF for local bell application or with a control that does not provide a retard feature, the PS10-EXF must be installed on the alarm outlet side of the retard chamber of the sprinkler system.

**Testing:** Accomplished by opening the inspector's end-of-line test valve. Allow time to compensate for system or control retard.

**Wet System With Excess Pressure:** Connect the PS10-EXF into alarm port piping extending from alarm check valve. Retard provisions are not required. Insure that no shut off valves are present between the alarm check valve and the PS10-EXF.

**Testing:** Accomplished by opening the water by-pass test valve or the inspector's end-of-line test valve. When using end-of-line test, allow time for excess pressure to bleed off.

**Dry System:** Connect the PS10-EXF 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 alarm port piping. Insure that no shut off valves are present between the dry sprinkler valve and the PS10-EXF.

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

---

**CAUTION**

The above tests may also activate any other circuit closer or water motor gongs that are present on the system.
Typical Sprinkler Applications

WET SYSTEM ~ WITH OR WITHOUT EXCESS PRESSURE

Closing of any shutoff valves between the alarm check valve and the PS10-EXF will render the PS10-EXF inoperative. To comply with NFPA-72 any such valve shall be electrically supervised with a supervisory switch such as Potter Model BVS.

Pressure Switch Termination

FOR LOW PRESSURE SIGNAL

USED ON DRY OR PRE-ACTION SYSTEMS WITH LESS THAN 20 PSI ONLY

Switch Terminal Connections Clamping Plate Terminal

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

Engineer/Architect Specifications
Air pressure supervisory switch shall be a Model PS40-EXF as manufactured by Potter Electric Signal Co. of St. Louis, Mo. U.S.A. and shall be installed on the sprinkler systems as shown on the drawings and/or as 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 Co. of St. Louis, Mo. U.S.A., or equivalent, shall be connected between the product and the air supply to provide a means of testing the operation of the supervisory switch.
The switch unit shall contain two SPDT (Form C) switches. One switch shall operate at a pressure decrease of 69 kPa/69 BAR (10 PSI) from normal. The second switch shall operate at a pressure increase of 69 kPa/69 BAR (10 PSI) from normal. Switch contacts shall be rated at 15.0 Amps at 125/250 VAC and 2.0 Amps at 30 VDC. The units shall have a maximum pressure rating of 1724 kPa/17.24 BAR (250 PSI) and shall be adjusted from 69kPa/69 BAR (10 PSI) to 1207 kPa/12.07 BAR (175 PSI).
The switch housing shall be weatherproof and oil resistant.
The Potter PS40-EXF is a pressure actuated switch designed primarily to detect a 69 kPA/.69 BAR (10 PSI) increase and/or decrease from normal system pressure in automatic fire sprinkler systems located in hazardous locations classified as shown above.

Typical applications are air pressure supervision in dry pipe systems and pressure supervision of pressure tanks, air supply or water supply.

**Installation And Test Procedure**

**Mounting:** Device should be mounted in upright position (threaded connection down). Requires NEMA Type 4 conduit hub for outdoor installations.

**Testing:** The operation of the pressure supervisory switch and its associated protective system 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)

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**Testing the PS40-EXF may activate other system connected devices.**

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**Dry System:** Connect PS40-EXF in air supply line on the system side of any shutoff or check valve.

Provision for testing the unit can be accomplished with the installation of a Potter Bleeder Valve (Model BVL) in the line to the PS40-EXF.
Typical Sprinkler Application - Dry System

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

Typical Electrical Connections

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.
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.

Field Adjustments
The operating point of the switches on the PS40-EXF can be adjusted to any point between 69 kPa/0.69 BAR (10 PSI) and 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.

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

**WARNING**

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

**CAUTION**

When this device is to be installed in an area that is classified as “hazardous”, the person responsible for safety in the area should 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. Cover screws must be torqued to a minimum of 2 N-m.

