

Electrical Signaling

Electrical protective signaling systems are configurations of components used to produce alarm signals indicative of fire, smoke, sprinkler waterflow or other emergency and to produce supervisory signals indicative of conditions needing attention with respect to protection equipment or watch service. System configurations are classified according to where and how the signals are received. The categories are commonly designated as local, municipal, remote station, proprietary, emergency voice/alarm communication, emergency communication, and central station. Auxiliary systems are either local or proprietary systems interconnected with a municipal system.

This category presents the major system component categories and the integrated system configurations. The selection of components to form a hybrid system should be made only by those skilled in system design. Also, the suitability of any system application should be judged on the basis of the hazard(s) being protected.

Alarm Signal Initiating Devices

Alarm signals are initiated either automatically or manually. Automatic detectors respond to changes in characteristic phenomena associated with fire or other emergency conditions.

Fire Detection, Smoke-Actuated

FM Approved smoke actuated devices respond to airborne particulate products of combustion.

The photoelectric principle is based on the change in current which accompanies a change in light intensity on a photoelectric cell as a result of smoke entering the detector.

The beam type version has the light source and photoelectric cell separated in the protected area.

The ionization type detector ionizes the air in special chambers within the detector.

Particles entering the exposed chamber decrease the normal ionization current.

Air-sampling detectors have ambient air drawn from the protected area into a chamber containing the sensing element.

Air duct smoke detectors are for the primary purpose of controlling blowers and dampers of air conditioning and ventilating systems to prevent distribution of smoke and gaseous products;

they should not be used as a substitute for open area detection.

Unless otherwise indicated in the listing, the permissible air velocity range for duct type detectors is 250 to 1500 ft/min (75 to 455 m/min) and up to 300 ft/min (90 m/min) for open area detectors.

A "smoke switch" is fail-safe in that loss of power to the device causes the same switching operation as when smoke is detected. Average coverage should not exceed 900 ft² (84 m²) per detector. Reduced coverage is recommended beneath high ceilings and for high air flow areas such as computer rooms.

These devices are suitable for use in ambients of 32°-100°F (0°-38°C) unless otherwise indicated in the listing. Installation, testing, and maintenance by trained personnel are recommended.

Fire Detectors-Smoke

Model SOC-24 Photoelectric Smoke Detector

Compatible fire alarm panels	FM Approved fire alarm control panels;
Maximum number of devices	As determined by a compatible FACP;
Compatible detector bases	NS-4 series, NS-6 series, HSC-4R and HSC-XXXXR Relay series
Sensitivity range	1.36%/ft. to 3.12%/ft.
Maximum spacing	9m by 9m (30ft by 30ft)
Operating voltage range	8 to 35Vdc
Operating temperature range	0° to 49°C;
Air velocity range	0-4000 fpm
Maximum humidity	0 to 95% RH, non-condensing
Power consumption	Standby : 59µA at 24Vdc; Surge: 160µA at 24Vdc Alarm: 150mA at 24Vdc;
Outputs	Multi-color LEDs, relay with HSC relay bases
Transmission method	Two wire conventional detector: voltage reference level, SCR switch to activate alarm signal at FACP

Enclosure	Indoor use only;
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