

## Midas<sup>®</sup> SENSOR CARTRIDGE SPECIFICATIONS

### Carbon Dioxide (CO<sub>2</sub>) MIDAS-S-CO<sub>2</sub>, MIDAS-E-CO<sub>2</sub>



| Gas Measured                            | Carbon Dioxide (CO <sub>2</sub> )  |
|---|--|
| <b>Cartridge Part Number</b>            | MIDAS-S-CO <sub>2</sub> 1 year standard warranty<br>MIDAS-E-CO <sub>2</sub> 2 year extended warranty   |
| <b>Sensor Technology</b>                | 3 electrode electrochemical cell   |
| <b>Measuring Range (ppm)</b>            | CO <sub>2</sub> 0 – 2% v/v   |
| <b>Minimum Alarm 1 Set Point</b>        | 2500ppm  |
| <b>Repeatability</b>                    | < ± 0.06% v/v  |
| <b>Linearity</b>                        | < ± 15% of measured value  |
| <b>Response Time t<sub>92.5</sub></b>   | < 70 seconds   |
| <b>Sensor Cartridge Life Expectancy</b> | ≥ 24 months under typical application conditions   |
| <b>Operating Temperature</b>            | 0°C to + 40°C (32°F to 104°F)  |
| <b>Effect of Temperature</b>            | < 0.0039% vol / °C (0°C to 20°C)<br>< ± 0.0053% vol / °C (20°C to 40°C)<br>< 1.9% of measured value / °C (0°C to 20°C)<br>< ± 0.9% of measured value / °C (20°C to 40°C) |
| <b>Operating Humidity (continuous)</b>  |  |
| <b>Effect of Humidity</b>               | 15 – 95% rH  |
| Zero                                    | No effect  |
| Sensitivity                             | < ± 1% of measured value / % rH  |
| <b>Operating Pressure</b>               | 90 – 110kPa  |
| <b>Effect of Position</b>               | No effect in typical application   |
| <b>Long Term Drift</b>                  |  |
| Zero                                    | < +0.3% vol / year   |
| Sensitivity                             | < 30% of measured value / 1 year   |
| <b>Calibration Gas</b>                  | Carbon Dioxide (CO <sub>2</sub> )  |
| <b>Challenge Gas (Bump Test)</b>        | Carbon Dioxide (CO <sub>2</sub> )  |
| <b>Warm Up Time</b>                     | < 20 minutes   |
| <b>Storage Temperature</b>              | +5°C to +25°C (+41°F to +77°F)   |

The sensor data listed is based on ideal test environment; observed performance may vary based on the actual monitoring system and the sampling conditions employed

#### Cross Sensitivities

Each Midas<sup>®</sup> sensor is potentially cross sensitive to other gases and this may cause a gas reading when exposed to other gases than those originally designated. The table below presents typical readings that will be observed when a new sensor cartridge is exposed to the cross sensitive gas (or a mixture of gases containing the cross sensitive species).

| Gas / Vapor              | Chemical Formula   | Concentration applied (ppm) | Reading (ppm CO <sub>2</sub> ) |
|--------------------------|--------------------|-----------------------------|--------------------------------|
| <b>Carbon Monoxide</b>   | CO                 | 500                         | < 0.05                         |
| <b>Chlorine</b>          | Cl <sub>2</sub>    | 2                           | < 0.05                         |
| <b>Hydrogen</b>          | H <sub>2</sub>     | 1000                        | < 0.05                         |
| <b>Hydrogen Sulphide</b> | H <sub>2</sub> S   | 75                          | < 0.05                         |
| <b>Methane</b>           | CH <sub>4</sub>    | 20000                       | < 0.05                         |
| <b>Nitrogen Dioxide</b>  | NO <sub>2</sub>    | 50                          | < 0.05                         |
| <b>Sulphur Dioxide</b>   | SO <sub>2</sub>    | 50                          | < 0.05                         |
| <b>Methanol</b>          | CH <sub>3</sub> OH | 1000                        | < 0.05                         |

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Toll-free: 800.538.0363

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W: <https://dsasuppliers.com>

E: [sales@dsasuppliers.com](mailto:sales@dsasuppliers.com)

P: +441158390391

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