

Pendent Style "On-Off"TM Automatic Sprinkler

Patent No.'s
3,877,527
3,911,940
3,991,829



Conserves
Water

Reduces
Water
Damage

Provides Increased
Safety for
Fire Fighters

Controls Fire
Reflash
Automatically

Only Needed
Sprinklers
Remain Open

Maintains Highest
Flow and Pressure
Available for
Needed Sprinklers

Listed by: Underwriters Laboratories, Inc.

Usage Advantages • Description • Operation • Technical Data



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Usage Advantages

The advantages of using automatic sprinklers which will open and close automatically as needed are indeed numerous. The most obvious is the ability to conserve water and simultaneously reduce water damage, for only those sprinklers actually needed to control and/or extinguish a fire will remain open regardless of the number of sprinklers that may first open. Initial fire heat release generally opens several sprinklers due to the rapid heat spread across ceilings, and some of these sprinklers are not located close to the actual fire. Once the ceiling temperatures are reduced by diminished fire heat intensity, however, those Central "On-Off" Sprinklers not needed automatically close. Standard automatic sprinklers would continue to discharge water even though all may not be required to do so resulting in excessive and unnecessary water discharge with increased damage, cleanup time, etc. Further, those sprinklers operating when not needed reduce the pressure and flow of water from those needing it. In order to stop water flow from standard sprinklers after a fire has been extinguished, it is necessary to shut the main system control valve. A fire re-flash would require the reopening of this valve, sometimes impossible to accomplish due to inaccessibility. This procedure is not necessary with Central's "On-Off" Sprinklers as they would automatically reopen by themselves. This feature obviously contributes significantly toward fire fighting personnel safety.

Description

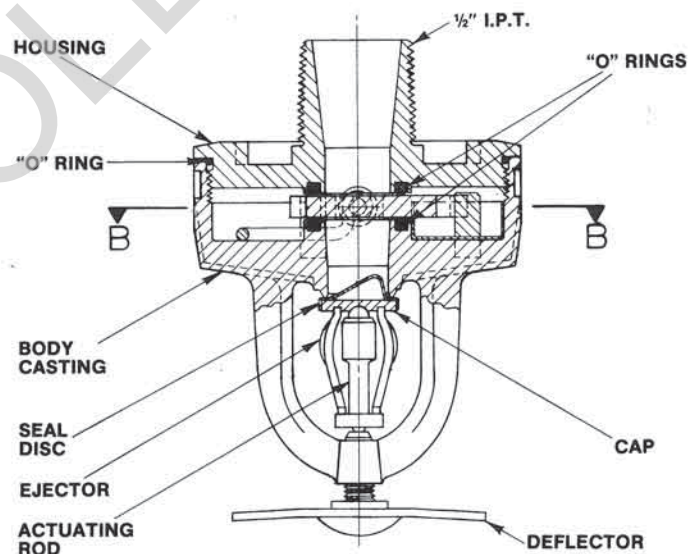
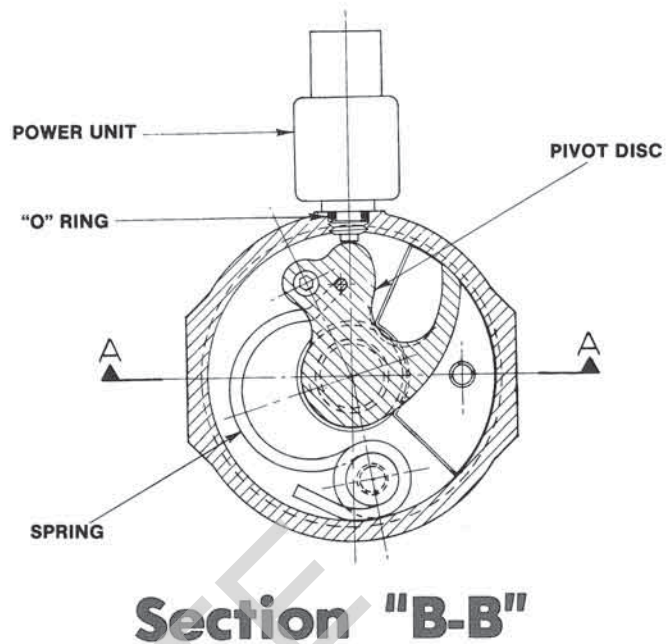
Central's "On-Off" Pendent Sprinkler is an automatic sprinkler which automatically opens and closes itself as heat conditions dictate. It is available with a temperature rating of 165°F/74°C only. Chrome plated finish is standard, but they may be special ordered with a plain factory brass finish.

The "On-Off" is listed by Underwriters Laboratories, Inc. for use with Light, Ordinary, or Extra Hazard Wet Type Systems and has a pressure service rating of 175 psi. It should not be installed in areas where the ambient temperature may exceed 100°F/37.7°C. After the basic sprinkler element operation the entire sprinkler should be replaced although fire protection is still provided until this is done. No special pre-installation procedures are necessary, nor is it necessary to precharge the sprinklers or the system piping prior to applying water pressure to the system. Standard sprinkler system water supplies and system flushing procedures are quite sufficient. All that need be done is to install the "On-Off" with its installation wrench in the same careful manner as an ordinary sprinkler is installed.

Overall physical dimensions are 3½" long by 3¾" wide. The unit can be installed flush against a finished ceiling such that its projection below the ceiling is only 2¾".

Operation

The Central "On-Off" Pendent Sprinkler utilizes the standard Central 165°F/74°C center strut design wherein a fusible alloy is sealed into a bronze center strut by a stainless steel ball. When the alloy melts, the ball is forced upward into the center strut releasing the two ejectors and operating the basic sprinkler. The alloy is not exposed to atmospheric conditions which could possibly affect its proper operation. Water discharge does not occur until the 125°F/51.7°C power element has operated. This element utilizes the time tested principle of the "wax motor" which has excellent repeatability, dependability, and long life. Essentially, it uses a sealed chamber containing a special wax having a melting point of 125°F/51.7°C. When liquified, considerable expansion results and a high force is exerted upon a connected piston which moves against and opens the cam (pivot disc) controlling water flow. Discharge from the sprinkler can only take place if the cam is in the open position and the basic sprinkler element has actuated. When the wax temperature reduces and solidification takes place, the piston retracts to its normal position, thus causing the spring loaded cam to close off the water passage stopping water flow. A built-in time delay prevents the cam from "fluttering" on and off. Likewise, a special insulant is incorporated to prevent the "cold" water discharge from affecting the wax temperature. To insure positive drip free closure, two special o-rings are employed; one above and one below the pivot disc. The movement of the pivot disc provides a "wiping action" that serves to clean the valve seat at each operation.



Vertical Section "A-A"

Technical Data

Style	Nominal Orifice Size	Thread Size N.P.T.	"K" Factor	Available Temperatures	Finishes Available
Pendent	½"	½"	5.5	Power Element 125°F (51.7°C) Sprinkler Element 165°F (74°C)	Bright Chrome or Factory Brass*

*Factory Brass Finish Available on special order only.