FS-OSI-RI(A) Intelligent Single-ended Reflective Imaging Beam Smoke Detector

General

NOTIFIER's FS-OSI-RI(A) intelligent addressable reflector-type linear optical beam smoke detector is uniquely suited for protecting large open areas with high ceilings, where spot-type smoke detectors are difficult to install and maintain. Ideal applications are warehouses, atriums, aircraft hangers, sporting arenas and concert halls. The beam operates primarily on the principle of light obscuration using infrared. The FS-OSI-RI(A) detector is a combined transmitter/receiver. It is compatible with AFP-3030, N16 series, NFS-320, NFS2-640, NFS2-3030, and NFW-50X, NFW-100X fire alarm control panels in FlashScan® or CLIP mode.

FAST AND EASY ALIGNMENT

Aligning the imager to the reflector is extremely intuitive, fast, and accurate. Both the infrared transmitter and the CMOS imager are contained in a movable "eyeball" – an adjustable lens assembly that can move +/- 20° in the vertical direction and 50° in the horizontal direction.

Four LED directional arrows indicate the direction to move the lens, guiding the user to find the imager's perfect alignment with the reflector.

Once the optimum alignment is found, indicated by all green arrows, the lens is locked with a slide lever. A paintable cover is then placed over the front to secure the lever in locked position.

RESISTANT TO BUILDING MOVEMENT

The infrared transmitter and receiver imager generates a beam of light towards a high-efficiency reflector. The reflector returns the beam to the receiver where the received signal is analyzed. The change in the strength of the received signal when smoke enters the area between the unit and the reflector is used to determine the alarm condition. The receiver imager has a wide 12° field of view that automatically tracks the reflector in case of building movement or support structure movement. This allows the FS-OSI-RI(A) to be highly resistant to movement, eliminating the number one cause of false alarms and/or faults with traditional beam detectors.

RESISTANT TO SUNLIGHT

Optical filtering, high-speed image acquisition and intelligent software algorithms provide the FS-OSI-RI(A) system with higher levels of stability and greater resistance to high level lighting variability. This provides better resistance to sunlight in its field of view, helping to prevent false alarms when saturated by sunlight, reflected sunlight or any other very bright light sources.

RESISTANT TO FOREIGN OBJECT INTRUSION

Advanced smoke imaging techniques allow the detector to avoid false alarms from partial and sudden blockage from foreign object intrusion.

TIME-SAVING AUTOMATIC SENSITIVITY SETTING

Unique in the market, the sensitivity of the detector is selected and set automatically at the optimum sensitivity based on the size of the reflector measured in the field of view.



The FS-OSI-RI(A) single-ended beam smoke detector is easy to install and adjust. Only the head unit needs to be wired, and the "eyeball" can be aimed without adjusting the detector mounting.

DRIFT COMPENSATION

The detector incorporates automatic drift compensation, whereby the detector will adjust its detection thresholds in line with any long-term signal reduction of the beam caused by dust or other contamination of the optical surfaces.

EQUIPPED WITH BUILT-IN IMAGER HEATER

The imager ships standard with an internal heating option to prevent condensation on the optical surface. (External power supply required.)

Features

- Combined transmitter/receiver unit
- Wide 12° field of view
- Fast, easy, and intuitive beam alignment indicated by directional LED arrows
- Long range coverage of 16-328 ft (5-100 m) is standard; no separate long-range kit required
- Highly resistant to building movement; tolerates +/- 1° movement
- Resistant to strong light sources; does not alarm when saturated by sunlight
- Resistant to solid object intrusion
- Automatic sensitivity threshold level settings and drift compensation
- 50° horizontal and 20° vertical beam adjustment
- Built-in imager heater
- Remote test station capable for electronic simulated smoke test from ground level
- Status LED indicators visible from the front and bottom
- Paintable housing/cover
- Removable plug-in terminal blocks
- Optional heater kit available for the reflector

PHYSICAL/OPERATING SPECIFICATIONS

- **Dimensions (Detector):** Height 6" (152.4 mm); Width 10" (254 mm); Depth 4.5" (114.3 mm)
- **Dimensions (Reflector):** Height 9.06" (230 mm); Width 7.87" (200 mm)
- **Weight (Installed):** 2.48 lbs (1.12 kg)
- **Weight (Shipping):** 3.91 lbs (1.77 kg)
- **Wire Gauge for Terminals:** 14 AWG (2.08 mm²)