Engineer/Architect Specifications
Air pressure supervisory switch shall be a Model PS40-EXF as manufactured by Potter Electric Signal Co. of St. Louis, Mo. U.S.A. and shall be installed on the sprinkler systems as shown on the drawings and/or as 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 Co. of St. Louis, Mo. U.S.A., or equivalent, shall be connected between the product and the air supply to provide a means of testing the operation of the supervisory switch. The switch unit shall contain two SPDT (Form C) switches. One switch shall operate at a pressure decrease of 69 kPa/0.69 BAR (10 PSI) from normal. The second switch shall operate at a pressure increase of 69 kPa/0.69 BAR (10 PSI) from normal. Switch contacts shall be rated at 15.0 Amps at 125/250 VAC and 2.0 Amps at 30 VDC. The units shall have a maximum pressure rating of 1724 kPa/17.24 BAR (250 PSI) and shall be adjusted from 69kPa/0.69 BAR (10 PSI) to 1207 kPa/12.07 BAR (175 PSI). The switch housing shall be weatherproof and oil resistant.
The Model ADPS is an Adjustable Deadband Pressure Switch with independent set and reset points which are adjustable throughout the entire operating range of the switch. The minimum deadband (minimum span between set and reset points) may be obtained at any point in the operating range of the switch. A change in pressure greater than the high setting will reposition the switch mechanism to open or close a single snap-action electrical switch.

This control device is designed for use as an operating control in applications sensing air, water, or any fluid not harmful to the pressure connection, diaphragm or nitrile pressure-sealing o-ring. The instances where an operating control would result in personal injury and/or loss of property, it is the responsibility of the installer to add devices (safety, limit controls) that protect against, or systems (alarm, supervisory systems) that warn of control failure.

This device is not intended for applications in explosive environments or use with hazardous fluids.

Mounting and Installation
The Model ADPS is typically mounted in an upright position on a flat surface by two 1/4" screws through the mounting flanges on the base or by two 1/4-20 screws into the back of the base. See Fig. 1 for mounting dimensions. Locate the switch where vibration, shock, and ambient temperature fluctuations are minimal. To avoid damage to the switch, always hold a wrench on the pressure connection hex when tightening pressure connections. Never tighten the pressure connection by turning the switch housing into the fitting.

Listings/Approvals
- UL Standard 508 Guide (NKZ) and CSA Standard C22.2 No. 14-M Class (321106) for Pressure Operated Industrial Control Equipment.
- UL Standard 873 Guide (XAPX) and CSA Standard C22.2 No. 24 Class (481302) for Temperature Indicating and Regulating Equipment.
- CE Marked

Ambient/Media Temperature Range
-4°F to 180°F (-20°C to 82°C)

Construction
- NEMA Type 4X enclosure for indoor or outdoor use.
- Forged brass or 316 S.S. pressure connections
- Aluminum Diecast base with Polymer enclosure
- Beryllium Copper diaphragm (Stainless steel isolator diaphragm included for protection of beryllium copper diaphragm on models with stainless steel pressure connection.)
- Nitrile Pressure Sealing O-ring

Switch Contact
Snap-action SPDT (Form C)
15 Amps at 125/250/480 VAC*
1/8 HP at 125 VAC
1/4 HP at 250 VAC
* Non-inductive loads only

Adjustable Operating Range
<table>
<thead>
<tr>
<th>Adjustable Operating Range</th>
<th>Minimum Deadband</th>
<th>Proof Pressure</th>
<th>Factory Setting</th>
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<td>25-300 PSIG</td>
<td>12 PSIG</td>
<td>400 PSIG</td>
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NOTICE
Direct control of motors with HP ratings greater than those shown could damage the ADPS switch, resulting in sprinkler system damage and unintentional water flow. The installation of a pressure relief valve set at or below the systems maximum operating pressure is recommended.

Description
The Model ADPS is an Adjustable Deadband Pressure Switch with independent set and reset points which are adjustable throughout the entire operating range of the switch. The minimum deadband (minimum span between set and reset points) may be obtained at any point in the operating range of the switch. A change in pressure greater than the high setting will reposition the switch mechanism to open or close a single snap-action electrical switch.

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This device is not intended for applications in explosive environments or use with hazardous fluids.

