NO2/C-20
Nitrogen Dioxide Gas Sensor in Compact Housing

MEASUREMENT
Operation Principle 3-Electrode Electrochemical
Nominal Range 0 – 20 ppm
Maximum Overload 200 ppm
Inboard Filter –
Output Signal -1100 ± 300 nA/ppm
Resolution (Electronics dependent) < 0.1 ppm
T90 Response Time < 60 sec
Typical Baseline Range (pure air, 20°C) < 0.1 ppm
Maximum Zero Shift (+20°C to +40°C) -0.2 ppm
Repeatability < 2 % of signal
Output Linearity Linear
Gain –

ELECTRICAL
Rec. Load Resistor 10 – 33 Ohm
Bias (V_Sens-V_Ref) not required
Conformity to RoHS directive RoHS Compliance

ENVIRONMENTAL
Relative Humidity Range 15 % to 90 % R.H. non-condensing
Temperature Range -40 °C to 50 °C
Pressure Range Atmospheric ± 10%
Pressure Coefficient N.D.
Humidity Effect none

LIFETIME
Expected Operation Life 2 years in air
Expected Long Term Output < 2 % per month
Drift in air –
Filter Life –
Storage Life 6 months in container
Rec. Storage Temperature 5 °C – 20 °C
Warranty Period 12 months from date of dispatch

Performance data conditions: 20 °C, 50% RH, 1013 mbar

MECHANICAL
Weight 13 g
Position Sensitivity None

APPLICATIONS
Continuous Air Quality Monitoring
Emission Monitoring

CROSS-SENSITIVITY DATA
The table below does not claim to be complete. Interfering gases should not be used for calibration.

<table>
<thead>
<tr>
<th>Interfering Gas</th>
<th>Conc. ppm</th>
<th>Reading ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>O₃</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>SO₂</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>CO</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>H₂</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>C₂H₄</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Cl₂</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>NO</td>
<td>35</td>
<td>0'</td>
</tr>
<tr>
<td>CH₂O</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>HCl</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>NH₃</td>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>H₂S</td>
<td>20</td>
<td>&lt; -20</td>
</tr>
</tbody>
</table>

1) NO readily forms NO₂ in the presence of O₂

MEMBRAPOR AG
Birkenweg 2
CH-8304 Wallisellen
Switzerland

The data contained in this document is for guidance only. Membrapor AG accepts no liability for any consequential losses, injury or damage resulting from the use of this document or from any omissions or errors herein. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.
TEMPERATURE DEPENDENCE

The output of an electrochemical sensor varies with temperature. The graphs below show the variation in output with temperature for this type of sensor. The results are shown in the graphs as a mean for a batch of sensors. The sensitivity dependence is expressed as a percentage of the signal at 20 °C. The shift in baseline is shown in ppm referenced to 20 °C and a relative humidity of 50%.

Please note:
It is highly recommended to acquire the temperature dependence curves with the whole instrument. The sampling system, the humidity, the electronics, the interaction between the electronics and the sensor, all have a significant impact on the temperature dependence of the final measurement reading.

Figure 1: Sensitivity dependence expressed as a percentage of the signal at 20 °C. The result is shown along with confidence intervals corresponding to ±3 times the standard deviation.
Figure 2: The shift in baseline shown in ppm referenced to 20 °C and a relative humidity of 50%.

Figure 3: The shift in baseline expressed as percentage of the measurement range referenced to 20 °C and a R.H. of 50%.