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
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

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

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 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