Premium Line

NT-NH3-PL5000

Electrochemical Ammonia Sensor

Description

The NT-NH3-PL5000 is a new electrochemical gas sensor with 3 electrodes for the detection of Ammonia in a variety of gas detection applications. Exhibiting high performance with very stable base line and output signal and excellent selectivity, this compact sensor (20.4 mm diameter) is suitable both for portable and fixed gas detection instruments.

The porous electrode technology enables accurate gas detection with high sensitivity. The mechanical design of the sensor gives optimum gas diffusion characteristics, and the hermetically sealed enclosure prevents costly electrolyte leakage.

This new Premium Line design offers several advantages with respect to the traditional industrial sensor. For example it gives the possibility to use a general OP amplifier instead of the high-cost OP97.

Technical Specifications

- Detectable Gas: Ammonia
- Detection Range: 0 – 5000 ppm (1)
- Output Signal: 4 ± 2 nA/ppm
- Resolution: 20 ppm
- Repeatability: ± 10 %
- Typical Baseline Range: (pure air) < 10 ppm
- Typical Response Time (t_{90}): < 150 sec
- Baseline Shift: (-30 ~ 50 degree C) < 40 ppm
- Long Term Output Drift: < 2%/month
- Expected Life Time: > 2 years
- Weight: Approximately 4.5 g

Operating conditions

- Operating Temperature: -30°C to +50°C
- Operating Humidity: 15 to 90 % RH
- Operating Pressure Range: 1 atm ± 10 %
- Recommended Load Resistor: 33 Ω
- Bias Voltage: Not required
- Position Sensitivity: None
- Recommended Storage Temp.: 0-20°C
- Storage Life: < 6 months

(1) Available also in the detection ranges 0-100 ppm, 0-300 ppm and 0-1000 ppm (see NET website for further information)
Typical cross sensitivities

<table>
<thead>
<tr>
<th>Gas</th>
<th>Test Gas Concentration (ppm)</th>
<th>Typical NO2 Concentration Equivalent (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Sulphur Dioxide</td>
<td>20</td>
<td>- 12</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>5,000</td>
<td>0</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>300</td>
<td>0</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Nitric Oxide</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>Ethanol</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

**Dimensions**

**Temperature Dependency**

**NH₃ sensor Premium Line Benefits**

- Very stable base line and output signal with respect to many other NH₃ sensors on the market.

- The sensor has an excellent gas selectivity. For example, the sensor shows no sensitivity to H₂S compared to other industrial sensors which often have a high sensitivity to H₂S.

- The performance of NT-NH3-PL5000 sensor is not affected by the choice of OP amplifier. So a general OP amplifier can be used without needing of special high-cost amplifiers.

- The sensor has an excellent mechanical durability. As a result, the sensors can maintain a long stability without the breaking down of wires or electrolyte leakage.