

Features

- Non-corrosive saddle bushing
- Optional one or two switch models
- IP 54/NEMA 4
- Two knockouts for cable glands/conduit
- 0-90 second field replaceable retard
- All metal enclosure



NOTICE

Before any work is done on the fire sprinkler or fire alarm system, the building owner or their authorized representative shall be notified. Before opening any closed valve, ensure that opening the valve will not cause any damage from water flow due to open or missing sprinklers, piping, etc.

CAUTION

Waterflow indicators 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 indicators used for this application may result in unintended discharges caused by surges, trapped air, or short retard times.



Important: This document contains important information on the installation and operation of VSR-F series waterflow indicators. Please read all instructions carefully before beginning installation. A copy of this document is required by NFPA 72 to be maintained on site.

Description

The VSR-F is a vane type waterflow indicator for use on wet pipe sprinkler systems. It is FM Approved and UL Listed for use on steel pipe: schedules 10 through 40, sizes 50mm through 200mm (2" through 8"). See Compatible Pipe/Installation Requirements chart for pipe dimensions.

The unit may also be used as a sectional waterflow indicator on large systems.

The VSR-F is available with one or two Single Pole, Double Throw (SPDT) snap action switches and a field replaceable, adjustable, instantly recycling pneumatic retard. The switch(es) are actuated when a flow of 38 LPM (10 GPM) or more occurs downstream of the device. The flow condition must exist for a period of time necessary to overcome the selected retard period.

Enclosure

The unit is 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. See bulletin no. 5400775 for installation instructions of this switch.

A minimum of 38 LPM (10 GPM) is required to activate this device. Advise the person responsible for testing of the fire protection system that this system must be tested in accordance with testing instructions.

Technical Specifications

System Service Pressure	Up to 3.1 MPa (450 PSI)
Flow Sensitivity Range For Signal	15-38 LPM (4-10 GPM)
Maximum Surge	5,5 m/s (18 FPS)
Contact Ratings	One or Two sets of SPT (Form C) 15.0 Amps at 125/250VAC 2.0 Amps at 30VDC Resistive
Environmental Specifications	Suitable for indoor or outdoor use with factory installed gasket and die-cast housing. IP54/NEMA 4 Rated Enclosure - use with appropriate cable or conduit fitting. Temperature Range: 4,5°C/49°C, 40°F/120°F. Non-corrosive sleeve factory installed in saddle.
Conduit Entrances	Two Knockouts for 22,5mm (1/2" - Ø.886) conduit provided
Service Use	NFPA 13, 13D, 13R, 72

Specifications subject to change without notice

Installation

These devices may be mounted on horizontal or vertical pipe. On horizontal pipe, they shall be installed on the top side of the pipe where they will be accessible. The device should not be installed within 15 cm (6") of a fitting which changes the direction of the waterflow or within 60 cm (24") of a valve or drain.

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

Drain the system and drill a hole in the pipe using a hole saw in a low speed drill (see Fig. 1). Clean the inside pipe of all growth or other material for a distance equal to the pipe diameter on either side of the hole. Roll the vane so that it may be inserted into the hole; do not bend or crease it. Insert the vane so that the arrow on the saddle points in the direction of the waterflow. Take care not to damage the non-corrosive bushing in the saddle. The bushing should fit inside the hole in the pipe. Install the saddle strap and tighten the nuts alternately (see chart in Fig. 1). The vane must not rub the inside of the pipe or bind in any way.

CAUTION

Do not trim the paddle. Failure to follow these instructions may prevent the device from operating and will void the warranty.

