Technology of the Future
Protection for today

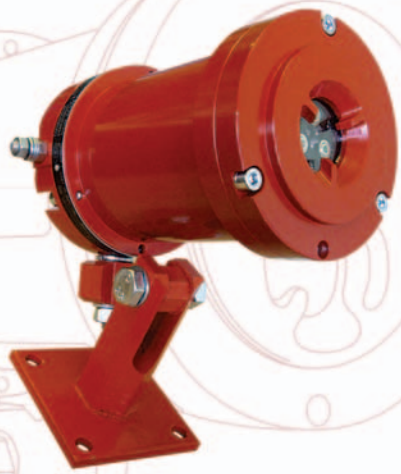
The state-of-the-art multi-spectral infrared technology of JSC "Electronstandart-pribor" Model IPES-IR3 Flame Detector affords the highest sensitivity in detecting flames from combustible vapors and gases within a wide field of view. It is indicated where UV in other detectors may be a problem with false signal triggers.

IPES-IR3's advanced detection technology ensures rapid flame recognition and alarm signaling. In addition, IPES-IR3's selective, multi-spectral technology virtually eliminates false alarms. It ignores false triggers from sources such as direct or indirect sunlight, arc welder flash, resistive heaters, fluorescent, halogen, and incandescent light.

IPES-IR3 sends an alarm only when data from three different IR wavelengths agree that a flame or fire is present in the field of view. Upon confirmation of flame or fire, the IPES-IR3 transfers alarm signals to receiving control devices located in control and operations rooms and to fire alarms and burglar/fire alarm systems. While operating, the IPES-IR3 transmits detector-status information via:

- A standard RS-485 communication channel under protocol Modbus RTU
- 4-20 mA analog output
- Relay outputs

The IPES-IR3 Flame Detector is constructed with an explosion-proof housing for use in hazardous (classified) locations. It meets the certifications and requirements of Class I, Division 1, Group B, C & D, T4.



IPES IR3 FLAME DETECTOR

Applications

- Drilling and production platforms
- Shipping tankers, freighters, and other vessels
- Fuel loading facilities
- Refineries, bulk terminals, and tank farms
- LNG/LPG processing and storage facilities
- Compressor stations and pipeline facilities
- Petrochemical, paint, and fertilizer plants
- Power plants and gas turbine facilities
- Transportation facilities (airports and subways)
- Oil and gas fired boilers / furnaces
- Aircraft hangars

Features and benefits

- Multi-spectral IR detection provides the highest level of flame and fire sensitivity
- Multi-spectral IR detection provides optimal rejection of false alarms
- Power-on self-test and frequent sensor self-test ensure system integrity and correct operation
- Explosion-proof package allows for hazardous environment operation
- Tri-color status LED on the device is easily viewable for a visual report of the device's operating status
- Continuous monitoring of the optical path for obstruction or reduced transmission affords maximum reliability
- Power consumption of <3W means low power costs, protection against surges
- Digital, analog and relay outputs provide reliable status information across a range of communication formats
- Industry standard for remote alarm and fault indication ensure reliability and consistency
- Optimal combination of flame detection and false alarm rejection
- Extended detection range provides a greater area of protection
- Automatic and manual self-tests support optimum reliability
- 5-year warranty – long, reliable product life; low cost to operate over time

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SPECIFICATIONS

IPES IR3 FLAME DETECTOR

Electrical Characteristics

Voltage 18 to 32 VDC

Power <2 W, standby
<3 W, during alarm

Outputs

1) Analog signal 4-20 mA
Fault signal 2 mA ± 0.1 mA
Ready signal 4 mA ± 0.1 mA
Fire signal 18 mA ± 0.1 mA
Test Mode 8 mA ± 0.1 mA

2) RS 485, Modbus RTU, Profibus

3) Relay:
Fire: - From terminal X3, position (3,4)
- normally closed relay
- open on fire detection
- latching/non-latching
Fault:
- From terminal X3, position (1,2)
- normally open relay
- open on fault detection
- latching/non-latching

