Analog Multi-Criteria Sensor

Model No: LE-ACC-V

Features

- Low profile - only 2.00" high, including base
- Simple and reliable device addressing
- 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

Operation

The LE-ACC-V chamber consists of a light-emitting diode (LED) and photodiode arrangement. 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 LE-ACC-V heat portion incorporates a highly linear thermistor circuit, with two thermistors mounted externally. The specially designed cover protects the thermistor while allowing maximum air flow. The thermistor circuit produces a voltage proportional to temperature which is scaled, and transmitted as a digitally encoded value to the control panel. When the ambient temperature exceeds a preprogrammed threshold (fixed temperature), the sensor transmits an interrupt to the control panel indicating a fire alarm. The fire alarm control panel can adjust the sensor threshold for different standard's requirements. 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 an electronics-free base and incorporates a locking mechanism for secure installation. The base provides mounting slots, terminals for field wiring and a third contact for a remote indicator/LED. The sensor incorporates dual LEDs for easy viewing of sensor status.

Specification

Operating Voltage	24 - 41 VDC
Standby Current	450µA
Alarm current	540µA
Transmission Method	DCP - *Digital Communication Protocol*
Maximum Humidity	93% RH Non-Condensing
UL Temperature Range	135° F to 150° F (57° C to 65° 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
Colour & Case Material	Bone - ABS blend
Weight	4.2oz
Dimensions	3.9"D x 1.8"H
Bases	LE-YBN-NSA-4, LE-HSB-NSA-6, LE-ASB, LE-SCI-B4, LE- SCI-B6, LE-ASBL

Applications

The LIFECO LE-ACC-V Multi-Criteria Sensor is particularly suited for detecting smoke produced by a wide range of combustibles found in various applications. Temperature monitoring is achieved by a thermistor placed for optimum sensitivity. LIFECO's unique design allows fast response to flaming fires as well as smoldering fires while minimizing false alarms.

Sensor Spacing

Heat sensor spacing shall be in compliance with NFPA 72. The distance between heat sensors shall not exceed their listed spacing or all points on the ceiling shall have a sensor within a distance equal to or less than 0.7 times the listed spacing. Heat sensors shall be located within a distance of one-half the listed 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 Specification

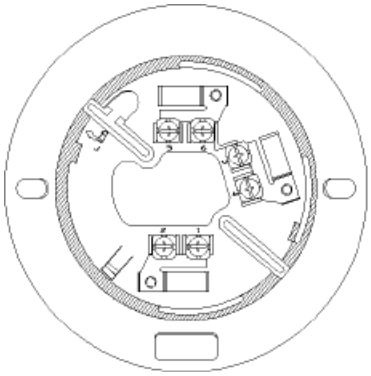
The contractor shall furnish and install LIFECO's ACC-V (Multi-Criteria Sensor) as indicated on the plans. The multi-criteria sensor head and twist lock base is UL Listed and it's compatible with an UL Listed fire alarm control panel.

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

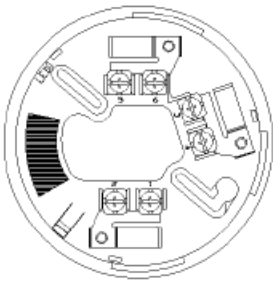
The sensitivity of the sensor is capable of being measured by the control panel.

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.

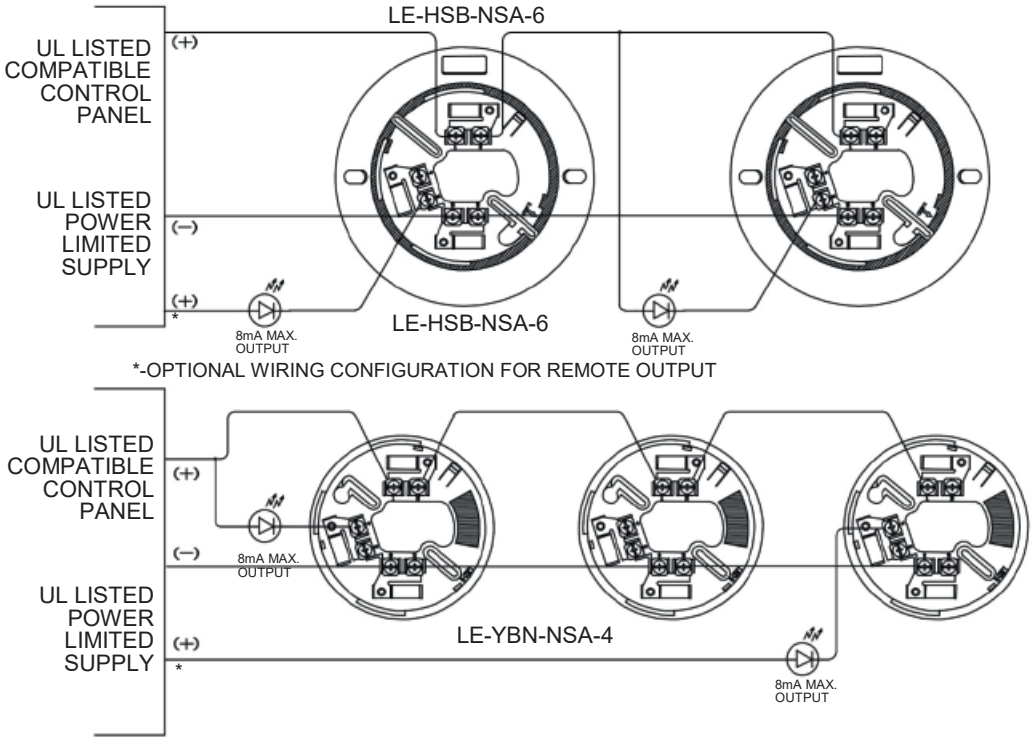
Wiring Diagram



LE-HSB -NSA - 6 Base



LE-YBN-NSA-4 Base



Bases

LIFECO LE-HSB-NSA-6 and the LE-YBN-NSA-4 mounting bases are electronic free and are a simple, rugged design with screw terminals for wiring connections. 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.

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 and ATG-EA, bases and modules) to be used concurrently on a system's SLC (Signaling Line Circuit).