Mounting and Installation
The Model ADPS is typically mounted in an upright position on a flat surface by two 1/4" screws through the mounting flanges on the base or by two 1/4-20 screws into the back of the base. See Fig. 1 for mounting dimensions. Locate the switch where vibration, shock, and ambient temperature fluctuations are minimal. To avoid damage to the switch, always hold a wrench on the pressure connection hex when tightening pressure connections. Never tighten the pressure connection by turning the switch housing into the fitting.

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- CE Marked

Ambient/Media Temperature Range
-4°F to 180°F (-20°C to 82°C)

Construction
- NEMA Type 4X enclosure for indoor or outdoor use.
- Forged brass or 316 S.S. pressure connections
- Aluminum Diecast base with Polymer enclosure
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Description
The Model ADPS is an Adjustable Deadband Pressure Switch with independent set and reset points which are adjustable throughout the entire operating range of the switch. The minimum deadband (minimum span between set and reset points) may be obtained at any point in the operating range of the switch. A change in pressure greater than the high setting will reposition the switch mechanism to open or close a single snap-action electrical switch.

This control device is designed for use as an operating control in applications sensing air, water, or any fluid not harmful to the pressure connection, diaphragm or nitrile pressure-sealing o-ring. The instances where an operating control would result in personal injury and/or loss of property, it is the responsibility of the installer to add devices (safety, limit controls) that protect against, or systems (alarm, supervisory systems) that warn of control failure.

This device is not intended for applications in explosive environments or use with hazardous fluids.

Mounting and Installation
The Model ADPS is typically mounted in an upright position on a flat surface by two 1/4" screws through the mounting flanges on the base or by two 1/4-20 screws into the back of the base. See Fig. 1 for mounting dimensions. Locate the switch where vibration, shock, and ambient temperature fluctuations are minimal. To avoid damage to the switch, always hold a wrench on the pressure connection hex when tightening pressure connections. Never tighten the pressure connection by turning the switch housing into the fitting.

Listings/Approvals
- UL Standard 508 Guide (NKZ) and CSA Standard C22.2 No. 14-M Class (321106) for Pressure Operated Industrial Control Equipment.
- UL Standard 873 Guide (XAPX) and CSA Standard C22.2 No. 24 Class (481302) for Temperature Indicating and Regulating Equipment.
- CE Marked

Ambient/Media Temperature Range
-4°F to 180°F (-20°C to 82°C)

Construction
- NEMA Type 4X enclosure for indoor or outdoor use.
- Forged brass or 316 S.S. pressure connections
- Aluminum Diecast base with Polymer enclosure
- Beryllium Copper diaphragm (Stainless steel isolator diaphragm included for protection of beryllium copper diaphragm on models with stainless steel pressure connection.)
- Nitrile Pressure Sealing O-ring

Switch Contact
Snap-action SPDT (Form C)
15 Amps at 125/250/480 VAC*
1/8 HP at 125 VAC
1/4 HP at 250 VAC
* Non-inductive loads only

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<td>25-300 PSIG</td>
<td>12 PSIG</td>
<td>400 PSIG</td>
<td>90/60 PSIG</td>
</tr>
</tbody>
</table>
Adjustments
The two thumb adjustment dials, accessible through the enclosure cover, are used to adjust the set point and reset point of the switch. The dial scales and pointer may be used to give an indication of the low and high set points.

The high setting adjustment dial is calibrated for increasing pressure. The low setting adjustment dial is calibrated for decreasing pressure. For best accuracy, make the final adjustments with a pressure gauge at the actual working media pressure and temperature encountered in the application.

The minimum deadband (minimum span between set and reset points) may be obtained at any point in the operating range of the switch. When the desired settings are obtained, replace the adjustment cover. The adjustment cover and enclosure cover can be made tamper resistant by a single sealing wire inserted through the hole in the locking bar.

The repeatability of the set and reset points is typically ± 1% of the operating range.

