



## Midas® Sensor Cartridge Specifications

### Diborane (B<sub>2</sub>H<sub>6</sub>) MIDAS-E-B2H, MIDAS-S-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</b>	B <sub>2</sub> H <sub>6</sub> 0 - 400ppb
<b>Minimum Alarm 1 Set Point</b>	50ppb
<b>Lower Detection Limit</b>	44ppb
<b>Linearity</b>	< ± 10% of measured value
<b>Repeatability</b>	< ± 2% of Full Scale
<b>Resolution</b>	2ppb
<b>Response Time t<sub>62.5</sub></b>	≤ 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	< ± 0.02ppb / °C
Sensitivity	< ± 1% of measured value / °C
<b>Operating Humidity</b>	10 to 90% RH
<b>Effect of Humidity</b>	
Zero	< ± 8ppb / % 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>Bump Test Gas</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® 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 Measured	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>	5000	0
Carbon Monoxide	CO	85	0
Chlorine	Cl <sub>2</sub>	0.85	-0.05
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	1.2	0.35
Hydrogen Fluoride	HF	7.2	0
Hydrogen Selenide	H <sub>2</sub> Se	0.8	0.2
Hydrogen Sulfide	H <sub>2</sub> S	1.8	0.75
Iso Propanol	C <sub>3</sub> H <sub>7</sub> OH	20000	<0.05
Methane	CH <sub>4</sub>	18000	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
Sulfur 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

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