

## IPES IR FLAME DETECTOR



JSC “Electronstandart-pribor” Model IR 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 with integrated infrared sensors is allowed to monitor fires in IR spectral range with a 90 degree field of view.

Optical filters and design of receivers determine the range of maximum spectral sensitivity of the detector for IR radiation - 4,2...4,6 micron. 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 explosion 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



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## 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).

Connector X1:

- 1 - +24 VDC
- 2 - -24 VDC

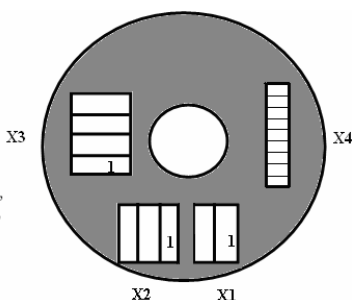
Connector X2:

- 1 - output 4 – 20 mA
- 2 - 485 A-
- 3 - 485 B+

Connector X3:

- 1 - contact relay "Fault"
- 2 - contact relay "Fault"
- 3 - contact relay "Fire"
- 4 - contact relay "Fire"

Connector X4: Soft socket



## Mechanical characteristics:

**Enclosure Material** Stainless steel 316/ Aluminum

**Cable Entry** 3/4 inch -14 NPT

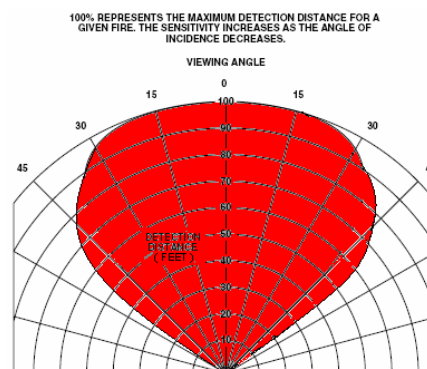
**Wiring** 15 AWG (101.4 feet per pound)

**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.



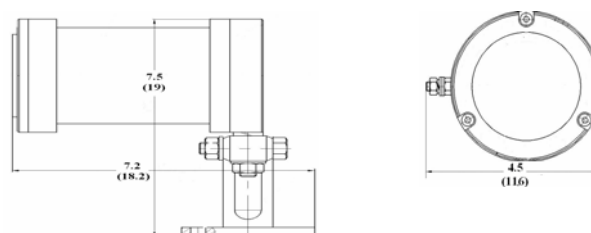
## Response

**Very High Sensitivity**

Fuel	Size	Distance Feet (M)	Typical Response Time (Sec.)
n-Heptane	1 ft x 1 ft	85 (26)	4.52
Methanol	1 ft x 1 ft	82 (25)	4.9
JP5	2 ft x 2 ft	100 (30)	4.5

## Dimensions

Dimensions shown in inches (centimeters)



## Certification:



Class I, Division 1, Groups B, C & D,  
IP 66



Class I, Division 1, Groups B, C & D  
T4 T<sub>a</sub> = -40°C to +85°C IP 66

**IECEX**  
Certificate of Conformity  
IECEX FMG 02.0002  
Ex B IIC T4 T<sub>a</sub> = -40°C to +85°C



**NEMKO 06 ATEX 1219X**

II 2 G EEx d IIC T4  
T<sub>a</sub> = +85°C



Certified of conformity  
EMC  
CE mark

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