SPECIFICATION SHEET

ESP SAFETY INC

Technology of the Future
Protection for Today

ESP Safety's Model IPES-IR/UV Flame Detector provides superior sensitivity for fires from oil and petrochemical products. It is also indicated for a wide range of other fire types including metal fires.

IPES-IR/UV's advanced detection technology includes optical filters configured for maximum sensitivity to radiation produced by flame or fire and ensures rapid flame recognition and alarm signaling. Upon fire recognition within its 90-degree field of view, the IPES-IR/UV signals a change in state from normal operation to fire in any OEM or proprietary alarm and response system.

In addition, via integrated ultraviolet (UV) and infrared (IR) sensors, the IPES-IR/UV monitors in specific regions of both spectral ranges. In the infrared spectrum, the device is configured for sensitivity to wavelengths in the range of 4.2 to 4.6 microns, allowing optimal sensitivity to combustible gas fires while rejecting false signals from incandescent lamps, sunlight and hot objects. For ultraviolet (UV) radiation, the device is configured for sensitivity in the range of 180 to 250 nanometers, making the sensor "blind" to sunlight and radiation from heated objects but still able to "see" the UV radiation emitted by a flame. With these settings, the IPES-IR/UV detects and alarms for only those characteristic wavelength emissions from the UV and IR spectrum that indicate actual flame or fire.

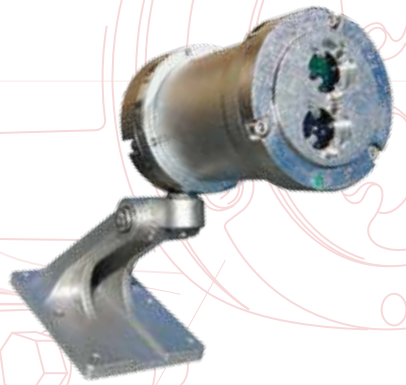
The combination of multiple sensors and wavelength range settings makes the IPES-IR/UV an excellent choice for elimination of false positive indicators caused by non-flame sources of radiation such as artificial lighting, direct and indirect sunlight, lightning, arc welding and metal grinding.

While operating, the IPES-IR/UV generates detector-status information via:

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

The IPES-IR/UV is constructed in an explosion-proof housing for use in hazardous (classified) locations and meets the industry certifications and requirements of Class I, Division 1, Group B, C & D, T5.

SIL3 RATED



IPES IR-UV
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

- 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
- Automatic and manual self-tests ensure system integrity and correct operation
- Continuous monitoring of the optical path for obstruction or reduced transmission affords maximum reliability
- Industry standard for remote alarm and fault indication
- Combines both IR sensor configuration and UV sensor configuration
- Color status LED
- Explosion-proof package allows for hazardous environment operation
- Heated optics, secondary heater function helps to prevent condensation problems

CONTACT
www.espsafetyinc.com
info@espsafetyinc.com

CALIFORNIA
555 N. First Street | San Jose, CA 95112
Ph: +1-408-886-9746 | Fx: +1-408-886-9757

TEXAS
4001 W. Sam Houston Parkway N. Ste #150 | Houston, TX 77043
Ph: +1-713-999-1050 | Fx: +1-713-999-1060

SPECIFICATIONS

info@espsafetyinc.com

Certifications

FM C US
APPROVED
Class I, Division 1
Groups B, C & D,
T5 Ta = -40°F to +167°
F (-40°C to +75°C)
IP66

Ex d IIC T5
-40°F to +185°F
(-40°C to +85°C)

ABS
Class I, Division 1
Groups B, C & D,
T5 Ta = -40°F to +167°F
(-40°C to +75°C)
IP66

IEC IECEx
Ex d IIC T5
-40°F to +185°F
(-40°C to +85°C)
IP66

Electrical Characteristics

Voltage 18 to 32 VDC

Power
< 2.0 W, standby
< 3.0 W, during alarm
< 5.0 W, self test
< 7.3 W, maximum with heated window & alarm

