

MULTISENSOR DETECTORS



Part Number 55000-885IMC

DEVICE RESPONSE

Type: Overheating/thermal combustion
Response: Very good

Type: Flaming with high heat output
Response: Very good

Type: Smouldering/glowing combustion
Response: Good

Type: Flaming combustion
Response: Good

Type: Flaming - clean burning
Response: Moderate/good

The Context Plus XP95 multisensor detector contains an optical smoke sensor and a thermistor temperature sensor whose outputs are combined to give the final analogue value.

The multisensor construction is similar to that of the optical detector but uses a different lid and optical mouldings to accommodate the thermistor temperature sensor. The sectional view (below) shows the arrangement of the optical chamber and thermistor.

The signals from the optical smoke sensing element and the temperature sensor are independent, and represent the smoke level and the 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 - even if the temperature reaches a high level. A large sudden change in temperature can, however, cause an alarm without the presence of smoke, if sustained for 20 seconds.

The processing algorithms in the multisensor incorporate drift compensation. The control panel must not have a drift compensation algorithm enabled.

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

Note: In situ testing of the multisensor should be carried out as for smoke detectors.

Technical Data

Detector Part No 55000-885IMC

Base Part No 45681-210

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

Detector principle:

Smoke: Photoelectric detection of light scattered by smoke particles

Heat: Temperature sensitive resistance

Type code:

Bits: (2 1 0 4 3) 1 0 1 1 1

Supply wiring: Two-wire supply, polarity insensitive

Terminal functions: L1&L2 supply in and out connections (polarity insensitive)

+R remote indicator positive connection (internal 2.2kΩ resistance to positive remote indicator negative connection)

-R remote indicator negative connection (internal 2.2kΩ resistance to negative)

Operating voltage: 17-28V DC

Communications protocol: 5-9V peak to peak

Quiescent current: 500µA average 750µA peak

Power-up surge current: 1mA

Maximum power-up time: 10s

Alarm LED current: 3.5mA

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

Clean air analogue value: 23 +4/-0

Alarm level analogue value: 55

Alarm indicator: 2 colourless Light Emitting Diodes (LEDs); illuminated red in alarm optional remote LED

Temperature range:

Max. continuous operating: +60°C

Min. continuous operating: 0°C

Min. operating (no condensation / icing): -20°C

Storage: -30°C to +80°C

Humidity (No condensation): 0 to 95% relative humidity

Effect of temperature on optical detector: Less than 15% change in sensitivity over rated range. Slow changes in ambient conditions will automatically be compensated and will not affect sensitivity

Effect of atmospheric pressure on optical sensor: None

Effect of wind on optical sensor: None

Vibration, Impact and Shock: To prEN54-7

IP rating: 43

Dimensions: 100mm diameter; 50mm height; 58mm (in base)

Weight: Detector: 105g; Detector in base: 160g

Materials: Housing: White polycarbonate V-0 rated to UL94; Terminals: Nickel plated stainless steel

Smoke element only:

Chamber configuration:

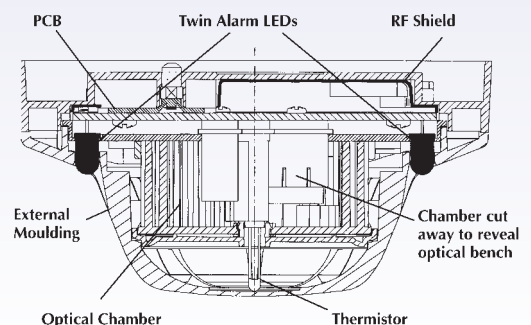
Horizontal optical bench housing infrared emitter and sensor, arranged radially to detect forward scattered light

Sensor: Silicon PIN photo-diode

Emitter: GaAlAs infra-red light emitting diode

Sampling frequency: 1 per second

WARNING: If the control panel incorporates a drift compensation algorithm, this should be disabled when polling the Context Plus Multisensor detector.



Sectional view - Multisensor Detector