SafeFlame
IR3 Optical Flame Detector

Data Sheet

■ Features and Benefits

- High Sensitivity Triple IR (Infrared) detectors
- Detects fire at distances up to 200 feet (60
- Meters)
- Latching/Non-Latching Fire Alarm
- 90° Horizontal and 90° Vertical Field of Vision
- Water and Dust Tight
- Auto-Comissioning
- EMC Protected
- Fast Response Time
- Self Testing
- RS-485
- Fire, Fault, and Warning Relays
- 0 to 20mA isolated output (Optional)
- Mounting bracket for easy alignment
- Explosion Proof option available
- False Alarm immunity
- Wide temperature range of operation

■ Approvals

FM APPROVED   KFI   ATEX   CE

■ Applications

- Offshore Oil and Gas installations
- Onshore Oil and Gas installations
- Chemical Plants
- Pipelines
- Printing Industry
- Warehouses
- Aerospace Industry
- Aircraft Hangers
- Power Generation facilities
- Fuel Storage Facilities
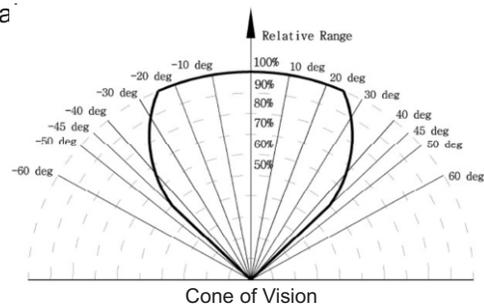- Automotive Industry

**SF200SX
Stainless Steel /
Explosion Proof**

**SF200A
Aluminum**

■ Description

SafeFlame's triple IR (IR3) flame detector compares three specific wavelength bands within the IR spectral range of a fire and their ratio to each other. This offers fast response without the fear of typical false alarms. One sensor monitors the 4.4 micrometer range and the other sensors monitor the bands above and below. This advanced technology allows the detector to distinguish between non flame IR sources, and flames that emit hot carbon dioxide in the combustion process (which have a spectral characteristic peak at 4.4 micrometers).

As a result, both detection range and immunity to false alarms can be significantly increased. The SafeFlame 3 IR detectors can detect a 0.1m2 (1ft2) gasoline pan fire at up to 60m (200ft) in less than 5 seconds. SafeFlame 's IR3 detector is designed to ignore constant background IR radiation, which is present in all environments. Instead it measures the modulated part of the radiation of a fire. When exposed to modulated non flame IR radiation, IR and UV/IR detectors become more prone to false alarms, while IR3 detectors become more immune to false a

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General Specifications

Detection Range	200 feet (60 meters)
Response Time	5 Seconds
Adjustable Time Delay	12 Seconds
Sensitivity Ranges	50ft(15m) to 200ft(60m)
Field of View	90° Horizontal; 90° Vertical
Self Testing	Automatic or Manual
Temperature Range	Operational: -40°C(-40°F) to +75°C(+167°F) Storage: -50°C(-58°F) to +80°C(+176°F)
Humidity	0 to 95% Relative Humidity

Electrical Specifications

Operating Voltage	24VDC (18 to 32VDC)
Power Consumption	Standby: 150mA @ 24VDC Alarm: 200mA @ 30VDC
Cable Entries	2 x ½" PF, ½" NPT-14
Wiring	14 to 24 AWG
Electrical Interface	Includes 14 terminals and 19 dip-switches for customized settings
EMC	EMI/RFI Protected

Outputs
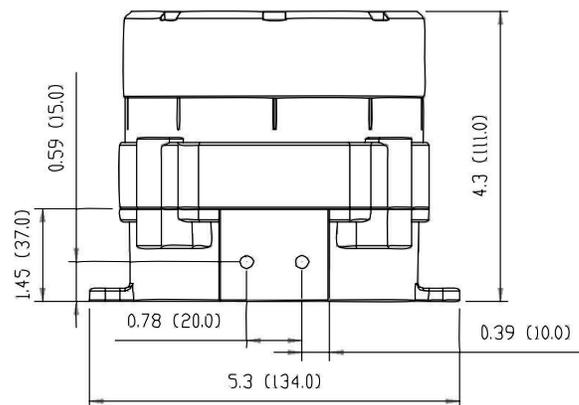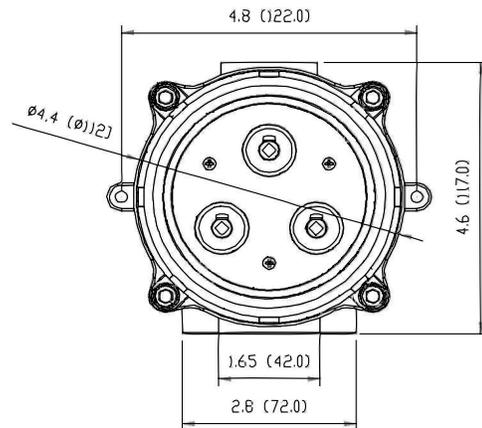
Relays	Alarm, Fault, and Warning Rated 3A@30VDC, 5A@125VAC, 3A@350VAC	
0-20mA	0mA (±.5mA)	Connection Fault
	2mA (±.5mA)	Self-Diagnosis Test Faut
	4mA (±.5mA)	Normal
	8mA (±.5mA)	IR Detection
	12mA (±.5mA)	UV Detection
	16mA (±.5mA)	Warning
	20mA (±.5mA)	Fire Detection
Max Loop Resistance	400Ω	
RS-485	RS-485 compatible link that can be used in computer controlled installations	

Mechanical Specifications

Materials	Aluminum or 316 Stainless Steel	
Mounting	Aluminum with Ivory coloring	
Dimensions	Standard:	150 x 103 x 125 mm 5.9" x 4.1" x 4.9"
	Explosion Proof:	134 x 117 x 110 mm 5.3" x 4.6" x 4.3"
Weight	Standard:	1.5kg (3.3lbs)
	Explosion Proof:	3.5kg (7.7lbs)
	Mounting Bracket:	1kg (2.2lbs)
Water and Dust	IP67, NEMA type 4X	
Hazardous Areas	Explosion Proof Only Class I Div. 1 Groups B, C, and D Class II Div. 1 Groups E, F, and G Class III	

Dimensions

Dimensions shown in inches (mm)

Publication Number: MA-SF200CS