

# MIDAS S2

# DIBORANE ( $B_2H_6$ )

## Sensor Cartridge Specifications

Selectable gases	Diborane ( $B_2H_6$ )
Cartridge Part Number	MIDAS S2-E-B2H 2-year extended warranty
Sensor Technology	Electrochemical sensor
Measuring Range	$B_2H_6$ 0 – 400ppb
Default Alarm 1	$B_2H_6$ 50ppb
Default Alarm 2	$B_2H_6$ 100ppb
LDL, LAL	$B_2H_6$ 36ppb
Resolution	$B_2H_6$ 2ppb
Accuracy	$\leq \pm 5\%$ of measured value
Response Time $t_{62:5}$	Typical 2 seconds
Sensor Cartridge Life Expectancy (Expiration Period)	24 months under typical application conditions Extendable for 1 year through calibration after 24 months
Operating Temperature	0°C to +40°C (32°F to 104°F)
Effect of Temperature Sensitivity	$\leq \pm 10\%$ of measured value at 20°C
Operating Humidity	10 to 90% non-condensing
Operating Pressure	90 – 110kPa
Calibration Gas	$B_2H_6$ 200ppb
Warm Up Time	< 20 minutes
Storage Temperature	+5°C to +25°C (+41°F to +77°F)

The sensor data listed is based on the test data with  $B_2H_6$  gas under normal Lab test conditions (20-25 C, 0 - 60%RH, normal atmosphere pressure); observed performance may vary based on the actual monitoring system and the sampling conditions employed.



**CROSS SENSITIVITIES**

Each Midas S2 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 (ppb 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>2</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.

**For more information**

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**Honeywell Process  
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