

# Series 65A

## Photoelectric Smoke Detector



### Product overview

Product	Photoelectric Smoke Detector
Part No.	55000-327
Part No.	Photoelectric Smoke Detector with flashing LED
Part No.	55000-326
Product	Photoelectric Smoke Detector with flashing LED and magnetic test
Part No.	55000-325
Product	Photoelectric Smoke Detector - high sensitivity
Part No.	55000-328

### Compliance



### Product information

The Series 65A Photoelectric Smoke Detector works on the light scatter principle and is ideal for applications where slow burning or smouldering fires are likely.

- Responds well to slow burning, smouldering fires
- Well suited to bedrooms and escape routes
- Unaffected by wind or atmospheric pressure
- Wide operating voltage
- High-sensitivity option
- Flashing LED option
- Flashing LED, and magnetic test option

### Technical data

All data is supplied subject to change without notice. Specifications are typical at 24V, 73°F and 50% RH unless otherwise stated.

<i>Sensitivity</i>	3.0 + 1.0 - 1.98 %/ft
<i>Working voltage</i>	9 V to 33 V dc
<i>Supervisory current</i>	40 - 50 $\mu$ A at 9 V 45 - 55 $\mu$ A at 24 V
<i>Surge current</i>	0 mA
<i>Alarm current</i>	17 mA at 9 V 52 mA at 24 V
<i>Operating temperature range</i>	32 °F to 140 °F
<i>Air velocity</i>	0 - 300 fpm
<i>Standards and approvals</i>	UL, ULC, CSFM, FM, MSFM
<i>Dimensions</i>	3.93" diameter x 1.65" height
<i>Weight</i>	3.50 oz
<i>Materials</i>	Housing: White flame-retardant polycarbonate Terminals: Nickel plated stainless steel
<i>Test</i>	Magnet or Gemini 501

## Function

The Series 65A Photoelectric Smoke Detector works on the light scatter principle and is ideal for applications where slow burning or smouldering fires are likely.

## Operation

The Series 65A Photoelectric Smoke Detector uses the same outer case as the ionization smoke detector and is distinguished by the indicator LED which is clear in standby and red in alarm. Within the case is a printed circuit board which on one side has the light proof labyrinth chamber with integral gauze surrounding the optical measuring system and on the other the address capture, signal processing and communications electronics.

An infrared light emitting diode within its collimator is arranged at an obtuse angle to the photo-diode. The photo-diode has an integral daylight blocking filter.

The infrared LED emits a burst of collimated light every three seconds. In clear air the photo-diode receives no light directly from the infrared LED because of the angular arrangement and the dual mask. When smoke enters the chamber a fraction of the collimated light is scattered onto the photo-diode. If the resulting signal from the photo-diode is above a pre-set threshold the LED emits two more bursts of light, this time at two-second intervals. If light is scattered onto the photo-diode by both these pulses- due to the presence of smoke - the detector signals an alarm state by switching the alarm latch on, increasing the current drawn from the supply from about 40  $\mu$ A to a maximum of 52 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 detector integral LED.

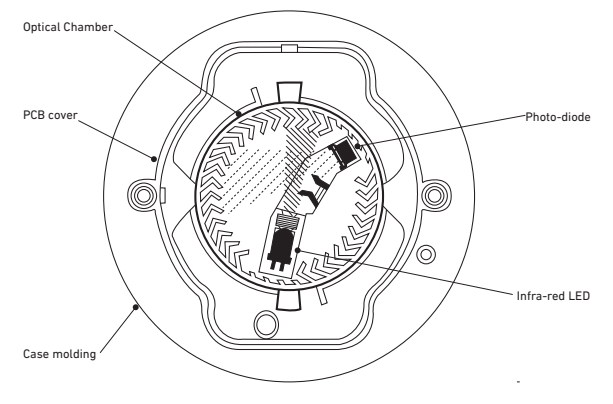
## Environmental characteristics

The Series 65A Photoelectric Smoke Detector is unaffected by wind or atmospheric pressure and operates over the temperature range 32°F to 140°F.

## Electrical description

The Series 65A Photoelectric Smoke Detector is designed to be connected to a two wire loop circuit carrying both data and a 9V to 33V dc supply. The detector is connected to the incoming and outgoing supply via terminals L1 and L2 in the mounting base. A remote LED indicator requiring not more than 4 mA at 5 V may be connected between the +L1IN and -R terminals. An earth connection terminal is also provided.

### Series 65A Photoelectric Smoke Detector top section



### Response characteristics of Series 65A Photoelectric Smoke Detector

Type of fire	Optical Smoke Detector
Overheating/thermal combustion	Very Good
Smouldering/glowing combustion	Moderate/Good
Flaming combustion	Very Good
Flaming with high heat output	Very Good
Flaming - clean burning	Poor

### Compatible bases for the Series 65A Photoelectric Smoke Detector

Part No.	Description
45681-200	Series 65A mounting base
45681-220	4" Series 65A standard mounting base
45681-232	6" Low profile base
45681-251	6" E-Z fit base
45681-255	4" Standard relay base
45681-256	4" Auxiliary relay base
45681-257	4" 12 V End-of-Line relay base
45681-258	4" 24 V End-of-Line relay base