<table>
<thead>
<tr>
<th>Stock Number</th>
<th>Model Number</th>
<th>Adjustable Operating Range</th>
<th>Minimum Deadband</th>
<th>Proof Pressure</th>
<th>Pressure Connection</th>
<th>Diaphragm</th>
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</thead>
<tbody>
<tr>
<td>1370010</td>
<td>ADPS-300-1B</td>
<td>25-300 PSIG</td>
<td>12 PSIG</td>
<td>400 PSIG</td>
<td>1/4&quot; NPT Brass</td>
<td>Beryllium Copper</td>
</tr>
<tr>
<td>1370020</td>
<td>ADPS-300-1S</td>
<td>25-300 PSIG</td>
<td>12 PSIG</td>
<td>400 PSIG</td>
<td>1/4&quot; NPT 316 S.S.</td>
<td>Beryllium Copper w/ 316 S.S. Isolator</td>
</tr>
<tr>
<td>1370030</td>
<td>ADPS-300-2S</td>
<td>25-300 PSIG</td>
<td>12 PSIG</td>
<td>400 PSIG</td>
<td>3/8&quot; NPT 316 S.S.</td>
<td>Beryllium Copper w/ 316 S.S. Isolator</td>
</tr>
<tr>
<td>1370040</td>
<td>ADPS-600-1B</td>
<td>50-600 PSIG</td>
<td>25 PSIG</td>
<td>650 PSIG</td>
<td>1/4&quot; NPT Brass</td>
<td>Beryllium Copper</td>
</tr>
<tr>
<td>1370050</td>
<td>ADPS-600-1S</td>
<td>50-600 PSIG</td>
<td>25 PSIG</td>
<td>650 PSIG</td>
<td>1/4&quot; NPT 316 S.S.</td>
<td>Beryllium Copper w/ 316 S.S. Isolator</td>
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<td>1370060</td>
<td>ADPS-600-2S</td>
<td>50-600 PSIG</td>
<td>25 PSIG</td>
<td>650 PSIG</td>
<td>3/8&quot; NPT 316 S.S.</td>
<td>Beryllium Copper w/ 316 S.S. Isolator</td>
</tr>
</tbody>
</table>
PCS
PUMP CONTROL SWITCH

UL Listed, CSA Approved, and CE Marked
Listing/Approvals: UL Standard 508 Guide (NKPZ) and CSA Standard C22.2 No. 14-M Class (321106) for Pressure Operated Industrial Control Equipment.
UL Standard 873 Guide (XAPX) for Temperature Indicating and Regulating Equipment.
CE Marked

Ambient/Media Temperature Range:
40°F to 140°F (4.5°C to 60°C)

Construction:
• NEMA Type 4X Enclosure for indoor or outdoor use.
  (To maintain 4X rating, use appropriate Type 4 conduit hub.)
• Forged Brass Pressure Connections
• Aluminum Diecast Base with Polymer Enclosure
• Beryllium Copper
• Nitrile Pressure Sealing O-ring

Switch Contact:
15 Amps @ 125 V AC Resitive
1/2 HP @ 125 V AC

General
The model PCS is a Pump Control Switch with independent set and reset points which are adjustable throughout the entire operating range of the switch. The minimum deadband (minimum span between set and reset points) may be obtained at any point in the operating range of the switch. When the pressure drops below the setting, a snap action switch closes energizing the built in pump control relay and turns the pump on. When the pressure increases above the high setting, the snap action switch opens de-energizing the built in pump control relay and turns the pump off.

This control device is designed for use as an operating control in applications sensing air, water, or any fluid not harmful to the pressure connection, diaphragm or nitrile pressure-sealing o-ring. Where an operating control would result in personal injury and/or loss of property, it is the responsibility of the installer to add devices (safety, limit controls) that protect against, or systems (alarm, supervisory systems) that warn of control failure.

This device is not intended for applications in explosive environments or use with hazardous fluids.

<table>
<thead>
<tr>
<th>Adjustable Operating Range</th>
<th>Minimum Deadband</th>
<th>Proof Pressure</th>
<th>Factory Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-300 PSIG</td>
<td>12 PSIG</td>
<td>400 PSIG</td>
<td>90/60 PSIG</td>
</tr>
</tbody>
</table>

CAUTION
Direct control of motors with HP ratings greater than those shown could damage the PCS switch, resulting in sprinkler system damage and unintentional water flow. The installation of a pressure relief valve set at or below the system's maximum operating pressure is recommended.
Wiring
Use properly rated temperature supply wire for the anticipated service temperature. When applicable, make all electrical connections in accordance with the National Electrical Code and all local regulations in a junction box with a 2 inch maximum connector length between the PCS enclosure and junction wiring box.

