The Det-Tronics GT3000 line of electrochemical gas detectors is designed to provide continuous monitoring of the atmosphere for potentially hazardous gas leaks or oxygen depletion. Models are available for detecting a variety of gas types in various concentration ranges.

The GT3000 toxic gas detector is a two-wire loop powered device and is designed as a stand alone unit that supports local calibration. It is also fully compatible with the FlexVu® UD10/UD20 Universal Display Unit. The GT3000 consists of a replaceable sensor module (GTS) connected to a transmitter module (GTX). The transmitter generates a 4-20 mA output signal with HART, which is proportional to the concentration of the target gas and directly corresponds to 0-100% full scale.

The electrochemical sensor cell uses capillary diffusion barrier technology for monitoring gas concentrations in ambient air. When compared to solid state type sensors, the electrochemical sensing element provides improved accuracy, stability and reliability, and can also extend calibration intervals. This results in superior performance and reliability, as well as reduced maintenance.

**DESCRIPTION**

**HIGHLIGHTS**

- Performance approved and verified
- Electrochemical sensor cell for increased accuracy, stability, and reliability
- Highly specific response reduces the chance of false alarms resulting from the presence of other gases
- Self-contained transmitter circuitry
- Temperature compensated to ensure consistent performance over entire operating temperature range
- Suitable for outdoor applications requiring IP66 rating
- Hydrophobic filter easily replaced without opening the device or use of tools
- Hot swappable IS sensor module for live maintenance without de-classification of hazardous area
- EMI/RFI hardened
- Event and calibration logs are stored in non-volatile memory and are accessible using a UD10/UD20, HART device, or AMS software.
- Real-time clock with battery back-up
- Magnetic switch and LEDs for user interface
### SPECIFICATIONS

#### Calibration
Sensors are calibrated at the factory. Gas type and range are read by the transmitter. Calibration is initiated at the detector, at the UD10/UD20 Universal Display Unit, or by some other HART interface device.

#### Operating Voltage
24 Vdc nominal; Operating range is 12 to 30 Vdc.

#### Power Consumption
0.8 watt maximum @ 30 Vdc.

#### Maximum Loop Resistance
300 ohms at 18 Vdc, 600 ohms at 24 Vdc.

#### Current Output
4-20 mA (Normal operating mode)
3.8 mA indicates calibrate mode
3.5 mA or less indicates a fault condition.

