### SPECIFICATION SHEET



## Technology of the Future Protection for Today

The state-of-the-art multi-spectral infrared technology of ESP Safety's Model IPES-IR3 Flame Detector affords the highest sensitivity in detecting flames from combustible vapors gases within a wide field of view. It is preferred 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:

- 4-20 current loop w/ HART
- A standard RS-485 communication channel under protocol Modbus RTU
- 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.



RATED

# **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.
- · Heated optics, secondary heater function helps to prevent condensation problems.
- · 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.
- · Extended detection range provides a greater area of protection.
- 5-year warranty long, reliable product life; low cost to operate over time.

#### CONTACT

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# **SPECIFICATIONS**

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Certifications	
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Class I, Division 1 Groups B, C & D T4 Ta = $-40^{\circ}$ F to $+167^{\circ}$ F ( $-40^{\circ}$ C to $+75^{\circ}$ C) IP66	Ex d IIC T4 -40°F to +185°F (-40°C to +85°C) IP66

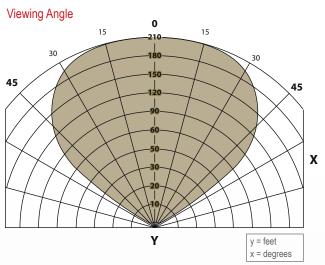
Response Tir	ne		
Fuel	Size	Distance Feet (M)	Typical Response Time (Sec.)
n-Heptane	1 ft x 1 ft	210 (64.0)	6.0
Methanol	1 ft x 1 ft	150 (45.7)	7.0
JP5	2 ft x 2 ft	210 (64.0)	4.5

#### Field of View

Fuel	Horizontal (left)	Horizontal (right)	Vertical (up)	Vertical (down)	Min. Distance Feet (down)	Avg Time
n-Heptane	50°	50°	50°	50°	56.1 (17.1)	3 sec.
Methanol	50°	50°	50°	50°	41.0 (12.5)	3 sec.
JP5	50°	50°	50°	50°	82.0 (25.0)	3 sec.

Operating Voltage	18 to 32 VDC		
Power consumption			
Analog Outputs	HART $4-20mA$ CurrentAnalog signal $2 mA \pm 0.1 mA$ Fault signal $4 mA \pm 0.1 mA$ Ready signal $18 mA \pm 0.1 mA$ Fire signal $8 mA \pm 0.1 mA$ Test Mode		
Digital Outputs	RS 485, Modbus RTU, Profibus		
Relay Contact	- norm - close - latch Fault: - norm	nally open relay ed on fire detection ing or non-latching nally closed relay n on fault detection	
Operating Temperature	-40°F to +185°F	(-40°C to +85°C)	
Extended Operating Temperature (By Request)	-75°F to +255°F	(-60°C to +125°C)	
Storage Temperature	-76°F to +185°F	(-60°C to +85°C)	
Humidity	Up to 95 % Relative humidity, non-condensing (withstands up to 100% RH for short periods)		
Wiring	14 AWG (2.08 mm2) or 16 AWG (1.31 mm2) Shielded cable is recommended		
SIL Rating	SIL 3		

Mechanical Characteristics Material Aluminum and 316 Stainless Steel Cable Entry 3/4" NPT Weight 11 lbs (5.0 kg) Warranty 5 years



#### Dimensions

in inches (millimeters) The IR3 can be adjusted to cover a wide angular range (151.30mm) Adjustable Pivot 8.39" (213.16mm) AT THIS ORIENTATION (100mm) 3.78" (93.98mm) (100mm)



IPES IR3

80013-001 R08