



IR² Flame Detector—Flameproof (Exd) Stainless Steel

The Flameproof dual Infra-Red (IR²) 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 IR² 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 IR² detector has selectable output options of relay contacts or 4-20mA signal, as standard.




Features

- Highest 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 T135°C Db IP66 A21
[Zones 1, 21, 2 and 22]
SIL 2 rated.



Approvals

SIL 2	C127_CT003_(2.0)
Baseefa ATEX	Baseefa08ATEX0270
Baseefa IECEx	IECEx BAS 08.0073

Applications

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

Item Number

316-014	Stainless Steel Flameproof (Exd) IR ² Flame
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Accessories

316-019	Stainless Steel Adjustable Mount
316-022	Stainless Steel Weather Shield
316-023	Portable Flame Detector Tester



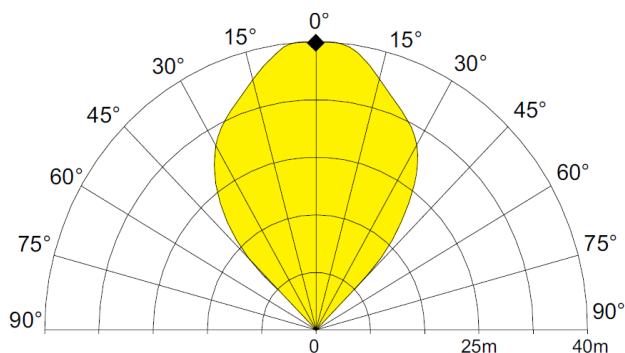
Specifications

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 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	IP66

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

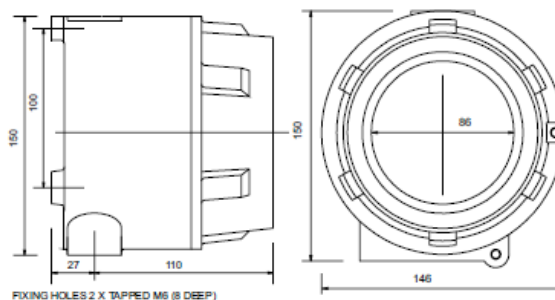
Installation Recommendations

Please refer to the 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

