



# CRANFORDCONTROLS®

## FIRE & SECURITY

### Flameproof (Exd) IR<sup>3</sup> Flame Detector

The flameproof triple Infra-Red (IR<sup>3</sup>) 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, mist and dust
- 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 T135°C Db IP66 A21

[Zones 1, 21, 2 and 22]

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



#### Approvals

<b>CPD</b>	0832-CPD-0599
<b>LPCB</b>	729a/05
<b>VdS</b>	G212189
<b>SIL 2</b>	CI27_CT003_(2.0)
<b>BASEEFA</b>	BAS02ATEX1001
<b>BASEEFA IECEx</b>	IECEx BAS 08.0073

#### Applications

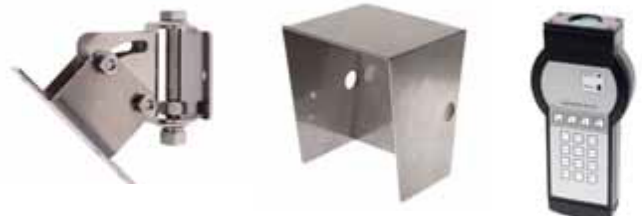
- Chemical plants
- Waste Recycling
- Nuclear Power Sites
- Engine Rooms
- Spray Booths
- Pharmaceutical Production
- Military Applications
- Marine Industry
- Refineries
- Fuel loading racks
- Aircraft Hangars
- Coal Handling
- Printing
- Storage Tanks
- Petrochemical offshore/ onshore
- LNG/LPG production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

#### Item Number

<b>316-012</b>	Flameproof (Exd) IR <sup>3</sup> Flame Detector
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#### Accessories

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



# Specifications

## Mechanical Specification

<b>Housing Material</b>	Copper Free Aluminium Alloy
<b>Housing Colour</b>	Red
<b>Dimensions</b>	150(H) x 146(W) x 137(D)mm
<b>Weight</b>	2.5kg
<b>Cable Gland Entries</b>	3 x 20mm
<b>Wiring</b>	1.0 to 4.0mm <sup>2</sup>

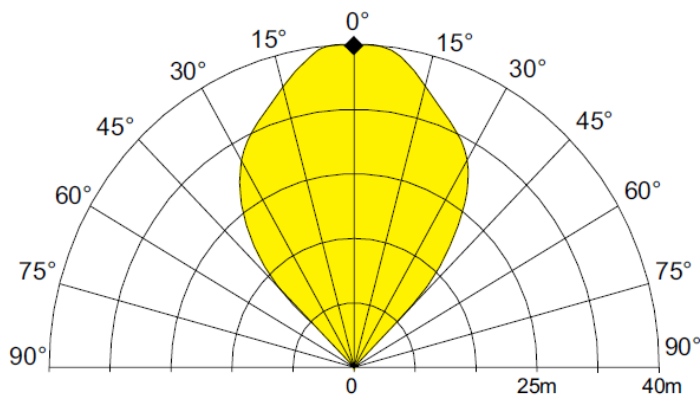
## Electrical Specification

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

## Environmental

<b>Operating Temperature</b>	-10°C to +55°C
<b>Storage Temperature</b>	-20°C to +65°C
<b>Relative Humidity</b>	95% Non condensing
<b>IP Rating I</b>	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

<b>Range—Class 1*</b>	0.1m <sup>2</sup> n-heptane at 25m
<b>- Class 3</b>	0.1m <sup>2</sup> n-heptane at 12m
	(see EN54:10 for sensitivity settings)
<b>Field of View</b>	90° min. Cone
<b>Operating Wavelength</b>	
<b>Band—IR</b>	0.75 to 2..7µm

## Response Characteristics—High Sensitivity

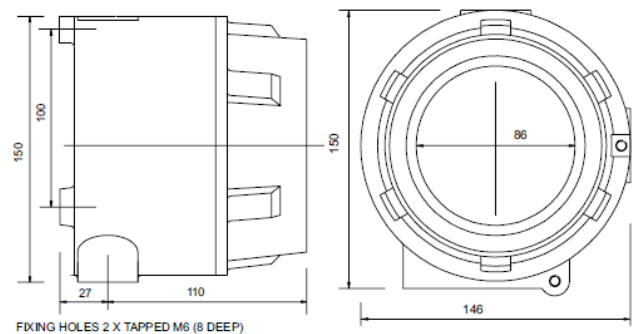
Fuel	Flame Size m (ft)	Distance m (ft)	FFE Factory Tested Distance m (ft)	Average Response Time (seconds)
<b>n-Heptane* (yellow flame)</b>	0.3 x 0.3 (1 x 1)	25 (82)	60 (196)	8
<b>Methylated Spirit* (Clear flame)</b>	0.5 x 0.5 (1.6 x 1.6)	25 (82)	60 (196)	12
<b>Hydrogen (non-visible flame)</b>	0.1 x 0.5 (0.3 x 1.6)	12 (39)	30 (98)	16

\* has been tested and approved at Class 1

# 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.

### Flame Detector



### Mounting Bracket

