WATERFLOW DETECTOR

Model VSR-S

Vane type waterflow alarm switch with retard



PRODUCT DESCRIPTION

The vane type waterflow model VSR-S is used on wet sprinkler systems that use 1" (25 mm), 1¼" (32 mm), 1½" (38 mm) or 2" (50 mm) pipe size. The unit may also be used as a sectional waterflow detector on large systems.

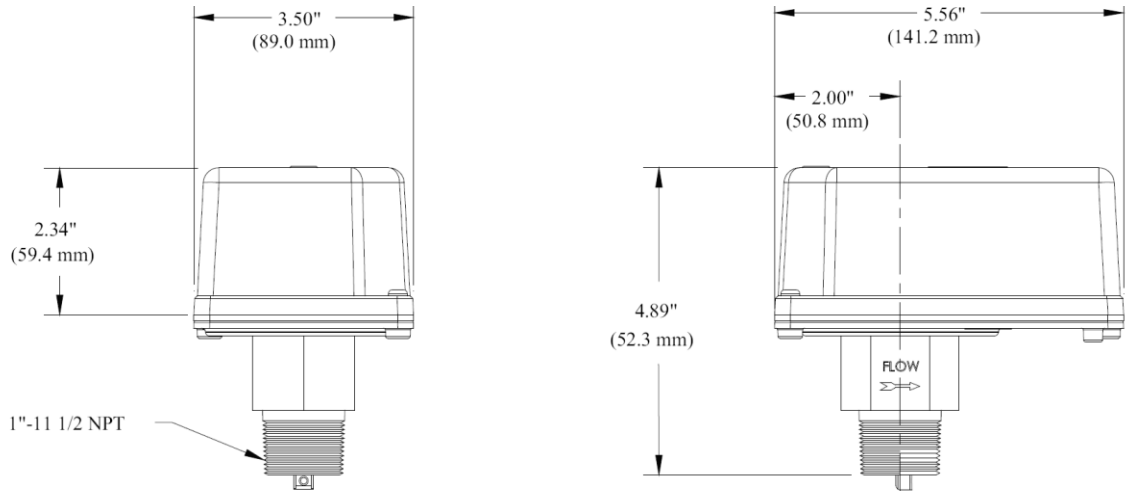
The unit contains two single pole double throw snap action switches and an adjustable, instantly recycling pneumatic retard. The switches are actuated when a flow of 10 gallons per minute (38 lpm) or more occurs downstream of the device. The flow condition must exist for a period of time necessary to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

TECHNICAL DATA

Model	VSR-S
Maximum system pressure	300 psi (20,68 bar)
Maximum surge	18 fps (5,5 m/s)
Contact ratings	Two sets of SPDT (Form C) 10.1 Amps at 125/250 VAC 2.0 Amps at 30 VDC resistive 10mAmpsmin. at 24 VDC
Conduit entrance	Two openings provided for 1/2" conduit Individual switch compartments suitable for dissimilar voltages
Enclosure	Die-cast red enamel finish Cover held in place with tamper resistant screws
Usage	Listed plastic, copper and schedule 40 iron pipe Fits pipe sizes - 1" (25mm), 1 1/4" (32mm), 1 1/2" (38mm) and 2" (50mm) Note: 12 paddles are furnished with each unit, one for each pipe size of threaded and sweat TEE, one for 1" (25mm) CPVC, one for 1" (25mm) CPVC (Central), one for 1" threaded Nibco CPVC, and one for 1 1/2" (38mm) threaded (Japan)
Environmental limitations	-40ºF tot 140ºF (-40ºC to 60ºC) NEMA 4/IP66 Rated Enclosure - indoor or outdoor when used with NEMA 4 conduit fittings
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
Tamper	Optional cover tamper switch kit must be ordered separately

C/Alfoz de Bricia nº4 | P.I. Villalonquéjar | 09001 Burgos (Spain) | Tlfno: +34 947 28 11 08

DIMENSIONS



ENCLOSURE

The VSR-S switches and retard device are enclosed in a general purpose, die-cast housing. The cover is held in place with two tamper resistant screws which require a special key for removal. A field installable cover tamper switch is available as an option which may be used to indicate unauthorized removal of the cover.

