WATER FLOW SWITCH

MODEL: SD-WFD SERIES

FEATURES

- Designed for both indoor and outdoor use;
- Equipped with tamper resistant screws to prevent unauthorized entry.
- Two synchronized switches are enclosed in a durable terminal block. Terminals are easy to read and wire.
- Built-In mechanical time delay feature; minimizing the risk of false alarms due to pressure surges or air trapped in the system.
- Offers excellent performance during riser vibrations caused by large in-rushes of water.
- Designed and built for accuracy and repeatability.
- Sealed retard mechanism immune to dust and other contaminants
- Field-replaceable retard mechanism and SPDT switches
- Rugged, dual SPDT switches enclosed in a durable terminal block
- 100 percent synchronization activates both alarm panel and local bell
- Tamper-resistant cover screws

TECHNICAL DATA

Flow Sensitivity Range	4-10 GPM (15-38LPM)
Contact Rating	Two sets of SPDT 8A@250VAC; 3A@24VDC; 2.5A@ 30VDC.
Working Pressure	450PSI.
Working Temperature	0°C to 68°C
Corrosion Protection	Fusion Bonded Epoxy Coated Interior and Exterior or Enamel Spray Paint, Interior and Exterior
Working Pressure	450psi.
Maximum Surge	18 FPS (5.5 m/s)
Corrosion Protection	Fusion Bonded Epoxy Coated Interior and Exterior or Enamel Spray Paint, Interior and Exterior.
Compatible Pipe	Steel water pipe, schedule 10 through 40
Conduit Entrances	Two openings for ½" conduit.
Service Use	• Automatic Sprinkler: NFPA 13 • One or Two Family Dwelling: NFPA 13D Residential • Occupancies up to 4 Stories: NFPA 13R National Fire Alarm • Code: NFPA 72

Size		Model Number
inch	mm	
2	50	SD-WFD20
2½	65	SD-WFD25
3	80	SD-WFD30
4	100	SD-WFD40
5	125	SD-WFD50
6	150	SD-WFD60
8	200	SD-WFD80

DESCRIPTION

The Model SD-WFD is a vane type waterflow swi tch for use on wet sprinkler system s. The water flow contains two single pole, double throw, snap action switches and an adjustable, instantly recycling pneumatic retard.
Vane-type waterflow detectors shall be installed on system piping as designated on the drawing and/or as specified herein. Detectors shall have sensitivity in the range of 4 to 10 gallons per minute and a static pressure rating of 450 psi for 2″–8″ pipes. The flow condition must exist for a period of time necessary to overcome the selected retard period that is field adjustable.

The delay mechanism shall be a sealed mechanical pneumatic unit with visual indication of actuation. The actuation mechanism shall include a polyethylene vane inserted through a hole in the pipe and connected by a mechanical linkage to the delay mechanism. Outputs shall consist of dual SPDT switches. Two conduit entrances for standard fittings of commonly used electrical conduit shall be provided on the detectors.

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 6" (15 cm) of a fitting which changes the direction of the waterflow or within 24" (60 cm) 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 slow speed drill. 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 nuts alternately to required torque. 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 obstruct or otherwise prevent the trip stem of the flow switch from moving when water flows as this could damage the flow switch and prevent an alarm. If an alarm is not desired, a qualified technician should disable the alarm system.

TESTING

The frequency of inspection and testing for the Model VSR and its associated protective monitoring system shall be in accordance with applicable NFPA Codes and Standards and/or the 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, application of the VSR is not recommended or advisable.

A minimum flow of 10 GPM (38 LPM) is required to activate this device.

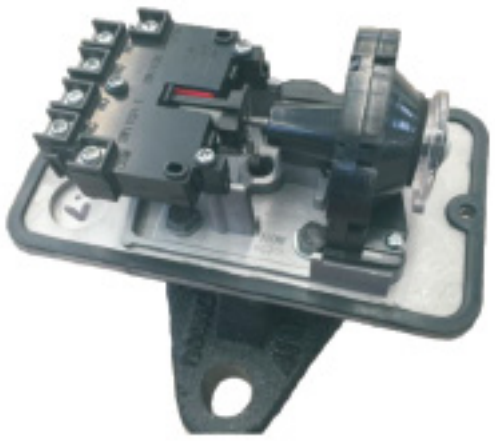
Note: Advise the person responsible for testing of the fire protection system that this system must be tested in accordance with the testing instructions.

