The MICROPACK FDS-301 is an imaging based flame detector which incorporates superior false alarm rejection and live colour video imaging direct from a specially designed detection camera. It is the safest and most advanced flame detector on the market today, and its track record on the numerous installations where it is used has proven the instrument to be robust, even in the harshest of environments.

The FDS-301 operates standalone and incorporates, within a single unit, an integrated CCTV system; Digital Signal Processing and Software Algorithms to process the live video image and interpret flame characteristics.

These unique software algorithms are capable of discriminating between genuine fire conditions and other radiant sources such as flare reflection and black body.

The surveillance aspect of the detector eliminates the need to dispatch operators to investigate alarms as the live video images are viewed directly in the control room. The video images are recorded on-board or remotely allowing post incident analysis. Un-manned installations can be remotely monitored allowing suitable action to be taken before personnel access the area, thereby minimising the risk to operators.

**Features**

- Combined Visual Flame Detection and Colour CCTV surveillance contained within one enclosure.
- Single detection sensitivity setting as the FDS-301 is unaffected by nuisance alarms unlike more vulnerable detection technologies.
- Superior False alarm immunity to common sources of unwanted alarms such as Hot process, Hot Work, Hot CO2 emissions and Flare Reflections.
- Onboard flash recording of alarms via internal Secure Digital (SD) memory card.
- Advanced optical verification test facility is designed to check the window for contamination and that the detectors field of view is not restricted by an obstruction placed immediately in front of the window. Assuring readiness to perform when needed.
- Separate terminal chamber for ease of installation.
- Functional test torch operation from distances of 3-8 metres, removing the need for scaffold/ ladders.
- FDS-301 can operate stand-alone with or without video. Minimum of 3 wire current source termination for retrofit applications.
- FM and ATEX approvals.
FDS-301 TECHNICAL SPECIFICATION

**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: 5 to 95 RH non-condensing
- Ingress: IP66, NEMA 4X

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

**Power Consumption**
- 6 watts minimum (no heater), 10 watts typical, 15 watts maximum (with heater)

**Flame Sensitivity**

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Fire Size</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane Jet Fire</td>
<td>25L/min</td>
<td>20m (65 feet)</td>
</tr>
<tr>
<td>Ethane Jet Fire</td>
<td>28L/min</td>
<td>20m (65 feet)</td>
</tr>
<tr>
<td>Propane Jet Fire</td>
<td>20L/min</td>
<td>20m (65 feet)</td>
</tr>
<tr>
<td>Butane Jet Fire</td>
<td>15L/min</td>
<td>20m (65 feet)</td>
</tr>
<tr>
<td>Diesel</td>
<td>0.3m x 0.3m pan</td>
<td>40m (130 feet)</td>
</tr>
<tr>
<td>Crude Oil (heavy fuel oil)</td>
<td>0.5m x 0.5m pan</td>
<td>40m (130 feet)</td>
</tr>
<tr>
<td>Wax Inhibitor (Clear-10)</td>
<td>0.3m x 0.3m pan</td>
<td>40m (130 feet)</td>
</tr>
<tr>
<td>Anti Foam (Surflo AF-300)</td>
<td>0.3m x 0.3m pan</td>
<td>40m (130 feet)</td>
</tr>
<tr>
<td>Wood Stack</td>
<td>0.3m x 0.3m crib</td>
<td>40m (130 feet)</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>0.3m x 0.3m pan</td>
<td>44m (144 feet)</td>
</tr>
<tr>
<td>Gasoline</td>
<td>0.3m x 0.3m pan</td>
<td>61m (200 feet)</td>
</tr>
<tr>
<td>JP4</td>
<td>0.6m x 0.6m pan</td>
<td>61m (200 feet)</td>
</tr>
</tbody>
</table>

**Speed of Response**
- ~4 seconds (Typical)

**Enclosure**
- Dimensions: 100 Diameter x 200 Length Overall (mm)
- Material: LM25 (Red epoxy), 316L stainless steel
- Entries: 1 or 2 – M20, M25, ¾"NPT, ½"NPT
- Weight: 2.5kg (LM25) or 6kg (316L)

**Field of View**

**Outputs**
- Relay contacts – alarm and fault
- Current source 4-20mA
- RS485 bidirectional serial communications link
- Live colour video – PAL and NTSC

**Certification**
- Factory Mutual: 3260 (3029978)
- ATEX: II 2 G Ex d IIC T4 (FM07ATEX0033)
- IEC: Ex (FME 07.0002)