

IR³ 316 Stainless Steel Flame Detector

The triple Infra-Red (IR³) Flame Detector is designed to protect 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 IR³ 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 three 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 IR3 detector has selectable output options of relay contacts or 4-20mA signal, as standard.



Features

- Excellent immunity to false sources
- Tolerant of fumes, vapours, dust and mist
- Suitable for indoor and outdoor 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

Worldwide approvals include EN54:10, with VdS and LPCB certification, as well as SIL 2 rated.



Applications

- Refineries
- Compressor Stations
- Fuel Loading Racks
- Chemical Plants
- Tunnels
- Waste Recycling
- Nuclear Power Sites
- Storage Tanks
- Engine Rooms
- Spray Booths
- Military Applications
- Marine Industry
- Printing
- Aircraft Hangars
- LNG/LPG production
- Coal Handling
- Pharmaceutical Production
- Biomass storage and handling

| Item Number | |
|-------------|--|
| 316-006 | Stainless Steel IR ³ Flame Detector |
| Accessories | |
| 316-019 | Stainless Steel Adjustable Mount |
| 316-021 | Stainless Steel Weather Shield |
| 316-023 | Portable Flame Detector Tester |
| Approvals | |
| CPR | 0832-CPR-0583 |
| LPCB | 729a/01 |
| VdS | G212189 |
| SIL 2 | C127_CT003_(2.0) |

Specifications

Mechanical Specification

| | |
|----------------------------|-------------------------------|
| Housing Material | Stainless Steel 316 housing |
| Housing Colour | Natural |
| Dimensions | 142 (H) x 108 (W) x 82 (D) mm |
| Weight | 2.1kg |
| Cable Gland Entries | 2 x 20mm |
| Wiring | 1.0 to 4.0mm ² |

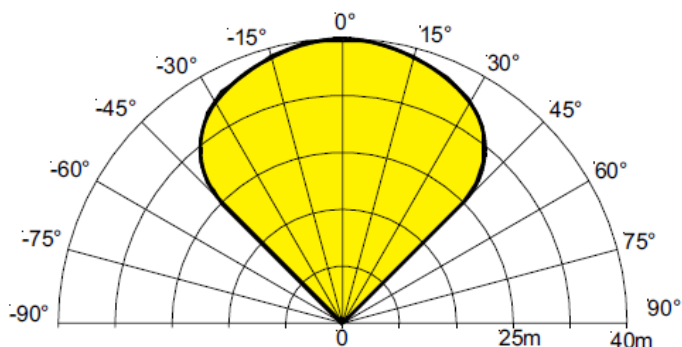
Electrical Specification

| | |
|----------------------------|----------------------------------|
| Supply Voltage | 14 to 30Vdc |
| Quiescent Current | 8mA, RL2 energised |
| | 4mA, current loop, RL2 off |
| | 3mA, RL2 off |
| Alarm Current | 28mA, RL1 & RL2 energised |
| | 20mA, current loop, RL1 & 2 off |
| | 9mA, RL1 energised |
| Power Up Time | 2 seconds max. |
| Test Signal Voltage | 14 to 30Vdc |
| Relay Outputs | |
| - Programmable | Normally Open or Normally Closed |
| | Latching or Non-latching |
| - Ratings: Current | 1.0A Max. |
| Voltage | 50Vdc Max. |
| Power | 30W Max. |
| | (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 | IP65 |

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°.

Performance

| | |
|-----------------------------|--|
| Range—Class 1* | 0.1m ² n-heptane at 25m |
| - Class 3 | 0.1m ² n-heptane at 12m |
| | (see EN54:10 for sensitivity settings) |
| Field of View | 90° min. Cone |
| Operating Wavelength | |
| - IR | 0.75 to 2.7µm |

Response Characteristics—High Sensitivity

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

* has been tested and approved at Class 1

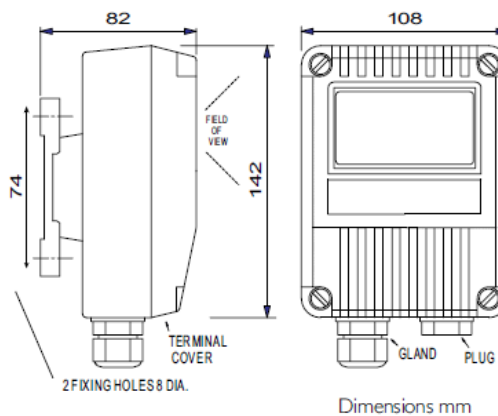
Installation Recommendations

Please refer to our User Manual for mounting and wiring instructions.

The installation of 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. CCL 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

Flame Detector



Mounting Bracket