ELECTRICAL SPECIFICATIONS: FS-OSI-RI(A)

- **Operating Voltage Range:** Nominal: 24 VDC
- **Minimum:** 15 VDC
- **Maximum:** 32.0 VDC
- **Maximum Standby Current:**
  13 mA @ 32 VDC
  14 mA @ 24 VDC
  20 mA @ 15 VDC
- **Maximum Alarm Current (LED on):**
  22 mA @ 32 VDC
  15 mA @ 24 VDC
  22 mA @ 15 VDC
- **Maximum Devices per SLC Loop:**
  The number of OSID-R devices are limited due to SLC current draw restrictions. Current draws listed above must be considered in coordination with any other devices on a circuit. In general, this limits the number of OSID-R detectors to up to 4 detectors per loop on a dedicated circuit on NOTIFIER panels. Any non-beam devices, increased distances or higher gauge wiring on the circuit will decrease available current and total capacity of OSID-R detectors.
  Available SLC loop current:
  – **AFP-3030, N16, NFS-320, NFS2-640, NFS2-3030:** 150ma normal operating; 400 ma maximum
  – **FireWarden-50X:** 100 ma normal operating; 200 ma maximum
  – **FireWarden-100X:** 100 ma normal operating; 400 ma maximum

ELECTRICAL SPECIFICATIONS: BEAMHKR

- **Voltage Range:** 15 to 32 V
- **Maximum Current:** 450 mA Max at 32 V
- **Power Consumption:**
  7.7 W @ 24 V
  15 W @ 32 V

ELECTRICAL SPECIFICATIONS: RTS151KEY(-A)

- **Voltage Range:** 10.2 to 32 VDC
- **Current Range:** 9 mA Min to 11 mA Max

ENVIRONMENTAL SPECIFICATIONS

- **Operating Temperature:** UL-Listed for use from 32°F to 100°F (0°C to 37.8°C)
- **Application Temperature Range:** -4°F to 131°F (-20°C to +55°C)
- **Humidity Range:** 0 to 95% relative humidity, non-condensing

OPERATIONAL SPECIFICATIONS

- **Protection Range:** 16 ft to 328 ft (5 m to 100 m)
- **Adjustment Angle:** 20 degrees vertical, 50 degrees horizontal
- **Sensitivity Levels:** Level 1 25%, Level 2 30%, Level 3 40%, Level 4 50% (L1=1.25 dB, L2=1.55 dB, L3=2.22 dB, L4=3.01 dB)
- **Test/Reset Features:** Local alarm test switch, local alarm reset switch, Remote test and reset switch (compatible with RTS151(A) and RTS151KEY(-A) test stations), OSID-R test filter.
- **Smoke Detector Spacing:** On smooth ceilings, 30-60 feet between projected beams and not more than one-half that spacing between a projected beam and a sidewall. Other spacing may be used depending on the ceiling height, airflow characteristics, and response requirements. See NFPA 72 (S524 in Canadian applications, AS 1670.1 in Australian applications).

Agency Listings

- UL, ULC: S911
- FM: PR449231
- CSFM: 7260-0028:0509
- Approved to Australian AS 7240.12:2018
- SAI Global Listing # SMK40640-2
- Fire Protection New Zealand - Notifier Register

Product Line Information

- **FS-OSI-RI:** Intelligent imaging beam smoke detector including reflector, UL listed
- **FS-OSI-RIA:** Intelligent imaging beam smoke detector including reflector, ULC listed
- **OSP-002:** Laser alignment tool
- **OSP-004:** Test filter, 10 pack
- **RTS151:** Remote test station, UL listed
- **RTS151KEY:** Test and reset station with key lock, flush mount, UL listed
- **RTS151KEY-A:** Test and reset station with key lock, flush mount, ULC listed
- **BEAMHKR:** Heater kit for the reflector
- **6500-MMK:** Multi-mount accessory for ceiling or wall mounting with additional mounting adjustment

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This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

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