IOM 2.48
Issue A

Post Indicator Supervisory Switch
Fig. RDPIBV2

Important

This instruction manual contains important information on the installation and operation of supervisory switches. Purchasers who install supervisory switches for use by others must leave this manual or a copy of it with the user. These instructions apply to Rapidrop switches for post indicator and butterfly type valves. Read all instructions carefully before beginning installation.

Caution

Do NOT use this switch in explosive or potentially explosive atmospheres.

Do NOT leave unused wires exposed.

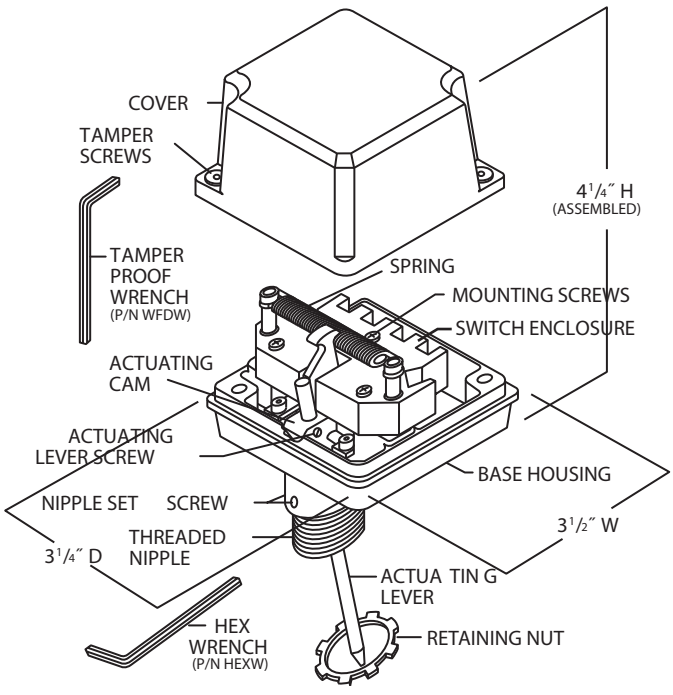
Before installing any supervisory switches in sprinkler systems, be thoroughly familiar with:

NFPA 72: Installation, Maintenance and Use of Local Protective Signalling Systems

NFPA 13: Installation of Sprinkler Systems, specifically Section 3.17

NFPA 25: Inspection, Testing and Maintenance of Sprinkler Systems, specifically Chapters 4 and 5

Figure 1. Assembly



Specifications

Overall Switch Dimensions	108mm × 89mm × 82mm (4¼″H × 3½″W × 3¼″D)
Shipping Weight	0.9 kg (2 lbs.)
Operating Temperature Range	–40°C to 49°C (–40°F to 120°F)
Maximum Stem Extension	80 mm (3 5/32″)
Mounting	½″ NPT nipple
Conduit Entrances	One single side open for ½″ conduit
Contact Ratings	Two sets of SPDT (Form C) 10.0 A @ 125/250V AC; 2.5 @ 6/12/24V DC
Enclosure Rating	UL indoor/outdoor NEMA 3R when mounted with the actuator vertical

General Installation Considerations

1. Model RDPIBV2 is designed for installation in a 1⁄2″ NPT tapped hole and located so that the actuating lever of the switch engages the target or flag of the valve . The switch actuating lever is spring loaded against the flag or target of the valve and is released when the valve moves toward the closed position from the fully open position. The switch is factory set to indicate an alarm condition when the target and lever move in the direction toward the conduit entry hole when the valve closes, but can be reversed if the installation demands (refer to Section 4).
2. Model RDPIBV2 is equipped with a removable 1⁄2″ NPT pipe nipple which is locked in place with one set screw. A hex wrench is provided for this feature. The RDPIBV2 also includes an adjustable length actuating lever.
3. The cover is secured with two tamper resistant screws which require a special key to remove. One key is included with each supervisory switch. Replacement and additional keys are available.

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Installation Instructions for Post Indicator Valve

1. There are two types of post indicator valves – rising flag and falling flag. In a rising flag installation, the RDPIBV2 mounts below the target assembly, as shown in Figure 2A. Closing the valve raises the target assembly and releases the actuating lever on the RDPIBV2. In a falling flag installation, the RDPIBV2 mounts above the target assembly (Figure 2B). Closing the valve lowers the target assembly and releases the actuating lever on the RDPIBV2. The RDPIBV2 is set for falling flag installation. If a rising flag operation is desired, it is necessary to reverse the action of the switch (See Section 4).

