

Multi-Criteria Sensor - Smoke & Heat

VF2016-00



Standard Features

- UL 268 7th edition listed
- UL 521 7th edition listed
- New design featuring wide viewing angle alarm indicators for enhanced visibility and performance
- Advanced multi-criteria smoke detection
- Designed to resist unwanted alarms from cooking and other nuisance alarm sources
- Simple and reliable device addressing
- Automatic compensation for detector contamination
- Uses the noise-immune Digital Communication Protocol (DCP), which utilizes interrupts for fast response to fires

Application

The VES VF2016-00 Multi-Criteria Detector is designed to effectively detect smoke from a wide variety of combustibles in diverse environments. It includes a thermistor strategically positioned for optimal sensitivity to monitor temperature. Its advanced design ensures quick detection of both flaming and smoldering fires while minimizing unwanted alarms.

Operation

The VES VF2016-00 Multi-Criteria Detector features a new chamber that enhances the smoke entry for early fire smoke detection. The detection chamber utilizes light from IR and Blue LED sources. In the event of fire, particles of smoke enter the chamber and scatter light in proportion to the smoke density, resulting in an increased analog smoke measurement. The chamber contains a unique baffle design which allows smoke to enter the chamber while preventing external light from affecting the photo-diode detector.

The heat detection function uses a newly designed precise thermistor circuit with one externally mounted thermistor. The protective cover ensures the thermistor is safeguarded while allowing maximum airflow. The thermistor generates a voltage relative to the ambient temperature, which is then converted to a digital signal for transmission to the control panel. When the temperature exceeds a set threshold, the detector signals the control panel, triggering an alarm. The control panel can adjust the heat sensitivity to meet various applications.

Each SLC loop can support up to 127 devices and up to 127 sounder bases. Detector addresses are programmed using a handheld programmer. The detector is installed on a base for secure placement, providing terminal connections for field wiring and a third contact for a remote indicator LED.

Detector Spacing

Smoke detector placement should comply with NFPA 72 guidelines. On smooth ceilings, without specific performance based criteria, smoke sensors should be spaced no more than 30 feet (9.1m) apart, or within a distance equal to or less than 0.7 times the nominal spacing. Sensors must also be positioned 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.



VF2016-00 Analog Multi-Criteria Detector

Supply Voltage	Operating Voltage Range (High Signal)	24 - 41 VDC
	Signal Voltage (Peak to Peak) ¹	7 - 9 VDC
Current Consumption	Normal Standby Current	340µA
	Alarm Current (LED Off) ²	340µA
	Alarm Current (LED On) ²	8.5mA
	Remote Indicator Current ³	8.0mA
	Polling Current ⁴	6.75mA
Smoke Density Range	1.40 – 3.30%/ft @ 0 - 300 FPM Open Area	
Heat Fixed Temperture Range	135°F ~ 150°F (57.2°C ~ 65.5°C)	
Heat Rate of Rise	20°F per minute (11.1°C per minute)	
Compatible Bases	YBN-NSA-47, HSB-NSA-67, SCI-B47, SCI-B67, ASB7, ASBL7	
Operating Temperature Range	32°F ~ 117°F (0°C ~ 47.2°C)	
UL Listed Ambient Temperature	32°F ~ 117°F (0°C ~ 47.2°C)	
Storage Temperature Range	-22F ~ +140F (-30°C ~ 60°C)	
	(104F(40°C) or less at 95%RH, 140F(60°C) or less at 80%RH)	
Operating Humidity Limit	<95%RH at 104F (40°C), <80%RH at 120F (49°C)	
Dimension	3.94" diameter x 2.15" tall (10cm x 5.46cm)	
Color	Ivory	
Weight	3.4 oz. (96.38g)	



Notes

1. Measured during FACP transmission. 17V Minimum Voltage (Operating Voltage less Signal Voltage).
2. When the total number of active alarm LEDs is limited by the FACP, additional detectors in Alarm will consume the Alarm Current (LED Off) current.
3. RI is current limited by the detector not to exceed 9.6mA. Actual RI current is equal to the load current for loads less than 9.6mA.
4. Polling Current should be added to sum-total Normal Standby Current for each SLC loop. Voltage drop calculations do not need to include Polling Current.