



**SIJ-24**  
Ionization Smoke Detector

Harrington Signal Inc.  
2519 4th Avenue, Moline, Illinois 61265  
P.O. Box 590, Moline, Illinois 61266-0590  
Phone: (800) 577-5758 Local: (309) 762-0731 Fax: (309) 762-8215  
Internet: www.harringtonfire.com



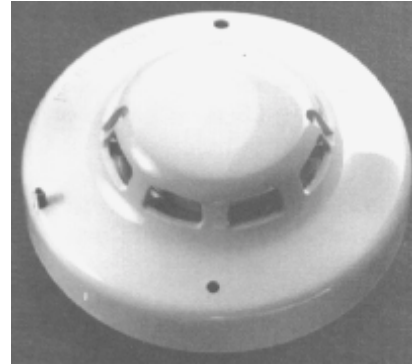
**FEATURES:**

- 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, 40µA at 24VDC
- 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 SLR-24 photoelectric detectors
- Backwards compatible with SLK and SIH detectors

**APPLICATIONS**

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

NS-4 Series, NS-6 Series, or HSC-4R style bases



*Shown without base*

may be used with the SIJ-24. Current interchangeable/compatible devices are the SLR-24 photoelectric detector.

All NS conventional devices are mechanically compatible with HSB, HSC and YBA type bases which may have been used in previous installations. Please check individual panel listings for compatible bases.

**ORDERING INFORMATION**

MODEL #	PART #	DESCRIPTION
SIJ-24	700-0102	Low profile ionization smoke detector head
NS6-221	349-0995	6" 2 wire smoke detector base for SLR and SIJ detector heads
NS4-221	349-0994	4" 2 wire smoke detector base for SLR and SIJ detector heads
HSC-4R	349-0493	6" 4 wire smoke detector base with relay, 24Vdc



**SIJ-24 Ionization Smoke Detector**

**ENGINEERING SPECIFICATIONS**

The contractor shall furnish and install where indicated on the plans, Harrington Model SIJ-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 Harrington SLR-24 photoelectric type smoke detector. The base shall be appropriate twist-lock base NS-4 Series, NS-6 Series, or HSC-4R. In the event of partial or complete retrofit, the SIJ-24 may be used in conjunction with, or as a replacement for, Harrington detectors (SLK-24, SLK-24FH and the SIH-24) on most HSB and HSC base applications.

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

**OPERATION**

The SIJ-24 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.

**PRODUCT SPECIFICATIONS**

Radioactive Source	AM-241 0.5µCi
Rated Voltage	17.7 - 30.0VDC
Working Voltage	15.0 - 33.0VDC
Maximum Voltage	42VDC
Supervisory Current	40µA @ 24VDC
Surge Current	200µA max. @ 24VDC
Alarm Current	150mA max. @ 24VDC
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

***The SLR-24 Photoelectric Smoke Detector has a built-in automatic sensitivity test feature.***

1. In normal condition, both LED's flash green.
2. When the sensitivity drifts outside of its sensitivity limits, both LED's flash red.
3. In the alarm state both LED's are red continuously.
4. When the sensitivity drifts outside of its sensitivity limits and both LED's flash red, the device needs to be cleaned.

NOTICE: The information contained in this document is intended only as a summary and is subject to change without notice. The devices described in this document have specific instruction sheets which cover various technical, limitation and liability information. Copies of these instruction sheets and the General Product Warning and Limitations Document, which also contains important information are provided with the product and are available from Harrington Signal Inc. Fire Alarm. Information contained in these documents should be consulted before specifying or using the product. For further information or assistance concerning particular problems contact Harrington Signal Inc. Harrington Signal Inc. Fire Alarm reserves the right to change specifications without notice. Quality manufactured for Harrington Signal Inc. Fire Alarm by Hochiki America Corp.