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" (15cm) of a valve, drain or fitting which changes the direction of the waterflow. Select the proper paddle for the pipe size and type of TEE used see Fig. 1 for instructions on changing paddle. The unit has a 1" NPT bushing for threading into a non-corrosive TEE. Use no more than three wraps of teflon tape.

Care must be taken to properly orient the device for the direction of waterflow.

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.

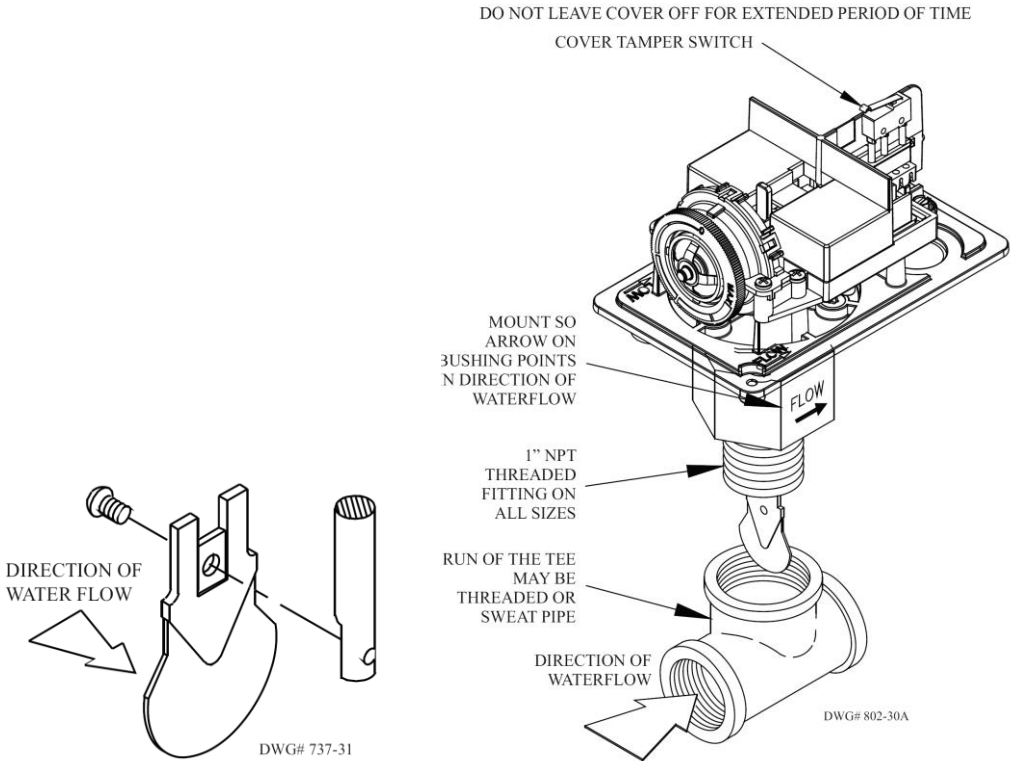
Note: Do not leave cover off for an extended period of time.

RETARD ADJUSTMENT

The time delay is factory set at 30 ± 10 seconds.

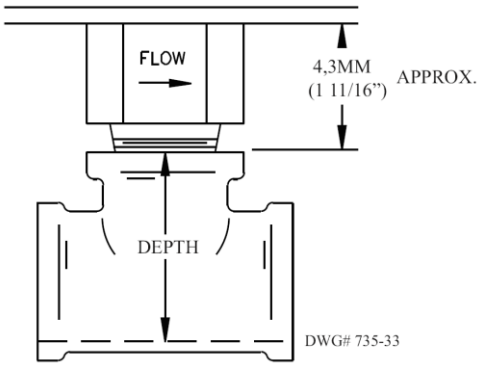
The delay can be adjusted by rotating the retard adjustment knob from 0 to the max setting (60-90 seconds). The time delay should be set at the minimum required to prevent false alarms.