Operating Temperature -40°F to +185°F
(-40°C to +85°C)

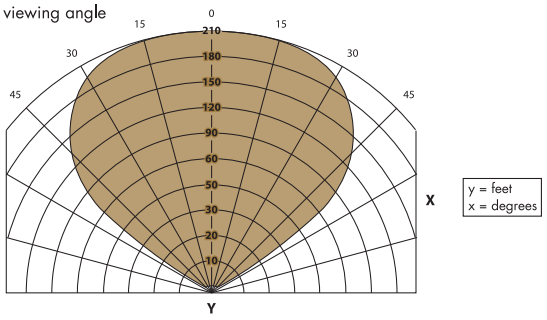
Storage temperature -76°F to +185°F
(-60°C to +85°C)

Humidity Up to 95 % Relative humidity,
(withstands up to 100% RH for short periods)

Wiring 14 AWG (2.08 mm) or 16 AWG (1.31 mm)
Shielded cable is recommended

Field of View

Fuel	Horizontal (Left)	Horizontal (Right)	Vertical (Up)	Vertical (Down)	Min. Distance Feet (M)	Avg. Time
n-Heptane	50°	50°	50°	50°	56.1 (17.1)	3 sec.
Methanol	50°	50°	50°	50°	41 (12.5)	3 sec.
JP5	50°	50°	50°	50°	82 (25)	3 sec.



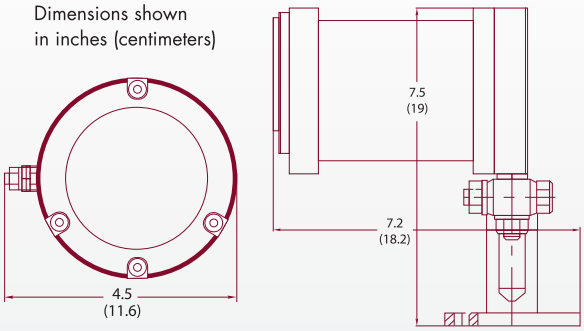
Response:

Very High Sensitivity

Fuel	Size	Distance Feet (M)	Typical Response Time (Sec.)
n-Heptane	1 ft x 1 ft	210 (64)	6
Methanol	1 ft x 1 ft	150 (45.7)	7
JP5	2 ft x 2 ft	210 (64)	4.5

Dimensions

Dimensions shown
in inches (centimeters)



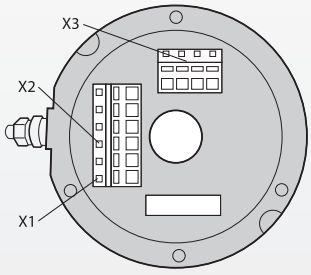
Arrangement and functions of connection terminals

The Figure presents the arrangement and function of mounting connection terminals on the IPES back plane (viewed from the side where the elements are mounted).

Connector X3:
1: relay contact "Fault"
2: relay contact "Fault"
3: relay contact "Fire"
4: relay contact "Fire"

Connector X2:
1: + 4 - 20 mA
2: - 4 - 20 mA
3: + 485 A
4: - 485 B

Connector X1:
1: + 24 VDC
2: - 24 VDC



Mechanical characteristics:

Material Aluminum (standard); Stainless steel (optional)

Cable Entry 3/4 inch -14 NPT

Weight Aluminum: 5.5 lbs (2.5 kg)
Stainless steel: 11 lbs (5.0 kg)

Warranty 5 years

Certification:

FM C US APPROVED
Class I, Division 1, Groups B, C & D, IP66

Ex CE
Certificate of Conformity:
CE Mark for EMC (TUV)
CE Mark for IECEx

ABS TYPE APPROVAL PROGRAM
Class I, Division 1, Groups B, C & D, T4 Ta = -40°C to + 85°C IP66

IEC IECEx
Ex B IIC T4 Ta = -40°C to +85°C

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