Outputs
1) Analog signal 4 - 20 mA
Fault signal 2 mA ± 0.1 mA
Ready signal 4 mA ± 0.1 mA
Fire signal 20 mA ± 0.1 mA
Test Mode 8 mA ± 0.1 mA
2) RS 485, Modbus RTU
3) Relay:
Fire:
- normally open/normally closed (NO/NC) user selectable
- latching/ non-latching

Fault:
- normally open/normally closed (NO/NC) user selectable

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, (withstands up to 100% RH for short periods)

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

Mechanical Characteristics:

Material Aluminum or 316 Stainless Steel

Cable Entry 3/4" NPT

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

Warranty 5 years

Response:

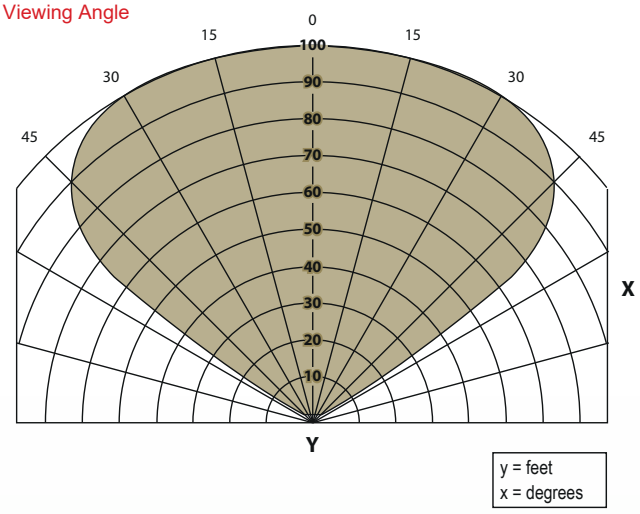
Very High Sensitivity

Fuel	Size	Distance Feet (M)	Typical Response Time (Sec.)
n-Heptane	1 ft x 1 ft	100 (30)	5.0
Methanol	1 ft x 1 ft	85 (26)	4.9
JP5	2 ft x 2 ft	100 (30)	5.0

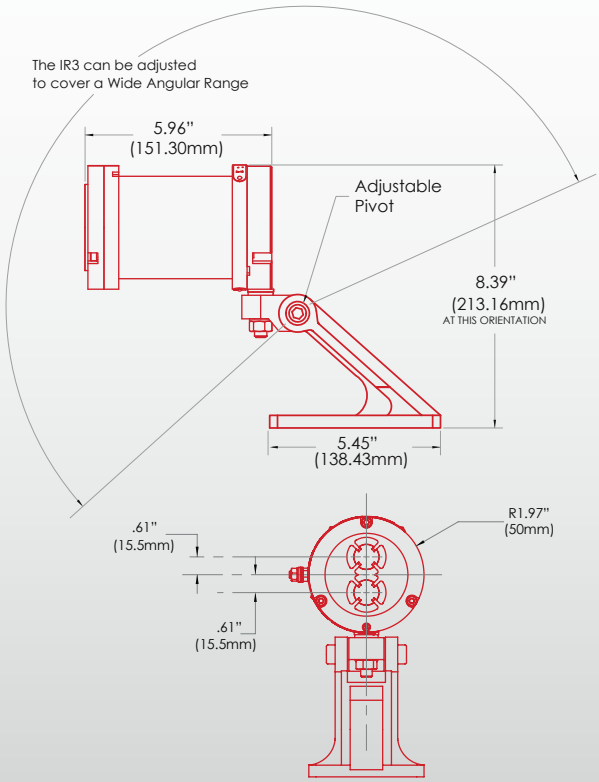
Field of View

The detector has a 90° field of view (horizontal) with the highest sensitivity lying along the central axis.
** 120° field of view version available by request*

Viewing Angle



Dimensions
in inches (millimeters)



FLAME DETECTOR

IPES IR-UV