C/Alfoz de Bricia nº4 | P.I. Villalonquéjar | 09001 Burgos (Spain) | Tlfno: +34 947 28 11 08



WARNING: There are 12 paddles furnished with each unit. One for each size of threaded, sweat or plastic TEE. These paddles have raised lettering that shows 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 drawing) and the screw that holds the paddle must be securely tightened.

SCREW DEVICE INTE THE TEE FITTING



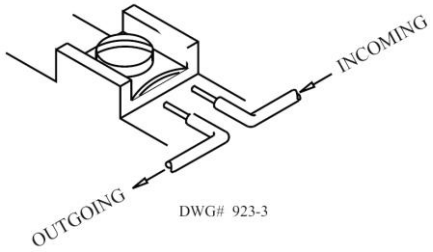
Care must be taken to properly orient the device for the direction of waterflow. On sweat tees, no threaded bushings, inserts, or adapters are permitted, unless they comply with the dimensions listed in the chart below.

Important: The depth to the inside bottom of the tee should have the following dimensions:

WARNING: Do not use more than three wraps of teflon tape.

C/Alfoz de Bricia nº4 | P.I. Villalonquéjar | 09001 Burgos (Spain) | Tlfno: +34 947 28 11 08

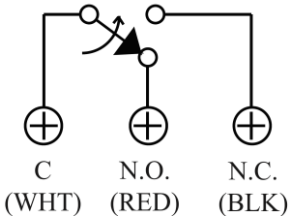
SWITCH CLAMPING PLATE TERMINAL



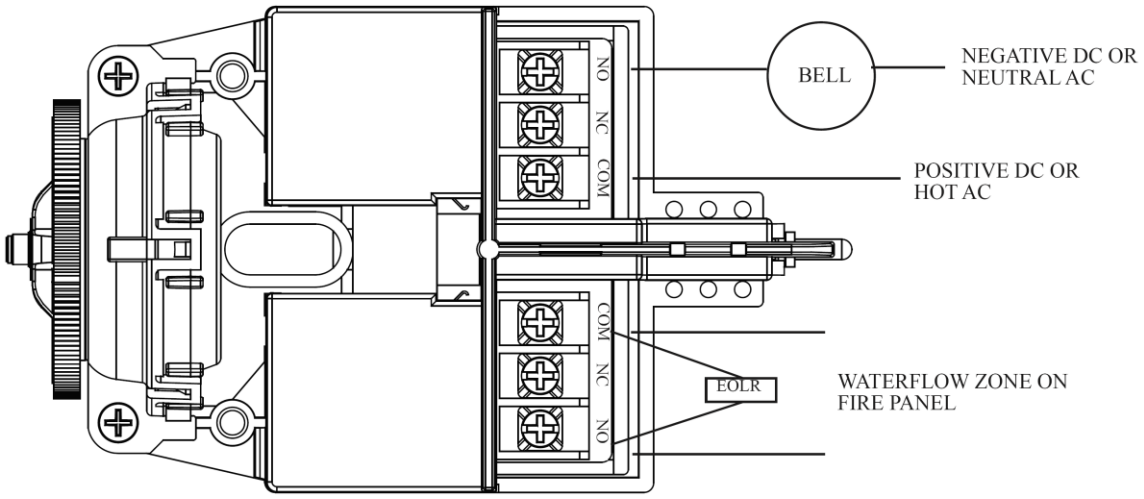
WARNING: An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire becomes dislodged from under the terminal.