DO NOT LEAVE COVER OFF FOR EXTENDED PERIOD OF TIME

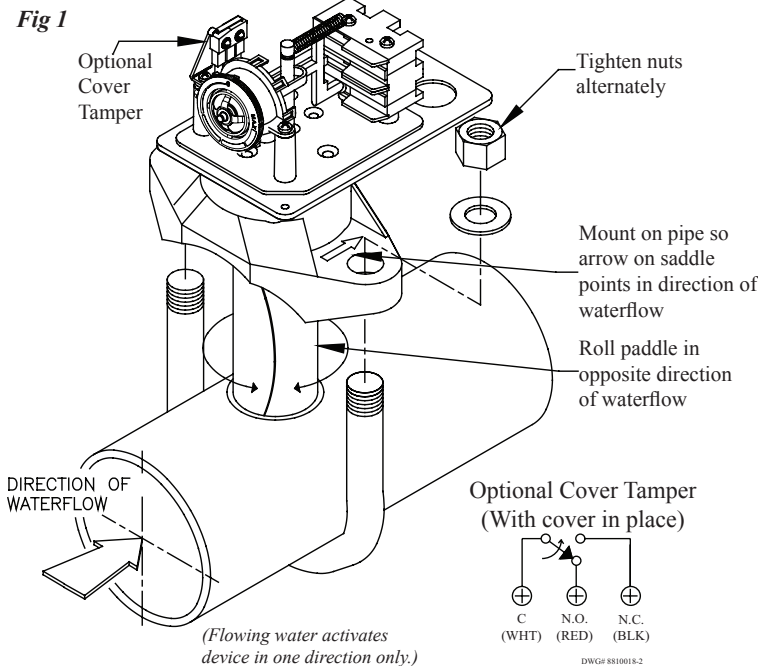
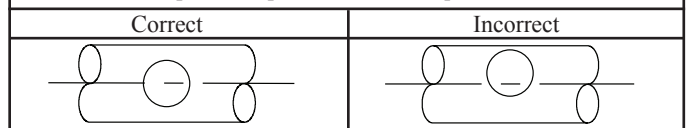
Retard Adjustment: The time delay is factory set at 30 ± 10 seconds. The delay can be adjusted by rotating the retard adjustment knob from 0 to the max setting (60-90 seconds). The time delay should be set at the minimum required to prevent false alarms.

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.
- Risk of explosion. Not for use in hazardous locations. Serious injury or death could result.

CAUTION

Hole must be drilled perpendicular to the pipe and vertically centered. Refer to the Compatible Pipe/Installation Requirements chart for size.

