

# Marine Intelligent Base Mounted IR<sup>3</sup> Flame Detector



## Technical Data

All data is supplied subject to change without notice. Specifications are typical at 24 V, 25°C and 50% RH unless otherwise stated.

<b>Supply voltage</b>	17 - 28 V dc
<b>Digital communication</b>	XP95, Discovery and CoreProtocol compatible
<b>Protocol peak to peak</b>	5 - 9 V
<b>Quiescent current</b>	2.5 mA
<b>Alarm current</b>	4.2 mA
<b>Surge current</b>	9 mA (peak) for 85 ms
<b>Maximum power-up time</b>	4 seconds
<b>Remote output characteristics</b>	Connects to positive line through 4.5 kΩ (5 mA maximum)
<b>Operating range</b>	0.1 m <sup>2</sup> n-heptane at 25 m
<b>Sensitivity</b>	Class 1 or 3, EN 54-10
<b>Field of view</b>	90° cone
<b>Spectral response</b>	0.75 to 2.7 μm
<b>Operating temperature</b>	-40°C to +70°C
<b>Storage temperature</b>	-40°C to +70°C
<b>Relative humidity (no condensing or icing)</b>	95% RH
<b>Standards and approvals</b>	MED and ABS
<b>IP rating</b>	designed to IP66
<b>Dimensions</b>	100 mm x 40 mm detector only 100 mm x 48 mm detector and base
<b>Weight</b>	150 g - detector only 210 g - detector and base
<b>Materials:</b>	<b>Housing</b> White flame retardant polycarbonate
	<b>Sensing window</b> 2 mm Float glass
	<b>Terminals</b> Nickel plated stainless steel
<b>Isolator count:</b>	<b>20D</b> 7
	<b>20i</b> 20

## Product overview

<b>Product</b>	Marine Intelligent IR <sup>3</sup> Flame Detector
<b>Part No.</b>	55000-029MAR
<b>Digital Communication</b>	XP95, Discovery and CoreProtocol® compatible

## Approvals



## Product information

The Marine Intelligent Base Mounted Triple Infra -Red (IR<sup>3</sup>) Flame Detectors are designed to protect indoor areas where open fires may be present.

The detector is sensitive to low frequency, flickering IR radiation emitted by flames during combustion. Since it responds to flickering radiation the detector can operate even if the lens is contaminated by a layer of oil, dust water-vapour or ice.

- Responds to stationary flames with no flicker
- Sensitive to low frequency flickering IR radiation emitted by flames during combustion
- Compact flame detector which fits into Discovery marine bases
- Loop powered
- False alarms due to factors such as flickering sunlight are avoided by a combination of filters and signal processing techniques

## Operation

The detector is set to respond to low-frequency radiation at 1 - 15 Hz (0.75 - 2.7 μm) in order to detect all flickering flames, including those invisible to the naked eye, e.g. hydrogen fires.

The detector has three IR sensors that respond to different IR wavelengths in order to discriminate between flames and spurious sources of radiation. False alarms due to factors such as flickering sunlight are avoided by a combination of filters and signal processing techniques.

These detectors are also fast reacting but is also tolerant of fumes, vapours, steam, dust and mist, whilst being unaffected by the phenomena listed above. It may, however, be affected by modulated IR radiation. Triple IR flame detectors are used in waste handling, colour printing and paper manufacturing applications.

\* For a full list of applications for Apollo Marine Intelligent Base Mounted Flame Detectors, please refer to PP5010, in this manual or to [www.apollo-fire.co.uk](http://www.apollo-fire.co.uk)

### Protocol compatibility

The detectors operate using the XP95 or Discovery digital protocol and are CoreProtocol® compatible.

### Protocol usage

Output Bits	
2	LED
1	Test
0	Remote LED
Interrupt	No
Analogue value	
Quiescent	25
Alarm	55 - 64
Fault	4
Input Bits	
2	LED confirmed
1	Test confirmed
0	Remote LED confirmed
Flag settings	
XP95 flag	Yes
Alarm flag	Yes

### Electrical description

The Intelligent Base Mounted Flame Detectors are loop-powered and require no external supply. A remote LED alarm indication may be connected to the flame detector.

The field of view for the Intelligent Base Mounted Flame Detectors is shown in Figure 1. The illustration also includes information on the size of fire detectable at various distances.

The flame detectors can also be ceiling mounted positioned above the anticipated flame source or at the centre of the area to be protected, perpendicular to the floor below. If the detector cannot see the whole of the area to be protected, one or more additional detectors may be required. Figure 2 shows the angle of view to help establish the detectors performance. The area of detection is dependent upon the detectors height above the likely source of flame.

The detectors have a 90° conical field of view or 45° either side of the viewing axis centre line. The maximum ceiling height is 20 m. If the detector is perpendicular to the floor and at a height of 10 m, the detector will view a circular floor area below with a 10 m radius (20 m diameter circle).

### EMC Directive 2014/30/EU

The Marine Intelligent Base Mounted IR<sup>3</sup> Flame Detector complies with the essential requirements of the EMC Directive 2014/30/EU, provided that it is used as described in this datasheet.

A copy of the Declaration of Conformity is available from the Apollo website: [www.apollo-fire.co.uk](http://www.apollo-fire.co.uk)

Conformity of the Marine Intelligent Base Mounted IR<sup>3</sup> Flame Detector with the EMC Directive, does not confer compliance with the directive on any apparatus or systems connected to them.

### Construction Products Regulation 305/2011/EU

The Marine Intelligent Base Mounted IR<sup>3</sup> Flame Detector complies with the essential requirements of the Construction Products Regulation 305/2011/EU.

A copy of the Declaration of Performance is available from the Apollo website: [www.apollo-fire.co.uk](http://www.apollo-fire.co.uk)

### Marine Equipment Directive 2014/90/EU

The Marine Intelligent Base Mounted IR<sup>3</sup> Flame Detector complies with the essential requirements of the Marine Equipment Directive 2014/90/EU.

