



Stainless Steel Intelligent IR³ Flame Detector

FUNCTION

The Stainless Steel Intelligent IR³ Infra-red (IR) Flame Detector is designed to protect areas where open flaming fires may be expected.

FEATURES

The Intelligent IR³ Flame Detector is sensitive to low-frequency, flickering infra-red radiation emitted by flames during combustion. Since it responds to flickering radiation the IR³ Flame Detector can operate even if the lens is contaminated by a layer of oil, dust, water-vapour or ice.

The Intelligent IR³ Flame Detector is set to respond to low-frequency radiation at 1 to 15Hz (1 to 2.7µm) in order to detect all flickering flames, including those invisible to the naked eye, eg, those emitted by hydrogen fires.

The Intelligent IR³ Flame 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 such factors as flickering sunlight are avoided by a combination of filters and signal processing techniques.

This detector has a heavy duty, stainless steel housing, which is highly resistant to corrosion. The housing has been electro-polished to give a natural silver finish and has no need to be painted, making it ideal for marine applications.



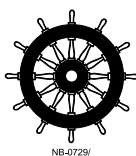
Part no: 55000-034MAR
Stainless Steel Intelligent IR³ Flame Detector

PROTOCOL COMPATIBILITY

The Intelligent IR³ Flame Detector operates only with control equipment using the Apollo XP95 or Discovery digital protocol (or any development of it).

ELECTRICAL CONSIDERATIONS

The Intelligent IR³ Flame Detector is loop powered and needs no external supply. A remote LED alarm indicator may be connected to the flame detector.



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PROTOCOL BIT 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 Setting	
XP95 Flag	Yes
Alarm Flag	Yes

Table 1

TECHNICAL DATA

Supply voltage	17–28V DC
Quiescent current	2.2mA
Maximum power-up time	4 seconds
Remote LED current	Limited to 2mA
Range of view (EN54-10)	0.1m ² n-heptane at 25m 0.2m ² n-heptane at 35m 0.4m ² n-heptane at 45m
Field of view	90° cone
Spectral response	1.0 to 2.7µm
Sensitivity	High—Class 1 Low—Class 3
Operating temperature	–10° C to +55° C
Storage temperature	–20° C to +65° C
Relative humidity	95%, non-condensing
IP rating	65
Housing material	316 Grade Stainless Steel
Housing colour	Silver
Dimensions	See Fig 3
Weight	2.1kg
Cable gland entries	2x20mm

ACCESSORIES

A range of accessories and test equipment is available for the Stainless Steel Intelligent IR³ Flame Detector:

Weathershield, part no 29600-206, (see Fig. 5) Flame Sensor Test Unit and case, part no 29600-226. Stainless steel 2 axis adjustable mounting bracket, part no 29600-203

