ACD-V MULTI-CRITERIA SENSOR

STANDARD FEATURES

- Low profile - only 2” high
- Simple and reliable device addressing
- Supports 16 operational modes
- Automatic compensation for sensor contamination
- Built-in fire test feature
- Uses the noise-immune Digital Communication Protocol (DCP), which utilizes interrupts for fast response to fires
- Two built-in power/alarm LEDs
- Programmable non-polling LEDs
- Non-directional smoke chamber
- Vandal resistant security locking feature
- 10 years CO sensor life span*

SPECIFICATIONS

Operating Voltage	17-41 VDC
Standby Current	450µA
Alarm Current	7.2mA
Transmission Method	DCP - *Digital Communication Protocol*
Maximum Humidity	95% RH Non-Condensing
UL Temperature Range	32°F to 120°F (0° C to 49° C)
Operating Temperature Range	14°F to 122°F (-10°C to 50°C)
Sensitivity Range	0.7-4.0%/FT@300FPM 0.7-3.86%/FT@2000FPM 0.7-2.65%/FT@4000FPM
Air Velocity Range	0-4000 fpm
Color & Case Material	Bone - ABS Blend
Weight	4.2oz (5.9 oz. with 4” base)
Dimensions	3.9”D x 1.8”H
Recommended Base	ASBL

Specifications subject to change without notice.

APPLICATIONS

The Hochiki ACD-V Multi-Criteria Sensor is particularly suited for detecting smoke produced by the wide range of combustibles found in various applications. Temperature monitoring is achieved by thermistors placed for optimum sensitivity. Also, the sensor is suited for detecting deadly levels of carbon monoxide (CO). Hochiki's unique design allows fast response to flaming/smoldering fires and carbon monoxide levels while minimizing nuisance alarms.

OPERATION

To sense smoke, the ACD-V uses a light-emitting diode (LED) and photodiode compliment. The chamber is designed such that light emitted by the LED cannot normally reach the photodiode. In the event of fire, particles of smoke enter the chamber and scatter the light. As the smoke level increases, the scattering effect increases, causing more light to hit the photodiode. The chamber contains a unique design which allows smoke to enter the chamber while preventing external light from affecting the photodiode. The photodiode input level is sampled to sense smoke density. When the smoke density exceeds a preset threshold the sensor transmits an interrupt to the fire control panel indicating a fire condition. The fire alarm control panel can adjust the sensor threshold to compensate for contamination.

The ACD-V heat portion incorporates a highly linear dual thermistor circuit. A specially designed cover protects the thermistors while allowing maximum air flow. The ACD-V supports both fixed-temperature and rate-of-rise sensing. The fire alarm control panel can adjust the sensor threshold for different environmental requirements.

The ACD-V carbon monoxide (CO) sensing cell serves the dual purpose of supplementing smoke detection in combination with the photodiode arrangement and monitoring colorless, odorless and deadly carbon monoxide levels for life safety. When the carbon monoxide exceeds the poisonous levels, the sensor transmits an interrupt to the control panel indicating a CO alarm.

Up to 127 devices are permitted on each SLC loop. A sensor address can be set by a hand-held programming unit. The sensor mounts to a base and incorporates a locking mechanism for secure installation. The base provides mounting slots and terminals for field wiring. The sensor incorporates dual LEDs for easy viewing of sensor status.

The ACD-V is fully compatible with today’s enhanced FireNET Plus Controls and Loop Explorer II Software.

** Detectors must be replaced after 10 years from date of manufacturing.*

PRODUCT LISTINGS

SIGNALING UL LISTED S1383

FM APPROVED Pending

California State Fire Marshal Pending

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ISO 9001:2008 REGISTERED

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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.

ENGINEERING SPECIFICATIONS

The contractor shall furnish and install Hochiki's ACD-V (Multi-Criteria Sensor) as indicated on the plans. The Multi-Criteria Sensor head and twist lock base is UL Listed and it's compatible with an UL Listed fire alarm control panel.

