

# Series 60



**Conventional Fire Detectors**  
*Ionisation Smoke Detectors*  
*Optical Smoke Detectors*  
*Heat Detectors*



## SERIES 60 IONISATION SMOKE DETECTOR

The sensing part of the detector consists of two chambers – an open, outer chamber and a semi-sealed reference chamber within.

Mounted in the reference chamber is a low activity radioactive foil of Americium 241 which enables current to flow between the inner and outer chambers when the detector is powered up.

As smoke enters the detector, it causes a reduction of the current flow in the outer chamber and hence an increase in the voltage measured at the junction between the two chambers. The voltage increase is monitored by the electronic circuitry which triggers the detector into the alarm state at a preset threshold. An externally visible LED will light up when the detector changes to alarm state.

### Part no. 55000-200

An integrating ionisation detector, suitable for use in areas where transient high levels of smoke may be expected, is also available.

### Part no. 55000-210



## SERIES 60 OPTICAL SMOKE DETECTOR

Optical smoke detectors incorporate a pulsing LED located in a labyrinth within the housing of the detector. The labyrinth is designed to exclude light from any external source. At an angle to the LED is a photo-diode which normally does not register the column of light emitted by the LED.

In the event of smoke from a fire entering the labyrinth the light pulse from the LED will be scattered and hence registered by the photo-diode. If the photo-diode “sees” smoke on the two following pulses, the detector changes to the alarm state when the indicator LED will light up. The detector housing is identical to that of the ionisation smoke detector. It is distinguished from this type by having an indicator LED which is clear in quiescent state but produces red light in alarm.

The Optical detectors are easy to disassemble and clean without the necessity of returning them to the factory.

### Part no. 55000-305

## SERIES 60 HEAT DETECTOR

The Series 60 heat detectors are resettable and operate by using a matched pair of thermistors to sense heat. One thermistor is exposed to the ambient temperature, the other is sealed. In normal conditions the two thermistors register similar temperatures, but, on the development of a fire, the temperature recorded by the exposed thermistor will increase rapidly, resulting in an imbalance of the thermistors and causing the detector to change to the alarm state.

Rate of rise detectors are designed to detect a fire as the temperature increases, but they also have a fixed upper limit at which the detector will go into alarm if the rate of temperature increase has been too slow to trigger the detector earlier.

Fixed heat detectors only change to the alarm state at a preset temperature.

Externally, the heat detectors are distinguishable from smoke detectors by having wide openings to the surrounding atmosphere to allow good movement of air around the external thermistor.

**Part nos. 55000-100 Grade 1**  
**55000-101 Grade 2**  
**55000-102 Grade 3**

**Part nos. 55000-103 Range 1**  
**55000-104 Range 2**



## SERIES 60 BASE

The base has been designed to enable detectors to be plugged in without any need for force – particularly useful when fitting to suspended ceilings. To make it even easier the base has a “one way only” fit. All Series 60 bases are lockable.

The detectors are polarity insensitive and bases are easy to wire with an earth connector.

The standard base contains no electronic parts which could be damaged during installation.

### Part no. 45681-200

For conventional systems that are designed to operate correctly when one or more detector heads have been removed, a base fitted with a diode in Line 1 (positive line) is available.

### Part no. 45681-201



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