Note: Do not alter factory wiring on micro switch.

Adjustments
The two thumb adjustment dials, accessible through the enclosure cover, are used to adjust the set point and reset point of the switch. The dial scales and pointer may be used to give an indication of the low and high set points. The high setting adjustment dial is calibrated for increasing pressure. The low setting adjustment dial is calibrated for decreasing pressure. For best accuracy, make the final adjustments with a pressure gauge at the actual working media pressure and temperature encountered in the application.

The minimum deadband (minimum span between set and reset points) may be obtained at any point in the operating range of the switch.

The repeatability of the set and reset points is typically ±1% of the operating range.
The QRS is a microprocessor based pressure switch designed to monitor the air pressure in a dry pipe fire sprinkler system and replace a mechanical air accelerator when used with a PFC Series Fire Alarm Releasing Panel, and an approved solenoid valve. High/Low air indication: One normally open contact that closes if the normal air pressure in the system increases or decreases beyond a given point. (see system air pressure setting chart) Preset pressure settings set by 10 position rotary switch on pc board. Normally wired to the supervisory circuit of the fire alarm panel. Factory set to position #2 for a normal system air pressure of 30 PSI. 

Alarm indication: One normally open contact that closes if the pressure drops at a rate of .1 PSI (.007 BAR) per second or greater (indicates an open sprinkler head, normal response time is approximately 2 seconds) or if the pressure drops to 5.5 PSI (.38 BAR). 

When the QRS is installed in accordance with these installation instructions, compliance to the above immunity standards indicates the equipment’s design provides reasonable immunity from radio frequency sources. Intentionally subjecting the equipment to radio frequency sources could result in unintended operation of the dry pipe system.

CAUTION

Keep all radio transmitters or RF sources at least ONE foot from the QRS. Failure to do so could result in unintended operation of the dry pipe system.

Bar). The QRS must be wired to a PFC Series Fire Alarm Releasing Panel that operates an approved electric solenoid valve on the dry pipe sprinkler system. Its function is to dump air into the intermediate chamber, tripping the alarm valve. This is used to replace a mechanical air accelerator and gives a much faster response time.

Cover tamper: One normally open contact that closes when the cover is removed. May be wired to Supervisory Circuit condition on the fire alarm panel. Loss of power results in an open circuit on the alarm input terminals and causes a Trouble Condition on the Releasing Panel. High/Low air contacts automatically reset when the pressure returns to normal. 

Alarm contacts: Automatically reset after 30 seconds for .1 PSI (.007 BAR) per second drop. Latch in alarm for critical low air (5.5 PSI) (.38 BAR) and reset at 6.5 PSI (.45 BAR).
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.

### Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.250 (5.7 cm)</td>
<td></td>
</tr>
<tr>
<td>1.125 (2.9 cm)</td>
<td></td>
</tr>
<tr>
<td>4.750 (12.1 cm)</td>
<td></td>
</tr>
<tr>
<td>3.188 (8.1 cm)</td>
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</tr>
<tr>
<td>2.750 (7.0 cm)</td>
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</tr>
</tbody>
</table>

### System Air Pressure Setting Chart

<table>
<thead>
<tr>
<th>Switch Setting</th>
<th>Low Air Threshold</th>
<th>Nominal Pressure</th>
<th>High Air Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PSI</td>
<td>BAR</td>
<td>PSI</td>
</tr>
<tr>
<td>0</td>
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<tr>
<td>9</td>
<td>55</td>
<td>3.79</td>
<td>65</td>
</tr>
</tbody>
</table>

### Notice

The following installation requirements shall be followed completely to ensure proper operation of the QRS and PFC-4410-RC. Make all connections between the QRS and PFC-4410RC with no power applied to the PFC-4410RC.

