AMPAC
ADVANCED WARNING
S Y S T E M S

Stainless Steel IR³ 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

Applications

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

Item Number

4108-2011 Stainless Steel IR³ Flame Detector

Accessories

4108-3001 Stainless Steel Adjustable Mount
4108-3003 Stainless Steel Weather Shield
204-0032 Portable Flame Detector Tester

Approvals:

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

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 4.0mm²

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
	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 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
Operating Wavelength	
Band - IR	0.75 to 2.7μm

Approvals

CPD	0832-CPD-0595
LPCB	729a/01
VdS	G212189
SIL 2	C127_CT003_(2.0)

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

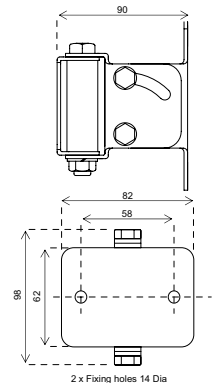* has been tested and approved at Class 1

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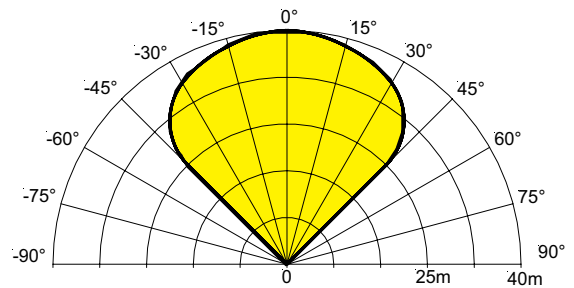
To meet the requirements of EN54:10 clause 5.4, where the ratio of the response points Dmax: Dmin should not exceed 1.41, the horizontal and vertical viewing angles max should not exceed ±30°.

Flame Detector **Mounting Bracket**

Dimensions mm
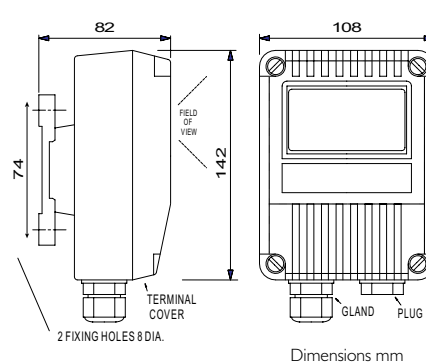
Installation Recommendations

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.