

Conventional Intrinsically Safe

IR³ Flame Detector



Product Overview

Product Type	I.S. IR ³ Flame Detector
Part No.	55000-063

Approvals



Product Information

The Intrinsically Safe (I.S.) Triple Infra-Red (IR³) Flame Detector is for either indoor or outdoor applications. It is sensitive to low-frequency flickering IR radiation emitted from flames during combustion. The sensor operates even through a layer of oil, dust, water vapour or ice. These detectors have been approved by BASEEFA to EN50014, EN50020 and EN50284. The requirements of ATEX Directive 2014/34/EU have also been met.

- ATEX certified: II 1 G
- CENELEC/IEC certified: Ga Ex ia IIC T4
- Selectable output options: Conventional two-wire, 4-20 mA, latching or non-latching, relay contacts, fire/fault, pre-alarm
- Class 1 sensitivity to EN54-10 detects 0.1 m² fire at 25 m
- High optical interference immunity
- Selectable response speed
- Optical self-test
- Low power consumption
- IP65 rated

Technical Data

All data is supplied subject to change without notice. Specifications are typical at 24V, 23°C and 50% RH unless otherwise stated.

Supply voltage (Vmin–Vmax)	14 - 30 V dc
Terminal 1 & 2 current	See DIL switch settings in Table 1
Test signal voltage (Vmin–Vmax)	14 - 30 V dc
Maximum power up time	2s
Relay contact ratings:	
RL1 terminal 5 & 6, current	0.25 A Max.
RL1 terminal 7 & 8, voltage	30V dcMax.
Resistive loads only, power	3.0 W Max.
Sensor input parameters:	
Terminal 1 with respect to 2, Ui	30 V
Terminal 3 with respect to 4, li	100 mA
Pi	0.65 W
Ci	0.03 µF
Li	0
Terminal 5 with respect to 6, Ui	30 V
Terminal 7 with respect to 8, li	100 mA

Performance:

Range (see Figure 1)	Class 1 - 0.1m ² n-heptane at 25m (Sensitivity Setting - Class 3 0.1m ² n-heptane at 12m, see EN 54-10)
Field of view (see Figures 2 & 3)	90° Min. Cone
Operating wavelength band	IR 1.0 to 3.0 µm
Sensitivity	High = Class 1 Low = Class 3
ATEX	II 1 G
Approval category	Category 1, 2 or 3
CENELEC / IEC	GA EX ia IIC T4
Marking	Zone 0, 1 or 2
Operating temperature	-10°C to +40°C (T4) -10°C to +55°C (Sensor Limit)
Storage temperature	-20°C to +65°C
Relative humidity	0% to 95% RH (no condensation or icing)
Vibration, impact and shock	EN 54-10
IP Rating	IP65
EMC immunity / emissions	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 50130-4, EN 55022
Standards and approvals	EN54-10, CPR, LPCB, IECEx, ATEX
Apparatus Certificate No.	BAS02ATEX1001
System Certificate No.	Baseefa08Y0078
Housing Material	Die Cast Zinc Alloy
Housing Colour	Blue
Dimensions	See Figures 4 & 5
Weight	2kg
Cable Gland Entries	2mm x 20mm

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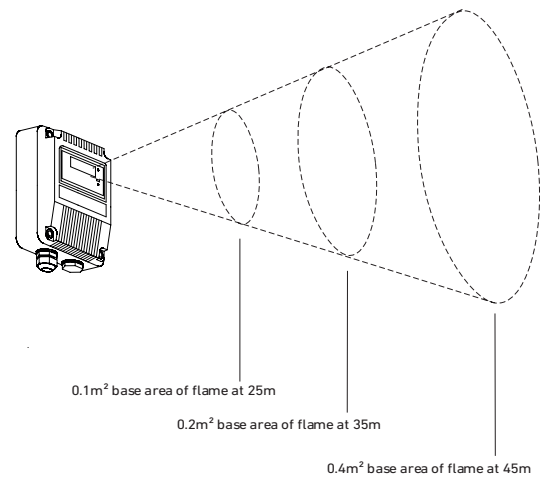
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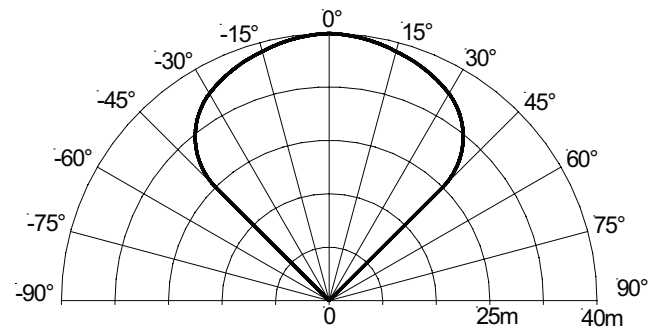
Selectable options

	DIL switch settings	
Relay RL2 function	1	1
RL2 off	0	0
RL2 off	1	1
IR fire or pre-alarm	0	1
Fault (Energised if OK)	1 ~ 1	
Alarm currents [RL1 Flame Relay]	3	4
3.9 mA RL1 Only, 4/8/14 mA RL2 and RL1	0	0
4 - 20 mA, 4/20 mA, No relays /or	1	0
8 - 20 mA, 8/20 mA and relays - Proportional	0	1
8/28 mA and relays	1~1	
Output mode	5	
Non-latching (-)	0	
Latching (/)	~1	
Response time	6	7
Slowest ≈ 8 s	0	0
Medium ≈ 4 s	1~0	
Fast ≈ 2 s	0	1
Very fast ≈ 1 s	1	1
Sensitivity	8	
Low	0	
High	~1	

Flame size and distance from the detector



Flame detector field of view



I.S. IR³ Flame Detector dimensions

