



## Stainless Steel Flameproof (Exd) IR<sup>2</sup> Flame Detector

The flameproof dual Infra-Red (IR<sup>2</sup>) Flame Detector is designed to protect specialist hazardous areas where open fires may be expected and detects almost all flames, including hydrocarbon fires with 4.3 μm emissions through to invisible fires such as hydrogen.

The IR<sup>2</sup> Flame Detector is sensitive to flickering, low frequency (1-15Hz) infra-red radiation emitted by flames during combustion even if the lens is contaminated by a layer of oil, dust, water, vapour or ice.

This detector has two IR sensors which respond to different IR wavelengths in order to discriminate between flames and spurious sources of radiation. False alarms from flickering sunlight are avoided by a combination of filters and signal processing techniques.

The IR<sup>2</sup> detector has selectable output options of relay contacts or 4-20mA signal, as standard.

### Features

- High immunity to false sources
- Increased environmental protection
- Tolerant of fumes, vapours, dust and mist
- Suitable for indoor areas
- Unaffected by convection currents, draughts or wind
- Proven response to multiple fuel types
- Multi-spectrum detection
- Selectable output options
- Selectable response speed
- Selectable sensitivity levels
- Built in auto and manual test
- Low current consumption
- Fast response to fire

### Approvals:

ATEX & IECEx certified:  
 II 2GD Ex d IIC T4 Gb  
 Ex tb IIIC T1 35°C Db IP66 A21  
 [Zones 1, 21, 2 and 22]



SIL 2 rated.



### Applications

- Chemical Plants
- Waste Recycling
- Nuclear Power Sites
- Engine Rooms
- Spray Booths
- Pharmaceutical Production
- Military Applications
- Marine Industry
- Coal Handling
- Printing
- LNG/LPG production

### Item Number

4108-2010 Stainless Steel Flameproof (Exd) IR<sup>2</sup> Flame Detector

### Accessories

4108-3001 Adjustable Mount Stainless Steel  
 4108-3002 Weather Shield Stainless Steel  
 204-0032 Portable Flame Detector Tester



## Mechanical Specification

|                     |                             |
|---------------------|-----------------------------|
| Housing Material    | 316 Stainless Steel         |
| Housing Colour      | Natural                     |
| Dimensions          | 150(H) x 146(W) x 137(D) mm |
| Weight              | 6kg                         |
| Cable Gland Entries | 3 x 20mm                    |
| Wiring              | 1.0 to 4.0mm <sup>2</sup>   |

## Electrical Specification

|                     |  |
|---------------------|--|
| Supply Voltage      | 14 to 30Vdc  |
| Quiescent Current   | 8mA, RL2 energised<br>4mA, current loop, RL2 off<br>3mA, RL2 off                   |
| Alarm Current       | 28mA, RL1 & RL2 energised<br>20mA, current loop, RL1 & 2 off<br>9mA, RL1 energised |
| Power Up Time       | 2 seconds max.   |
| Test Signal Voltage | 14 to 30Vdc  |
| Relay Outputs       |  |
| - Programmable      | Normally Open or Normally Closed<br>Latching or Non-latching                       |
| - Ratings: Current  | 1.0A Max.  |
| Voltage             | 50Vdc Max.   |
| Power               | 30W Max.<br>(Note: Resistive Loads Only)   |

## Environmental

|                       |                    |
|-----------------------|--------------------|
| Operating Temperature | -10°C to +55°C     |
| Storage Temperature   | -20°C to +65°C     |
| Relative Humidity     | 95% Non condensing |
| IP Rating I           | IP66               |

## Performance

|                      |  |
|----------------------|--|
| Range - Class I*     | 0.1m <sup>2</sup> n-heptane at 25m   |
| - Class 3            | 0.1m <sup>2</sup> n-heptane at 12m<br>(see EN54:10 for sensitivity settings) |
| Field of View        | 90° min. Cone  |
| Operating Wavelength |  |
| Band - IR            | 0.75 to 2.7µm  |

## Approvals

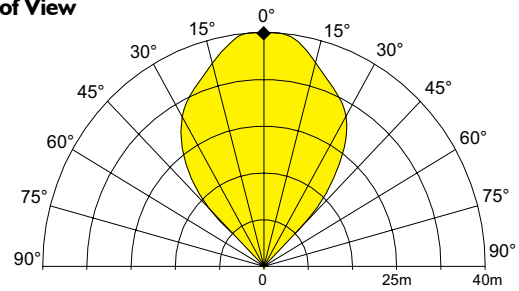
|               |                   |
|---------------|-------------------|
| SIL 2         | CI 27_CT003_(2.0) |
| Baseefa ATEX  | Baseefa08ATEX0270 |
| Baseefa IECEx | IECEx BAS 08.0073 |

## Response Characteristics – High Sensitivity

| Fuel                                | Flame Size<br>m (ft)     | Distance<br>m (ft) | Average Response<br>time (seconds) |
|-------------------------------------|--------------------------|--------------------|------------------------------------|
| n-Heptane*<br>(Yellow flame)        | 0.3 x 0.3<br>(1 x 1)     | 25 (82)            | 12                                 |
| Methylated Spirit*<br>(Clear flame) | 0.5 x 0.5<br>(1.6 x 1.6) | 25 (82)            | 25                                 |
| Hydrogen<br>(non-visible flame)     | 0.1 x 0.5<br>(0.3 x 1.6) | 12 (39)            | 8                                  |

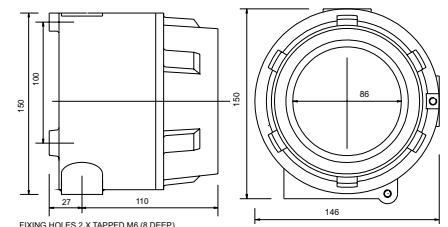
\* has been tested and approved at Class I

## Field of View

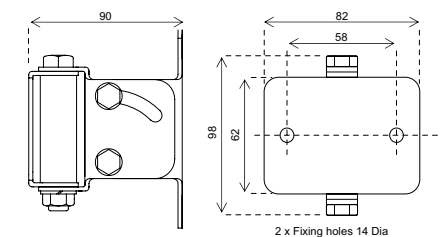


To meet the requirements of EN54:10 clause 5.4, where the ratio of the response points Dmax: Dmin should not exceed 1.41, the horizontal and vertical viewing angles max should not exceed ±30°.

## Flame Detector



## Mounting Bracket



Dimensions mm

## Installation Recommendations

Please refer to our User Manual for mounting and wiring instructions. The installation of Talentum® flame detectors should be undertaken in accordance with recognised national or international standards and codes of practice.

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