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Potter / Amseco VSR-6

Potter VSR-6 Sprinkler Flow Switch Instruction Manual

Model: VSR-6

1. Introduction

The Potter VSR-6 is a vane type waterflow switch designed for use on wet sprinkler systems. This device is UL Listed and FM Approved for installation on steel pipes with schedules 10 through 40, specifically for a 6-inch pipe size. The VSR-6 functions as a waterflow detector, capable of identifying sustained water flow within the sprinkler system. It incorporates two single pole, double throw (SPDT) snap-action switches and features an adjustable, instantly recycling pneumatic retard mechanism.

The primary function of the VSR-6 is to initiate an alarm signal when a water flow of 10 GPM (38 LPM) or more occurs downstream of its installation point. This flow condition must persist for a duration sufficient to overcome the selected retard period, preventing false alarms from transient pressure fluctuations.

2. Setup and Installation

Proper installation of the Potter VSR-6 is crucial for its reliable operation. This device is intended for horizontal or vertical pipe installation on 6-inch steel pipes (schedules 10-40). Ensure the flow arrow on the switch housing aligns with the direction of water flow in the pipe.



Figure 2.1: Potter VSR-6 Sprinkler Flow Switch in original packaging, showing the main unit, U-bolt, and vane.

The installation process typically involves drilling a hole in the pipe and securing the switch using the provided U-bolt assembly. Care must be taken to ensure the vane is correctly positioned within the pipe to detect water flow accurately without obstructing it.



Figure 2.2: Front view of the VSR-6 flow switch, highlighting the main housing and U-bolt attachment points.

Electrical connections should be made according to local codes and the wiring diagram provided with the product. The two SPDT switches allow for flexible integration into alarm and supervisory circuits.



Figure 2.3: Bottom view of the VSR-6, showing the product label with model number, certifications, and warning information.

The pneumatic retard mechanism can be adjusted to set the desired delay before an alarm is initiated. This adjustment helps to prevent nuisance alarms caused by short-term pressure surges or water hammer.

3. Operating Principles

The Potter VSR-6 operates on the principle of water flow detection. When water flows through the pipe at a rate of 10 GPM (38 LPM) or greater, the vane inside the pipe is displaced. This displacement activates the internal mechanism, which, after the adjustable retard period has elapsed, triggers the two SPDT snap-action switches.
These switches can be wired to activate various alarm devices, such as local bells, remote annunciators, or fire alarm control panels. The adjustable retard feature ensures that only sustained water flow, indicative of a sprinkler system activation, generates an alarm, thereby minimizing false alarms.

4. Maintenance

Regular maintenance is essential to ensure the continued reliability of the Potter VSR-6 flow switch. Periodic inspection should include:

- **Visual Inspection:** Check for any signs of physical damage, corrosion, or loose connections.
- **Functional Testing:** Conduct periodic flow tests as required by local fire codes and NFPA standards to verify the switch activates within the specified flow rate and retard time.
- **Wiring Integrity:** Ensure all electrical connections are secure and free from damage.

Always disconnect power before performing any maintenance or inspection to prevent electrical shock.

5. Troubleshooting

If the VSR-6 flow switch is not operating as expected, consider the following common issues:

- **No Alarm on Flow:** Verify that the water flow rate meets or exceeds 10 GPM (38 LPM). Check the retard setting; if set too long, it may delay alarm activation. Inspect the vane for obstruction or damage. Ensure electrical connections are correct and secure.
- **False Alarms:** The retard setting may be too short, causing activation from transient pressure changes. Adjust the retard period to a longer setting. Check for excessive vibration in the pipe system.
- **Intermittent Alarms:** This could indicate loose wiring connections or an unstable water supply. Inspect all wiring and ensure stable system pressure.

For persistent issues, consult a qualified fire protection technician or contact Potter Electric Signal Company technical support.

6. Specifications

Specification	Detail
Model Number	VSR-6
Pipe Size Compatibility	6 Inches (Steel Pipe, Schedules 10-40)
Flow Detection Threshold	10 GPM (38 LPM)
Switch Type	Two Single Pole, Double Throw (SPDT) Snap-Action
Retard Mechanism	Adjustable Pneumatic
Material	Alloy Steel
Inlet Connection Type	Flange
Outlet Connection Type	NPT
Number of Ports	2
Certifications	UL Listed, FM Approved
Item Weight	5 pounds
UPC	785192013785

7. Warranty and Support

For information regarding the product warranty, please refer to the documentation provided with your purchase or visit the official Potter Electric Signal Company website. For technical assistance, troubleshooting, or replacement parts, please contact Potter Electric Signal Company customer support directly. Always provide the model number (VSR-6) and any relevant serial numbers when seeking support.

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