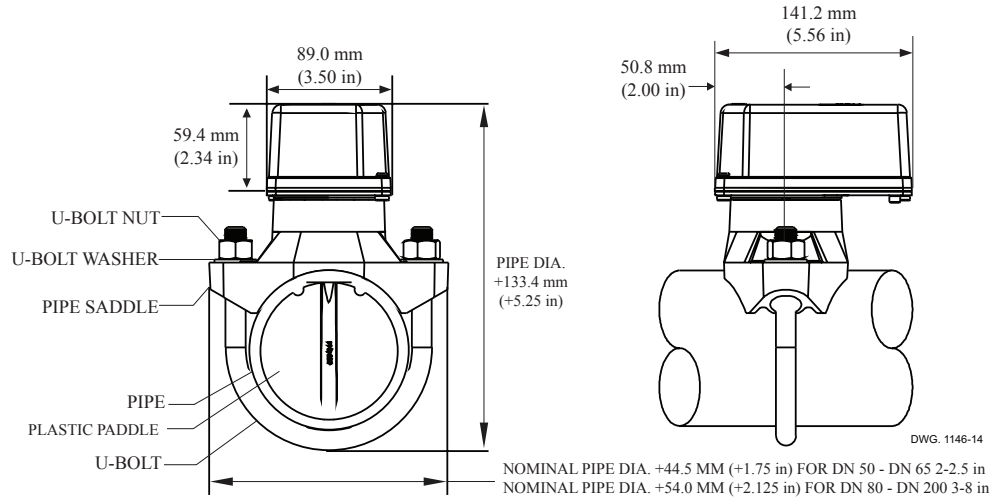


Compatible Pipe/ Installation Requirements

Model	Nominal Pipe Size		Nominal Pipe O.D.		Pipe Wall Thickness										Hole Size		U-Bolt Nuts Torque			
					API Schedule 10		API Schedule 40		BS-1387		DN		GBT 3091						GBT 17395	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	n-m	ft-lb
VSR-F 50	50	2	60,3	2.375	2,77	0.109	3,91	0.154	3,6	0.142	2,3	0.091	3,8	0.150	-	-	33,0 ±2,0	1.25 +125/ -062	27	20
VSR-F 65	65	2 1/2	73,0	2.875	3,05	0.120	5,16	0.203	-	-	-	-	-	-	-					
VSR-F 65	65	2 1/2	76,1	3.000	-	-	-	-	3,6	0.142	2,6	0.102	4,0	0.157	-	-				
VSR-F 80	80	3	88,9	3.500	3,05	0.120	5,49	0.216	4,0	0.157	2,9	0.114	4,0	0.157	-	-				
VSR-F 100	100	4	114,3	4.500	3,05	0.120	6,02	0.237	4,5	0.177	3,2	0.126	4,0	0.157	-	-				
VSR-F 125	125	5	141,3	5.563	3,40	0.134	6,55	0.258	-	-	-	-	-	-	-	-	50,8 ±2,0	2.00 ±125		
VSR-F 125	125	5	139,7	5.500	-	-	-	-	5,0	0.197	3,6	0.142	4,0	0.157	-	-				
VSR-F 150	150	6	168,3	6.625	3,40	0.134	7,11	0.280	5,0	0.197	4,0	0.157	4,5	0.177	-	-				
VSR-F 200	200	8	219,1	8.625	3,76	0.148	8,18	0.322	6,3	0.248	4,5	0.177	6,0	0.236	7,0	0.276				

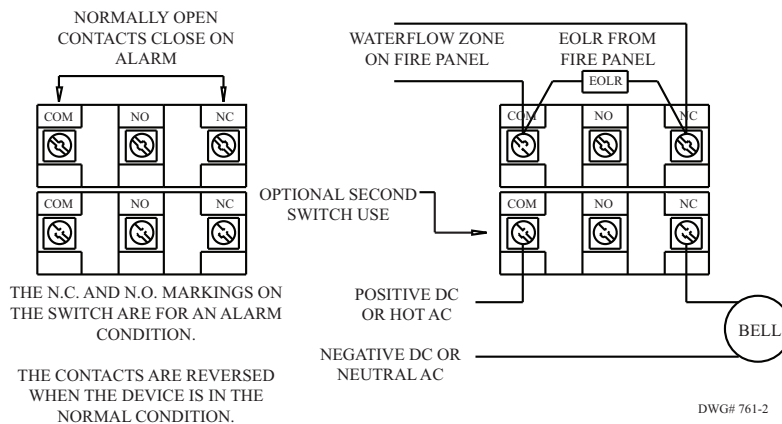
Mounting Dimensions

Fig 2



Typical Electrical Connections

Fig 3

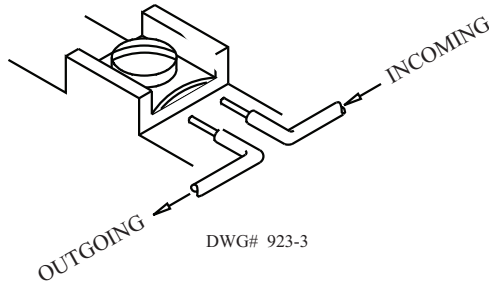


NOTES:

1. For models with two switches, one can be used to operate a central station, proprietary or remote signaling unit, while the other contact is used to operate a local audio or visual annunciator.
2. For supervised circuits see "Switch Terminal Connections Clamping Plate Terminal" drawing and caution note (Fig. 4).

Switch Terminal Connections Clamping Plate Terminal

Fig 4



WARNING

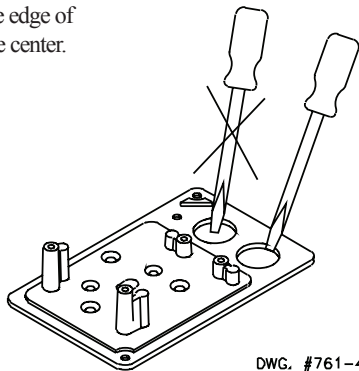
An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire become dislodged from under the terminal. Failure to sever the wire may render the device inoperable risking severe property damage and loss of life.