FIGURES 2A. RISING FLAG:

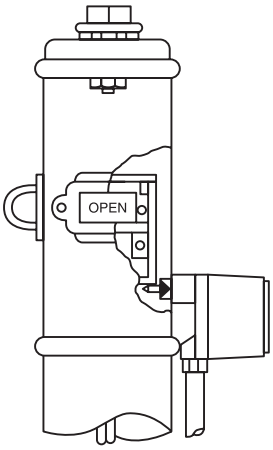
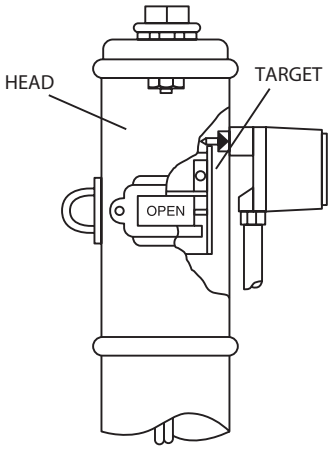


FIGURE 2B. FALLING FLAG:



2. If the post indicator valve is predrilled with 1/2″ NPT mounting hole, remove the plug and go to step 6. If the post indicator valve is NOT equipped with a 1/2″ NPT mounting hole, it will be necessary to drill and tap the hole.
3. Position the valve in the fully open position ("OPEN" should appear in the window) and remove the head and target assembly. In doing so, ensure that the assembly can be reinstalled with its original adjustment.
4. (a) In a falling flag installation (flag lowers as valve is closed), measure the distance from the bottom of the head to the upper surface of the target that will contact the actuating lever of the RDPIBV2. Add 3/32″ to this measurement and mark the outside of the housing at that location. Drill with a 23/32″ drill bit and tap a 1/2″ NPT thread. (b) In a rising flag installation (flag rises as valve is closed), measure the distance from the bottom of the head to the lower surface of the target that will contact the actuating lever. Subtract 3/32″ to this measurement and mark the outside of the housing at that location. Drill with a 23/32″ drill bit and tap a 1/2″ NPT thread.
5. Replace the head and target assembly.
6. Loosen the set screw that holds the nipple on the RDPIBV2 and remove the nipple.
7. Screw the locknut onto the threaded nipple which is supplied with the RDPIBV2.
8. Screw the nipple hand tight into the 1/2″ hole in the valve and tighten the locknut against the housing to secure the nipple in position.
9. Insert a probe into the hole through the nipple to measure the distance from the open end of the nipple to the desired position on the target assembly. Subtract 5/8″ from the distance and set the length of the actuating lever of the RDPIBV2 from the end of the enclosure to this distance. Tighten the screw which holds the actuating lever.

   NOTE: Place cover over RDPIBV2 to ensure that actuating lever does not interfere with cover. If actuating lever interferes with cover, remove lever and break off additional length at breakaway point. Repeat step 8 to re-install actuator lever. Refer to Figure 5.

10. Close the valve 3 to 4 revolutions.
11. Install the RDPIBV2 onto the nipple and orient the conduit entry down (See Figure 3). Apply pressure to the RDPIBV2 and lock the set screws to secure the nipple to the RDPIBV2.
12. Slowly open the valve to its fully open position. The switch should trip as the valve opens, but not force the actuating lever against the nipple when fully open. To check for this condition, open the valve fully and depress the top of the actuating cam to stretch the actuating spring further. There should be some additional movement available. If no movement is available, damage may occur to the RDPIBV2 actuator lever. It will be necessary to adjust the flag location by removing the head and turning the handle while the valve stem is disengaged (refer to the valve manufacturer.)
13. After checking the fully open position to ensure adequate clearance, close the valve slowly until the RDPIBV2 contacts trip. The switches must trip within 1/5 of the full travel distance of the valve.
14. If the RDPIBV2 does not change states within 1/5 of the length of travel, it may be necessary to adjust the flag up or down by removing the head and turning the handle (refer to the valve manufacturer.)

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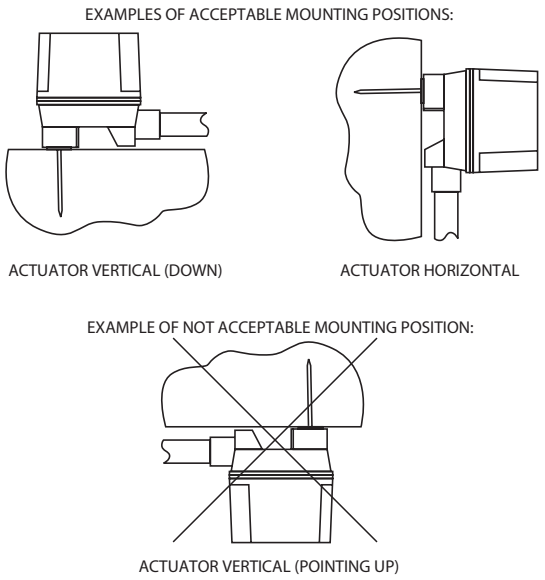
General Installation Instructions

1. Installation Positions

Figure 3. Mounting Position



2. Ground Screw - A ground screw is provided with all supervisory switch models. When grounding is required, clamp wire with the screw in hole located near conduit entrance.
3. Wiring - See Figure 6, Page 4.

