

# WFDN

## Waterflow Detector



Conventional Initiating Devices

### GENERAL

#### WFDN SERIES

The WFDN Series Waterflow Detectors are compatible with Schedule 7 through 40 steel pipe, sizes 2" through 4" (50.8 mm through 101.6 mm), and are compatible with Schedule 10 through 40 steel pipes, sizes 5" through 8" (127 mm through 203.2 mm). They can be mounted in a vertical or horizontal position.

WFDN Series detectors are contained in a rugged, NEMA 4-rated enclosure. Designed for both indoor and outdoor use, the WFDN Series operates across a wide temperature range: 32°F to 150°F (0°C to 66°C).

UL-Listed models are equipped with tamper-resistant cover switch to prevent unauthorized entry. Inside, two sets of SPDT (Form-C) synchronized switches are enclosed in a durable terminal block with a new layout designed to make wiring easy with wire ready terminals. COM terminals are on a different elevation. There is a large barrier between switches and raised textured lettering make it easy to read. An optional cover tamper switch is available which securely snaps into place, no tools required.

WFDN Series detectors incorporate a mechanical time delay feature, which minimizes the risk of false alarm due to pressure surges or air trapped in the sprinkler system. The larger and easy to turn timer dial makes setting the waterflow detector easy.

The WFDN Series is designed for accuracy and repeatability. The detector also offers improved performance during vibration in riser applications where detectors are exposed to a large rush of water.

### FEATURES

- New directional cover allows installers and inspectors to easily see the direction of flow.
- UL-Listed models are NEMA 4 rated.
- Sealed retard mechanism immune to dust and other contaminants
- Less exposed metal reduces shock hazard. Plastic cover acts as an insulator and is resistant to arcing.
- Visual switch activation
- Audible switch activation (73 dBA).
- Field-replaceable timer/switch assembly.
- Accommodates up to 12 AWG wire.
- Switch synchronization activates both alarm panel and local bell or horn strobe.
- Tamper-resistant cover screws.
- Improved water sealing.
- Reduced product weight.
- Wire-ready terminals.
- Improved wiring with new terminal block layout.
- Snap-in optional cover tamper switch.
- Improved timer repeatability and accuracy.



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WFDN Waterflow Detector

### SPECIFICATIONS

#### WFDN SERIES

**Static Pressure Rating:** 450 PSI.

**Triggering Threshold Bandwidth (flow rate):** 4 to 10 GPM.

**Maximum Surge:** 18 feet per second (FPS) (5.4864 m/sec).

**Compatible Pipe:** steel water pipe, 2" - 4" (50.8 mm through 101.6 mm) rated for use with Schedule 7 through 40 pipe, 5" - 8" (127 mm through 203.2 mm) rated for use with Schedule 10 through 40 pipe.

**Contact Ratings:** two sets of SPDT (Form-C) contacts; 10.0 A @ 1/2 HP @ 125/250 VAC; 2.5 A @ 6/12/24 VDC.

**Conduit Entrances:** two openings for 0.5" (12.7 mm) conduit. One open, one knock-out type. NEMA 4 rated plugs

**Operating Temperature Range:** 32°F to 150°F (0°C to 66°C).

**Enclosure Rating:** NEMA 4, suitable for indoor/outdoor use.

**Cover Tamper Switch:** standard for ULC models; optional for UL models (P/N CTS).

**Service Use:** NFPA 13 for Automatic Sprinkler; NFPA 13D for One- or Two-Family Dwelling; NFPA 13R for Residential Occupancies up to Four Stories; NFPA 72 for National Fire Alarm Code.

**Warranty:** 3 years.

## ENGINEERING SPECIFICATIONS

### WFDN SERIES

Vane-type waterflow detectors shall be installed on system piping as designated on the drawing and/or as specified herein. Detectors shall mount on any clear pipe span of the appropriate nominal size, either a vertical upflow or horizontal run, at least 6" (152.4 mm) from any fittings which may change water direction, flow rate, or pipe diameter; or no closer than 24" (0.6096 m) from a valve or drain. Detectors shall have a sensitivity in the range of 4 to 10 gallons per minute and a static pressure rating of 450 psi for 2" (50.8 mm) to 8" (203.2 mm) pipes. The detector shall respond to waterflow in the specified direction after a preset time delay which 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 (Form-C contacts). Two conduit entrances for standard fittings of commonly used electrical conduit shall be provided on the detectors. A grounding provision is provided. Unless noted, enclosures shall be NEMA 4 Listed by Underwriters Laboratories Inc. All detectors shall be Listed by Underwriters Laboratories Inc. for indoor or outdoor use.

