

# ...XP95



- Ionisation Smoke Detector**
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# XP95 MULTISENSOR DETECTOR



XP95 Multisensor Detector

▲ Ref.: SI: Multi-885

## OPERATING PRINCIPLES

The 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 (Fig.15) 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.

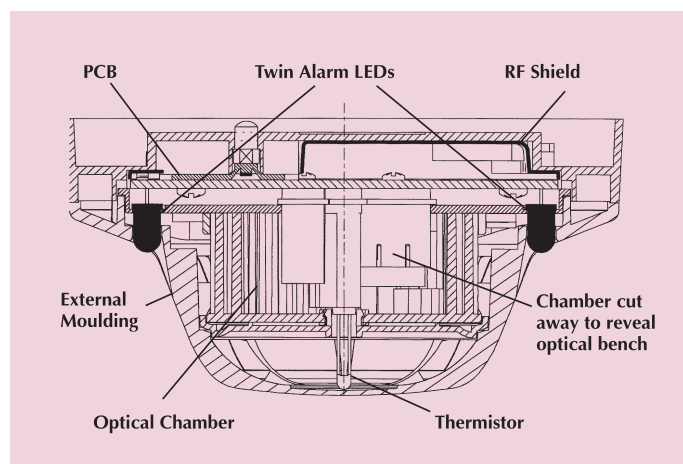


Fig.15 Sectional view - XP95 Multisensor Detector

## TECHNICAL DATA

**XP95 Multisensor Detector**  
Detector Multi-885  
Base Part No 45681-210

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

### Detector Type:

Point type smoke detector for fire detection and fire alarm systems for buildings

### 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:

Apollo Series 90/XP95 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

### Electro-magnetic compatibility:

See page 21 for full details

### 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

### IP rating:

23D

### Approvals & Regulatory Compliance:

See page 21 for full details

### Vibration, Impact and Shock:

To prEN54-7

### Dimensions:

100mm diameter  
50mm height  
58mm (height 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 infra-red 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

technical data

**WARNING:** if the control panel incorporates a drift compensation algorithm, this should be disabled when polling the XP95 Multisensor detector.



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