



ESP SAFETY INC

**Technology of the Future
Protection for today**



ESP Safety's Model IPES-UV Flame Detector is optimally suited for use in detecting fires of metal and pyrophoric materials. It is also ideally suited for areas where modulated infrared radiation may be present, such as hot spots on rotating electrical equipment.

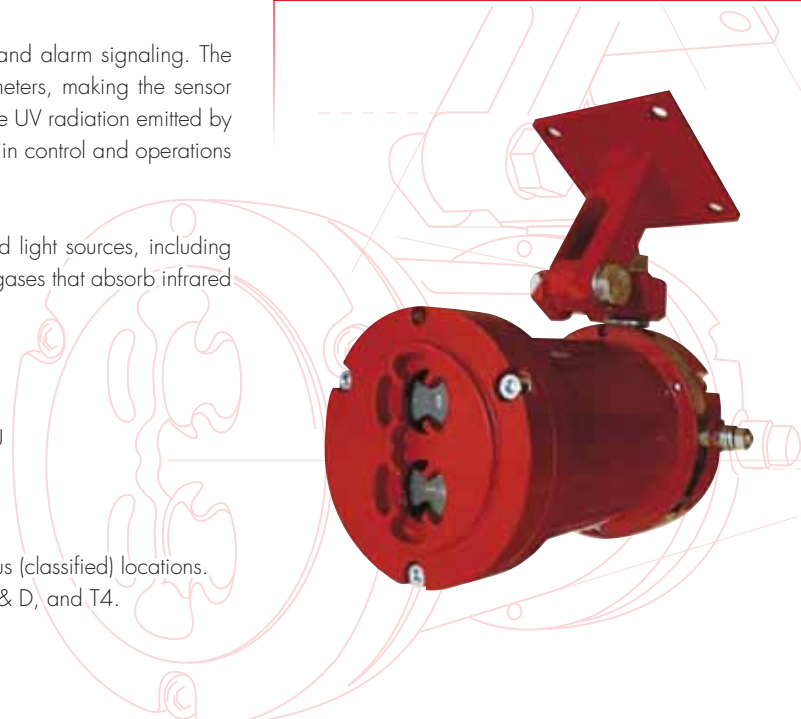
IPES-UV's advanced detection technology ensures rapid flame recognition and alarm signaling. The device is configured for sensitivity in the UV range of 180 to 250 nanometers, making the sensor "blind" to sunlight and radiation from heated objects but still able to "see" the UV radiation emitted by a flame. On detection, it transfers alarm signals to receiving control devices in control and operations rooms and to fire alarms and burglar/fire alarm systems.

Since the IPES-UV uses UV detection, it is unaffected by visible and infrared light sources, including sunlight, within its 90 degree field of view. In addition, it is not effected by gases that absorb infrared radiation which reduce the intensity of the signal.

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

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

The IPES-UV is constructed in an explosion-proof housing for use in hazardous (classified) locations. The type of protection is "Explosion-proof," Class I, Division 1, Group B, C & D, and T4.



IPES 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
- UV sensor configuration (peak sensitivity at 180 and 250 nm wavelengths) is ideal for hydrogen and metal fire detection
- Color status LED
- Explosion-proof package allows for hazardous environment operation

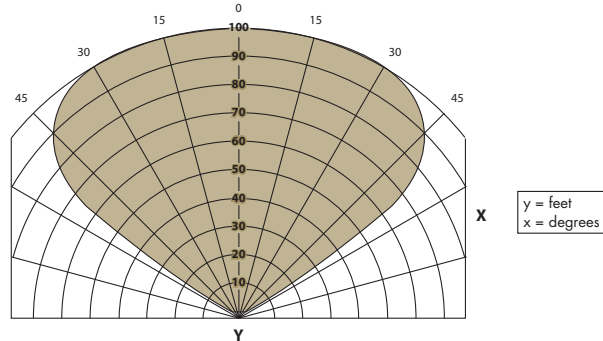
Electrical Characteristics

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

The detector has a 90° field of view (horizontal) with the highest sensitivity lying along the central axis.

viewing angle



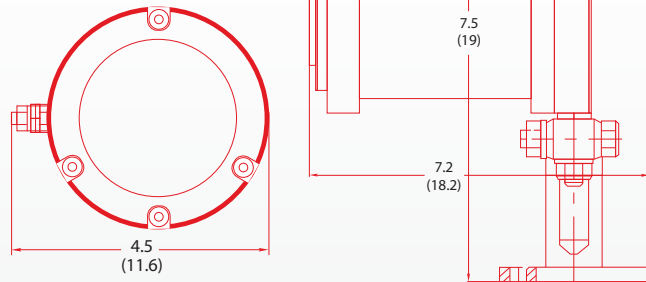
Response:

Very High Sensitivity

Fuel	Size	Distance Feet (M)	Typical Response Time (Sec.)
n-Heptane	1 ft x 1 ft	100 (30)	5
Methanol	1 ft x 1 ft	85 (26)	4.9
JP5	2 ft x 2 ft	100 (30)	5

Dimensions

Dimensions shown in inches (centimeters)



Arrangement and functions of connection terminals

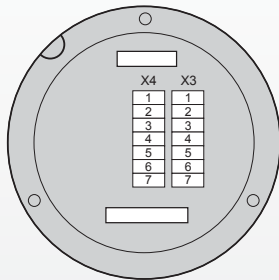
The Figure presents the arrangement and function of mounting connection terminals on the IPES back plane (viewed from the side where the elements are mounted).

Connector X3:

- 1 - +24v
- 2 - GND
- 3 - +4/20
- 4 - 485A
- 5 - 485B
- 6 - R_Work
- 7 - R_Work

Connector X4:

- 1 - +24v
- 2 - GND
- 3 - +4/20
- 4 - 485A
- 5 - 485B
- 6 - R_Fire
- 7 - R_Fire



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:



Class I, Division 1,
Groups B, C & D,
IP66



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



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



Ex B IIC T4 Ta =
-40°C to +85°C