### Agency Listings and Approvals

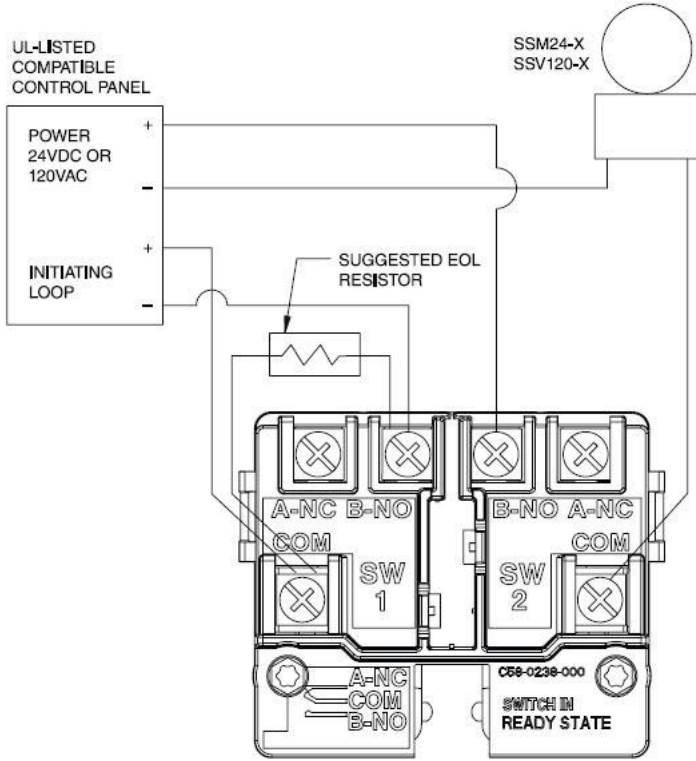
These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S739
- **ULC Listed:** S739
- **MEA Listed:** 167-93-E
- **CSFM:** 7770-1653:114
- FM Approved

### Ordering Information

WFDN Series Detectors				
UL Models	ULC Models	Pipe Size	Hole Size	Shipping Weight
WFD20N	WFD20NA	2.0" (50.8 mm)	1.25" (31.75 mm)	2.6 lbs
WFD25N	WFD25NA	2.5" (63.5 mm)	1.25" (31.75 mm)	2.6 lbs
WFD30N	WFD30NA	3.0" (76.2 mm)	2.00" (50.8 mm)	3.1 lbs
WFD40N	WFD40NA	4.0" (101.6 mm)	2.00" (50.8 mm)	4.0 lbs
WFD50N	WFD50NA	5.0" (127 mm)	2.00" (50.8 mm)	4.9 lbs
WFD60N	WFD60NA	6.0" (152.4 mm)	2.00" (50.8 mm)	5.6 lbs
WFD80N	WFD80NA	8.0" (203.2 mm)	2.00" (50.8 mm)	7.3 lbs
Accessories and Replacement Parts				
Model Number	Description			
WFDW	Tamper-proof wrench for metal cover			
CTS	Tamper-proof switch kit			
FS-RT	Delay mechanism and switch assembly			

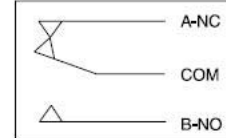
# WFDN Field Wiring Diagram



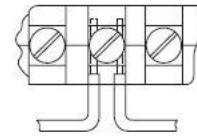
NOTE: COMMON AND B-NO CONNECTIONS WILL CLOSE WHEN VANE IS DEFLECTED, I.E., WHEN WATER IS FLOWING. DUAL SWITCHES PERMIT APPLICATIONS TO BE COMBINED ON A SINGLE DETECTOR.

CONTACT RATINGS	
125/250 VAC	10 AMPS
24 VDC	2.5 AMPS

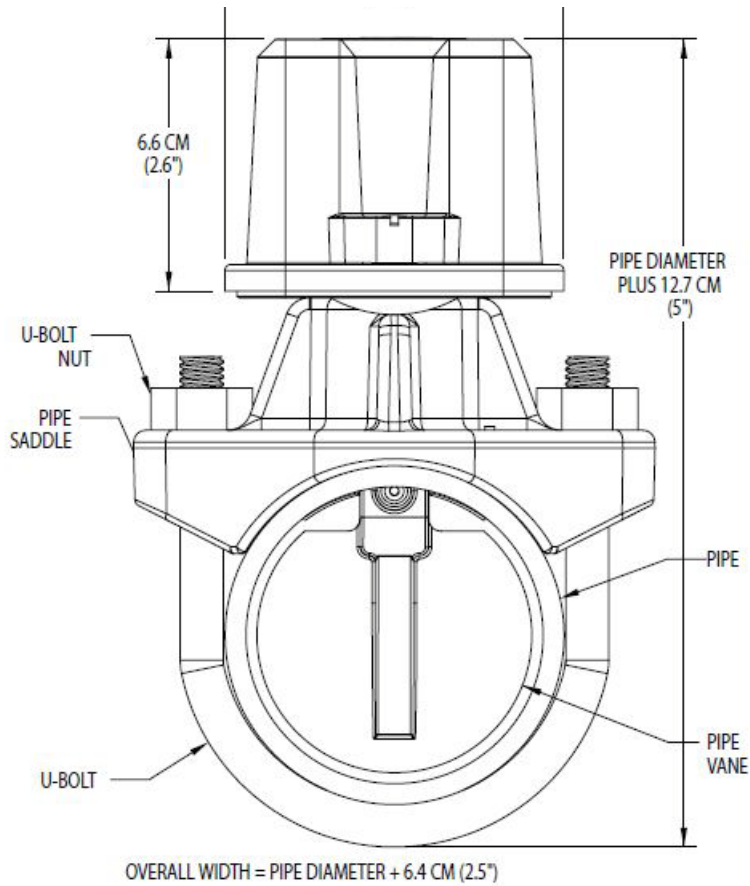
SCHEMATIC OF INDIVIDUAL SWITCH IN "NO WATERFLOW" CONDITION



BREAK WIRE AS SHOWN FOR SUPERVISION OF CONNECTION. DO NOT ALLOW STRIPPED WIRE LEADS TO EXTEND BEYOND SWITCH HOUSING, DO NOT LOOP WIRES.



## Overall Dimensions Installed



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[www.firelite.com](http://www.firelite.com)



Country of Origin: USA