The X3301 is a multispectrum infrared (MIR) flame detector. It provides unsurpassed detection of fires from light to heavy hydrocarbon fuels combined with the highest degree of false alarm rejection. The detector has Division and Zone explosion-proof ratings and is suitable for use in indoor and outdoor applications.

The X3301 contains three IR sensors with their associated signal processing circuitry. The standard output configuration includes fire alarm, fault and auxiliary relays, with an isolated 0–20 mA output model with optional HART communication.

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
- Automotive Painting
- LNG/LPG
- Gas Separation Plants
- Warehousing
- Marine

**X3301 TECHNOLOGY FEATURES**

- Complies with FM 3260
- EN54 certified
- Certified SIL 2 capable
- ATEX Directive compliant
- Certified performance to multiple fuel types and fire sizes
- EQP models available
- Long detection range to carbonaceous fires
- HART models available
- FDT/DTM capable
- Multiple sensitivity levels
- Maximum false alarm rejection
- Calibrated automatic optical integrity
- Reliable flame detection with modulated IR background
- Microprocessor controlled heated optics
- Third-party approved options for detector verification include Magnetic Optical Integrity and Manual Optical Integrity tests
- Tri-color LED indicates detector status and field-of-view (FOV)
- RFI and EMC Directive compliant
- Event logging with time and date stamp
- Integral wiring compartment for ease of installation
- Operates under adverse weather conditions and in dirty environments

**BENEFITS**

- Single detector for multiple hydrocarbon fuels
- Low cost of coverage
- Ability to detect smaller fires earlier
- Detection range of up 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 (Ex d) or increased safety installations (Ex d e) in hazardous locations
### SPECIFICATIONS

**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**
- **Auxiliary:** Form C (NO and NC contacts)  
- **normally energized/de-energized**  
- **latching/non-latching**.

**Current Output (Optional)**  
0–20 mA (± 0.3 mA), with a maximum loop resistance of 500 ohms from 18–19.9 Vdc. 600 ohms from 20–30 Vdc.

**Temperature Range**  
- **Operating:** -40°F to +167°F (-40°C to +75°C)  
- **Storage:** -67°F to +185°F (-55°C to +85°C)

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

**Spectral Sensitivity Range**  
4 - 5 microns

**Wiring**  
16 AWG or 2.5 mm² shielded cable is recommended.

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

**Conduit Entry Size**  
3/4 inch NPT or M25

**Warranty**  
5 years

### 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>Methane</td>
<td>1 x 1 foot</td>
<td>100 (30.5)</td>
<td>7</td>
</tr>
<tr>
<td>Diesel</td>
<td>1 x 1 foot</td>
<td>50 (15.24)</td>
<td>&lt;2</td>
</tr>
<tr>
<td>Ethanol</td>
<td>1 x 1 foot</td>
<td>70 (21.3)</td>
<td>4</td>
</tr>
<tr>
<td>Methanol</td>
<td>1 x 1 foot</td>
<td>85 (25.9)</td>
<td>7</td>
</tr>
<tr>
<td>Methane</td>
<td>32 inch plum</td>
<td>70 (21.3)</td>
<td>6</td>
</tr>
<tr>
<td>Propane</td>
<td>32 inch plum</td>
<td>55 (16.8)</td>
<td>4</td>
</tr>
<tr>
<td>Jet A</td>
<td>1 x 1 foot</td>
<td>75 (22.8)</td>
<td>&lt;5</td>
</tr>
<tr>
<td>JP-5</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.

### Field of View

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

### Certification

- **DEMKO 01 ATEX 130204X**  
  Increased Safety Model
  - Ex d e IIC T6...T5 Gb
  - Ex tb IIC T130°C

- **IECEx 61508**  
  Certified SIL 2 Capable.
  - Applies to specific models – Refer to the SIL 2 Certified X3301 Safety manual (95-8720)

### RUSSIA & KAZAKHSTAN

- **VNIIFTRI**  
  CERTIFICATE OF CONFORMITY TO “TP TC 012/2011”
  - N2 TC RU C-US. BH02.00401

- **IECEx Certificate of Conformity**  
  IECEx ULD 06.007X
  - Ex db eb IEC T6...T5 Gb
  - Ex tb IIIC T130°C

- **UL-Br 12.0093X**  
  - Ex d IEC T6...T4 Gb
  - Ex tb IIIC T130°C

- **US Coast Guard**  
  Coast Guard Approval No. 161.002/49/0.

- **DNV**  
  Type Approval Certificate Number TAA000002V2
  - DNV Certificate Number MED-B-9427

### Shipping Weight (Approximate)

- **Aluminum:** 7 lbs. (3.2 kg)
- **Stainless Steel:** 13.8 lbs. (6.3 kg)

---

Specifications subject to change without notice.

All trademarks are the property of their respective owners. © 2020 Carrier. All rights reserved.

Det-Tronics manufacturing system is certified to ISO 9001—the world’s most recognized quality management standard.