** For a full list of applications for Apollo Flame Detectors, please refer to PP2409, available on request.*

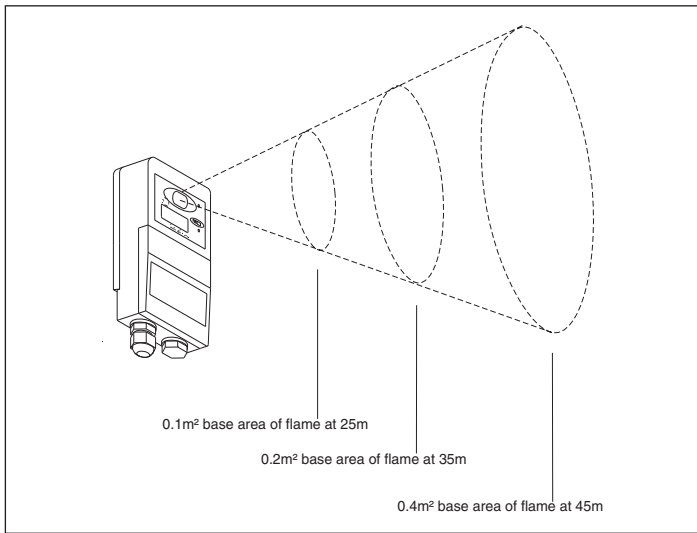


Fig 1 Flame detection as a function of flame size and distance from detector

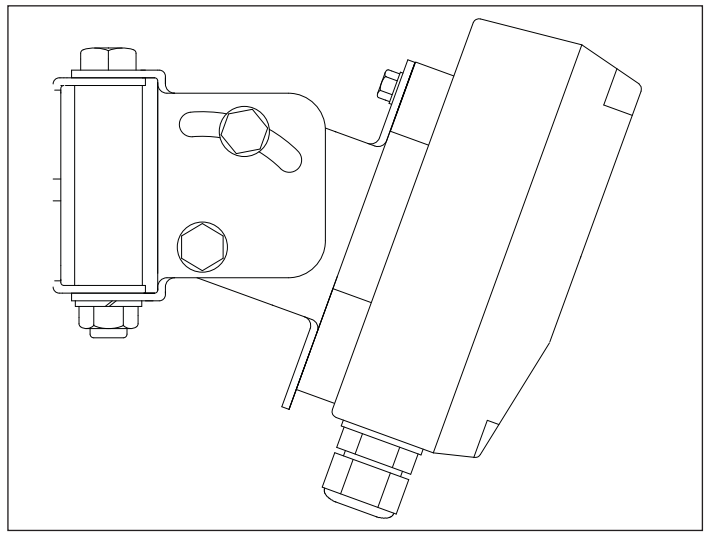


Fig 4 IR³ Flame Detector on stainless steel 2 axis adjustable mounting bracket (Part no 29600-203)

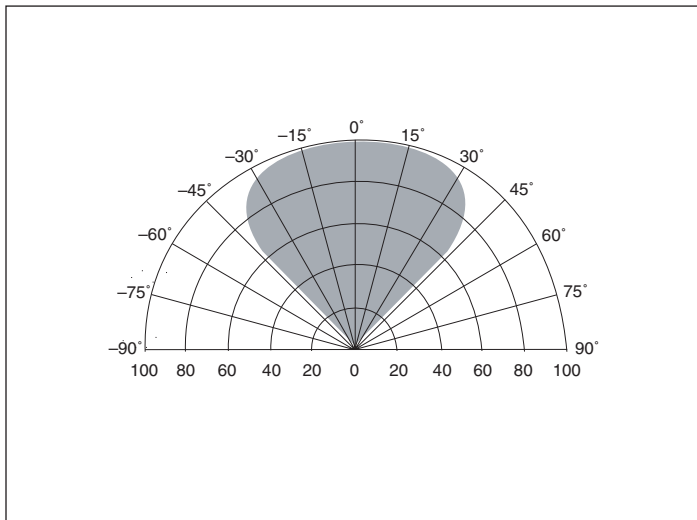


Fig 2 Range of view of Flame Detector

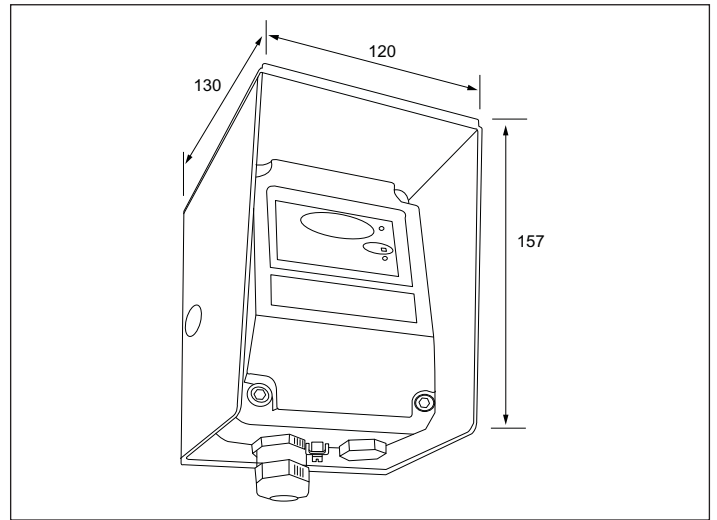


Fig 5 IR³ Flame Detector with Weathershield (Part no 29600-206)

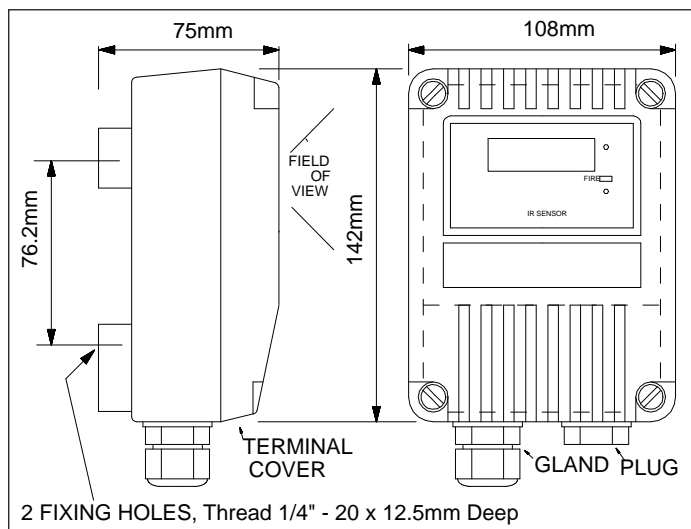


Fig 3 Front and side view to show dimensions of flame detector