IONIZATION SMOKE DETECTOR

DESCRIPTION

The 67-1033 can be used in all areas where Ionization Smoke Detectors are required. The responsive yet highly stable operation allows the 67-1033 to fit in a wide range of uses. It can be used in areas where early warning of superheated or flaming combustibles is expected.

Ionization Smoke Detector	
Fike P/N	Mfg. P/N
67-1033	SIJ-24
Compatible Bases 6”	
67-1034 (430 Ω)	NS6-224
67-1035 (220 Ω)	NS6-220
Compatible Bases 4”	
67-1036 (430 Ω)	NS4-224
67-1037 (220 Ω)	NS4-220

P/N 67-1033

APPROVALS

- UL Listed - S4021
- FM Approval - 3010873
- CSFM - 7271-0410:135

FEATURES

- Low profile, 1.8" high (with base)
- 2 or 4 wire base compatibility, relay bases available
- Highly stable operation, RF/Transient protection
- Low standby current, 40mA at 24 VDC
- Two built-in power/alarm LEDs for 360° viewing
- Non-directional smoke chamber
- Vandal resistant security locking feature
- Built-in magnetic detector sensitivity test feature. Meets NFPA 72, Chapter 7, Inspection, Testing and Maintenance requirements.
- Compatible with Fike 63-1024 photoelectric detector
- Backwards compatible with Fike 63-1008 and 67-1016 smoke detector

OPERATION

The 67-1033 ionization smoke detector utilizes two bi-colored LEDs for status indication purposes. In a normal standby condition the LEDs flash green approximately once each second. When the detector senses smoke and goes into alarm the status LEDs will latch on red.

A single radioactive source of Americium-241 ionizes two chambers within the detector, a reference chamber, and the smoke sensing chamber. The air is ionized by this source and a small DC current flows between the electrodes of each chamber. Smoke can freely enter the sensing chamber while the inner chamber is virtually sealed to smoke. Smoke entering the sensing chamber causes a reduction in the DC current flow, the voltage imbalance between the two chambers is proportional to the smoke density. When the voltage differences become great enough it causes the detector to go into alarm. The two chamber design is utilized to compensate for changes in atmospheric and environmental conditions.

SPECIFICATIONS

Radioactive Source	AM-241 0.5mCi
Rated Voltage	17.7 - 30.0 VDC
Working Voltage	15.0 - 33.0 VDC
Maximum Voltage	42 VDC
Supervisory Current	40mA @ 24 VDC
Surge Current	200mA max. @ 24 VDC
Alarm Current	150mA max. @ 24 VDC
Ambient Temperature	32°F to 120°F (0°C to 49°C)
Color & Case Material	Bone PC/ABS Blend
Sensitivity Test Feature:	Magnetically activated dual reed switch test

Data Sheet

704 S. 10th Street · P.O. Box 610 · Blue Springs, Missouri 64013-0610 U.S.A. · (816) 229-3405 · (816) 229-4615 · www.fike.com

ENGINEERING SPECIFICATIONS

The contractor shall furnish and install where indicated on the plans, the 67-1033 ionization smoke detectors. The combination detector head and twist-lock base shall be UL listed compatible with a UL listed fire alarm panel.

The base shall permit direct interchange with 63-1024 photoelectric type smoke detector, the 63-1025 combination photoelectric/heat detector, and/or 60-1029 or 60-1030 fixed temperature/rate-of-rise heat detectors. The base shall be a listed, compatible twistlock base. In the event of partial or complete retrofit, the 67-1033 may be used in conjunction with, or as a replacement for, Fike detectors (63-1007, 63-1016 and the 67-1016).

The smoke detector shall have two flashing status LEDs for visual supervision. When the detector is in standby condition the LEDs will flash Green. When the detector is actuated, the flashing LEDs will latch on Red. The detector may be reset by actuating the control panel reset switch.

The sensitivity of the detector shall be capable of being verified. It shall be possible to perform a functional test of the detector without the need of generating smoke. The test method shall simulate effects of products of combustion in the chamber to ensure testing of the detector electronics.

To facilitate installation, the detector shall be non-polarized. Voltage and RF transient suppression techniques shall be employed to minimize false alarm potential. Auxiliary SPDT relays shall be installed where indicated.

The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be field removable when not required.

IONIZATION SMOKE DETECTOR SENSITIVITY TEST FEATURE

Test Procedure

1. With detector wired to appropriate initiating circuit or current limited power source and with normal applied power, place a magnet as shown in Figure 1.
2. Wait at least six seconds. Detector SHOULD NOT alarm and LED should not light.
3. Place magnet on detector as shown in Figure 2 (opposite side).
4. Wait at least six seconds. Detector SHOULD alarm.
5. If detector does alarm when magnet is positioned as in Figure 1 or does not produce an alarm when magnet is positioned as in Figure 2, detector is not within specified sensitivity limits and may require service.

WARNING: Conduct testing only under Normal Standby conditions. Abnormal or Low Power conditions may affect sensitivity. Always reset power prior to testing of next unit.

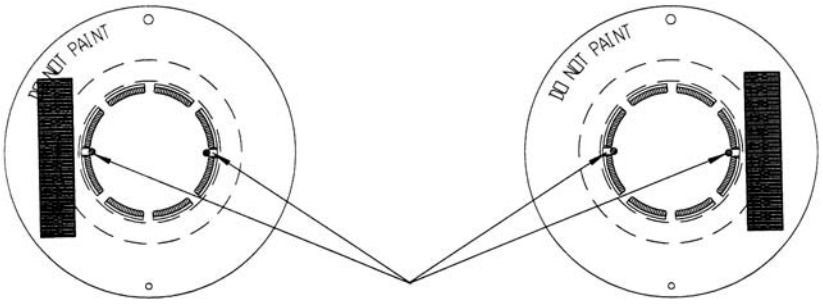

Figure 1 LED's Figure 2