TRIGA
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TR-OSI-RI

Intelligent Single-ended Reflective Imaging Beam Smoke Detector

General

The TR-OSI-RI 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 TR-OSI-RI detector is a combined transmitter/receiver and is compatible with Triga fire alarm controls panels.

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 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, Sunlight and Foreign Object Intrusion

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 TR-OSI-RI to be highly resistant to movement, eliminating the number one cause of false alarms and/or faults with traditional beam detectors.

Optical filtering, high-speed image acquisition and intelligent software algorithms provide the system with higher levels of stability and with 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.

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

The TR-OSI-RI 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.

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.

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 & BENEFITS

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

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Technical Specifications

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 mm^2)

ELECTRICAL SPECIFICATIONS

TR-OSI-RI

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

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

RTS151KEY

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, noncondensing

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%

Test/Reset Features: Local alarm test switch, local alarm reset switch, Remote test and reset switch (Compatible with RTS151 and RTS151KEY 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.

AGENCY LISTINGS

UL : S36448

FM: PR460220

PRODUCT LINE INFORMATION

TR-OSI-RI: Intelligent imaging beam smoke detector including reflector

OSP-002: Laser alignment tool

OSP-004: Test filter, 10 pack

RTS151: Remote test station

RTS151KEY: Test and reset station with key lock, flush mount

BEAMHKR: Heater kit for the reflector

6500-MMK: Multi-mount accessory for ceiling or wall mounting with additional mounting adjustment

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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