1. There shall be a continuous run of shielded cable between the QRS & PFC-4410-RC. Splices shall not be permitted. If an 8 conductor shielded cable is not available, multiple cables may be used to provide the number of conductors required, providing all cables are shielded.
2. All wiring between the QRS and PFC-4410-RC shall be installed in a continuous run of metal conduit. Interruptions in the continuity of the metal conduit shall not be permitted. There shall not be any other wires in, or attached to, this conduit. If a junction box is used, the box shall be of the drawn style, not spot welded. There shall be no gaps in the box. The metal box cover shall remain on at all times.
3. The drain wire of the shielded cable shall be grounded at the PFC-4410-RC only. It shall not be grounded at the QRS. Termination of the drain wire at the QRS shall consist of cutting the wire short and insulating it to prevent contact with other material or circuits.
4. The drain wire of the shielded cable shall be connected to the S terminal on the RS-485 terminal strip in the PFC-4410-RC. The drain wire shall be as short as possible and insulated to prevent unwanted contact with other circuits on the 4410-RC.
5. Terminals 8 & 9 of the QRS shall be connected to the + - terminals of the 24VDC power terminal strip respectively in the PFC-4410-RC, to supply power to the QRS. These connections must be made before applying power to the PFC-4410RC.
6. The 120VAC power for the PFC-4410-RC shall be from a dedicated circuit. There shall not be any other conductors in the conduit other than the hot, neutral and ground wires necessary to power the PFC-4410-RC.

### Caution

Failure to follow these requirements completely will result in improper operation.
7. The EG terminal of the PFC-4410-RC shall be connected to a good earth ground connection.

8. The AC power wires shall be kept away from all other wires associated with the PFC-4410-RC by a minimum of 1 inch.

9. The shielded cable for the QRS shall be separated from the NAC wiring by a minimum of 1 inch. There shall be no wires or circuits allowed inside the PFC-4410-RC cabinet except those directly connected to the panel. There shall be no external AC circuits brought into the PFC-4410-RC cabinet.

11. The Top conduit entrances on the PFC-4410-RC cabinet shall not be used if there is the possibility of condensation or other liquid entering the cabinet.

12. The supervisory air in the system shall be set to match one of the settings on the QRS rotary switch.

**Testing the system**

With power applied to the PFC-4410-RC panel and system pressure corresponding to the setting on the QRS rotary switch, press the reset button. The panel should restore to normal.

Wait 60 seconds before doing anything.

**Note:** failure to wait 60 seconds before testing the system will result in the system not operating properly!

Open the test valve, the QRS should operate and the panel should display an alarm on the appropriate zone of the PFC panel.

**Trouble Shooting Tips**

Problem: PFC-4410RC indicates trouble on the zone the QRS is connected to.

Check: Temporarily remove all power from the PFC-4410RC for 5-10 seconds, then re-apply power. If power connections were made to the QRS while the PFC-4410RC was hot, it may be necessary to reboot the system.

Problem: System won’t trip when air pressure is dropped during test.

Check: Make sure a minimum of 30 seconds has expired after the system is restored to normal pressure, the QRS has power applied and the PFC panel is reset. The System air pressure and PFC panel must both be a normal condition with the QRS powered up for a MINIMUM of 30 seconds before the system can be tested.

Check: Troubleshooting tip #1 about rebooting the system.

Problem: The PFC panel indicates a SUPERVISORY condition.

Check: The system air pressure may not correspond with the rotary switch setting on the QRS.

Adjust the system air pressure to match the rotary switch on the QRS.

(See the System Air Pressure Setting Chart on pg. 2)

Check: The system air pressure with calibrated gauges.

Problem: The system false trips or other unexplained operations.

Check: Was shielded cable used.

Check: Is the drain wire connected to the S terminal of the PFC series panel only.

Check: Make sure the drain wire is not connected to the QRS.

Check: Make sure the cover is installed on the QRS.

Check: Make sure no wires other than the shielded cable for the QRS are included in the metal conduit.

Problem: System won’t trip when air pressure is dropped during test.

Check: Temporarily remove all power from the PFC-4410RC for 5-10 seconds, then re-apply power. If power connections were made to the QRS while the PFC-4410RC was hot, it may be necessary to reboot the system.

