IR-1A Optical Flame Detector

Effective: September 2013
K-83-112

FEATURES

- ***FM Approved***
- ***Three-Dimensional Protection***
- ***Fast Response***
- ***Proven False-Alarm Immunity***
- ***Automatically Resets***
- ***Flexible Interface—Can be Mixed with Thermal Fire Detectors***
- ***Connectors are Pre-Assembled: Simply Plug Into Harness***
- ***Simple to Install using Mounting Bracket Kit***
- ***Sensor Responds Within Half A Second to an Explosive Fire***
- ***Wide Temperature Range***
- ***Shock and Vibration Resistant***
- ***Small Space Claim***

DESCRIPTION

The Kidde® IR-1A operates by sensing two separate bands of infrared energy. A fire signal is generated when the sensors see a fire fueled by gasoline, diesel, hydrogen, oils (including hydraulic), lubricants, CNG, LNG, LPG, methanol, and other fuels or combustibles. This signal is transmitted into the Sentinel™ or legacy KVS™ panel.

The fire sensor has a 90° solid cone field-of-view. It has a response time to explosive fires of 0.5 seconds maximum. The Model IR-1A fire sensor has a detection threshold of three feet for a one square foot pan fire fueled by gasoline, diesel, or methanol.

The fire sensor is immune to false alarms from sunlight, flashlights, lightning, vehicle headlights, incandescent lights (100 W at 2 inches), and welding arcs (30 inches).

Each fire sensor has a green status light in the center of its front surface. The status light is illuminated when the fire sensor has electrical power. The status light will blink after the sensor has responded to a fire. The blinking will not stop until power to the sensor has been cycled.

The IR-1A sensor detection threshold (range) in feet is as follows:

1 sq. ft. Methanol Pan Fire	3.0
1 sq. ft. Gasoline Pan Fire	3.0
1 sq. ft. Diesel Pan Fire	3.0
30 inch Natural Gas Flame, 3/8 Orifice	1.7
30 inch Hydrogen Gas Flame, 3/8 Orifice	1.0

TECHNICAL DATA

1. Sensor temperature range -40°F (-40°C) to 257°F (125°C).
2. Enclosure rating NEMA 4X.
3. The following should be observed when mounting the sensor:
   - Ensure enough clearance for the mating connector and harness. When practical, sensor should be mounted so cable entry point below the horizontal to minimize contamination.
   - When using more than one sensor, the field of view (FOV) and/or ranges of the sensors should overlap.
   - Sensor should be located to view potential fire hazard areas.
   - Sensor should be mounted so that the windows point below the horizontal to prevent excessive window contamination. It should be easily and safely accessible for inspection and maintenance (allow a minimum clearance of 4.0 inches directly in front of the sensor).

- Sensor should not be mounted near hot surfaces such as turbocharger or exhaust manifold and exhaust pipes.
- Sensor should be mounted such that objects do not block its field of view. This includes glass, Plexiglas and other visibly transparent material.

4. For new installations, the sensor must be used in conjunction with either the Kidde Sentinel NET (P/N 83-132420-000) or the Sentinel SA1 (P/N 83-132400-001) panel. Existing installations using the KVS-2025 (83-132034-001) or EM2 (83-132034-001) may be retrofitted with this sensor.
5. The sensor should be mounted using the mounting bracket kit, P/N 83-131060-001, and hardware acceptable to the hazard application.

FIRE SENSOR ELECTRICAL INTERFACE

J1-1	Power In
J1-2	Ground In
J1-3	Alarm Signal Out
J2-1	Power Out
J2-2	Ground Out
J2-3	Alarm Signal In

ORDERING INFORMATION

Part Number	Description	Shipping Weight
83-132700-001	IR-1A Optical Sensor	1 lb.
83-131060-001	IR-1 Mounting Bracket	2 lb.
83-131061-001	IR-1 Replacement Isolation Pad	1 lb.
83-132400-001	Sentinel SA1 Control Panel	1 lb.
83-132420-001	Sentinel NET Network Control Module	1 lb.
83-132016-001	IR Test Kit	2 lb.
83-100001-003	LHS (Linear Heat Sensing) Cable 100 Meter Reel (328 ft. approx.)	10 lb.

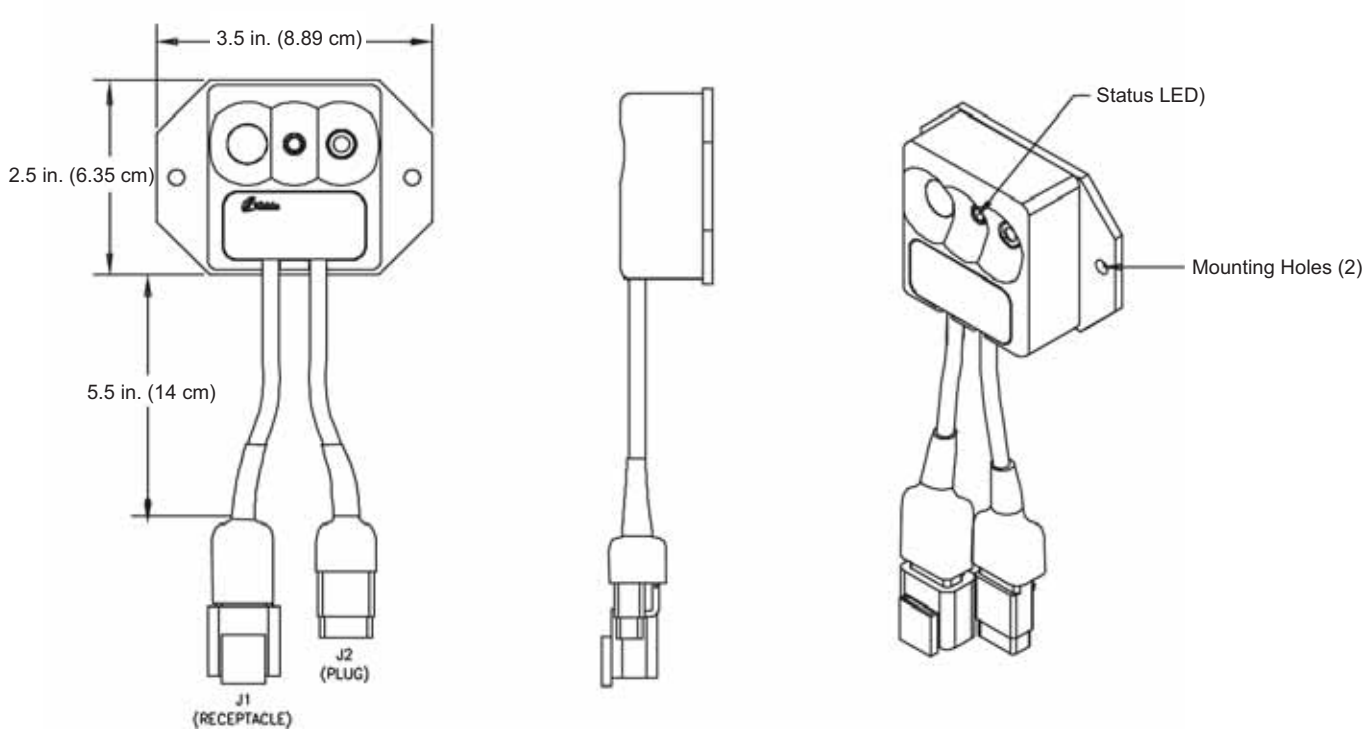

Figure 1. Dimensions of IR-1A Optical Flame Detector

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