

# SFP SERIES : SFP-IR3-EXD

## Three Band Point-type Infrared Flame Detector



Our IR3 (Triple Infra-Red) flame detector operates by using three specialized sensors with wavelengths of 3.8µm, 4.4µm & 5.3µm to detect the specific infrared radiation signature emitted by flames. It identifies the low-frequency, flickering motion of fire which typically occurs between 1 to 20Hz, while advanced algorithms analyze the intensity and ratio of signals across all three IR bands to distinguish genuine flames from false sources like sunlight or hot machinery.

**Triple-Spectrum Technology:** The detector uses three sensors to analyse different infrared wavelengths, allowing it to accurately identify hydrocarbon fires, even those invisible to the naked eye (like hydrogen).

**Flicker Analysis:** Flames are distinguished from steady IR sources (e.g., hot pipes) by looking for the 1–15 Hz "flicker" characteristic of fire.

**False Alarm Rejection:** By comparing signals across three wavelengths, the IR3 detector rejects false triggers from sunlight, artificial lighting, and heated objects.

**Performance in Harsh Conditions:** Designed to detect fires even when the lens is contaminated with oil, dust, water, or ice.

**Outputs:** Provides alarms via 3 relay contacts, 4–20 mA signal & RS-485.

**Application:** The detector is capable of detecting the optical radiation emitted by burning material, even non-carbonaceous materials such as hydrogen. Flames from numerous other potential fire sources can be detected such as: Liquids • Aviation Fuels (kerosene) • Ethanol • Methylated Spirits • n-Heptane • Paraffin • Petrol (gasoline) Solids • Coal • Cotton • Grain and Feeds • Paper • Refuse • Wood Gases • Butane • Fluorine • Hydrogen • Natural Gas • Off Gas • Propane.



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### Technical Specification

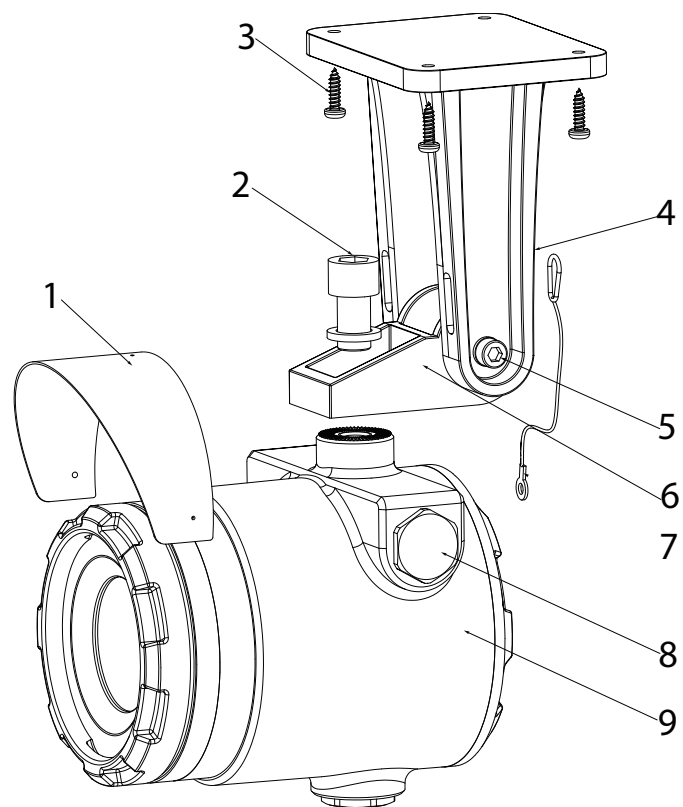
|                           |                                                                                                                                          |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Type                      | SFP SERIES - Flame Detector                                                                                                              |
| Sensor Type               | Pyroelectric sensor: 3.8µm, 4.4µm, 5.3µm                                                                                                 |
| Detection Range           | N-heptane: 60 m@0.3 m x 0.3 m<br>Gasoline: 55 m@0.3 m x 0.3 m<br>Alcohol: 50 m@0.3 m x 0.3 m                                             |
| Sensitivity               | Level 1-5 adjustable                                                                                                                     |
| Response Time             | < 10 s (alarm delay: 0–30 s settable)                                                                                                    |
| Angle of View             | Horizontal: 110°<br>Vertical: 110°                                                                                                       |
| Indicator Light           | Alarm: Red indicator remains lit<br>Fault: Red indicator flashes<br>Working: Green indicator flashes                                     |
| Outputs                   | 1 x RS-485<br>1 x fire bus<br>1 x 4–20 mA current-loop<br>3 x relay outputs: 1 x fire alarm, 1 x fault, 1 x auxiliary                    |
| Relay Output              | Contacts rated 1A at 30 VDC                                                                                                              |
| Operating Voltage         | 24 VDC                                                                                                                                   |
| Power Consumption         | < 1W                                                                                                                                     |
| Operating Temperature     | –25°C to +75°C (–13°F to +167°F)                                                                                                         |
| Storage Temperature       | –40°C to +80°C (–40°F to +176°F)                                                                                                         |
| Operating Humidity        | ≤95% RH (non condensing)                                                                                                                 |
| IP Rating                 | IP66                                                                                                                                     |
| Dimensions                | 146 mm × 123 mm × 133 mm (5.75" × 4.84" × 5.24")                                                                                         |
| Weight                    | 1.55 kg (3.42 lb) (without installation bracket)                                                                                         |
| Conduit Entry Size        | M20                                                                                                                                      |
| Color                     | Reddish black                                                                                                                            |
| Casing Material           | Aluminum alloy (ADC12)                                                                                                                   |
| Explosion-proof Approvals | ATEX:<br>II 2 G Ex db IIC T6 Gb<br>II 2 D Ex tb IIIC T80°C Db<br>IECEX:<br>Ex db IIC T6 Gb<br>Ex tb IIIC T80°C Db<br>(–25°C ≤ Ta ≤ 75°C) |
| Certifications            | ATEX, IECEX, CE, UKCA                                                                                                                    |

### Ordering Information

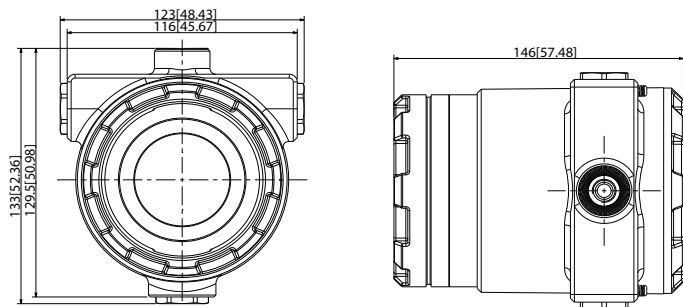
| Type                         | Model- SFP SERIES | Description        |
|------------------------------|-------------------|--------------------|
| Point Type IR Flame Detector | SFP-IR3-EXD       | IR3 Flame Detector |

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Installation



Dimensions (mm/inch)



Field of View

