

IPES IR/UV FLAME DETECTOR *Technology of the Future...Protection for today*



ESP Safety's Model IR/UV flame detector is designed to detect and alarm for conditions of flame and fire within its field vision. Once a condition is detected it would transfer alarm signals to receiving-and-control devices (RCD) of control and operations rooms, fire alarms, and burglar/fire alarm systems.

The model IPES IR/UV with integrated ultraviolet and infrared sensors is allowed to monitor fires in both UV and IR spectral range with a 90 degree field of view. Simultaneous monitoring in both spectral ranges is revealed to fire source with high protect to false alarm caused by arc welding, lighting, luminescent lamp and other source of radiation.

Optical filters and design of receivers determine the range of maximum spectral sensitivity of the detectors: for IR radiation – 4.2...4.6 micron, for UV radiation – 180...250 nm. The sensors and optical filters are chosen so that IPES is maximally sensitive to the radiation produced by fire provided flare light from incandescent lamps, sunlight and hot objects is maximally suppressed. Based on operational wavelength and distances, the coefficient of extinction for air is negligible.

In the process of operation, IPES generate dry relay contacts, informational analog signals 4-20 mA and standard communication channel RS-485 under protocol MODBUS RTU. IPES is made in an explosion-proof modification for use in hazardous (classified) locations; the type of implosion protection is "Explosion-proof", Class I, Division 1, Group B, C&D, T4.

Field of application

- Warehouses of combustible-lubricating matter
- As parts of fire extinguishing systems
- Flammable and explosively dangerous zones with high concentration of hydrocarbons, oil and oil products
- Flammable and explosively dangerous manufactures
- Gas transporting and storage facilities

Features and benefits

- Electronic report of events
- Low power consumption
- Immune to false stimuli sources
- Adjustable and stable swivel mounting
- Digital, analog and "dry contact" relay outputs
- Additionally provided fire-simulator for operability testing
- High sensitivity due to the use of optical, multi-spectral sensors
- Possibility to connect external control and fire warning systems
- Less number of detectors required to achieve complete coverage
- Protection from corrosion and wide operation temperature range allowing to use IPES in hard environmental conditions and in the rooms without heating



Swann & Associates, Inc.
 1707B. E. 28th St.
 Long Beach, CA 90755 USA
 001-562-492-1394
 001-562-492-1396 fax
www.hazardouslocation.com
www.intrinsicsafety.com
www.increasedsafety.com

Electrical Characteristics

Operating Voltage 24 vdc. Operating range is 18 to 30 vdc.

Power consumption Not exceed 2 VA at standby state
Not exceed 3 VA at fire alarm

Current Outputs **Analog signal** 4-20mA
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

Relay Contact Digital: RS 485, Analog: 4-20 mA
"Dry Contact" Relay

Fire Alarm: - From X3 (3,4)
- normally closed
- latching/non-latching

Fault: - From X3 (1,2)
- normally open
- latching/non-latching

Standby: - From X3 (3,4)
- normally open
- From X3 (1,2)
- normally closed

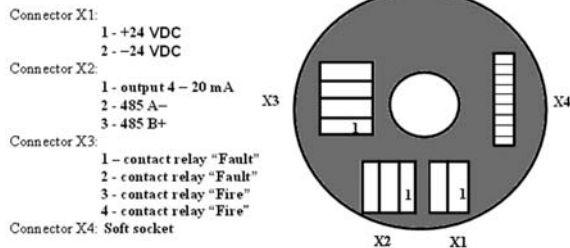
Operating Temperature -40°F to +185°F
(-40°C to +85°C)

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

Humidity Range 0 to 100 % Relative humidity,
non-condensing

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).



Mechanical characteristics:

Enclosure Material Stainless steel 316/ Aluminum

Cable Entry 3/4 inch -14 NPT

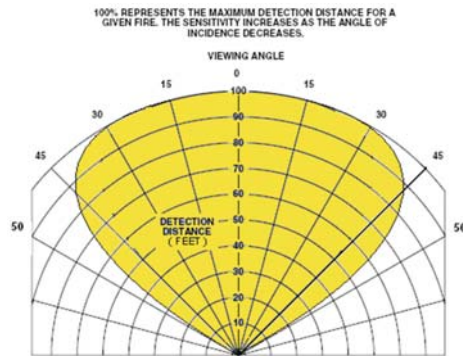
Wiring 15 AWG (101.4 feet per pound)

Weight Aluminum: 5,5 lbs (2,5 kg)
Stainless steel: 11 lbs (5,0 kg)

Warranty 5 years

Field of View

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



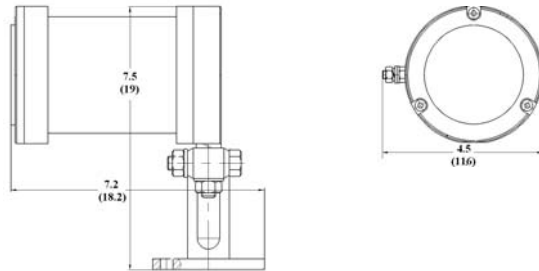
Response

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)



Certification:



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

NEMKO 06 ATEX 1219X
II 2 G EEx d IIC T4
Ta = +85°C



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

Certificate of Conformity
EMC
CE mark

IECEX
Certificate of Conformity
IECEX FMG 02.0002
Ex B IIC T4 Ta = -40°C to +85°C

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