

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

### Diborane (B<sub>2</sub>H<sub>6</sub>) MIDAS-S-B2H, MIDAS-E-B2H



Gas Measured	Diborane B <sub>2</sub> H <sub>6</sub>
<b>Cartridge Part Number</b>	MIDAS-S-B2H 1 year standard warranty MIDAS-E-B2H 2 year extended warranty
<b>Sensor Technology</b>	3 electrode electrochemical cell
<b>Measuring Range (ppm)</b>	B <sub>2</sub> H <sub>6</sub> 0 – 0.4ppm
<b>Minimum Alarm 1 Set Point</b>	0.050ppm
<b>Repeatability</b>	< ± 2% of measured value
<b>Linearity</b>	< ± 10% of Full Scale
<b>Response Time</b> <sub>100,2.5</sub>	< 15 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>	Zero: < ± 0.0002ppm / °C (0°C to 40°C) Sensitivity: < ± 1% of measured value / °C
<b>Operating Humidity (continuous)</b>	10 – 95% rH (non-condensing)
<b>Effect of Humidity</b>	Zero: Initial short term drift at abrupt RH change (< 0.0075ppm / % rH) Sensitivity: < ± 0.5% 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 Sensitivity: < 5% of measured value / 6 months
<b>Calibration Gas</b>	Diborane (B <sub>2</sub> H <sub>6</sub> )
<b>Challenge Gas (Bump Test)</b>	Phosphine (PH <sub>3</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 B <sub>2</sub> H <sub>6</sub> )
Ammonia	NH <sub>3</sub>	108	<0.1
Arsine	AsH <sub>3</sub>	0.2	0.1
Carbon Dioxide	CO <sub>2</sub>	5,000	0
Carbon Monoxide	CO	85	0
Chlorine	Cl <sub>2</sub>	0.85	-0.15
Disilane	Si <sub>2</sub> H <sub>6</sub>	0.27	0.12
Germane	GeH <sub>4</sub>	0.94	0.1
Hydrogen	H <sub>2</sub>	3100	0
Hydrogen Chloride	HCl	3.9	0.26
Hydrogen Cyanide	HCN	12	0.35
Hydrogen Fluoride	HF	7.2	0
Hydrogen Selenide	H <sub>2</sub> Se	0.8	0.2
Hydrogen Sulphide	H <sub>2</sub> S	1.8	0.75
Iso Propanol	C <sub>3</sub> H <sub>7</sub> OH	20,000	<0.05
Methane	CH <sub>4</sub>	18,000	0
Nitrogen Dioxide	NO <sub>2</sub>	10.1	-1.5
Phosphine	PH <sub>3</sub>	0.3	0.23
Silane	SiH <sub>4</sub>	2.0	0.18
Sulphur Dioxide	SO <sub>2</sub>	2	0.3

Interference differs from cartridge to cartridge and over cell life. It is not recommended to calibrate with cross sensitivity factors. The target gas should be used for calibration.

#### Find out more

[www.honeywellanalytics.com](http://www.honeywellanalytics.com)

Toll-free: 800.538.0363

#### Please Note:

While every effort has been made to ensure accuracy in this publication, no responsibility can be accepted for errors or omissions. Data may change, as well as legislation, and you are strongly advised to obtain copies of the most recently issued regulations, standards, and guidelines. This publication is not intended to form the basis of a contract.