**FDS300**

**INTELLIGENT VISUAL FLAME DETECTOR**

**DATA SHEET**

**Designed for hazardous industries where a high-quality, lower cost, long range flame detector is needed.**

The MICROPACK FDS300 is an explosion proof intelligent visual flame detector (iVFD) capable of detecting an n-heptane fire at 60 metres and JP4 at 90 m.

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**

The FDS300 utilises flame detection algorithms that have been refined over 30 years from the FDS101 through to the market leading FDS301.

**Excellent Immunity to False Alarms**

The FDS300 consistently demonstrates excellent 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 FDS300 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.

**Extended field of view**

The FDS300 has a massive 120° horizontal and 80° vertical field of view and unlike conventional flame detectors, the field of view does not reduce at the outer limits.

This means one unit covers more area than its conventional flame detector counterpart.

- 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.
- Continuous optical test, without a reflector
  - Verifies operation and improves device up-time
- International hazardous area approvals
  - FM / ATEX / IEC Ex
- Certified performance testing to multiple fuels
  - FM 3260
- 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
- Worldwide marine approvals

[micropackfireandgas.com](http://micropackfireandgas.com)
Environmental

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

Operating Voltage
24 Vdc Nominal - (Range 18 to 32 Vdc)

Power Consumption
2.8 W Nominal at 24 Vdc

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>30cm x 30cm / 1'x1'</td>
<td>60m (200 feet)</td>
</tr>
<tr>
<td>n-Heptane: direct sunlight</td>
<td>30cm x 30cm / 1'x1'</td>
<td>60m (200 feet)</td>
</tr>
<tr>
<td>n-Heptane: modulated sunlight</td>
<td>30cm x 30cm / 1'x1'</td>
<td>60m (200 feet)</td>
</tr>
<tr>
<td>n-Heptane: modulated black body</td>
<td>30cm x 30cm / 1'x1'</td>
<td>60m (200 feet)</td>
</tr>
<tr>
<td>n-Heptane: Arc welding</td>
<td>30cm x 30cm / 1'x1'</td>
<td>60m (200 feet)</td>
</tr>
<tr>
<td>n-Heptane: 1000 W lamp</td>
<td>30cm x 30cm / 1'x1'</td>
<td>60m (200 feet)</td>
</tr>
<tr>
<td>Ethanol</td>
<td>30cm x 30cm / 1'x1'</td>
<td>30m (100 feet)</td>
</tr>
<tr>
<td>Methane</td>
<td>90 cm / 36” plume</td>
<td>26m (86 feet)</td>
</tr>
<tr>
<td>Gasoline</td>
<td>30cm x 30cm / 1'x1'</td>
<td>60m (200 feet)</td>
</tr>
<tr>
<td>JP4</td>
<td>60cm x 60cm / 2'x2'</td>
<td>90m (300 feet)</td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>30cm x 30cm / 1'x1'</td>
<td>20m (65 feet)</td>
</tr>
<tr>
<td>Diesel</td>
<td>30cm x 30cm / 1'x1'</td>
<td>40m (130 feet)</td>
</tr>
<tr>
<td>Crude oil (heavy fuel)</td>
<td>0.5mx0.5m 20”x20”</td>
<td>50m (165 feet)</td>
</tr>
<tr>
<td>Silane</td>
<td>60 cm / 24” plume</td>
<td>17m (56 feet)</td>
</tr>
</tbody>
</table>

Enclosure

Material: Copper free aluminium or 316 stainless steel
Entry size: M25 or 3/4 inch NPT
Weight: Aluminium 2.5 Kg (5.5 lbs) Stainless steel 6 Kg (13.2 lbs)

Field of View

80° vertical by 120° horizontal

Outputs

Relay contacts - alarm and fault
0-20mA (current source)

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 approval to FM 3260

Ingress  IP66 / NEMA type 4X

DNV GL  Marine Type Approval

Accessories

Flame simulator (FS30x)
Pole mount bracket
Retrofit mounting bracket
Marine mounting bracket