SOC-24VN CONVENTIONAL PHOTOELECTRIC SMOKE DETECTOR

STANDARD FEATURES

- Computer-designed non-directional smoke chamber
- 360° view of detector status LED
- Low profile, 2" high (with base)
- 2 or 4 wire base compatibility, relay bases available
- Highly stable operation, RF/Transient protection
- Low standby current, 59µA at 24VDC
- One built-in power/sensitivity supervision/alarm LED
- Automatic Sensitivity window verification function meets outlined requirements in NFPA 72, Chapter 2 & 7, Inspection, Testing and Maintenance.
- Without Magnetic Test Feature

SPECIFICATIONS

Light Source	GaAlAs Infrared Emitting Diode
Nominal Rated Voltage	24 VDC
Working Voltage	8 - 35.0 VDC
Maximum Voltage	42 VDC
Supervisory Current	59µA @ 24 VDC
Surge Current	160µA max. @ 24VDC
Alarm Current	150mA max. @24 VDC
Air Velocity Range	0-4000 fpm
Maximum Humidity	95% RH Non-Condensing
Ambient Temperature	32°F to 120°F (0°C to 49°C)
Color & Case Material	Bone PC/ABS Blend
Sensitivity Test Feature	Automatic Sensitivity window verification test
Mounting	Refer to NS Conventional Detector Base Data Sheet

APPLICATIONS

The SOC-24VN is a reliable, high quality Photoelectric Smoke Detector. It can be used in all open areas where Photoelectric Smoke Detectors are required, including in-duct applications. The computer-designed smoke chamber makes the SOC-24VN well suited for detecting smoldering fires as well as fast-flaming fires.

NS-4 Series, NS-6 Series, HSC-4R or HSC-R Style bases may be used with the SOC-24VN.

OPERATION

The SOC-24VN photoelectric smoke detector utilizes one bicolored LED for indication of status. In a normal standby condition the LED flash Green every 3 seconds. When the detector senses that its sensitivity has drifted outside the UL listed sensitivity window the LED will flash Red every 3 seconds. When the detector senses smoke and goes into alarm the status LED will latch on Red.

The detector utilizes an infrared LED light source and silicon photodiode receiving element in the smoke chamber. In a normal standby condition, the receiving element receives no light from the pulsing LED light source. In the event of a fire, smoke enters the detector smoke chamber and light is reflected from the smoke particles to the receiving element. The light received is converted into an electronic signal.

Fire Judgement signals are processed and compared to a reference level, and when five consecutive signals exceeding the reference level are received within a specified period of time, the time delay circuit triggers the SCR switch to activate the alarm signal. The status LED light continuously during the alarm period.

SENSOR SPACING

Smoke sensor spacing shall be in compliance with NFPA 72. For smooth ceilings and in the absence of specific performance-based design criteria, the distance between smoke sensors shall not exceed a nominal spacing of 30 ft. (9.1m) **or** all points on the ceiling shall have a sensor within a distance equal to or less than 0.7 times the nominal 30 ft. (9.1m) spacing. Sensors shall be located within a distance of one-half the nominal spacing, measured at right angles from all walls or partitions extending upward to within the top 15 percent of the ceiling height. For additional instructions see NFPA 72.

PRODUCT LISTINGS

SIGNALING UL LISTED S1383

FM APPROVED 3061300

California State Fire Marshal 7272-0410:0504

Specifications subject to change without notice.

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ISO 9001:2008 REGISTERED

Assembled in the USA

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ENGINEERING SPECIFICATIONS

The contractor shall furnish and install where indicated on the plans, Hochiki America Model SOC-24VN photoelectric smoke detectors. The combination detector head and twist-lock base shall be UL listed compatible with a UL listed fire alarm panel. The base shall permit direct interchange with Hochiki America SOC-24VN photoelectric smoke detector. The base shall be appropriate twist-lock base NS-4 Series, NS-6 Series, HSC-4R, or HSC-R. In the event of partial or complete retrofit, the SOC-24VN maybe used in conjunction with, or as a replacement for, Hochiki America detectors (SLR-24V, SLR-24VN, SLK-24 and the SLR-24H) on most HSB and HSC base applications.

The smoke detector shall have one flashing status LED for visual supervision. When the detector is in standby condition the LED will flash Green. When the detector is outside the UL listed sensitivity window the LED will flash Red. When the detector is actuated, the flashing LED will latch on Red. The detector may be reset by actuating the control panel reset switch. The sensitivity of the detector shall be capable of being measured. The sensitivity of the detector shall be monitored automatically and continuously to verify that it is operating within the listed sensitivity range.

To facilitate installation, the detector shall be non-polarized. Voltage and RF transient suppression techniques shall be employed to minimize false alarm potential. Auxiliary SPDT relays shall be installed where indicated.

SOC-24VN SENSITIVITY TEST FEATURE

The SOC-24VN Photoelectric Smoke Detector has a built-in automatic sensitivity test feature.

1. In normal condition, the status LED flashes green.
2. When the sensitivity drifts outside of its sensitivity limits, the status LED flashes red.
3. In the alarm state, the status LED is red continuously.
4. When the sensitivity drifts outside of its sensitivity limits and the LED flash red, the device needs to be cleaned or returned to the factory for cleaning or calibration. Refer to HA Technical Bulletin HA-97 for cleaning information.