COVER TAMPER SWITCH WIRING

(Shown with cover in place)



TYPICAL ELECTRICAL CONNECTIONS



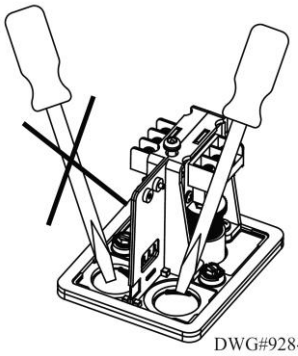
Notes:

1. The Model VSR-S 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.

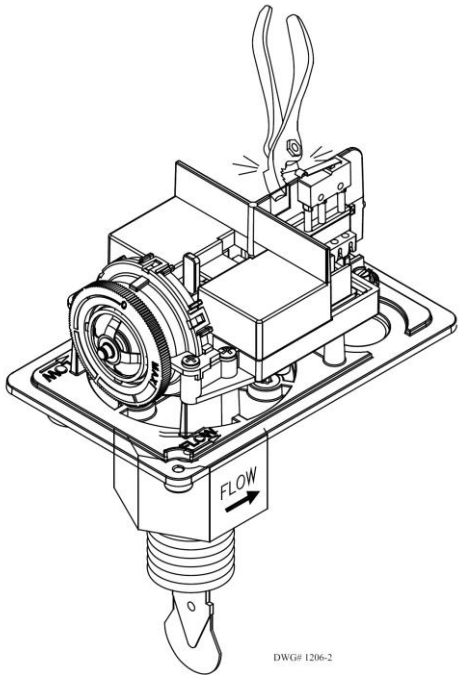
2. For supervised circuits see “Switch Terminal Connections” drawing and caution note.

C/Alfoz de Bricia nº4 | P.I. Villalonquéjar | 09001 Burgos (Spain) | Tlfno: +34 947 28 11 08

KNOCKOUT REMOVAL



Place screwdriver at edge of knockouts, not in the center.



Break out thin section of cover when wiring both switches from one conduit entrance.

TESTING

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

An inspector's test valve (usually located at the end of the most remote branch line) should always be used for test purposes. If there are no provisions for testing the operation of the flow detection device on the system, application of the VSR-S is not recommended or advisable.

A minimum flow of 10 gpm (38 lpm) is required to activate this device.

NOTICE: Please advise the person responsible for testing of the fire protection system that this system must be tested in accordance with the testing instructions.

C/Alfoz de Bricia nº4 | P.I. Villalonquéjar | 09001 Burgos (Spain) | Tlfno: +34 947 28 11 08

MAINTENANCE

Inspect detectors monthly for leaks. If leaks are found, replace the detector. The VSR-S waterflow switch should provide years of troublefree service. The retard and switch assembly are easily field replaceable.

In the unlikely event that either component does not perform properly, please order replacement retard switch assembly stock #1029030. There is no maintenance required, only periodic testing and inspection.

REMOVAL

• To prevent accidental water damage, all control valves should be shut tight and the system completely drained before waterflow detectors are removed or replaced.

• Turn off electrical power to the detector, then disconnect wiring.

• Use a wrench on the flats of the bushing. Turn the switch counterclockwise to disengage the pipe threads.

• Gently lift with your fingers, roll the vane so it will fi t through the hole while continuing to lift the waterflow detector.

• Lift detector clear of pipe.

CAUTION: Waterflow switches that are monitoring wet pipe sprinkler systems shall not be used as the sole initiating device to discharge AFFF, deluge, or chemical suppression systems. Waterflow switches used for this application may result in unintended discharges caused by surges, trapped air, or short retard times.

ORDERING INFORMATION

SIZE	CODE
From 1” DN25 to 1 ½” DN40	DFVSRS025040

Specify:

Model	
Quantity	
Optional cover tamper switch	It must be ordered separately

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.

C/Alfoz de Bricia nº4 | P.I. Villalonquéjar | 09001 Burgos (Spain) | Tlfno: +34 947 28 11 08