

# Series 65

## Base Mounted Flame Detector



### Product overview

Product	Series Base Mounted UV Flame Detector
Part No.	55000-025
Product	Adjustable Mounting Bracket - complete with Deckhead Mounting Box
Part No.	29600-458

### Product information

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

The detector is sensitive to UV 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 UV radiation (185 to 260 nm) 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 use in internal, fully enclosed areas.



**CAUTION:** The detector will also detect electrical discharges from lightning or arc welding.

### Technical Data

All data is supplied subject to change without notice. Specifications are typical at 24V, 23°C and 50% RH unless otherwise stated.

Supply voltage	17 - 28 V dc
Quiescent current	550 $\mu$ A
Alarm voltage	6 to 33 V dc
Alarm current	61 mA at 28 V 54 mA at 24 V 20 mA at 10 V
Terminal functions	L1 In and Out      Supply positive L2                      Supply negative -R                      Remote indicator negative connection
Remote output characteristics	Remote is a current sink to the negative line limited to 17 mA
Alarm indicator	Red light emitting diode
Design alarm load	420 $\Omega$ in series with a 2 V drop
Holding voltage	6 V min
Holding current	10 mA min
Minimum voltage required to illuminate indicators	12 V
Alarm reset voltage	< 1 V
Alarm reset time	1 second
Range of view	0.1 m <sup>2</sup> n-heptane at 25 m
Sensitivity	Class 1, EN 54-10
Field of view	90° cone
Spectral response	UV 180 to 260 nm
Operating temperature (no condensing or icing)	-40°C to +70°C
Storage temperature	-40°C to +85°C
Relative humidity	95% non-condensing
IP rating	IP66
Dimensions	100 mm x 40 mm detector only 100 mm x 48 mm detector and base
Weight	150 g - detector only 210 g - detector and base
Materials:	Housing      White polycarbonate, V-0 rated to UL94 Terminals    Nickel plated stainless steel

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# Series 65 Base Mounted Flame Detectors

## Electrical considerations

The detector signals an alarm state by switching an alarm latch on increasing the current drawn from the supply from 550  $\mu\text{A}$  to a maximum of about 75 mA. This fall in the impedance of the detector is recognised by the control panel as an alarm signal.

The alarm current also illuminates the detectors 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 one volt across it and so will illuminate.

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

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

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

To restore the detector to quiescent condition, ensuring all flames are extinguished interrupt the 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 acting and respond to a flame more than 25 m away (refer to Figure 1).

## Installation

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 quantity per zone with the panel manufacturer.

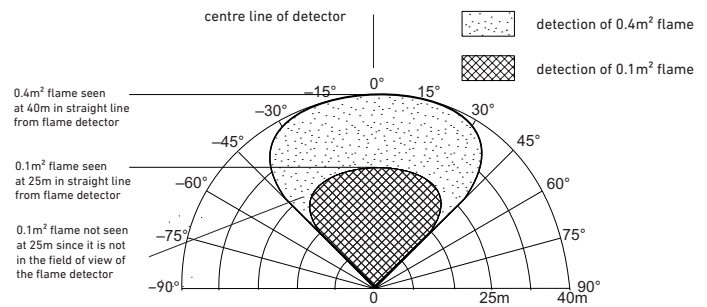


Figure 1: Field of view

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

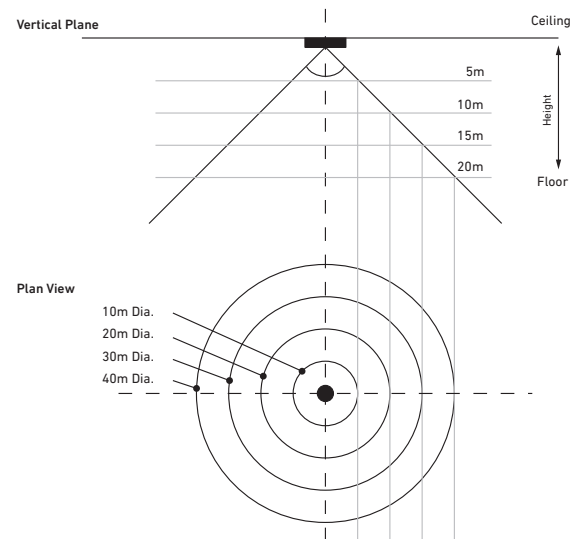


Figure 2: Ceiling mounting example

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 - Figure 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 20 m. If the detector is perpendicular to the floor and at a height of 10 m then the detector will view a circular floor area below with a 10 m radius - 20 m diameter circle.