Product Data Sheet
Electrochemical CO Sensor    (P/N: 051-0100-000)

Description
Electrochemical carbon monoxide gas sensor is designed for fire detection, ventilation, indoor garage and vehicular air conditioning systems.

Performance Characteristics
- Gas Concentration Range: 0~500ppm CO
- Maximum Overload: 2000ppm
- Zero Signal: -0.1~0.2 μA
- Sensitivity (at 20°C): 0.050+/-0.015μA/ppm CO
- Response Time (T90): <30s
- Resolution: 1ppm
- Zero Drift (-20°C ~50°C): <10ppm
- Linearity: linear up to 500ppm
- Bias Voltage: zero
- Recommended load Resistor: 10Ω

Environmental
- Operating Temperature: -20°C~50°C
- Operating Pressure: 1 atm ± 10%
- Operating Humidity: 15%~95% RH Non-Condensing

Life time
- Life Time Output Drift: <5% Year
- Recommended Storage Temp: 10°C~30°C
- Expected Operational Life: > 6 Years
- Storage Life: 6 Months

Mechanical
- Housing Material: ABS Plastic
- Weight: 2g (Nominal)
- Orientation: Any

Poisoning
Exposure to high concentrations of solvent vapours is avoided under any condition. When using sensors with printed circuit boards, degreasing agents should be used before the sensor is fitted. Do not glue directly on or near the sensor as the solvent may cause the crazing of the plastic.

Note:
The performance data in this document is conducted by using SemeaTech recommended test circuitry and test environment at 20 °C, 50% RH and 1 atm.

Sensor performance varies under different environmental conditions, please contact SemeaTech for more details.
Cross-sensitivity Data

<table>
<thead>
<tr>
<th>Gas</th>
<th>Concentration (ppm)</th>
<th>Output signal (ppm CO equivalent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen Sulfide</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Nitric Oxide</td>
<td>35</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>5</td>
<td>-1~0</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>100</td>
<td>&lt;40</td>
</tr>
<tr>
<td>Ethylene</td>
<td>100</td>
<td>&lt;50</td>
</tr>
<tr>
<td>Chlorine</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Ethanol</td>
<td>200</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: The cross-sensitivity data shows the sensor response to other gases rather than the target gas. The data in the table above may vary from different batches of sensors and the changes of test environment.

Temperature Data

![Graph showing sensitivity vs temperature](image)

y = -3E-06x² + 0.0004x + 0.0338

Safety Note

The sensor is designed to be used in certain instruments for life critical applications. To ensure the sensor functioning per its specifications inside the instrument, it is required to read the instrument user's guide carefully and comply with the calibration procedures by using certified target calibration gas before each use. Failure to do so may cause serious injury and fatality.

It is highly recommended for customers to validate the sensor performance using this document as a reference for their product designs or applications.