MAINTENANCE

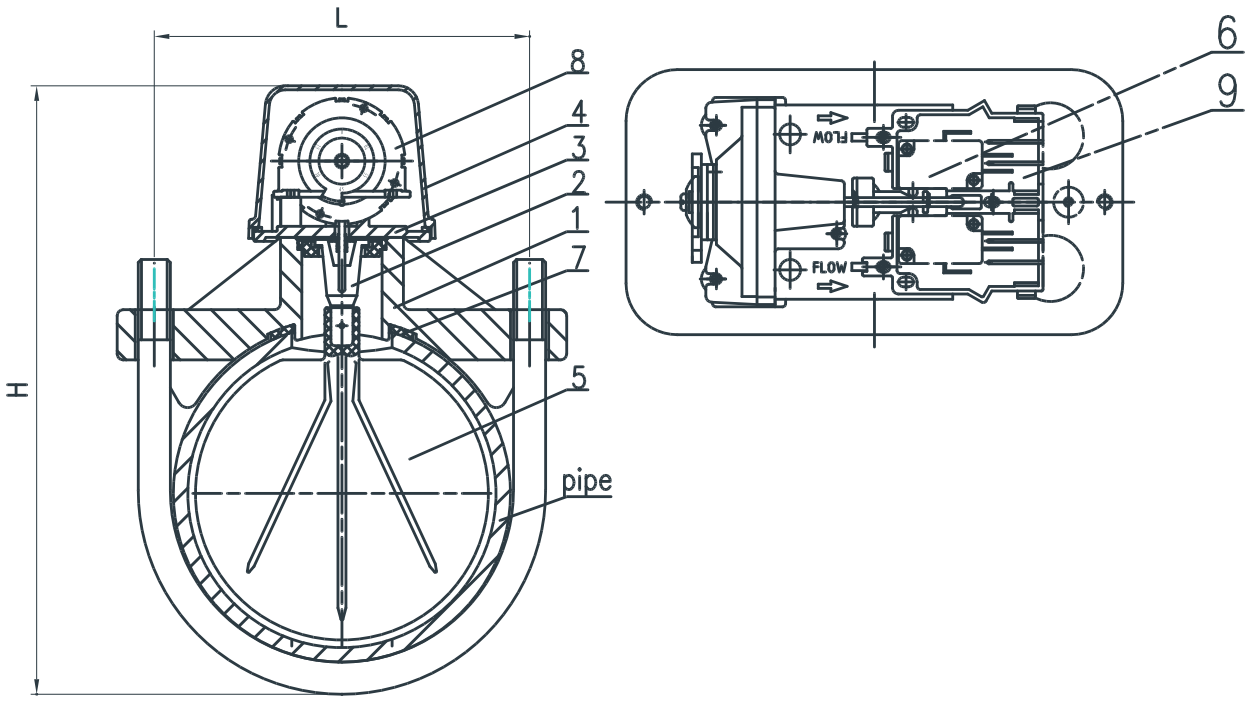
Inspect detectors monthly. If leaks are found, replace the detector. The SD-WFD waterflow switch should provide years of trouble-free service. The retard and switch assembly are easily field replaceable. In the unlikely event that either component does not perform properly, please order replacement retard switch assembly. There is no maintenance required, only periodic testing and inspection.

REMOVAL OF WATERFLOW SWITCH

- 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.



SCHEMATIC DRAWINGS



PART LIST

Number	Part Name	Material
1	Saddle	Ductile Iron, ASTM A536 65-45-12
2	Holder	SS304 + EPDM
3	Plate	Aluminium Alloy
4	Cover	Aluminium Alloy
5	Paddle	Plastic
6	Microswitch	Plastic
7	Gasket	EPDM
8	Retarding Device	Plastic
9	Terminal Box	Plastic

DIMENSIONS

Size	DN50	DN65	DN80	DN100	DN125	DN150	DN200
L	84	92	104	133	160	187	239
H	190	100	220	245	270	300	350
OD, nominal Size	60.3	73	88.9	114.3	141.3	168.3	219.1
Pipe Wall Thickness	2.77 to 3.91	3.05 to 5.16	3.05 to 5.49	3.05 to 6.02	3.40 to 6.55	3.40 to 7.11	3.76 to 8.18