

SureFire® Single Interlock

System operation under normal power conditions

When the detector (1) is activated, a signal is sent to the VFR-400 release control panel (2). The panel sends the appropriate alarm signals, and at the same time, powers the normally closed (N/C) solenoid valve (3) open, releasing pressure from the priming chamber (5) of the deluge valve. The priming chamber (5) of the deluge valve is then vented faster than water is supplied through the restricted orifice (6), allowing the deluge valve to open. The water enters the system piping, but no water is discharged until a sprinkler (7) is activated. Should there be a loss of AC power, the system has battery backup.

System operation under loss of total AC and battery back-up power

Should both the AC power and the battery back-up power be lost, the system will still operate as a dry system, as long as there is air pressure in the system piping. Heat from a fire activates a sprinkler (7), which causes a drop in the system air pressure. The system air pressure continues to drop until the pneumatic actuator (8) opens. The priming chamber (5) of the deluge valve is then vented through the normally open (N/O) solenoid valve (4) and pneumatic actuator (8) faster than water is supplied through the restricted orifice (6), which opens the deluge valve. This will open the pressure operated relief valve (PORV) (9) which will continuously vent the prime water, ensuring the deluge valve remains in the open position. Water is then discharged out of the sprinklers opened by the fire.

