Conventional UV/IR² Flame Detector

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		14 - 28 V dc
Supply current		See DIL switch settings in Table 1
Test signal voltage		14 - 28 V dc
Maximum power up time		2 seconds
Relay contact ratings:		
	Current	0.25 A max.
	Voltage	30V dc max.
	Resistive loads only, power	3.0 W max.
Performance:		
Range (EN 54-10)		0.1 m² n-heptane at 25m
		0.2 m² n-heptane at 35 m
		0.4 m² n-heptane at 45 m
Field of view		90° min. Cone
Spectral response		
	UV	185 to 260 nm
	IR	0.9 to 1.7 μm
Sensitivity		High = Class 1
		Low = Class 2
Operating temperature		-10°C to +85°C
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 50081-1, EN 50081-2, EN 50082-2, EN 550
Housing Material		Die Cast Zinc Alloy
Housing Colour		Blue
Dimensions		108 mm wide x 142 mm high x 82 mm deep
Weight		1kg
Cable Gland Entries		2mm x 20mm

Product Overview

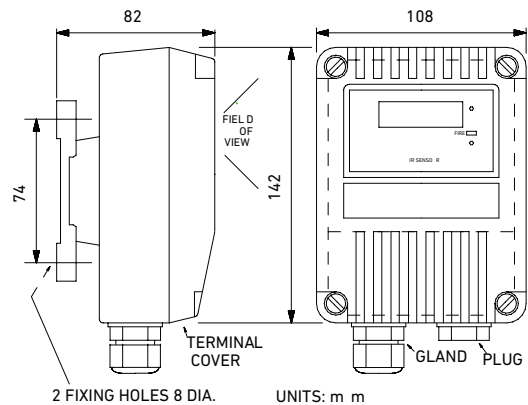|	
Product Type	UV/IR² Flame Detector
Part No.	55000-064

Approvals

LPCB

Product Information

The combination of Ultra Violet (UV) and Infra-Red (IR) detection plus signal processing enables the flame detector to be used without risk of false alarms in difficult situations characterised by factors such as flickering blackbody by radiation or arc welding.

- 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

UV/IR² Flame Detector dimensions

82
108
74
142
FIELD OF VIEW
IR SENSOR
TERMINAL COVER
GLAND   PLUG
2 FIXING HOLES 8 DIA.
UNITS: m m

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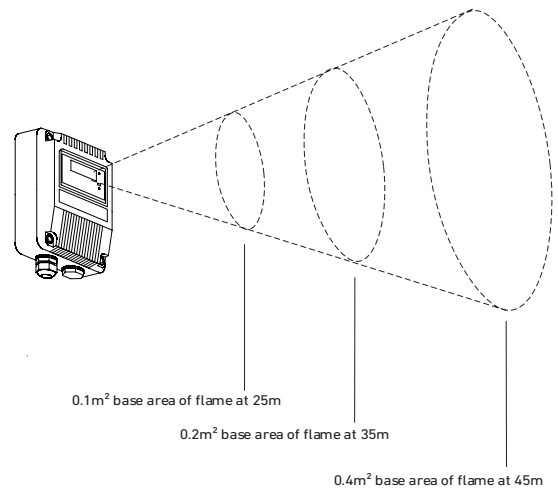© Apollo Fire Detectors Limited 2017

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Operation

The UV/IR^2 Flame Detector is sensitive to low frequency, flickering IR and UV radiation emitted by flames during combustion.

The UV/IR^2 Flame Detector is set to respond to low-frequency, flickering IR (0.75 to 2.7 μm) radiation at one to 15 Hz along with UV (185 nm to 260 nm) in order to detect almost all flames including those invisible to the naked eye, e.g. hydrogen fires.

The UV/IR^2 Flame Detector has two IR sensors that respond to different IR wavelengths in order to discriminate between flames and spurious sources of radiation. False alarms from flickering sunlight, arc welding or lightning are avoided by this combination of UV and IR signal processing techniques.

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 ≈ 1s	1	1
Sensitivity	8	
Low	0	
High	~1	

Flame detection as a function of flame size and distance from detector

0.1m² base area of flame at 25m

0.2m² base area of flame at 35m

0.4m² base area of flame at 45m

Range of view of a flame detector