

Flameproof (Exd) IR³ Flame Detector

The flameproof triple Infra-Red (IR³) Flame Detector is designed to protect 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 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:

ATEX & IECEx certified:
 II 2GD Ex d IIC T4 Gb
 Ex tb IIIC T1 35°C Db IP66 A2 I
 [Zones 1, 21, 2 and 22]



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



Applications

- Chemical Plants
- Waste Recycling
- Nuclear Power Sites
- Engine Rooms
- Spray Booths
- Pharmaceutical Production
- Military Applications
- Marine Industry
- Printing
- Refineries
- Fuel loading racks
- Storage tanks
- Aircraft hangers
- Petrochemical onshore/offshore
- Biomass storage and handling
- LNG/LPG production
- Coal Handling

Item Number

4108-2006 Flameproof (Exd) IR³ 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	Copper Free Aluminium Alloy
Housing Colour	Red
Dimensions	150(H) x 146(W) x 137(D) mm
Weight	2.5kg
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	IP65

Performance

Range - Class I*	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	
Band - IR	0.75 to 2.7µm

Approvals

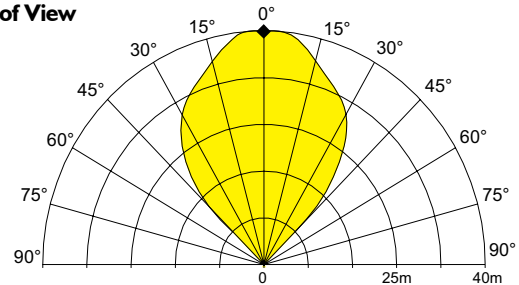
CPD	0832-CPD-0599
LPCB	729a/05
VdS	G212189
SIL 2	C127_CT003_(2.0)
Baseefa ATEX	Baseefa08ATEX0270
Baseefa IECEx	IECEX BAS 08.0073

Response Characteristics – High Sensitivity

Fuel	Flame Size m (ft)	Certified Distance m (ft)	FFE Factory Tested Distance m (ft)	Average Response time (sec)
n-Heptane* (Yellow flame)	0.3 x 0.3 (1 x 1)	25 (82)	60 (196)	8
Methylated Spirit* (Clear flame)	0.5 x 0.5 (1.6 x 1.6)	25 (82)	60 (196)	12
Hydrogen (non-visible flame)	0.1 x 0.5 (0.3 x 1.6)	12 (39)	30 (98)	16

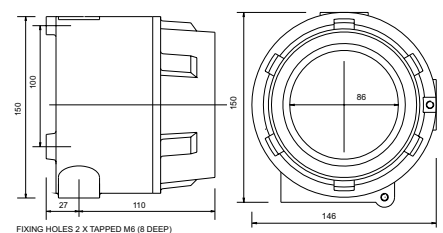
* has been tested and approved at Class I

Field of View

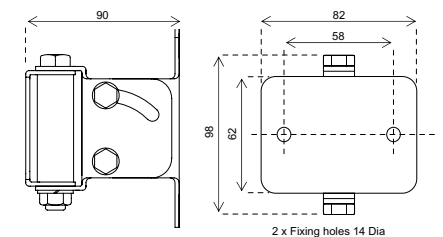


To meet the requirements of EN54:10 clause 5.4, where the ratio of the response points Dmax: Dmin should not exceed 1.41, the horizontal and vertical viewing angles max should not exceed ±30°.

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.