



CHESAPEAKE BAY FLOW COMPANY

HOME OF THE CB-FLOW AND CB-LOCK UNITS

Automatic Fire Sprinkler Systems

The fire code defines “automatic” as, “Operation without human intervention.” This means it’s imperative to have your automatic fire sprinkler systems inspected and tested as required by the fire code to ensure the systems will respond automatically, without human intervention.

There are critical components during an automatic operation that must not fail. The water delivery control valves to the sprinkler system must be fully opened and your fire alarm system, sprinkler monitoring panel and the waterflow switch must be operating perfectly. If just one of those components fail in a fire emergency, the repercussions could be significant. You should also be prepared for an accidental discharge. An accidental discharge is when a sprinkler pipe bursts due to freezing conditions, or building construction accidents, even a heater diffuser placed near a sprinkler head. Accidents are more probable than an actual fire, but both scenarios could be catastrophic if one of those components fail.

The waterflow switch is the component that tells the fire alarm or sprinkler monitoring panel to activate. Without that function, no one in the building can safely evacuate and the fire department will not respond. Hence, not automatic. Therefore, you must be sure your waterflow switch is protected.

All waterflow switch manufactures share a typical design. The switch uses a plastic paddle that you fold and push into the sprinkler piping. Once inside, the plastic paddle reopens. The paddle is connected to a stem and lever that operates the switch. The switch is connected to the fire alarm system or sprinkler monitoring panel. The sequence of operations is when you have a flow of water in the sprinkler system, such as a fused sprinkler head, the paddle will move in the direction of the flow of water causing the lever to activate the switch. When the switch activates, the fire alarm will sound and the sprinkler monitoring panel and fire alarm system will send a signal to central station monitoring who will dispatch the fire department. This is the automatic sequence of a fire sprinkler system.

There are several methods fire system service technicians use when testing waterflow switches. Only one method is allowed by the fire code. To properly test a waterflow switch, you must flow water through the waterflow switch equal to a signal sprinkler head flow.

Unfortunately, it is common to find unprofessional technicians opening waterflow switch covers and operating the switches manually. This test method does not verify the internal components are operating properly, nor does it verify the switch will operate during a signal head flow. The fire code requires property owners to ensure their fire systems are operating per the designed sequence of operations and to ensure they will function properly in a fire emergency.



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For a sprinkler technician to service an automatic fire sprinkler system, the building owner must place the system on test with central station monitoring, notify the fire department the system is being serviced, and to bypass the fire alarm system. Performing these tasks requires central station monitoring account numbers and passwords, information the service technician does not have. If management is unable to assist, the service technician uses plan B. Plan B is what you need to avoid and prevent.

Plan B is when the service technician removes the waterflow switch cover, by force, if necessary, to access the switch components. The technician will find ways to prevent the stem and paddle from moving. This allows the technician to drain and refill the sprinkler system without anyone knowing.

In most cases, when a sprinkler system is drained, there are portions of the building that are occupied without fire protection. When sprinkler systems are shut down for service, the fire code requires a fire watch to be maintained until the sprinkler system is back in service. When a technician bypasses fire code procedures, the occupants in the building are at risk. Further, the waterflow switch may be inoperative due to malicious tampering.

If you believe someone may have manipulated your waterflow switch, it is imperative to retain a licensed professional to perform a series of tests to confirm your water flow switch is functioning properly. You may want to consider replacing the waterflow switch as a precaution.

You can safely protect your waterflow switches by using our CB-Lock. The CB-Lock provides an easy and effective solution to protect your waterflow switches.

Thank you for watching.