Reversing the Action on RDRDPIBV2

1. Loosen the three 3/16″ hex (socket head) screws on the top of the black switch enclosure so that the switch enclosure is loose and free to move (see Figure 4).
2. Slide the switch enclosure away from the conduit entry toward the actuating pivot arm as far as possible and tighten the 3 screws to secure the enclosure. (Ensure that switch enclosure remains oriented away from the conduit entry as screws are tightened.)
3. Grasp the spring at the center and lift it over the actuating cam so that it seats on the opposite side of the actuator (see Figure 4).

   NOTE: Lever actuator may need to be adjusted to allow spring to be moved.

Figure 4. Actuating Lever

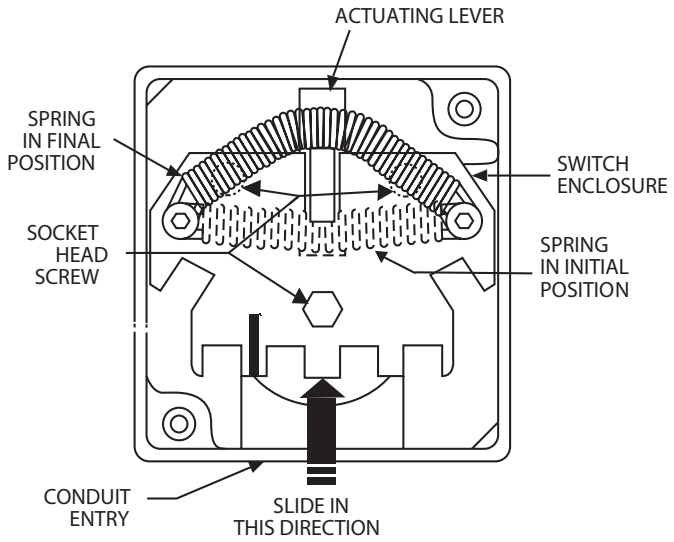


Figure 5. Actuating Arm Breakaway

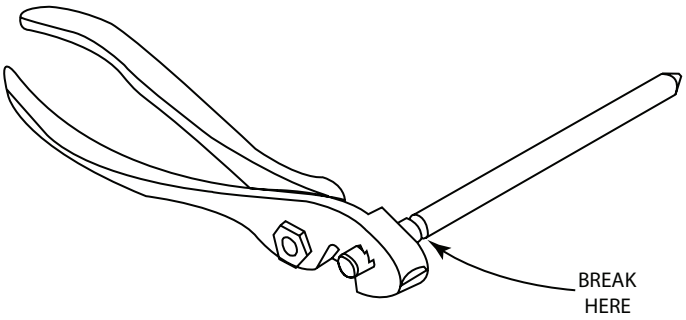


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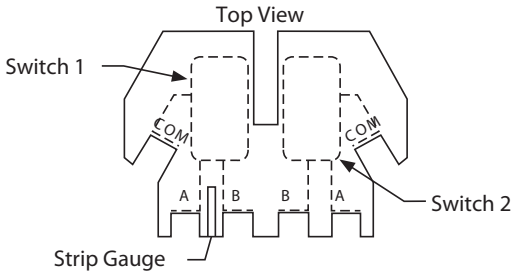
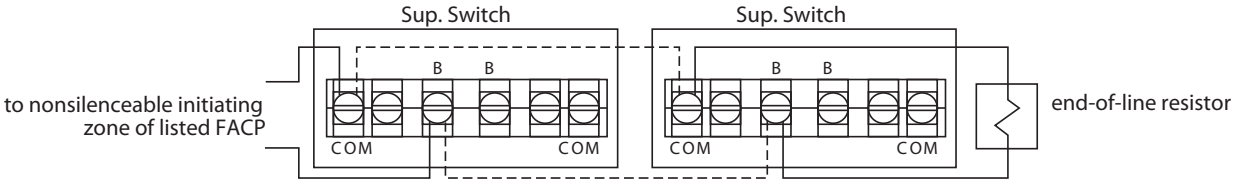
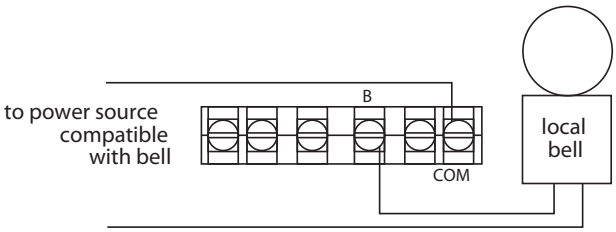
Figure 6. Electrical Connections



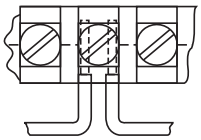
CONTACT RATINGS	
125/250 VAC	10 AMPS
24 VDC	2.5 AMPS



Typical FACP Connection



Typical Local Bell Connection



Break wire as shown for supervision of connection. DO NOT allow stripped wire leads to extend beyond switch housing. DO NOT loop wires.

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