

SAFETY ALERT

Water Sprinkler System Flow Switch Time Delays

Under 30 CFR § 75.1101-10, “[e]ach water sprinkler system shall be equipped with a device designed to stop the belt drive in the event of a rise in temperature and each such warning device shall be capable of giving both an audible and visual warning when a fire occurs.” In the event of a fire, a rise in temperature occurs resulting in one or more of the sprinklers within the system to thermally activate and cause water flow into the area of the fire. A flow switch is typically incorporated into a water sprinkler system to activate the warnings and to stop the belt drive when water flow to the sprinkler(s) occurs. The flow switch must be capable of stopping the belt drive and activating both an audible and visual warning with the activation and water flow of a single sprinkler in the system.



The flow switch for stopping the belt drive and for causing the audible and visual warnings is typically equipped with a mechanism for manually setting a delay to prevent nuisance warnings and belt stoppages due to surges in water pressure that cause the flow switch to activate. Time is of the essence when protecting miners from the hazards presented by a belt fire. It is important for the audible and visual warnings to be activated as soon as possible to allow necessary evacuation and firefighting measures to be taken safely and timely. It is important for the belt drive to stop as soon as possible to avoid spreading a fire in the belt entry. To protect miners, the flow switch should activate the warnings and stop the belt drive without a delay unless there is a demonstrated need for a delay due to water pressure surges that cause false warnings and unnecessary belt stoppages. Such water pressure surges are typically of very short duration. If there is a demonstrated need for a delay, the delay should be minimal and should be set based on the length of time it takes for a typical water pressure surge to activate the flow switch.