Series 65 Base Mounted UV Flame Detector

FUNCTION

The Series 65 Base Mounted Ultraviolet (UV) Flame Detector is designed to protect internal areas where flaming fires may be expected.

FEATURES

The detector is sensitive to ultraviolet radiation emitted by flames during combustion. Since it requires only UV radiation the Flame Detector responds even to stationary flames with no flicker like cigarette lighters and blue gas flames.

The detector is set to respond to ultraviolet radiation (185 to 260nm) emitted by almost all flames, including those invisible to the naked eye, e.g. hydrogen fires.

The detector has a single UV sensor with a narrow spectral response in order to discriminate between flames and most spurious sources of radiation and is designed for internal fully enclosed areas. *Caution: The detector will also detect electrical discharges from lightning or arc welding.*

ELECTRICAL CONSIDERATIONS

The detector signals an alarm state by switching an alarm latch on, increasing the current drawn from the supply from 550µA to a maximum of about 75mA. This fall in the impedance of the detector is recognised by the control panel as an alarm signal.

The alarm current also illuminates the detector's integral LEDs. A remote indicator connected between the L1 IN terminal and the –R terminal will have a voltage equal to the supply voltage less 1V across it and so will illuminate.

Part no. 55000-025

To ensure correct operation of the detector the control panel must be arranged to supply a maximum of 33V DC and a minimum of 12V DC in normal operation.

The supply may fall to 6V DC in alarm conditions if a supply current of at least 10mA is available at this voltage.

To ensure effective illumination of the integral LEDs and any remote indicator, the supply to the detector should exceed 12V.

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To restore the detector to quiescent condition, ensuring all flames are extinguished, interrupt the electrical supply to the detector for a minimum of one second.

Note: When using the detector the following must be avoided; outside viewing, UV lamps, electrical sparking, welding and sources of radiation, UV light sources, prolonged ambient temperatures above 60°C and obstructions to the field of view.

APPLICATIONS FOR UV FLAME DETECTORS *
UV flame detectors are designed for use in enclosed spaces and require a clear line of sight within the area to be protected. They are unaffected by draughts or convection currents.

They are fast reacting and respond to a flame more than 25m away (see Fig. 1.)

** Full a full list of applications for Apollo Flame Detectors, please refer to PP2409, available on request.*

DIMENSIONS
100mm x 40mm (Detector only)
100mm x 48mm (Detector and base)

WEIGHT

Detector	150g
Detector in base	210g

ACCESSORIES
A portable Flame Detector Test unit is available, part number 29600-226.

Adjustable mounting bracket, part number 29600-458 (comes complete with Deckhead Mounting Box).

Deckhead Mounting Box, part number 45681-217.

INSTALLATION NOTE
If fitting to an XP95 Zone Monitor do not fit more than one device per zone.

If fitting to a conventional control panel, please verify the quanity per zone with the chosen panel manufacturer.

TECHNICAL DATA

Supply voltage	12-33V DC
Quiescent current	550µA
Terminal functions	
L1 IN and OUT	supply positive
L2	supply negative
–R	remote indicator negative connection
Alarm Voltage	6 to 33V
Alarm Current	61mA at 28V 54mA at 24V 20mA at 10V
Remote output characteristics	
Remote is a current sink to the negative line limited to 17mA	
Alarm Indicator	Red Light Emitting Diode (LED)
Design Alarm Load	420Ω in series with a 2V drop
Holding Voltage	6V (min)
Holding Current	10mA (min)
Minimum Voltage Required to Illuminate Indicators	12V
Alarm Reset Voltage	<1V
Alarm Reset Time	1 second
Range of view	0.1m² n-heptane at 25m
Sensitivity	Class 1 (EN54-10)
Field of view	90° cone
Spectral response	UV 185 to 260nm
Operating temperature	-40° C to + 70° C (no condensation or icing)
Storage temperature	-40° C to + 85° C
Relative humidity	0-95%, non-condensing
IP rating	66
Materials	
Housing	White polycarbonate V-0 rated to UL94
Terminals	Nickel plated stainless steel

