**DESCRIPTION**

The X3301 with pulse/relay output is a multispectrum infrared (MIR) flame detector that is designed for use in controller based systems. In addition to use in new systems, it can serve as a direct field replacement for Det-Tronics controller based flame detectors that generate a pulse output (not compatible with R7484 and R7409B/C).

When used as a field replacement, all operating features of the current controller are retained in addition to gaining the advanced features of the X3301 Flame Detector. In typical applications, the four wire X3301 can utilize all existing system wiring.

The detector provides superior performance in applications that are at the extremes, and where background infrared radiation is a normal condition:

- Hangars
- Offshore production platforms
- Offshore production ships
- Refineries
- Production facilities
- Loading racks
- Compressor stations
- Turbine enclosures
- Airport water curtains.

**HIGHLIGHTS**

**X3301 TECHNOLOGY FEATURES**

- FM 3260
- ATEX Directive compliant
- Certified performance to multiple fuel types
- Extended detection range
- New standard set for cone of vision
- Maximum false alarm rejection
- Reliable flame detection with modulated IR background
- Pulse output for compatibility with controller based systems
- Microprocessor controlled heated optics
- Calibrated automatic optical check for each sensor eliminates need for testing with external test lamp
- RFI and EMC Directive compliant
- Event logging with time and date stamp
- International certifications
- Integral wiring compartment for ease of installation
- Solar resistance

**BENEFITS**

- Single detector for multiple fuels.
- Low cost of coverage.
- Ability to detect smaller fires earlier.
- Solid cone of vision to 125 feet for methane.
- Better detection zoning capability.
- Best combination of flame detection and false alarm rejection.
- Low maintenance costs.
- Reliable fault diagnostics.
- Suitable for heavy industrial applications.
- Explosion/flame proof or increased safety installations (Ex d e) in hazardous locations.
- Easily retrofitted (R7404, R7494).
Operating Voltage
24 Vdc nominal (18 Vdc minimum, 30 Vdc maximum). Maximum ripple is 2 volts peak-to-peak.

Power Consumption
4 watts minimum (without heater), 17 watts at 30 Vdc with EOL resistor installed and heater on maximum.

Relays
Contacts rated 5 amperes at 30 Vdc.

Fire Alarm:
— Form C (NO and NC contacts)
— normally de-energized
— latching/non-latching.

Fault:
— Form A (NO contacts)
— normally energized
— latching/non-latching.

Temperature Range
Operating: –40°F to +167°F (–40°C to +75°C).
Storage: –67°F to +185°F (–55°C to +85°C).
Hazardous location ratings from –55°C to +125°C.

Humidity Range
0 to 95% relative humidity, can withstand 100% condensing humidity for short periods of time.

Wiring
16 AWG or 2.5 mm² shielded cable is recommended.

Response Characteristics

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Size</th>
<th>Distance Ft (m)</th>
<th>Average Response Time (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>1 x 1 foot</td>
<td>265 (80.7)*</td>
<td>22</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>1 x 1 foot</td>
<td>250 (76.2)</td>
<td>17</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>1 x 1 foot</td>
<td>100 (30.5)</td>
<td>3</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>6 in. x 6 in.</td>
<td>100 (24.4)</td>
<td>7</td>
</tr>
<tr>
<td>Diesel</td>
<td>6 in. x 6 in.</td>
<td>70 (21.3)</td>
<td>6</td>
</tr>
<tr>
<td>Ethanol</td>
<td>1 x 1 foot</td>
<td>210 (64)</td>
<td>11</td>
</tr>
<tr>
<td>Methanol</td>
<td>6 in. x 6 in.</td>
<td>40 (12.2)</td>
<td>3</td>
</tr>
<tr>
<td>Methanol</td>
<td>1 x 1 foot</td>
<td>150 (45.7)</td>
<td>7</td>
</tr>
<tr>
<td>Methanol</td>
<td>1 x 1 foot</td>
<td>150 (45.7)</td>
<td>5**</td>
</tr>
<tr>
<td>Methane</td>
<td>32 inch plume</td>
<td>125 (38.1)</td>
<td>8**</td>
</tr>
<tr>
<td>Propane</td>
<td>32 inch plume</td>
<td>125 (38.1)</td>
<td>5</td>
</tr>
<tr>
<td>Jet-A</td>
<td>1 x 1 foot</td>
<td>150 (45.7)</td>
<td>4**</td>
</tr>
<tr>
<td>JP-5</td>
<td>2 x 2 feet</td>
<td>235 (71.6)</td>
<td>3**</td>
</tr>
<tr>
<td>JP-8</td>
<td>1 x 1 foot</td>
<td>150 (45.7)</td>
<td>5**</td>
</tr>
<tr>
<td>Class A</td>
<td>Ø12 in. x 7 in.</td>
<td>150 (45.7)</td>
<td>3**</td>
</tr>
</tbody>
</table>

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<tbody>
<tr>
<td>n-Heptane</td>
<td>1 x 1 foot</td>
<td>100 (30.5)</td>
<td>7</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>1 x 1 foot</td>
<td>50 (15.24)</td>
<td>&lt;2</td>
</tr>
<tr>
<td>Diesel</td>
<td>1 x 1 foot</td>
<td>70 (21.3)</td>
<td>7</td>
</tr>
<tr>
<td>Ethanol</td>
<td>1 x 1 foot</td>
<td>85 (25.9)</td>
<td>4**</td>
</tr>
<tr>
<td>Methanol</td>
<td>32 inch plume</td>
<td>70 (21.3)</td>
<td>6</td>
</tr>
<tr>
<td>Methane</td>
<td>32 inch plume</td>
<td>55 (16.8)</td>
<td>4</td>
</tr>
<tr>
<td>Methane</td>
<td>32 inch plume</td>
<td>75 (22.8)</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Propane</td>
<td>2 x 2 feet</td>
<td>150 (45.7)</td>
<td>3**</td>
</tr>
<tr>
<td>Class A</td>
<td>Ø12 in. x 7 in.</td>
<td>50 (15.24)</td>
<td>4**</td>
</tr>
</tbody>
</table>

* Outdoor test condition.
** 10 second pre-burn from ignition.
Ø Diameter

NOTE: Refer to the X3301 instruction manual (95-8736) for additional sensitivity levels.

Certification

UL-12.0093X
Ex d IIC T6-T4 Gb IP66/IP67
Ex tib IIC T130°C
T6 (Tamb = –50°C to +60°C)
T5 (Tamb = –50°C to +75°C),
– OR –
Ex d IIC T6-T4 Gb IP66/IP67
Ex tib IIC T130°C
T6 (Tamb = –55°C to +75°C)
T5 (Tamb = –55°C to +125°C)

IECEx Certificate of Conformity
IECEx ULD 06.0017X
Ex d IIC T6...T4 Gb
Ex tib IIC T130°C
T6 (Tamb = –50°C to +60°C)
T5 (Tamb = –55°C to +75°C)
T4 (Tamb = –55°C to +125°C)

FM and CSA Zone approval information, refer to the X3301 instruction manual (95-8736).

Warranty
5 years.

Shipping Weight
Aluminum: 7 lbs. (3.2 kg)
Stainless Steel: 13.8 lbs. (6.3 kg)

Field of View
90° horizontal by 75° vertical, at a minimum of 70% of the on-axis detection distance.

Enclosure Material
Copper-free aluminum (painted) or stainless steel (316/CF8M Cast).