Fluorine

SENSORIC F2 3E 1
FEATURES

Amperometric 3-electrode sensor
High reliability
High resolution
Fixed organic gel electrolyte

TYPICAL APPLICATIONS

Chemical Industry, Petrochemical Industry, General Industry

PART NUMBER INFORMATION

MINI 1431-031-30009
SENSORIC CLASSIC 1431-031-30069
CTL 4 series adaptation 1431-031-30049
CTL 7 series adaptation 1431-031-30079

Sensoric deems the data contained herein as factual, and the opinions expressed are those of qualified experts based on the results of tests conducted. The above data can not be used as a warranty provision or representation for which Sensoric assumes legal responsibility. The data are offered solely for consideration, investigation and verification. Any use of this information is subject to federal, state and local laws and regulations.
Sensoric F2 3E 1

TECHNICAL SPECIFICATIONS

Measuring Range 0–1 ppm
Sensitivity Range 1000 nA/ppm ± 300 nA/ ppm (negative current)
Zero Current at 20 °C < ± 20 nA
Resolution at 20 °C < 0.02 ppm
Bias Potential 0 mV
Linearity < 5% full scale

Response Time at 20 °C
\[ t_{50} < 30 \text{ s calculated from 4 min. exposure time with 1 ppm Cl}_2 \]
\[ t_{90} < 80 \text{ s calculated from 4 min. exposure time with 1 ppm Cl}_2 \]

Long Term Sensitivity Drift < 5% per month

Operation Conditions
Temperature Range -10 °C to + 40 °C
Humidity Range 15-90% r.H., non-condensing

Effect of Humidity abrupt changes of rel. humidity will cause short term drift in zero reading

Sensor Life Expectancy > 18 months
Warranty 12 months

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RELATIVE OUTPUT vs. TEMPERATURE:

Due to the nature of the gas the temperature dependence of the sensor as a function of the environmental temperature conditions is strongly related to the experimental conditions.

Sensoric is currently revising this set of data.

Based on the current experience with this sensor the temperature dependence

a) on the zero reading is < 0.1 ppm
b) on the sensitivity is < 20% of the sensitivity at 20°C

within the specified temperature range.

Please contact our Technical Support Department (sales_europe@citytech.com) for further details.
## CROSS SENSITIVITIES AT 20°C

<table>
<thead>
<tr>
<th>Gas</th>
<th>Concentration</th>
<th>Reading [ppm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohols</td>
<td>1000 ppm</td>
<td>0</td>
</tr>
<tr>
<td>Arsine</td>
<td>0.2 ppm</td>
<td>-0.03</td>
</tr>
<tr>
<td>Bromine</td>
<td>yes; n/d</td>
<td></td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>5000 ppm</td>
<td>0</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>100 ppm</td>
<td>1.4</td>
</tr>
<tr>
<td>Chlorine</td>
<td>1 ppm</td>
<td>0</td>
</tr>
<tr>
<td>Diborane</td>
<td>0.25 ppm</td>
<td>-0.01</td>
</tr>
<tr>
<td>Hydrocarbons</td>
<td>% range</td>
<td>0</td>
</tr>
<tr>
<td>Hydrochloric Acid</td>
<td>5 ppm</td>
<td>-7</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>10000 ppm</td>
<td>0</td>
</tr>
<tr>
<td>Hydrogen Cyanide</td>
<td>1 ppm</td>
<td>-0.05</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>1 ppm</td>
<td>-2</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>100 %</td>
<td>0</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>10 ppm</td>
<td>8</td>
</tr>
<tr>
<td>Ozone</td>
<td>0.25 ppm</td>
<td>0.3</td>
</tr>
<tr>
<td>Phosphine</td>
<td>0.3 ppm</td>
<td>approx. -0.1 ppm; n/d</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>20 ppm</td>
<td>-0.2</td>
</tr>
</tbody>
</table>

**Notes:**
1. Interference factors may differ from sensor to sensor and with life time. It is advisable to calibrate with 1 ppm Cl₂.
2. This table does not claim to be complete. The sensor might also be sensitive to other gases.

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**Safety Note**

This sensor is designed to be used in safety critical applications. To ensure that the sensor and/or instrument in which it is used, are operating properly, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may jeopardize the safety of people and property.

**Attention**

Use of the Sensoric range sensors requires complete understanding of the instructions. Before using Sensoric range sensors please carefully read ‘Application Notes’ which can be found at www.citytech.com under the heading ‘Support’ -> ‘Application Notes’ -> ‘Sensoric’

Product Safety Data Sheets (PSDS) can be obtained at www.citytech.com under the heading ‘Support’ -> ‘Product Safety Datasheets’

For further assistance on sensor selection and use, please contact a member of the Technical Sales team.