

Features

This detector combines inputs from optical and heat sensors and processes them using a sophisticated algorithm.

When polled by the control panel it returns an analog count which is determined by combined responses from both optical and heat sensors.

The multi-sensor detector is designed to be sensitive to a wide range of fires and may be used in place of an ionization detector in many instances.

The multi-sensor can be fitted in place of ionization detectors where these prove to be too sensitive and cause unwanted alarms.

The multi-sensor detector can be fitted where local specifications call for its use.



F900-886
Addressable Photoelectric/Heat Multi-sensor Detector

Operating Principle

The multi-sensor detector contains an optical smoke chamber and thermistor temperature sensor whose outputs are combined to give the status in analog value.

The multi-sensor construction is similar to that of the optical detector but uses a different lid and optical mouldings to accommodate the thermistor temperature sensor.

Signals from the optical smoke chamber and temperature sensor are independent, and represent the smoke level and air temperature respectively in the vicinity of the detector. The detector's microcontroller processes the two signals. The temperature signal processing extracts only rate of rise information for combination with the optical signal. The detector will not respond to a slow temperature increase but a large sudden change can cause alarm without the presence of smoke, if sustained for 20 seconds. The processing algorithms in the multi-sensor incorporate drift compensation.

The sensitivity of the detector is considered the optimum for most general applications since it offers good response to both smoldering and flaming fires.

Approvals and Listings

Underwriters Laboratories (File No. S6349)
NYC MEA (MEA No. 32-95-E)
California State Fire Marshal
City of Chicago



MEA CITY OF
NEW YORK



Electrical Specifications

Specifications are typical and given at 23°C and 50% relative humidity unless otherwise specified.

Detector Model No:
F900-886

Detector Type:
Multi-sensor.

Detection Principle:
Smoke: Photoelectric detection of light scattered by smoke particles.
Heat: Temperature sensitive resistance.

Chamber Configuration:
Horizontal optical bench housing an infrared emitter and sensor arranged radially to detect forward scattered light.

Sensor:
Silicon PIN photodiode.

Emitter:
GaAs Infrared light emitting diode.

Smoke Sampling Frequency:
1 per second.

Supply Wiring:
Two wire supply.

Terminal Functions:
L1 and L2; supply in and out connections
+R; remote indicator positive connection (internal 2K Ω resistance to supply +ve).
-R; remote indicator negative connection (internal 2K Ω resistance to supply -ve).

Supply Voltage:
17 to 28 Volts dc.

Modulation Voltage at Monitor:
5 to 9 Volts peak to peak

Quiescent Current:
500 μ A.

Power-up Surge Current:
1mA.

Normal Surge Current:
750 μ A.

Duration of power-up Surge Current:
0.3 seconds.

Maximum power-up time:
10 seconds.

Operating Temperature:
0°C to 49°C.

Alarm Indicator:
2 clear light emitting diode (LED) emitting red light.

Alarm LED Current:
3.5mA.

Remote LED Current:
4mA at 5V (measured across remote load).

Sensitivity:
Nominal threshold of 2.8% light grey smoke obscuration per meter.

Humidity:
(no condensation)
0% to 95% relative humidity.

Wind Speed:
3,000 ft./min (15m/s). Caution: monitors subjected to continuous velocities above 300 ft./min may require more frequent maintenance.

Atmospheric Pressure:
Unaffected.

Dimensions:
Monitor: 4 in x 1.65 in (diameter x height)

Weights:
Monitor: 3.6 oz.

Materials:
Housing: White polycarbonate V-O rated to UL 94.
Terminals: Stainless Steel, nickel plated.

Ordering Information

Model No.	Part No.	Description
F900-886	75059	Addressable Photoelectric/Heat Multi-sensor Detector

It is our intention to keep the product information up to date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information contact: FIRECOM, INC.

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