Stainless Steel Flameproof (Exd) UV/IR^2 Flame Detector

The flameproof Ultra-Violet, dual Infra-Red (UV/IR^2) 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 m emissions through to invisible fires such as hydrogen.

The UV/IR Flame Detector is sensitive to flickering, low frequency (1-15Hz) infra-red radiation emitted by flames during combustion.

This detector has a UV sensor and two IR sensors which respond to different wavelengths of both the ultra-violet and the infra-red spectrum. The signals from these sensors are processed by the detector and checked for characteristics of a flame. The simultaneous detection of both the UV and the IR light by the sensors will signal an alarm. False alarms from flickering sunlight, arc welding and lightning are eliminated by a combination of UV and dual IR signal processing techniques. The UV/IR detector has selectable output options of relay contacts or 4-20mA signal, as standard.

Features

- Highest immunity to false sources
- Increased environmental protection
- Solar blind
- 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

Applications

- Chemical Plants
- 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

Item Number

4108-2017 Stainless Steel Flameproof (Exd) UV/IR^2 Flame Detector

Accessories

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

Approvals:

ATEX:
EXII 2GD Ex d IIC T6
[Zones 1, 21, 2 and 22]
SIL 2 rated.

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 4.0mm²

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
- Ratings: Current	Latching or Non-latching
Voltage	1.0A Max.
Power	50Vdc Max.
	30W Max.
	(Note: Resistive Loads Only)

Environmental

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

Performance

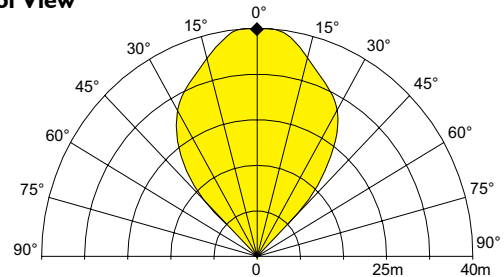|		
Range	- Class 1*	0.1m² n-heptane at 25m
	- Class 3	0.1m² n-heptane at 12m
		(see EN54:10 for sensitivity settings)
Field of View		90° min. Cone
Spectral Response		
- UV		185 to 260nm
- IR		1.0 to 2.7μm

Approvals

SIL 2	C127_CT003_(2.0)
ISSeP ATEX	ISSeP03ATEX012X

Response Characteristics – High Sensitivity

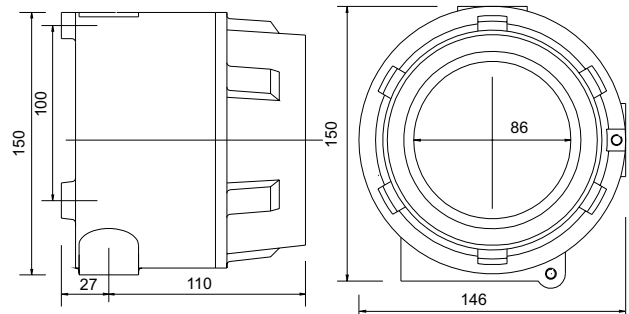| Fuel	Flame Size m (ft)	Distance m (ft)	Average Response time (seconds)
n-Heptane* (Yellow flame)	0.3 x 0.3 (1 x 1)	25 (82)	12
Methylated Spirit* (Clear flame)	0.5 x 0.5 (1.6 x 1.6)	25 (82)	25
Hydrogen (non-visible flame)	0.1 x 0.5 (0.3 x 1.6)	12 (39)	8

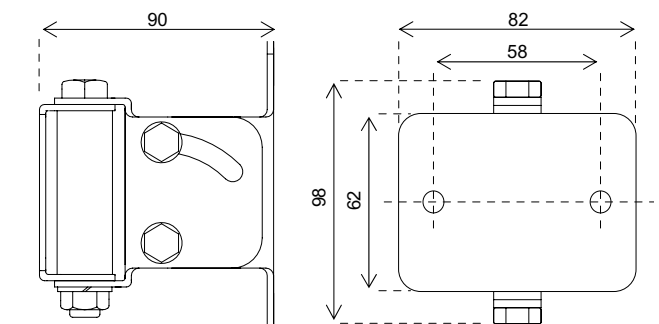* has been tested and approved at Class 1

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

FIXING HOLES 2 X TAPPED M6 (8 DEEP)

Mounting Bracket

DIMENSIONS MM

2 X FIXING HOLES 14 DIA