#### Wiring
2x22 AWG, 1x16 AWG, 600V, 20'.

#### Storage Temperature (Transmitter)
-55°C to +75°C (−67°F to +167°F).

#### Storage Temperature (Sensor)
0°C to +20°C (+32°F to +68°F)
Ideal: +4°C to +10°C (+39°F to +50°F).

#### Humidity Range
15 to 90% RH.

#### Pressure Range
Atmospheric ±10%.

#### Warm-Up
Warm-up time can last up to 150 seconds.

#### Electro-Magnetic Compatibility
- EN50270 (Immunity).
- EN55011 (Emissions)
- BS EN 50528 (Immunity).

#### Thread Options
3/4” NPT or M25.

#### Enclosure Material
GTX Transmitter: 316 Stainless Steel
GTS Sensor Module: PPA (30% Carbon filled).

#### Warranty
12 months from date of installation or 18 months from date of shipment, whichever occurs first.

### Gas Range Response time

<table>
<thead>
<tr>
<th>Gas Range</th>
<th>Response Time</th>
<th>Accuracy of Reading</th>
<th>Operating Temperature Range</th>
<th>Zero Drift</th>
<th>Performance Approved Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20 PPM</td>
<td>T50 = 10 Sec.</td>
<td>±2 ppm or 1% of Reading</td>
<td>-40°C to +50°C</td>
<td>± 1 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
<tr>
<td>0-50 PPM</td>
<td>T50 = 10 Sec.</td>
<td>±2 ppm or 1% of Reading</td>
<td>-40°C to +50°C</td>
<td>± 1 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
<tr>
<td>0-100 PPM</td>
<td>T50 = 10 Sec.</td>
<td>±2 ppm or 1% of Reading</td>
<td>-40°C to +50°C</td>
<td>± 2 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
<tr>
<td>0-500 PPM</td>
<td>T50 = 10 Sec.</td>
<td>±2 ppm or 1% of Reading</td>
<td>-40°C to +50°C</td>
<td>± 2 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
<tr>
<td>0-25% V/V</td>
<td>T50 = 7 Sec.</td>
<td>&lt; 0.5% V/V</td>
<td>-20°C to +50°C</td>
<td>&lt; 2 %/Mo.</td>
<td>BS EN 50104</td>
</tr>
<tr>
<td>0-100 PPM</td>
<td>T50 = 15 Sec.</td>
<td>±5 ppm or 1% of Reading</td>
<td>-20°C to +50°C</td>
<td>± 2 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
<tr>
<td>0-500 PPM</td>
<td>T50 = 15 Sec.</td>
<td>±5 ppm or 1% of Reading</td>
<td>-20°C to +50°C</td>
<td>± 9 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
<tr>
<td>0-20 PPM</td>
<td>T50 = 15 Sec.</td>
<td>±0.5 ppm or 1% of Reading</td>
<td>-20°C to +50°C</td>
<td>± 0.4 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
<tr>
<td>0-100 PPM</td>
<td>T50 = 15 Sec.</td>
<td>±0.5 ppm or 1% of Reading</td>
<td>-20°C to +50°C</td>
<td>± 0.4 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
<tr>
<td>0-10 PPM</td>
<td>T50 = 15 Sec.</td>
<td>±0.5 ppm or 1% of Reading</td>
<td>-20°C to +50°C</td>
<td>&lt; 0.2 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
<tr>
<td>0-1000 PPM</td>
<td>T50 = 8 Sec.</td>
<td>±0.5 ppm or 1% of Reading</td>
<td>-20°C to +40°C</td>
<td>± 20 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
<tr>
<td>0-20 PPM</td>
<td>T50 = 7 Sec.</td>
<td>±2 ppm or 1% of Reading</td>
<td>-20°C to +40°C</td>
<td>± 0.1 ppm/Mo.</td>
<td>ISA 92.00.01</td>
</tr>
</tbody>
</table>

* Time to reach percentage of final reading when gas concentration equal to full scale is applied to sensor.
** Background concentrations of ammonia may shorten lifetime of sensor.
*** Sensor approved for oxygen depletion (< 21% V/V) only.

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**Certification**

**Explosion-Proof Model**
- **FM/CSA:** Class I, Div. 1, Groups A, B, C & D (T4).
- **ATEX:** Ex d mb [ia Ga] IIC T4 Gb IP66.
- **IECEx:** Ex d mb [ia Ga] IIC T4 Gb IP66.
- **INMETRO:** CEPEL 10.1927X.

**Intrinsically Safe Model**
- **FM:** IS Class I, Div. 1, Groups A, B, C & D (T4).
- **FM:** IS Class I, Zone 0, AEx ia IIC (T4).
- **FM:** IS Class I, Div. 1 & 2, Groups A, B, C & D (T4).
- **ATEX:** Ex d mb [ia Ga] IIC T4 Gb IP66.
- **ATEX:** Ex ia IIC T4 Ga IP66.
- **ATEX:** Ex ia IIC T4 Ga IP66.
- **FM:** IS Class I, Div. 1, Groups A, B, C & D (T4).
- **FM:** IS Class I, Div. 1 & 2, Groups A, B, C & D (T4).

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**Corporate Office**

6901 West 110th Street | Minneapolis, MN 55438 USA
Operator: 952.941.5665 or 800.468.3244

Customer Service: 952.946.6491 or 800.765.3473

www.det-tronics.com | Email: det-tronics@det-tronics.com