



Data Sheet 2.42 Issue A



Water Flow Detector Fig. RDWFDTN

General Description

Rapidrop RDWFDTN T-Tap Water flow detectors are designed for primary signalling in residential systems and branch line signalling.

Product Description

The RDWFDTN 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.

Both the RDWFDTN with incorporated timer and RDWFDNTRN with immediate activation fit any tee that has a 1 in. NPT branch, including: 1in., 1¼in., 1½ in. and 2in. NPT threaded ferrous and brass tees; 1in., 1¼in., 1½in. and 2in. copper sweat tees. Twelve different clearly marked plastic paddles are available to fit different installation configurations.

UL-listed models are equipped with tamper-resistant cover screws to prevent un-authorised 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 RDWFDTN 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 RDWFDTN 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

T-Tap water flow detectors shall be installed on a tee that has a 1in. NPT branch including: 1in., 1¼in., 1½in. and 2in. NPT threaded ferrous and brass tee; 1in., 1¼in., 1½in. and 2in. copper sweat tees. CPVC tees as designed 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" from any fittings or valves that may change water direction, flow rate, or pipe diameter or no closer than 24in. 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 375 psi. The RDWFDTN detector with incorporated time delay mechanism 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

Approvals

UL Listed, FM Approved



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Standard Specifications

Static Pressure Rating	25.8 bar (375 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 Tee Fittings	Threaded ferrous and brass tees, copper sweat tees, CPVC tees
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

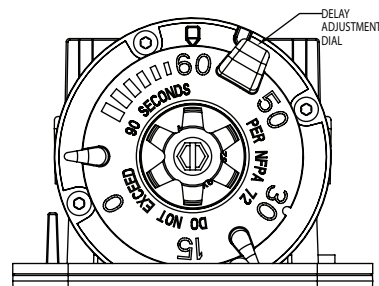
Sizes

RDRDWFDTN Water flow detector fits the following Tees

Ferrous and brass threaded tees	Copper Sweat Tees	CPVC Tees
(1")	(1")	(1")
(1¼")	(1¼")	-
(1½")	(1½")	-
(2")	(2")	-

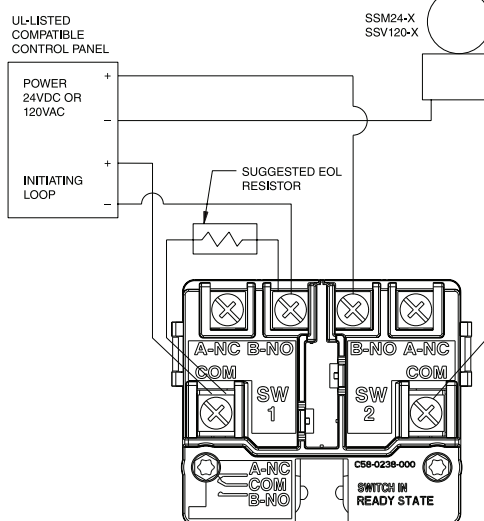
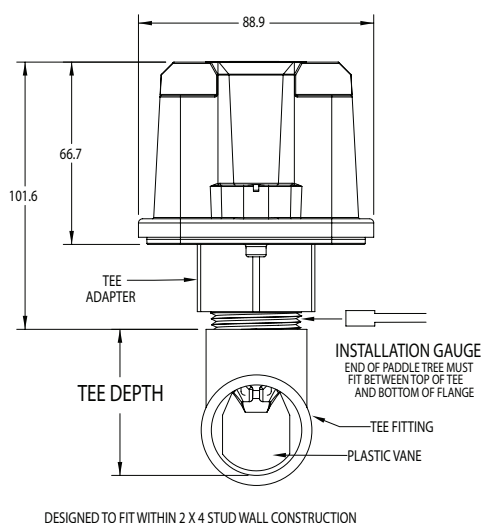
Flow detector RDRDWFDTN have a DN25 (1") Threaded connection. The correct paddle have to be installed, depending on the fitting size.

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

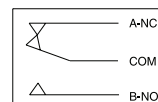
Field Wiring Diagram



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.

