



Hydride Group ( $B_2H_6$   $GeH_4$ )

MIDAS-S-HYD

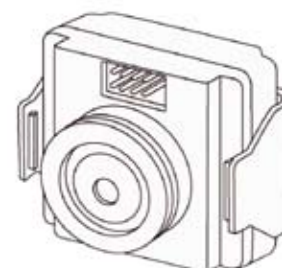
MIDAS-E-HYD

# Hydride Group ( $B_2H_6$ $GeH_4$ ) MIDAS-S-HYD MIDAS-E-HYD



**Hydride Group ( $B_2H_6$   $GeH_4$ ) MIDAS-S-HYD Midas<sup>®</sup> sensor cartridges are intended for use only with Honeywell Analytics' Midas<sup>®</sup> gas detector system. Please refer to the Midas<sup>®</sup> Technical Manual for further details.**

**The Midas<sup>®</sup> Hydride Group electrochemical sensor is specifically designed to directly detect similar molecular species in the Hydride family; namely Diborane ( $B_2H_6$ ), and Germane ( $GeH_4$ ). See details below regarding other detectable gases. Consult the Technical Manual to configure the Midas<sup>®</sup> transmitter**



Gas Measured	Diborane $B_2H_6$
<b>Cartridge Part Number</b>	MIDAS-S-HYD 1 year standard warranty MIDAS-E-HYD 2 year extended warranty
<b>Sensor Technology</b>	3 electrode electrochemical cell
<b>Measuring Range (ppm)</b>	$B_2H_6$ 0 – 0.4ppm
<b>Minimum Alarm 1 Set Point</b>	0.050ppm
<b>Lower Detectable Limit (LDL)</b>	0.036ppm
<b>Repeatability</b>	< ± 5% of measured value
<b>Linearity</b>	< ± 10% of measured value
<b>Response Time</b> <sub>102.5</sub>	< 20 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>	< ± 0.0008ppm / °C (0°C to 20°C) < ± 0.0035ppm / °C (20°C to 40°C) < ± 1% of measured value / °C
<b>Operating Humidity (continuous)</b>	20 – 90% rH (non-condensing)
<b>Effect of Humidity</b>	Initial short term drift at abrupt RH change (< 0.0075ppm / % rH) < ± 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>	< ± 0.05ppm / year < 5% of measured value / 6 months
<b>Calibration Gas</b>	Diborane ( $B_2H_6$ )
<b>Challenge Gas (Bump Test)</b>	Phosphine ( $PH_3$ )
<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

# General Specification



Midas® is a registered trademark of Honeywell Analytics.

All data refers to representative electrochemical sensor as tested with B<sub>2</sub>H<sub>6</sub> gas from an approved source.

As with all electrochemical sensor cells, dramatic output changes in reported concentrations can be expected under rapidly changing environmental conditions. Please ensure sensors are located in areas not prone to sudden changes in humidity and temperature.

Actual readings may be affected by flow rates (although Midas® automatically controls flow rate within specified ranges) and absorption on tubing and other gas path surfaces.

All sensors are shipped pre-calibrated to traceable national standards. Dependent on actual operating conditions and overall exposure to gases, each sensor may not require in-field calibration for up to 24 months subject to any requirements to calibrate from local regulations or site practices.

Calibration and challenge gases should be from a certified and reliable source.

## Other Detectable Gases

The following additional gases can be detected with this sensor cartridge. Sensor performance and characteristics will be representative of the data as tabulated above. Consult the Technical Manual to set up the Midas® transmitter with the designated identification code for each of the following gas types.

Detectable	Gas Chemical Formula	Measuring Range
Germane	GeH <sub>4</sub>	0 – 0.8ppm

## 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 / Vapour	Chemical Formula	Concentration Applied (ppm)	Reading (ppm B <sub>2</sub> H <sub>6</sub> )
Ammonia	NH <sub>3</sub>	100	0.14
Arsine	AsH <sub>3</sub>	0.2	0.28
Carbon Monoxide	CO	100	0
Carbon Dioxide	CO <sub>2</sub>	5000	0
Chlorine	Cl <sub>2</sub>	1	- 0.1
Germane	GeH <sub>4</sub>	0.5	0.35
Hydrocarbons		% range	0
Hydrogen	H <sub>2</sub>	3000	0
Hydrogen Chloride	HCl	5	0
Hydrogen Cyanide	HCN	10	0.35
Hydrogen Sulphide	H <sub>2</sub> S	1.0	0.35
Iso Propanol	C <sub>3</sub> H <sub>7</sub> OH	2000	0
Nitrogen Dioxide	NO <sub>2</sub>	10	- 2.8
Phosphine	PH <sub>3</sub>	0.1	0.18
Silane	SiH <sub>4</sub>	0.2	0.21
Sulphur Dioxide	SO <sub>2</sub>	2	0.28

# Our Product Range



## Fixed Gas Monitoring

Honeywell Analytics offers a wide range of fixed gas detection solutions for a diverse array of industries and applications including: Commercial properties, industrial applications, semiconductor manufacturers, energy plants and petrochemical sites.

- » Detection of flammable, oxygen and toxic gases (including exotics)
- » Innovative use of 4 core sensing technologies – paper tape, electrochemical cell, catalytic bead and infrared
- » Capability to detect down to Parts Per Billion (ppb) or Percent by Volume (%v/v)
- » Cost effective regulatory compliance solutions

## Portable Gas Monitoring

When it comes to personal protection from gas hazards, Honeywell Analytics has a wide range of reliable solutions ideally suited for use in confined or enclosed spaces.

These include:

- » Detection of flammable, oxygen and toxic gases
- » Single gas personal monitors – worn by the individual
- » Multi-gas portable gas monitors – used for confined space entry and regulatory compliance
- » Multi-gas transportable monitors – used for temporary protection of area during site construction and maintenance activities

## Technical Services

At Honeywell Analytics, we believe in the value of great service and customer care. Our key commitment is providing complete and total customer satisfaction. Here are just a few of the services we can offer:

- » Full technical support
- » Expert team on hand to answer questions and queries
- » Fully equipped workshops to ensure quick turnaround on repairs
- » Comprehensive service engineer network
- » Training on product use and maintenance
- » Mobile calibration service
- » Customised programmes of preventative/corrective maintenance
- » Extended warranties on products

### Find out more

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

### Contact Honeywell Analytics:

#### Europe, Middle East, Africa

Life Safety Distribution AG  
Wilstrasse 11-U31  
CH-8610 Uster  
Switzerland  
Tel: +41 (0)44 943 4300  
Fax: +41 (0)44 943 4398  
[gasdetection@honeywell.com](mailto:gasdetection@honeywell.com)

#### Americas

Honeywell Analytics Distribution, Inc.  
405 Barclay Blvd.  
Lincolnshire, IL 60069  
USA  
Tel: +1 847 955 8200  
Toll free: +1 800 538 0363  
Fax: +1 847 955 8208  
[detectgas@honeywell.com](mailto:detectgas@honeywell.com)

#### Asia Pacific

Honeywell Analytics Asia Pacific  
#508, Kolon Science Valley (1)  
187-10 Guro-Dong, Guro-Gu  
Seoul, 152-050,  
Korea  
Tel: +82 (0)2 2025 0307  
Fax: +82 (0)2 2025 0329  
[analytics.ap@honeywell.com](mailto:analytics.ap@honeywell.com)

### Technical Services

[ha.emea.service@honeywell.com](mailto:ha.emea.service@honeywell.com)

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

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