Do not strip wire beyond 3/8" of length or expose an uninsulated conductor beyond the edge of the terminal block. When using stranded wire, capture all strands under the clamping plate.

Removing Knockouts

Fig 5

To remove knockouts: Place screwdriver at inside edge of knockouts, not in the center.



NOTICE

Do not drill into the base as this creates metal shavings which can create electrical hazards and damage the device. Drilling voids the warranty.

Testing

The frequency of inspection and testing for the VSR-F and its associated protective monitoring system shall be in accordance with applicable NFPA Codes and Standards and/or Authority Having Jurisdiction (manufacturer recommends quarterly or more frequently).

If Provided, the inspector's test valve shall always be used for test purposes. If there are no provisions for testing the operation of the flow detection device on the system, the application of the VSR-F is not recommended or advisable.

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Maintenance

Inspect detector monthly. If leaks are found, replace the detector. The VSR-F waterflow Indicator should provide years of trouble-free service.

Ordering Information

Fig 6

ORDERING INFORMATION	
1113 x xx - VSR-F Series	02 (50mm - 2")
	25 (65mm - 2.5")
	03 (80mm - 3")
	04 (100mm - 4")
	05 (125mm - 5")
	06 (150mm - 6")
	08 (200mm - 8")
→ 0 - 1x SPDT	
→ 1 - 2x SPDT	

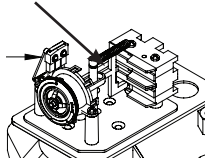
Optional: Cover Tamper Switch Kit, stock no. 0090018

Replaceable Components: Retard/Switch Assembly, stock no. 1029073

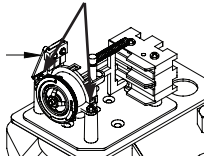
Procedure For Retard Assembly Replacement

The Retard Assembly is field-replaceable without draining the system or removing the Waterflow Indicator from the pipe.

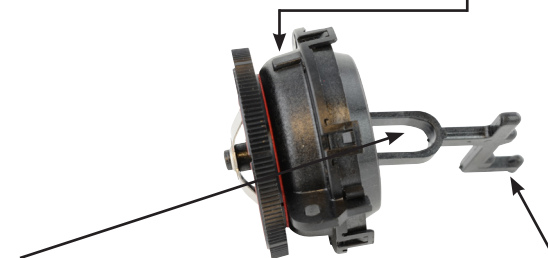
1. Make sure the Fire Alarm Zone or Circuit connected to the Waterflow Indicator is bypassed or otherwise taken out of service.
2. Identify and remove all wires from the Waterflow Indicator.
3. Slide *this end of spring* out of the groove on the tripstem.



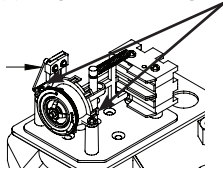
4. Remove the (2) *Mounting Screws* holding retard assembly to the base. **IMPORTANT: Do not lose the 2 screws.**



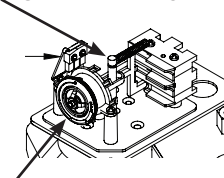
5. Remove the Retard Assembly by gently lifting it straight up over the tripstem.
6. Install the new Retard Assembly. **Important: Make sure the *Tab* of the Retard Assembly is facing upward.**



7. Slide the *Slot of the Retard Mechanism* on to the tripstem, ensuring the *L-lever Actuator* slips freely under the microswitch. The blades of the microswitch should be behind the L-Lever Actuator.
8. Align the two holes of the Retard Assembly to the base.
9. Re-install the (2) original *Mounting Screws*.



10. Slide the *Spring* back into the groove on the Tripstem.



11. Rotate the *knob* to "0" and pull the Tripstem to extend the spring. The microswitches should trip immediately. Rotate the knob to the position and set it to the desired retard time.
12. Reconnect all wires. Perform a flow test (if required) and place the system back in service.

Removal Of Waterflow Indicator

- 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.
- Loosen nuts and remove U-bolts.
- Gently lift the saddle far enough to get your fingers under it. With your fingers, roll the vane so it will fit through the hole while continuing to lift the waterflow detector saddle.
- Lift detector clear of pipe.