The base permits direct interchange with the Hochiki ALG-V, ALK-V/ALK-V2, ALN-V photoelectric type smoke sensors, AIE-EA ionization type smoke sensor, ATG-EA, ATJ-EA heat sensors and the ACA-V, ACC-V multi-criteria sensor.

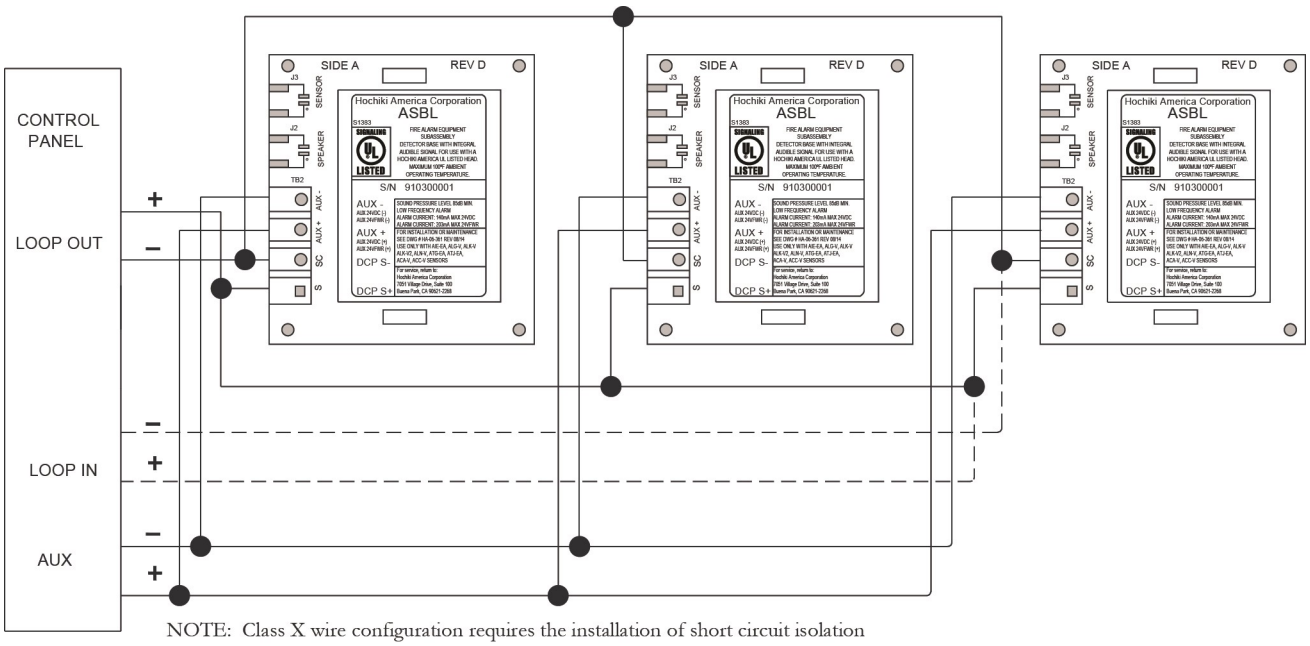
The sensitivity of the sensor is capable of being measured by the control panel. The CO sensing element shall provide for 10 years of active usage.

The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature is optional and can be implemented when required.

BASES

The ACD-V supports the YBN-NSA-4, HSB-NSA-6, ASB, SCI-B4, SCI-B6 bases as well as the recommended ASBL base when used for life safety CO sensing. A common mounting base allows sensor interchange and maintains loop continuity when sensors are removed. A simple anti-tamper head locking system is provided which is enabled by removing a small plastic tab on the back of the sensor. Once locked, the head can be removed using a small diameter screwdriver

TYPICAL WIRING DIAGRAMS



NOTE: Fire alarm control panel compatibility is required for DCP products. DCP communications protocol allows system components (DCP sensors AIE-EA, ALG-V, ACA-V, ACC-V, ALK-V, ALN-V, ATJ-EA, ATG-EA, ACD-V, bases and modules) to be used concurrently on a system's SLC (Signaling Line Circuit).