Problem: System won’t trip when air pressure is dropped during test.

Check: Make sure a minimum of 30 seconds has expired after the system is restored to normal pressure, the QRS has power applied and the PFC panel is reset. The System air pressure and PFC panel must both be a normal condition with the QRS powered up for a MINIMUM of 30 seconds before the system can be tested.

Check: Troubleshooting tip #1 about rebooting the system.

Problem: The PFC panel indicates a SUPERVISORY condition.

Check: The system air pressure may not correspond with the rotary switch setting on the QRS.

Adjust the system air pressure to match the rotary switch on the QRS.

(See the System Air Pressure Setting Chart on pg. 2)

Check: The system air pressure with calibrated gauges.

Problem: The system false trips or other unexplained operations.

Check: Was shielded cable used.

Check: Is the drain wire connected to the S terminal of the PFC series panel only.

Check: Make sure the drain wire is not connected to the QRS.

Check: Make sure the cover is installed on the QRS.

Check: Make sure no wires other than the shielded cable for the QRS are included in the metal conduit.

Problem: System won’t trip when air pressure is dropped during test.

Check: Temporarily remove all power from the PFC-4410RC for 5-10 seconds, then re-apply power. If power connections were made to the QRS while the PFC-4410RC was hot, it may be necessary to reboot the system.

Problem: System won’t trip when air pressure is dropped during test.

Check: Make sure a minimum of 30 seconds has expired after the system is restored to normal pressure, the QRS has power applied and the PFC panel is reset. The System air pressure and PFC panel must both be a normal condition with the QRS powered up for a MINIMUM of 30 seconds before the system can be tested.

Check: Troubleshooting tip #1 about rebooting the system.

Problem: The PFC panel indicates a SUPERVISORY condition.

Check: The system air pressure may not correspond with the rotary switch setting on the QRS.

Adjust the system air pressure to match the rotary switch on the QRS.

(See the System Air Pressure Setting Chart on pg. 2)

Check: The system air pressure with calibrated gauges.

Problem: The system false trips or other unexplained operations.

Check: Was shielded cable used.

Check: Is the drain wire connected to the S terminal of the PFC series panel only.

Check: Make sure the drain wire is not connected to the QRS.

Check: Make sure the cover is installed on the QRS.

Check: Make sure no wires other than the shielded cable for the QRS are included in the metal conduit.

Problem: System won’t trip when air pressure is dropped during test.

Check: Temporarily remove all power from the PFC-4410RC for 5-10 seconds, then re-apply power. If power connections were made to the QRS while the PFC-4410RC was hot, it may be necessary to reboot the system.

Problem: System won’t trip when air pressure is dropped during test.

Check: Make sure a minimum of 30 seconds has expired after the system is restored to normal pressure, the QRS has power applied and the PFC panel is reset. The System air pressure and PFC panel must both be a normal condition with the QRS powered up for a MINIMUM of 30 seconds before the system can be tested.

Check: Troubleshooting tip #1 about rebooting the system.

Problem: The PFC panel indicates a SUPERVISORY condition.

Check: The system air pressure may not correspond with the rotary switch setting on the QRS.

Adjust the system air pressure to match the rotary switch on the QRS.

(See the System Air Pressure Setting Chart on pg. 2)

Check: The system air pressure with calibrated gauges.

Problem: The system false trips or other unexplained operations.

Check: Was shielded cable used.

Check: Is the drain wire connected to the S terminal of the PFC series panel only.

Check: Make sure the drain wire is not connected to the QRS.

Check: Make sure the cover is installed on the QRS.

Check: Make sure no wires other than the shielded cable for the QRS are included in the metal conduit.

Check: Make sure the shielded cable is not running within 1” of either
When using the QRS as an electronic accelerator do not connect any other initiating device to any initiating zone of the PFC-100RC. Doing so could result in unintended operation of the dry pipe system.

The QRS uses electronic components to monitor the air pressure. Keep all radio transmitters or RF sources at least ONE foot from the QRS. Failure to do so could result in unintended operation of the dry pipe system.