l Fire Detectors

Series 65 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 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 red LED lights up when the detector changes to alarm state.

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

Series 65 Optical Smoke Detector

Optical smoke detectors incorporate a pulsing LED located in a chamber within the housing of the detector. The chamber 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 chamber, 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 into the alarm state and the indicator LED lights up. The detector housing is identical to that of the ionisation detector but has an indicator LED which is clear in quiescent state but produces red light in alarm.

Series 65 Heat Detector

The A1R, BR and CR (rate-of-rise) heat detectors 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, causing the detector to change into 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.

The CS (static response) heat detector has only one thermistor and changes to the alarm state at a preset temperature. Externally, the heat detectors are distinguishable from the smoke detectors by having wide openings to the surrounding atmosphere to allow good movement of air around the external thermistor.

Series 65 Bases

The bases have been designed to enable detectors to be plugged in without any need for force - particularly useful when fitting to suspended ceilings. **All Series 65 bases are lockable.**

The standard base is identical to the Series 60 base, so uses the same part number, **45681-200**. It contains no electronic parts which could be damaged during installation.

Relay Bases

Application

Series 65 relay bases are primarily intended for use with control units using 4-wire detector supply and alarm initiating circuits. Where local codes allow, they may also be used in 2- and 4-wire circuits to provide volt-free control signals to an auxiliary system such as an automatic door closer. *They are not suitable for use in systems where it is specified or required that operation of the auxiliary system shall be fail-safe.*

Description

Series 65 relay bases are designed for use with Apollo Series 65 fire detectors and compatible control equipment. *They must not be used with any other type of detector.*

The **standard Series 65 relay base**, **45681-245**, provides one set of volt-free, changeover (form C) contacts that change state when the detector signals an alarm.

Auxiliary relay base, **45681-246**, provides two sets of volt-free changeover contacts to facilitate the switching of a remote LED or other auxiliary device.

EOL (end-of-line) relay bases are intended for use with 4-wire circuits and feature two sets of changeover contacts and a power supervision relay. The end-of-line device specified by the control unit manufacturer should be connected across the terminals marked EOL - the EOL device will be connected across the initiating circuit when power is supplied to the detector. Part numbers: **45681-247**, for circuits having a supply voltage between 9 and 18 volts DC and **45681-248** for circuits having a supply voltage between 16 and 33 volts DC.

Installation

Full installation, commissioning and maintenance instructions are included with Series 65 relay bases.

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