

CB-Lock Informational Fact Sheet

Automatic fire sprinkler systems

Automatic fire sprinkler systems, by far, are the best solution in the protection of life and property. In a fire emergency, the most important feature of automatic fire sprinkler systems, is the safe evacuation of occupants in the building and the automatic dispatch of the local fire department. Water flow switches provide this sequence.

Water Flow Switches

Water flow switches are simple in theory. The switch is equipped with form-c dry contacts supervised by emergency equipment. The switch is connected to a stem that enters the sprinkler system piping. At the end of the stem, you have a flat plastic paddle. In a fire emergency, sprinklers will fuse causing a flow of water. The flow of water will cause the paddle to rise in the direction of flow resulting in switch activation. The switch is equipped with a time delay in activation. Time delays are necessary to eliminate false alarms due to the potential fluctuation in water pressure caused by the local water authority.



Typical sprinkler system header showing sprinkler system risers with three water flow switches.

Problem Maintaining Water Flow Switches

Building fire alarm systems and sprinkler monitoring panels are supervised by an offsite central station monitoring service, protected by account numbers and passwords. Prior to fire sprinkler service, the local fire department and central station monitoring must be called to deactivate automatic fire dispatch. Additionally, the building fire alarm system must be deactivated preventing false alarm evacuation of occupants. In many cases, sprinkler technicians do not have central station account numbers or passwords or the knowledge to obtain it. In those cases, sprinkler technicians will remove the flow switch cover, by force if necessary, and wedge something between the paddle stem and housing preventing movement. This allows the sprinkler contractor to drain and refill the sprinkler system without anyone knowing.

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Performing this task causes three potential life safety risks. **ONE:** *In many cases, contractors forget to remove the device used preventing the paddle bar stem from operating.* **TWO:** *When the cover is broken off, it will no longer attach itself to the flow switch housing protecting the internal components. Replacing the flow switch will cost the property owner potentially \$800 per switch.* **THREE:** *Preventing the mechanism to operate in a flow condition may cause harm to the switch potentially preventing operation indefinitely. When water is flowing into a fire sprinkler system with the flow switch paddle locked in position, the force of the water flowing may cause the paddle to shear off, bend, or curl. When the switch paddle is damaged or curled, it may not operate during a single sprinkler head flow; therefore, the fire department would not be dispatched. Should the fused sprinkler head be accidentally discharged, water would continue to flow out of the fused sprinkler head until management finds it. The costs of water damage would be significant.*

Inoperative water flow switches will not automatically activate evacuation notification or dispatch the fire department in a fire emergency. This is a serious life-threatening problem!



Paddle Fits Snugly Inside the Piping



Flow Switch Paddle Curled

It is also common to find unprofessional technicians removing 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 sprinkler head flow. When testing waterflow switches, flowing water through the waterflow switch using an appropriate inspector test port is the only approved method allowed by the fire code.

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Floor Control Station



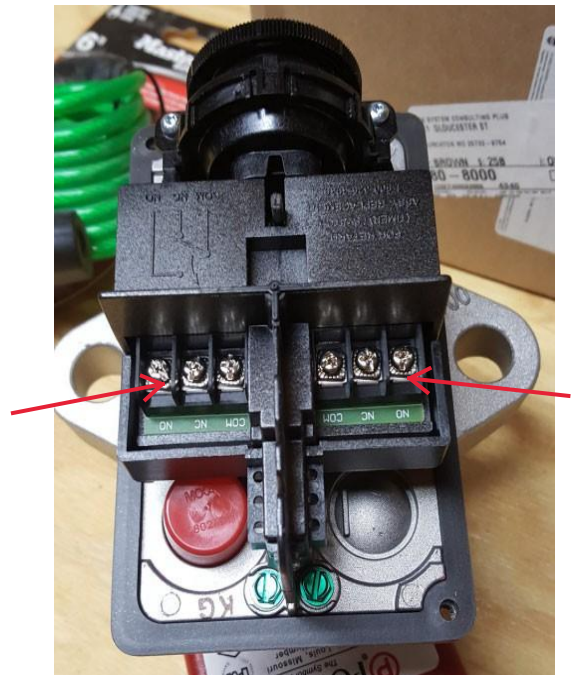
Removing Switch Cover



Manually Operating Switch



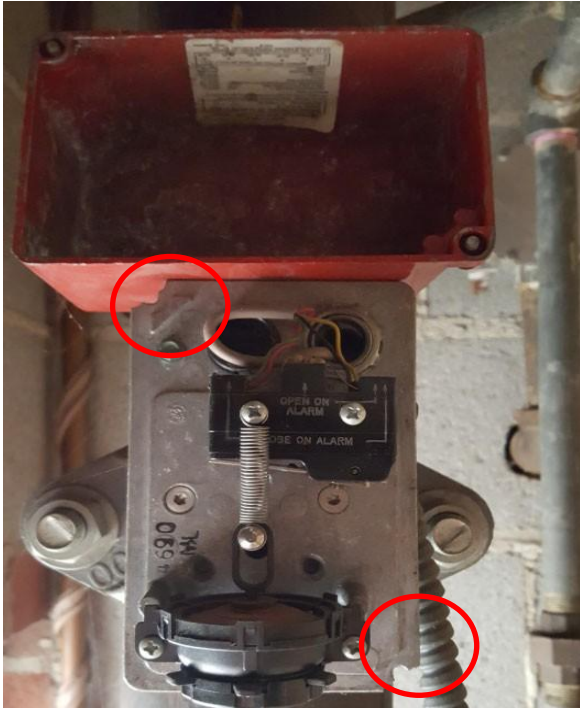
Side View of a Typical the Water Flow Switch



