



# Data Sheet 2.40

## Issue A



## Water Flow Detector

### Fig. RDWFDN

#### General Description

The Rapidrop RDWFDN series is compatible with schedule 7 through 40 steel pipe, for sizes 2 in. through 4 in. and compatible with schedule 10 through 40 steel pipe, sizes 6 in. through 8 in., and can be mounted in a vertical or horizontal position.

#### Product Description

The RDWFDN Series water flow detectors from Rapidrop consists of a rugged, NEMA 4-rated enclosure that is more damage resistant than previous metal designs. The water flow detector is designed for both indoor and outdoor use, with the widest available temperature range, from 32°F to 150°F. They are also approved for installation on the widest range of pipe schedules, sizes 2 in. through 4 in. are approved for installation on pipe schedules 7 through 40.

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

The RDWFDN series incorporates a mechanical time delay feature, which minimizes the risk of false alarm due to pressure surges or air trapped in the fire sprinkler system. The larger and easy to turn timer dial makes setting the water flow detector easy with high contrast pad printed markings. The dial offers three tabs to help with turning, with one larger tab located on the dial position for approximately 60 seconds, a notch is also indicated on the dial to locate approximately 30 seconds making setting the detector in dimly lit locations easy.

The RDWFDN 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 in rush of water.

#### Engineering Specifications

Vane-type water flow detectors shall be installed on system piping 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 in. from any fittings that may change water direction, flow rate or pipe diameter or no closer than 24 in. 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 31 bar (450 psi) for 2 in. – 8 in. pipes. The detector shall respond to water flow in the specified direction after a preset time delay that is field adjustable. The delay mechanism shall be a sealed mechanical pneumatic unit with visual and audible indication of actuation. The actuation mechanism shall include a ethylene vinyl acetate 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.

#### Features

- New directional cover allows installers and inspectors to easily see the direction of flow
- UL-listed models are NEMA 4 rated
- New cover provides a better seal, is lighter weight, not painted and corrosion resistant
- Sealed retard mechanism immune to dust and other contaminants
- Less exposed metal reduces shock hazard, plastic cover acts as 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

#### Test/Approvals

UL Listed, FM Approved



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## Water Flow Detector Fig. RDWFDN

### Standard Specifications

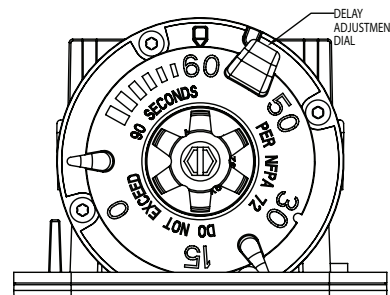
Static Pressure Rating	31 bar (450 psi)
Maximum Surge	5.5 m/s (18 ft/s)
Triggering Threshold Bandwidth (Flow Rate)	15.1 - 37.9 lpm (4 - 10 US gpm)
Conduit Entrances	Two openings for ½ in. conduit. One open, one knock-out type
Contact Ratings	Two sets of SPDT (Form C) 10.0 A, ½ HP @ 125/250 VAC 2.5 A @ 6/12/24 VDC
Compatible Pipe	Steel water pipe, schedule 7 through 40*
Operating Temperature Range	0°C to 66°C (32°F to 150°F)
Enclosure Rating	NEMA 4 – suitable for indoor/outdoor use
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

\* 2 in. - 4 in. rated for use with Schedule 7 through 40 pipe, 6 in. - 8 in. rated for use with Schedule 10 through 40 pipe.

### Sizes

Model	Pipe Size	Hole Size
RDWFD20N	DN50 (2")	31.8 mm (1¼")
RDWFD25N	DN65 (2½")	31.8 mm (1¼")
RDWFD30N	DN80 (3")	50.8 mm (2")
RDWFD40N	DN100 (4")	50.8 mm (2")
RDWFD60N	DN150 (6")	50.8 mm (2")
RDWFD80N	DN200 (8")	50.8 mm (2")

### Delay Adjustment Dial



NOTE: RETARD TIME MAY EXCEED 90 SECONDS. ADJUST AND VERIFY THAT TIME DOES NOT EXCEED 90 SECONDS. NUMBER ON DIAL IS APPROXIMATE TIME DELAY IN SECONDS

### Field Wiring Diagram

