

Series 65A

Ionization Smoke Detector



Product overview

Product	Ionization Smoke Detector
Part No.	55000-227
Part No.	Ionization Smoke Detector with flashing LED
Part No.	55000-226
Product	Ionization Smoke Detector with flashing LED and magnetic test
Part No.	55000-225

Compliance



Product information

The Series 65A Ionization Smoke Detector uses a low activity radioactive foil to detect fires by irradiating the air in the smoke chambers causing a current flow. If smoke enters the chamber the current flow is reduced leading to an alarm.

- Responds well to fast burning, flaming fires
- Operates in a variety of environments
- Wide operating voltage
- Minimal effects from temperature, humidity and atmospheric pressure

Technical data

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

Detection principle	Ionization Chamber
Chamber configuration	Twin compensating chambers using one single sided Ionization radiation source
Radioactive Isotope	0.9 μ Ci Americium 241
Activity	33.3 kBq, 0.9 μ Ci
Sampling frequency	Continuous
Supply voltage	9 to 33 V dc
Supervisory current	40 μ A to 50 μ A at 9 V 45 μ A to 55 μ A at 24 V
Surge current	0 mA
Maximum alarm current	17 mA at 9 V 52 mA at 24 V
Installation temperature	Minimum 32°F, maximum 158°F
Humidity	0% to 95% RH (no condensation or icing)
Air velocity	0 - 300 fpm
Standards and approvals	UL, FM, CSFM, MSFM
Dimensions	3.93" diameter x 1.65" height
Weight	3.70 oz
Materials	Housing: White flame-retardant polycarbonate Terminals: Nickel plated stainless steel
Test method	Magnet or Gemini 501

Function

The Series 65A Ionization Smoke Detector uses a low activity radioactive foil to detect fires by irradiating the air in the smoke chambers causing a current flow. If smoke enters the chamber the current flow is reduced leading to an alarm.

Operation

The sensing part of the detector consists of two chambers; an open, outer chamber and a reference chamber within.

Mounted in the reference chamber is a low-activity radioactive foil of Americium 241 which enables current to flow across 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.

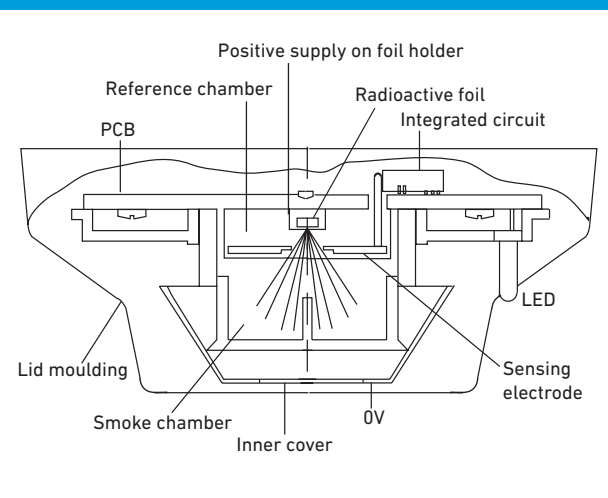
Environmental characteristics

The Ionization Smoke Detector like all ionization detectors has some sensitivity to air movement (wind). The extent to which the sensitivity will change depends on the wind speed and on the orientation of the detector relative to the wind direction. Relatively small changes in wind direction can cause significant changes in sensitivity. The detector operates over the temperature range -4°F to +140°F.

Electrical description

The Ionization Smoke Detector is designed to be connected to a two wire loop circuit carrying both data and a 9 V to 33 V 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 L1 IN and -R terminals. An earth connection terminal is also provided.

Series 65A Ionization Smoke Detector diagram



Compatible bases for the Series 65A Ionization 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

Response characteristics of Series 65A Ionization Smoke Detector

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