

WATERFLOW DETECTOR

Model VSR-FEX

Explosion proof vane type waterflow alarm switch with retard



PRODUCT DESCRIPTION

The Model VSR-FEX is a vane type waterflow switch for use on wet sprinkler systems located in hazardous locations as shown above. The unit may also be used as a sectional waterflow detector on large systems.

The unit contains two single pole, double throw, snap action switches and an adjustable, instantly recycling pneumatic retard. The switches are actuated when a flow of 10 gallons per minute (38 Lpm) or more occurs downstream of the device. The flow condition must exist for a period of time necessary to overcome the selected retard period.

TECHNICAL DATA

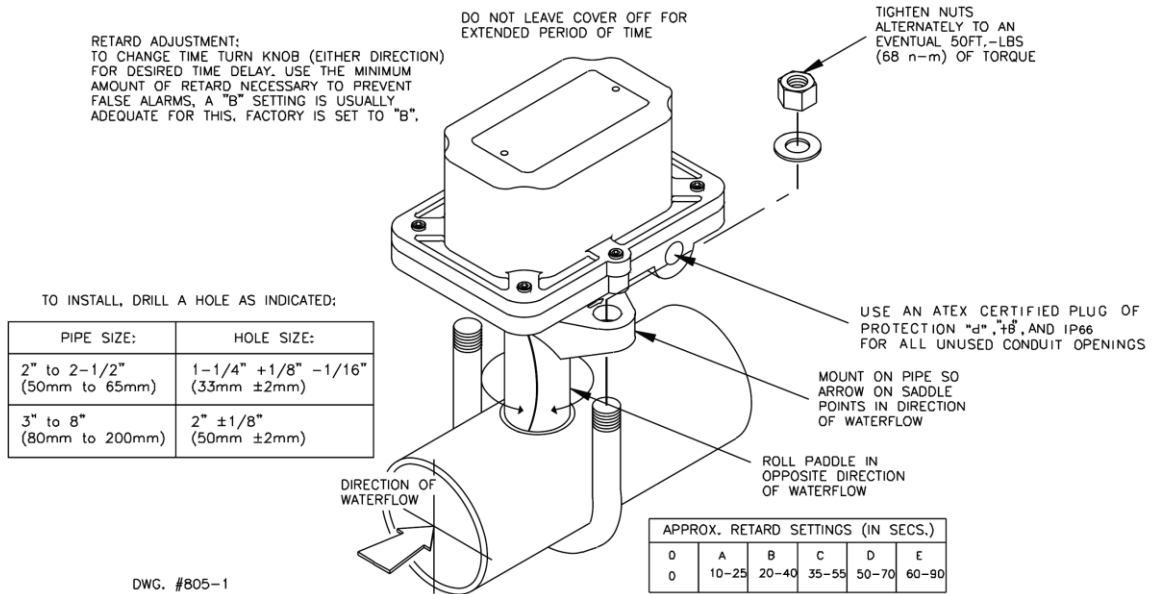
Model	VSR-FEX
Sizes available	Pipe schedules 10 thru 40, sizes 2" thru 8" (50 mm thru 200 mm)
Maximum system pressure	450 psi (31 bar)
Minimum flow rate for alarm	10 gpm (38 lpm)
Maximum surge	18 fps (5,5 m/s)
Contact ratings	Two sets of SPDT (Form C) 15 Amps at 125/250 VAC 2,0 Amps at 30 VDC resistive
Conduit entrances	Two conduit entrances provided for 1/2" conduit with 1/2" NPT threaded connections. Use an ATEX certified plug of protection "d", "tb", and IP66 for all unused conduit openings
Environmental specifications	40°F tot 120°F (4,5°C to 49°C) For use in hazardous locations, Classified as: Class I: Div. 1 & Div. 2, Groups C, D Class II: Div. 1 & Div. 2, Groups E, F, G, Class III: Div. 1 & Div. 2 • Suitable for indoor or outdoor use with factory installed gasket and cast aluminum housing • NEMA 4 Rated Enclosure: use with appropriate conduit fitting • Non-corrosive sleeve factory installed in saddle
Service use	Automatic sprinkler NFPA-13 National Fire Alarm Code NFPA-72
Optional	Cover tamper switch kit

ENCLOSURE

The unit is enclosed in a cast aluminum housing. The cover is held in place with six M6 x 1 mm-6g; 30 mm long socket head cap screws with a 5mm hexagonal drive head and a property class of 8.8. These screws can only be replaced with identical ones.

