Automatic fire sprinkler systems have alarms that indicate two main distinct conditions: 1) a system or device status requiring attention (i.e., tamper switch, air pressure) and 2) system activation alarms (i.e., water flow). These alarms, in conjunction with regular testing, inspection and maintenance, will help ensure operational status, notify building occupants of emergency conditions and summon public fire protection response upon system activation. Due to differing building occupancies, construction types and other details, each fire sprinkler alarm system devices, designs or code requirements may vary.

Fire sprinkler alarms should be transmitted to an approved remote monitoring station, central station, fire department or other proprietary alarm-receiving facility, if the premises are not continuously occupied by a qualified person who can respond.

Types of alarms

Flow Alarms—Flow alarms, either mechanically or electrically, indicate water is flowing through the sprinkler system. This flow is usually associated with a sprinkler head operating in response to a fire.

Tamper Switch Alarms—Tamper switch alarms serve as a warning if a valve is not completely open. A partially closed valve reduces the water supply to the fire sprinkler system.

Room Temperature Alarms—Temperature monitoring may be necessary for a dry-pipe or pre-action fire sprinkler riser room to ensure the temperature does not drop below 40°F.

Air Pressure Alarms—Low and high air pressure conditions for dry-pipe and pre-action systems should be indicated by a monitored alarm. Low pressure may lead to system activation, and high pressure may lead to a delay of water delivery to a fire.

Fire Pump Alarms—Alarms for fire pumps should be in place when the pump room is not constantly attended. Alarms may be necessary to indicate pump activation, loss of electrical phase, reversal of electrical phase and alternate power source status. The notification of these alarm conditions is usually made to the alarm panel by the fire pump controller that monitors the pump.

Integrated Detection Device Alarms—Smoke, heat and flame detectors may be integrated into a pre-action or deluge sprinkler system. These devices may be used to activate a fire sprinkler valve to start the flow of water.

For Additional Information

National Fire Protection Association: www.nfpa.org  
- NFPA 72® – National Fire Alarm Code  
- NFPA 13® – Installation of Sprinkler Systems  
- NFPA 25® – Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems  
- NFPA 70® – National Electric Code®  
- NFPA 20® – Installation of Stationary Pumps for Fire Protection

EMC Tech Sheets: www.emcins.com