The Model VSR-SFT is a vane type waterflow switch for use on wet sprinkler systems that use 1", 1-1/4", 1-1/2" or 2" pipe sizes. It is equipped with a union to accommodate installation in confined spaces.

The unit contains two single pole double throw snap action switches and an adjustable, instantly recycling pneumatic retard. The switches are actuated when a flow of 8-10 gallons per minute (30-38 liters per minute) or more occurs downstream of the device. The flow condition must exist for a period of time necessary to overcome the selected retard period.

**INSTALLATION:** These devices may be mounted in horizontal or vertical pipe. On horizontal pipe they should be installed on the top side of the pipe where they will be accessible. The units should not be installed within 6" (15 cm) of a valve, drain or fitting which changes the direction of the waterflow. The unit has a 1" NPT fitting for threading into a non-corrosive TEE. See Fig. 1 for proper TEE size, type and installation. Select the proper paddle for the pipe size and type of TEE used. See Fig. 3 for instructions on how to change the paddle.

Loosen the union nut and separate the 1" NPT fitting from the VSR-SFT. Use no more than three wraps of teflon tape as thread lubricant. Reattach the VSR-SFT to the 1" NPT fitting, verifying that the o-ring is properly positioned in its groove. Hand tighten the nut on the union after orienting the device in the appropriate direction to detect waterflow as shown in Fig. 2.

**CAUTION:** Do not over-tighten the union nut, hand tighten only!

The vane must not rub the inside of the TEE or bind in any way. The stem should move freely when operated by hand.

The device can also be used in copper or plastic pipe installations with the proper adapters so that the specified TEE fitting may be installed on the pipe run.

**INSPECTION AND TESTING:** Check the operation of the unit by opening the inspector’s test valve at the end of the sprinkler line or the drain and test connection, if an inspector’s test valve is not provided. If there are no provisions for testing the operation of the flow detection device on the system, application of the VSR-SFT is not recommended or advisable.

The frequency of the inspection and testing and its associated protective monitoring system should be in accordance with the applicable NFPA Codes and Standards and/or authority having jurisdiction (manufacturer recommends quarterly or more frequently).
FIG. 1

Screw the fitting into the TEE fitting as shown.

On sweat TEE’s, no threaded bushings, inserts or adapters are permitted unless they comply with the dimensions listed in the chart below.

**Caution:** To prevent leakage apply teflon tape sealant to the 1” NPT male fitting only. Do not use any other type of lubricant or sealant.

**Important** - the depth to the inside bottom of the TEE should have the following dimensions:

<table>
<thead>
<tr>
<th>TEE SIZE</th>
<th>THREADED</th>
<th>SWEAT</th>
<th>POLYBUTYLENE</th>
<th>CPVC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1” x 1” x 1”</td>
<td>2-1/16”</td>
<td>1-3/4”</td>
<td>N/A</td>
<td>2-7/16”</td>
</tr>
<tr>
<td>1-1/4” x 1-1/4” x 1”</td>
<td>2-7/16”</td>
<td>2-9/16”</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>1-1/2” x 1-1/2” x 1”</td>
<td>2-11/16”</td>
<td>2-1/4”</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2” x 2” x 1”</td>
<td>3-3/16”</td>
<td>2-3/4”</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

FIG. 2

**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”.

<table>
<thead>
<tr>
<th>APPROX. RETARD SETTINGS (IN SEC.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

FIG. 3

**Important:**

There are 12 paddles furnished with each unit. One for each size of threaded, sweat or plastic TEE as described in Fig. 1. The paddles have raised lettering that show the pipe size and type of TEE that they are to be used with. The proper paddle must be used. The paddle must be properly attached (see Fig. 3) and the screw that holds the paddle must be securely tightened.

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**NOTES:**

1. The model VSR-SFT has two switches, one can be used to operate a central station, proprietary or remote signaling unit, while the other is used to operate a local audible or visual annunciator.

2. For supervised circuits see “Switch Terminal Connections” drawing and caution note (Fig. 4).

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**APPLICATION WARNING!**

Due to the possibility of unintended discharges caused by pressure surges, trapped air, or short retard times, waterflow switches that are monitoring wet pipe sprinkler systems should not be used as the sole initiating device to discharge AFFF, deluge, or chemical suppression systems.