



IS-24 Stock No. 1430010

IS-24 Product Specifications

UL and CSFM Listed • FM Approved

Radioactive Source: AM-241 0.5 μ Ci

Rated Voltage: 17.7 - 30.0 VDC

Working Voltage: 15.0 - 33.0 VDC

Maximum Voltage: 42 VDC

Supervisory Current: 40 μ A at 24 VDC

Surge Current: 200 μ A at 24 VDC

Alarm Current: 150 mA at 24 VDC

Ambient Temperature: 32° F to 120° F (0° C to 49° C)

Sensitivity Test: Magnetically activated dual reed switch test.

Mounting: Refer to Potter SB-46 Smoke Detector Base Series, bulletin no. 8840008

STANDARD 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, 40 μ A at 24 VDC
- Two built-in power/alarm LED's 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 PS-24 photoelectric detectors
- Backwards compatible with Potter PS and IS smoke detectors.
- Compatible with Potter releasing controls

APPLICATION

The IS-24 can be used in all areas where Ionization Smoke Detectors are required. The responsive, yet highly stable operation allows the IS-24 to fit in a wide range of uses. The IS-24 can be used in areas where early warning of super-heated or flaming combustibles is expected.

SB Series style bases may be used with the IS-24. The only current compatible device is the PS-24 Photoelectric detector.

OPERATION

The IS-24 ionization smoke detector utilizes two bi-colored LED's for status indication purposes. In a normal standby condition the LED's flash *green* approximately once each second. When the detector senses smoke and goes into alarm the status LED's 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 difference becomes 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.

ENGINEERING SPECIFICATIONS

The contractor shall furnish and install where indicated on the plans, Potter Model IS-24 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 Potter PS-24 photoelectric type detector and PS-24H combination photoelectric/heat detector. The base shall be appropriate twist-lock base SB Series. In the event of partial or complete retrofit, the IS-24 may be used in conjunction with, or as a replacement for, Potter detectors (PS-24, PS-24H and the IS-24) on most SB base applications.

The smoke detector shall have two flashing status LED's for visual supervision. When the detector is in standby condition the LED's will flash *green*. When the detector is actuated, the flashing LED's 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

measured. 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 indicated on the drawing. The locking feature shall be field removable when not required.

Specifications subject to change without notice.

IS-24 SENSITIVITY TEST FEATURE

TEST PROCEDURE

1. With detector wired to appropriate initiating circuit or current limited power source and with normal applied power, place magnet as shown in Fig. 1.
2. Wait at least six seconds. Detector SHOULD NOT alarm and LED should not light.
3. Place magnet on detector as shown in Fig. 2 (opposite side).

4. Wait at least six seconds. Detector SHOULD alarm.
5. If detector does alarm when magnet is positioned as in Fig. 1 or does not produce an alarm when magnet is positioned as in Fig. 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.

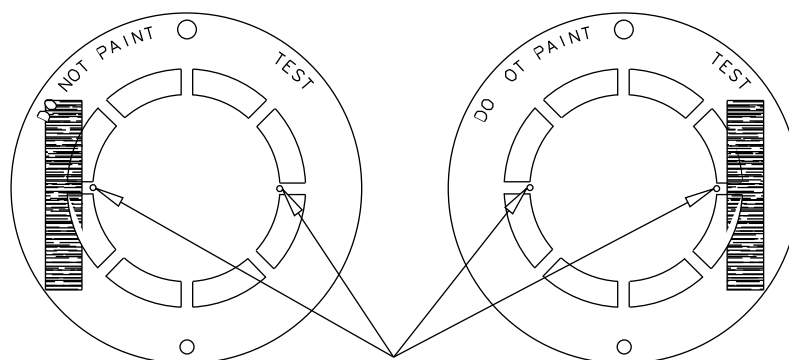


FIG. 1

LED'S

FIG. 2

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