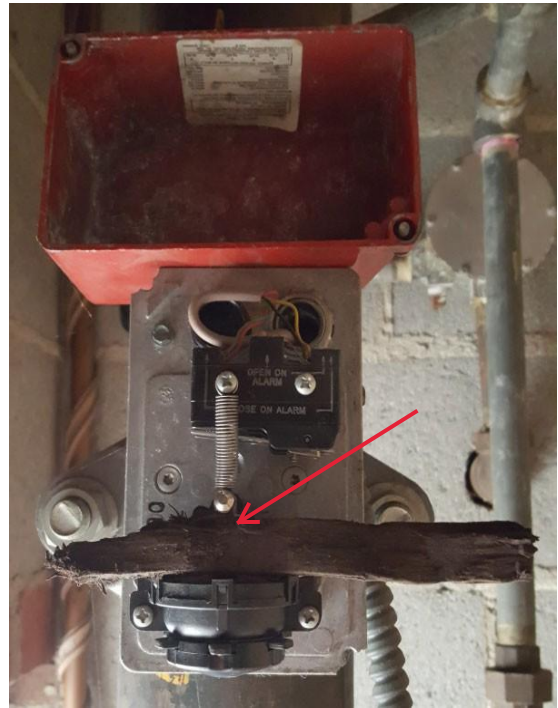
Internal Form-C Dry Contact

Pictures below show methods used over the years to prevent the activation of the water flow switch:

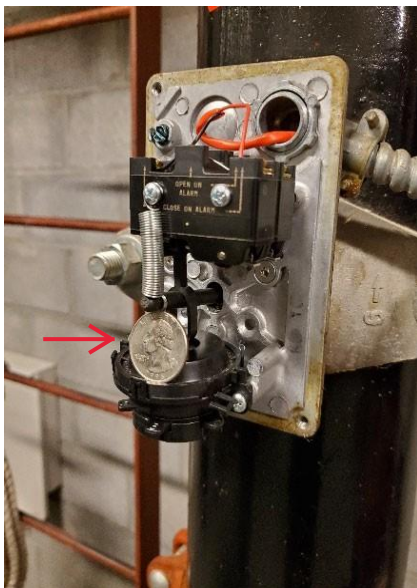
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The picture above shows the two tabs broken off preventing the cover from being re-attached



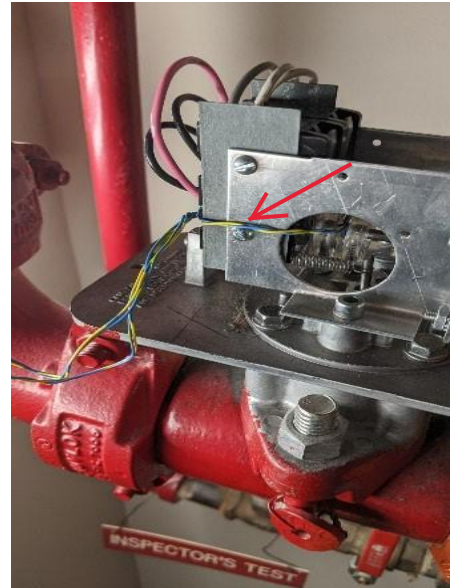
Picture above shows a piece of wood lodged preventing the paddle from moving



Quarter to wedge the stem



Screw driver to wedge the stem



Wire to hold down the s

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Solution: To provide a locking mechanism to protect the internal water flow switch components.

The CB-Lock is a simple low-cost locking mechanism preventing flow switch manipulation. You can purchase direct and install yourself.

- There is no need to retain a licensed contractor. Just slide it on and lock, it's that Easy!
- If a contractor damaged the housing or mounting screws, the CB-Lock will hold the broken switch cover in place. There is no need to replace the flow switch saving you tons of money...
- CB-Lock will work with Potter, Safe Signal and most older System Sensor water flow switches. Soon, CB-Lock will stock cover locks for pressure switches and other supervisory switches. We hope to have them on the market within the next few years.

IMPORTANT: 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!

Keys to the CB-Lock should only be in the hands of supervisors. Water flow switch cover should never be opened unless service is required.

Please feel free to email any questions you may have. I will try and respond as quickly as possible.

Randy@cbflow.com Thank you for your interest in our CB-Lock product.