016589 Flame detector, IR3

- Sensitivity according to EN 54-10 Class 1: 0.33 m² flames at 25m
- Low risk of false alarms due to different IR wavelengths and a combination of filters and signal processing techniques
- Reliable operation, even if the lens is contaminated by a layer of oil, dust, water-vapour, or ice
- Selectable response time
- 2-wire or 4-wire configuration via DIP switch settings

Flame detectors are used to detect open flames indoor and outdoor. They respond to the light emitted from flames during combustion.
Flame detectors are especially suitable for smokeless liquid and gas fires not visible for the naked eye as well as for fires of materials that contain carbon with strong smoke emission.
Typical areas of application are large industrial warehouses, airplane hangars, chemical facilities, oil refineries, machine rooms, ferries and freight ships, power plants, printing plants, wood warehouses, subway tunnels.

Functions

Most IR flame sensors respond to 4.3 µm light, emitted by hydrocarbon flames. By responding to 0.75 to 2.7 µm light emissions from fires almost all flickering flames can be detected.
The flame detector has three IR sensors. The detector discriminates between flames and other light sources by responding only to particular optical wavelengths and flame flicker frequencies. False alarms due to factors as flickering sunlight are avoided by a combination of filters and signal processing techniques. Low-frequency detection enables the sensor to operate through a layer of oil, dust, water vapour, or ice.
An alarm is transmitted via current amplification (2-wire) or relay contact (4-wire). The alarm is also indicated with the integrated alarm LED.

Regulatory information

Region	Regulatory compliance/quality marks	
Europe	CE	Flame detectors, IR3
	DoP	Flame detectors, IR3
	CPR	2831-CPR-F0583 016589 Flame detector, IR3
	RoHS	Flame detectors, IR3
Germany	VdS	G 212189 Flame detectors, IR3

Installation/configuration notes

- The device complies with EN 54-10 Class 1.
- Applications and locations to avoid:
  - ambient temperatures above +55 °C
  - close proximity to radio frequency sources
  - exposure to severe rain and ice
  - large amounts of flickering reflections
  - large IR sources for instance heaters, burners, flares
  - obstructions to field of view
  - sunlight falling directly on the detector optics
  - spot lighting directly on the detector optics

- Latching mode is recommended (factory setting). Different alarm signalling modes can be set via DIP switches: current amplification (for 2-wire configuration) or relay contact (for 4-wire configuration).
- The device can be connected using an FLM-420/4-CON Conventional Interface Module to the Local Security Network LSN. The device can also be used in conjunction with a CZM 0004 A module. For connecting more than one IR3 Flame Detector use a 4-wire connection with end of line element. Extended line monitoring is necessary for EN 54-13 compliant operation.
- The device cannot be used with an FPC-500 Conventional Fire Panel.
- Detector replacement cycle: 10 years

Parts included

Quant-ity	Component
1	IR3 Flame Detector, Blue

Technical specifications

Electrical

Auxiliary current (mA)	8 mA – 20 mA
Auxiliary current (mA) (for 2-wire configuration)	4 mA - 20 mA
Operating voltage (VDC)	14 VDC – 30 VDC
Detection points	4
Terminal functions	
1 - 2	Supply in connections or 2-Wire connections +IN and -IN
3 - 4	Remote test input connections +R and -R
5 - 6	Alarm Relay RL1 connections
7 - 8	Fault Relay RL2 connections

Environmental

Operating temperature (°C)	-10 °C – 55 °C
Storage temperature (°C)	-20 °C – 65 °C
Operating relative humidity, non-condensing (%)	0% – 95%
IP rating	IP65

Mechanical

Color	Blue
Dimensions (H x W x D) (mm)	142 mm x 108 mm x 79 mm
Material	Die cast zinc alloy (ZA12)
Weight (kg)	1.75 kg

Operation

Detection angle (°)	90°
Detection principle	Detection of low frequency (1 to 15 Hz) flickering infrared radiation
Operating wavelength band	0.75 to 2.7 µm
Sensitivity	High (Class 1) and Low (Class 3)
Range	Class 1: 0.33 m^2 n-heptane at 25m Class 3: 0.1 m^2 n-heptane at 12m

Ordering information

016589 Flame detector, IR3
016589 IR3 Detector for open flames, for indoor and outdoor areas, Blue
Order number **016589**

Accessories

007127 Mounting bracket for IR3 flame detector
Mounting bracket for IR3 flame detector
Order number **007127**

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