RETARD ADJUSTMENT

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.



WARNING:

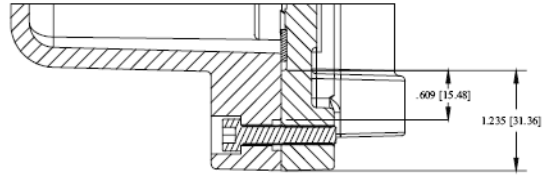
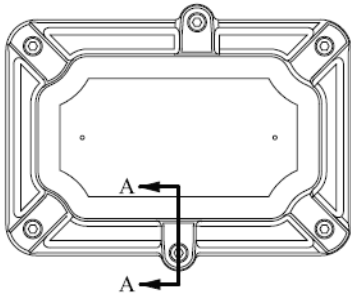
When this device is to be installed in an area that is classified as "HAZARDOUS", the person responsible for safety in the area shall be contacted to determine if the tools and operations required for the installation of the device and associated components are permitted in the area. To reduce the risk of ignition of hazardous atmospheres, disconnect supply circuits before opening cover. Keep cover tight while circuits are live.

The mating surfaces of the cover and housing are designed and machined to meet the hazardous location requirements of the applicable listing agencies. These surfaces shall be protected from any damage and shall be clean and free of all foreign matter. No gasket or sealant of any type is allowed on these surfaces. The use of any type of gasket, sealant, or damage to these surfaces will void the hazardous rating of the device and can lead to explosion and death. These surfaces are not repairable and the cover is not replaceable. If any damage has occurred to either surface or a gasket or sealant has been applied to either surface, the entire device must be immediately removed from service and replaced. All foreign matter must be removed. If mating surfaces are damaged, do not place the device in service.

Important: When reinstalling the cover during installation or maintenance, wipe the mating cover and housing surfaces with a soft clean lint free cloth. Carefully inspect the surfaces for any damage or foreign matter. Install the cover on the housing to fully seat the mating surfaces. Initially tighten each of the (6) cover screws evenly to 5 in-lbs (.56 n-m) to ensure that the cover is fully seated. Next, torque each cover screw to a final torque of 20 in-lbs (2.3 n-m). Failure to follow these instructions may result in injury or death.

JOINTS AND CLEARANCES

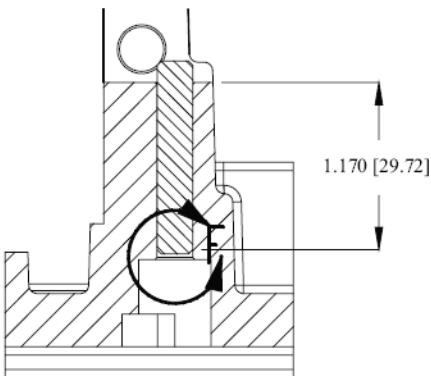
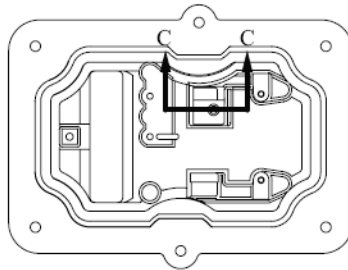
Minimum Joint Width



SECTION A-A

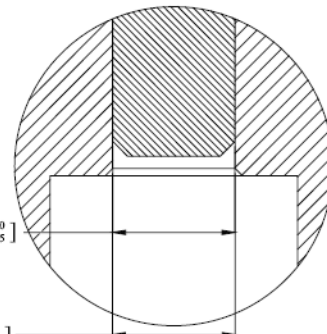
NOTE:
WITH COVER SCREWS TIGHTEND TO 20-25 IN/LBS (2.26-2.825 Nm) THE BASE TO COVER JOINT GAP MUST BE LESS THAN .0015 IN. (.038mm).

