

Fireray 2000 EExd Explosion Proof Smoke Detector



Features

- Separate Transmitter and Receiver Units certified to EExd
- Signal Strength indicating LED's
- Range 33ft. to 330ft. (10m to 100m)
- Easy set up and alignment
- Internal test switch
- Conforms to BS5839 Part 5 EExd IIB T6
- 3 selectable alarm thresholds:
 - 25%, 35% or 50%
- Alarm latching or auto reset
- Automatic gain control
- 12 VDC or 24 VDC operation
- Separate alarm and trouble relay contacts
- Ground Level Control Unit
- Alignment by Universal Bracket

Description

The Fireray 2000 EExd is ideally suited to protect large areas with potentially explosive atmospheres, protection against smoking fires can be provided by this beam. Fireray 2000 EExd includes an infrared transmitter and a receiver, both of which are ATEX-certified for use in Group 2 hazardous areas. There is a separate, safe area, wall-mounted remote low level control unit to allow adjustment and testing from a convenient non-hazardous location.

The product is designed for large enclosures with oil rigs, refineries, ordnance stores, waste water treatment plants, and similar premises. It provides an early warning of smoldering smoke-generated fires, some of which may not be picked up by flame detectors installed in many hazardous areas.

Smoke Detection

If smoke is present in the beams path, the received signal is reduced by a level determined by the density of the smoke. If the smoke reduces the signal strength to between the obscuration threshold and 93% for more than 8 to 10 seconds, the fire alarm relay in the control unit is activated. The alarm threshold may be set to 25%, 35% or 50% to suite the installation.

Engineering Specification

The projected beam type smoke detector shall be a 4-wire 12/24 VDC device to be used with an U.L. Listed separately supplied 4-wire control panel. The unit shall consist of an integrated transmitter and receiver. The detector shall operate between the range of 33ft to 330ft (10m to 100m). The temperature range of the beam shall be -4°F to $+131^{\circ}\text{F}$ (-20°C to $+55^{\circ}\text{C}$). The beam detector shall feature automatic gain control which will compensate for gradual signal deterioration from dirt accumulation on the lense. The beam detector shall be ATEX Certified, comply with BS5839 Part 5 and meet EExd IIB T6 temperature range requirments. The unit shall include one wall mount alignment bracket. Testing shall be carried out by using a calibration test filter. The projected beam smoke detector shall be a Fire Fighting Enterprises Fireray 2000 EExd.

Beam Detector Spacing

On smooth ceilings, up to 60ft. (18.288m) between projected beams and not more than one-half that spacing between a projected beam and a side wall. Other spacing may be used depending on ceiling height, airflow characteristics and response requirements. See NFPA 72 for further information

Construction Specification

Housing-Controller:

Double pressed sheet steel

Housing-Transmitter/Receiver:

Marine grade aluminum alloy

IP Rating:

Controller IP50
Transmitter/Receiver IP67

Finish:

Controller White RAL9010
Transmitter/Receiver Red RAL 2002

Weight-Controller:

4.00 lbs (1.8 kg)

Weight-Transmitter/Receiver:

8.8 lbs. (4 kg.)

Dimensions-Controller:

8.5" W x 10.5" H x 3.5" D
(210mm W x 265mm H x 88mm D)

Dimensions-Transmitter/Receiver (including mounting brackets):

4.8" W x 4.8" H x 4.8" D
(120mm W x 120mm H x 120mm D)

Electrical Specification

Primary Input Power

11.5 to 30 VDC

Protection:

100ma Fuse in Control unit

Standby Current

8.5mA @ 24VDC

Alarm Current

16.5 mA @ 24 VDC

Relay Contacts

2A at 30 VDC, resistive

Reset Time

5 Seconds maximum

Start Up Time (Automatic)

45 Seconds

Optical Wavelength:

880nm.

Sensitivity:

25%, 35%, 50%

Fire Alarm Thresholds:

1.25dB (25%), 1.87dB (35%), 3dB (50%)

Beam tolerance to misalignment at 35%:

Transmitter +/- 1°
Receiver +/- 4°

Temperature Rating:

-4°F to 131°F (-20°C to +55°C)

Relative Humidity:

0% to 93% RH non-condensing

Operational Range:

33 ft.- 330 ft. (10m - 100m)

RFI Immunity:

10V/m @ KHz-1 GHz

Field wiring size:

14-24 AWG

Operation

The infrared signal is sent from the transmitter via an optical system. At 330 ft. (100m) the diameter of this infrared signal is approximately 10 ft. (3.05m). The wide angle beam arrangement simplifies alignment and increases stability.

It is important that the projected beam smoke detector is positioned correctly to minimize the detection time.

A fire alarm condition occurs when the smoke obscures the infrared beam. The time to detect a fire condition depends on the location of the smoke beam within the premises, the volume of smoke produced, the construction of the roof, and ventilation considerations.

Ordering Information

F2000 EExd Projected beam smoke detector

33ft. to 330ft. (10m to 100m)

Includes I-Transmitter, I-Receiver, I- Control Box, I-Obscuration filter and I-23835 Alignment Bracket. (24006-01)

23835 Additional Surface Mount Alignment Bracket for ATEX Heads.

Pivots horizontally and vertically for accurate alignment

0209 Replacement Obscuration Filter

Listings

- ATEX Group 2
- Sira 03ATEX1504
- BS5839

Specifications and wiring information are provided for information only and are believed to be accurate. Fire Fighting Enterprises assumes no responsibility for their use. Data and design are subject to change without notice. Installations and wiring instructions are shipped with the products and should always be used for actual installation. For more information, Contact your Sales Representative.



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