MICROPACK
FIRE & GAS

FDS301

INTELLIGENT VISUAL FLAME DETECTOR

DATA SHEET

Designed for hazardous industries where fast fire detection is critical and nuisance alarms are not an option.

The MICROPACK FDS301 is an explosion proof intelligent visual flame detector (iVFD).

The device processes live video images to detect the characteristic properties of flames by means of onboard digital signal processing and hardcoded software algorithms.

Features and Benefits

Highest Immunity to False Alarms

The FDS301 consistently demonstrates the highest immunity to false alarms in areas where flare reflections and / or hot CO2 emissions may cause other technologies to false alarm.

No sensitivity loss

The FDS301 has been independently tested to show no sensitivity loss to a fire in the presence of modulated sunlight and modulated black body heat. This key feature means the unit has greater coverage than almost all other detectors in "real world" outdoor conditions.

On-board recording of alarms

The FDS301 incorporates a micro-SD card capable of recording a video of detected fires pre and post alarm.

This recording is invaluable when carrying out an incident investigation and essentially by using the FDS301, there will never be an instance of an unknown alarm.

Live Video

Each unit has a live color video stream output; this can provide an invaluable source of information insight into the conditions in the area being protected.

- Intelligent visual flame detection (iVFD) principle ensures maximum false alarm immunity and eliminates sensitivity loss in the presence of modulated sunlight and black body heat.
- Operates with or without color video output.
- On-board recording of pre-and post fire alarms
- Continuous optical test, without a reflector
  - Verifies operation and improves device up-time
- Microprocessor controlled heated optics
  - Maintains operation in harsh weather conditions (snow, ice, condensation)
- International hazardous area approvals
  - FM / ATEX / IEC Ex
- Certified performance testing to multiple fuels
  - FM 3260
  - EN 54-10
- Spatially aware—single sensitivity detection
- External testing with a long-range flame simulator
  - Minimises the need for scaffolding
- Easy integration using industry standard outputs:
  - Alarm and Fault Relays
  - 0-20mA
  - HART®, as standard
- Certified SIL 2 capable
- Worldwide marine approvals

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TECHNICAL SPECIFICATION

Environmental

Operating Temp	-76°F to +185°F (-60°C to +85°C)
Storage Temp	-76°F to +185°F (-60°C to +85°C)
Humidity	0 to 95% RH non-condensing

Operating Voltage

24 Vdc Nominal – (Range 18 to 32 Vdc)

Power Consumption

6 W minimum (without heater), 15 W at 32 Vdc with heater on maximum

Speed of Response

<7 seconds (Typical)

Flame Sensitivity

Fuel	Fire Size	Distance
n-Heptane pan fire	1 foot x 1 foot pan	144 feet (44m)
n-Heptane: direct sun-light	1 foot x 1 foot pan	144 feet (44m)
n-Heptane: modulated sunlight	1 foot x 1 foot pan	144 feet (44m)
n-Heptane: modulated black body	1 foot x 1 foot pan	144 feet (44m)
n-Heptane: Arc welding	1 foot x 1 foot pan	144 feet (44m)
n-Heptane: 1000 W lamp	1 foot x 1 foot pan	144 feet (44m)
Gasoline	1 foot x 1 foot pan	144 feet (44m)
JP4	2 foot x 2 foot pan	200 feet (61m)
Tri-ethylene glycol	1 foot x 1 foot pan	32 feet (10m)
Diesel	1 foot x 1 foot pan	130 feet (40m)
Crude oil (heavy fuel)	20 inch x 20 inch pan	130 feet (40m)
Methane Jet Fire	36" plume	100 feet (30m)
Ethanol	1 foot x 1 foot pan	85 feet (25m)
Silane	24" plume	42 feet (13m)

Enclosure

Dimensions:	4" Dia x 8" L (inches) 100 mm Dia x 200 mm
Material:	Copper free aluminum or 316 stainless steel
Entry size:	3/4 inch NPT or M25
Weight:	Aluminum 5.5 lbs (2.5 Kg) Stainless steel 13.2 lbs (6 Kg)

Field of View

90° horizontal by 65° vertical

Outputs

Relay contacts - alarm and fault
0-20mA, HART®
Live color video—PAL or NTSC

Certification

FM approved
Class 1 Div 1, Groups B, C, D T4
Class 1 Zone 1 AEx/Ex d IIC T4

ATEX Ex II 2 G Ex db IIC T4
IECEx Ex db IIC T4

Performance approvals
FM 3260
EN 54-10

Ingress	IP66 / NEMA type 4X
IEC 61508	Certified SIL 2 Capable
DNV GL	Type Approval

Accessories

Flame simulator (FS301)
Pole mount bracket
Retrofit mounting bracket
Marine mounting bracket

USE
Soluções em Medição e Controle

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ISO 9001:2015 Certified

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