

We see what you can't. The future of flame detection is here.

Intelligent Visual Flame Detector

FDS301

Speed critical detection. No false alarms.

An explosion proof visual flame detector. Processing live video to detect the visual characteristics of flames. Delivered through its FM and SIL 2 certified flame detection algorithms and on-board digital signal processing. The safest and most advanced flame detector on the market. Proven to perform in the harshest environments anywhere in the world.



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. By using the FDS301, there will never be an instance of an unknown alarm.

Live Video

Live colour video stream output provides invaluable insight of protected area conditions.

- 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
 - 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 / INMETRO / PESO / ECAS
- Certified performance testing to multiple fuels
 - FM 3260
 - EN 54-10
- Spatially aware single sensitivity detection
- External testing with a long-range flame simulator
 - Minimizes the need for scaffolding
- Easy integration using industry standard outputs:
 - Alarm and Fault Relays
 - 0-20mA
 - HART® Certified SIL 2 capable
- Worldwide marine approvals



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 30 Vdc)

Power Consumption

6 W minimum (without heater), 15 W at 3.0Vdc with heater on maximum

Field of View

90° horizontal by 65° vertical

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" x 20" 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)

Speed of Response

<7 seconds (Typical)

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, Single or Dual
Weight: Aluminum 5.5 lbs (2.5 Kg)
Stainless steel 13.2 lbs (6 Kg)

Outputs

Relay contacts (SPST 2A at 30Vdc) – alarm and fault.
0-20mA, HART®
Live colour video—PAL or NTSC

Certification

FM approved
Class 1 Div 1, Groups B, C, D T4
Class 1 Zone 1 AEx/Ex db IIC T4
Ambient: -50°C to +85°C



ATEX II 2 G Ex db IIC T4
IECEx Ex db IIC T4
Ambient: -60°C to +85°C



INMETRO Ex db IIC T4
PESO Ex db IIC T4
Ta= -60°C to +85°C



Performance approvals

FM 3260
EN 54-10



Ingress:

IP66 | NEMA type 4X

IEC 61508:

Certified SIL 2 Capable



Marine:

DNV GL Type Approval
ABS Product Assessment

Accessories

- Flame simulator (FS301)
- 2", 3" & 4" Pole mount bracket
- Retrofit mounting bracket
- Marine mounting bracket
- Sunshield
- Duct Mount Bracket
- Air Shield
- Detector Sealing Kit