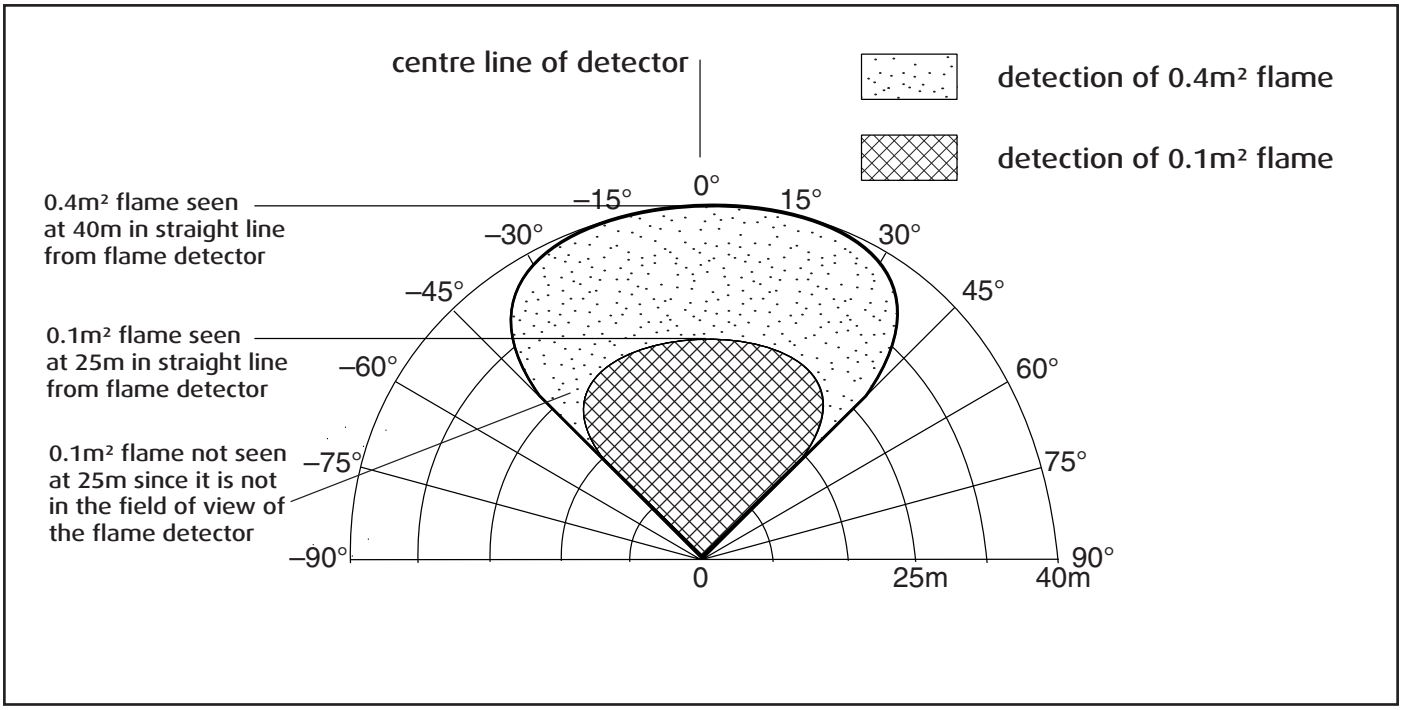

Fig. 1 Field of View

The field of view of the flame detector is shown in Fig. 1. This also provides information on the size of fire detectable at various distances.

The Flame Detectors can also be ceiling mounted, positioned above the anticipated flame source or at the centre of the area to be protected, perpendicular to the floor below. If the detector cannot see the whole of the area to be protected, one or more additional detectors may be required. Refer to the angle of view diagram Fig. 2 to establish the detector performance. The area of detection is dependent on the detectors height above the likely source of flame. The detector has a 90° conical field of view or 45° either side of the viewing axis centre line. The maximum ceiling height is 20m. If the detector is perpendicular to floor and at a height of 10m then the detector will view a circular floor area below with a 10m radius (20m diameter circle).

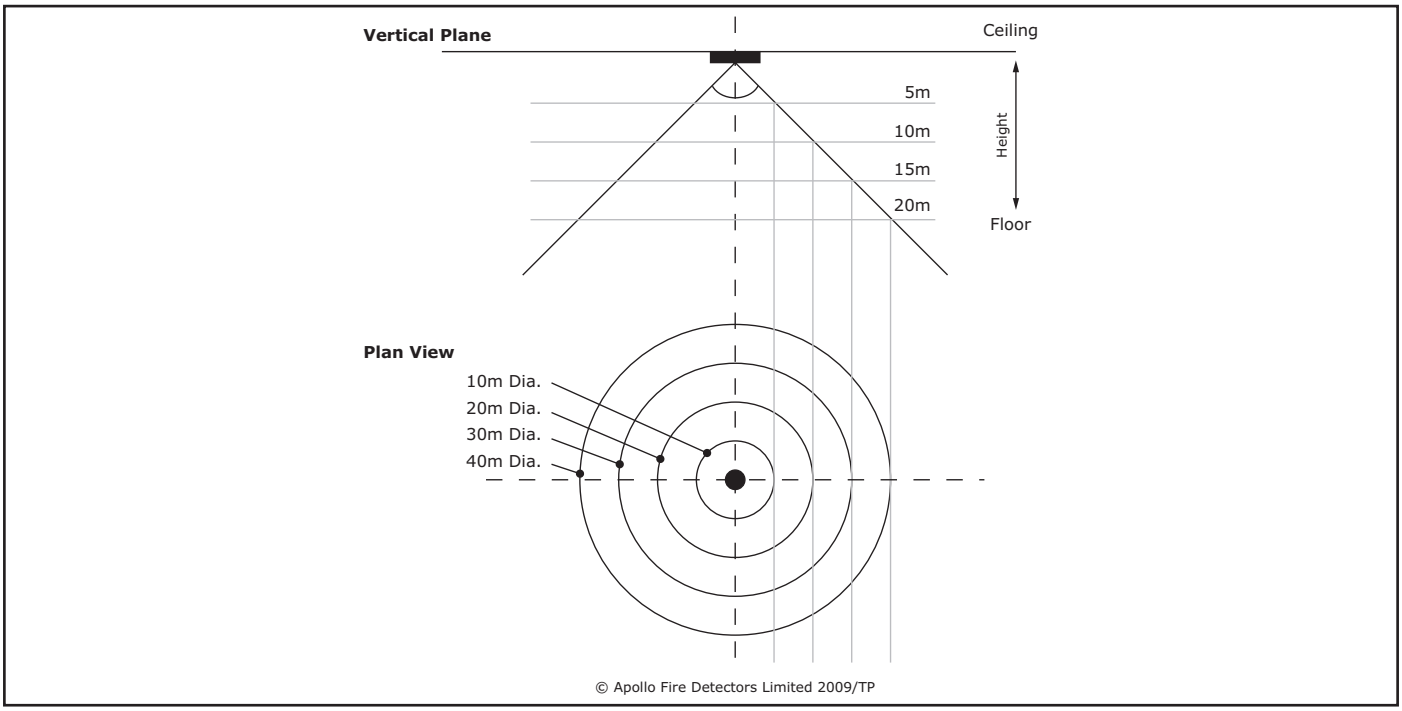

Fig. 2 Ceiling mounting example