Max Clearance



SHAFT $\varnothing 2.497 \begin{matrix} +0.0 \\ -0.0002 \end{matrix} [6.342 \begin{matrix} +0.000 \\ -0.005 \end{matrix}]$

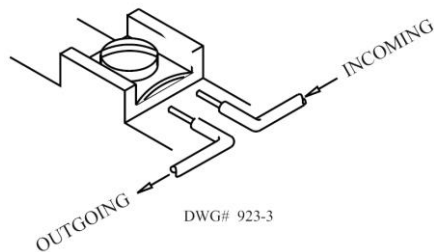
HOLE $\varnothing 2.507 \begin{matrix} +0.002 \\ -0.0 \end{matrix} [6.37 \begin{matrix} +0.05 \\ -0.0 \end{matrix}]$



DETAIL F

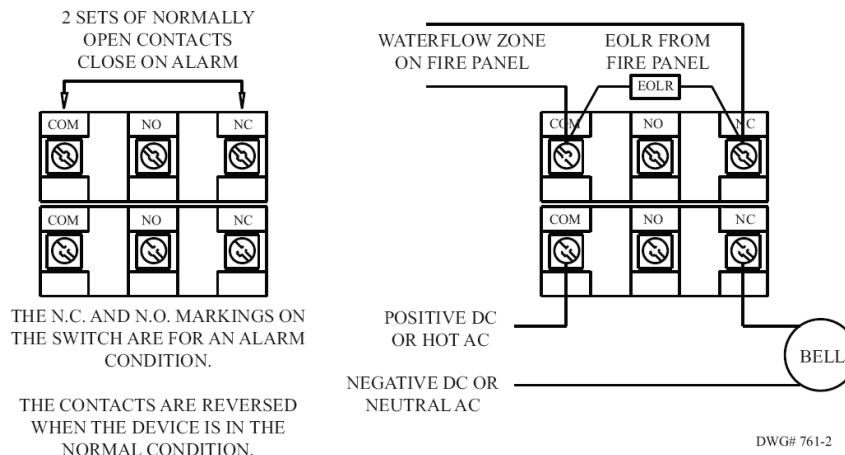
MAX CLEARANCE .0032 IN. (.08mm.)

SWITCH TERMINAL CONNECTIONS CLAMPING PLATE TERMINAL



CAUTION: An un-insulated 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 becomes dislodged from under the terminal.

TYPICAL ELECTRICAL CONNECTIONS



Notes:

1. The Model VSR-FEX has 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 audible or visual annunciator.
2. Note: For supervised circuits see "Switch Terminal Connections".

INSTALLATION

These devices may be mounted on horizontal or vertical pipe. On horizontal pipe they should be installed on the top side of the pipe where they will be accessible. The units should not be installed within 6" (15 cm) of a fitting which changes the direction of the waterflow or within 24" (61 cm) of a valve or drain.

Drain the system and cut a hole in the pipe using a hole saw in a slow speed drill. The 2" and 2 1/2" (50 mm and 65 mm) devices require a hole with a diameter of 1 1/4" + 1/8" - 1/16" (33 mm ± 2 mm). All other sizes require a hole with a diameter of 2" ± 1/8" (50 mm ± 2 mm).

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. Install the saddle strap and tighten nuts alternately to an eventual 50 ft-lbs. (68 n-m) of torque. The vane must not rub the inside of the pipe or bind in any way.

TESTING

The frequency of testing for the model VSR-FEX and its associated protective monitoring system should be in accordance with applicable NFPA Standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently).

If provided, the inspector's test valve, that is usually located at the end of the most remote branch line, should 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-FEX is not recommended or advisable.

A minimum flow of 10 gpm (38 lpm) is required to activate this device.

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

The equipment presented in this data sheet is to be installed in accordance with the latest published Standards of the national fire protection association (NFPA), FM Global, LPCB, VdS or other similar organizations, also with the provisions of governmental codes or ordinances whenever applicable. This documentation is not contractual. AG Fire Sprinkler reserves the right to any kind of change without notice.