Honeywell

Midas® SENSOR CARTRIDGE SPECIFICATIONS

Diborane (B_2H_6)
MIDAS-S-B2H, MIDAS-E-B2H

Gas Measured	Diborane B_2H_6
Cartridge Part Number	MIDAS-S-B2H 1 year standard warranty MIDAS-E-B2H 2 year extended warranty
Sensor Technology	3 electrode electrochemical cell
Measuring Range (ppm)	B_2H_6 0 – 0.4ppm
Minimum Alarm 1 Set Point	0.050ppm
Repeatability	< ± 2% of measured value
Linearity	< ± 10% of Full Scale
Response Time $_{t62.5}$	< 15 seconds
Sensor Cartridge Life Expectancy	≥ 24 months under typical application conditions
Operating Temperature **Effect of Temperature**	0°C to +40°C (32°F to 104°F) Zero: < ± 0.0002ppm / °C (0°C to 40°C) Sensitivity: < ± 1% of measured value / °C
Operating Humidity (continuous) **Effect of Humidity**	10 – 95% rH (non-condensing) Zero: Initial short term drift at abrupt RH change (< 0.0075ppm / % rH) Sensitivity: < ± 0.5% of measured value / % rH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift	Zero Sensitivity: < 5% of measured value / 6 months
Calibration Gas	Diborane (B_2H_6)
Challenge Gas (Bump Test)	Phosphine (PH_3)
Warm Up Time	< 20 minutes
Storage Temperature	+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 / Vapor	Chemical Formula	Concentration applied (ppm)	Reading (ppm B_2H_6)
Ammonia	NH_3	108	<0.1
Arsine	AsH_3	0.2	0.1
Carbon Dioxide	CO_2	5,000	0
Carbon Monoxide	CO	85	0
Chlorine	Cl_2	0.85	-0.15
Disilane	Si_2H_6	0.27	0.12
Germane	GeH_4	0.94	0.1
Hydrogen	H_2	3100	0
Hydrogen Chloride	HCl	3.9	0.26
Hydrogen Cyanide	HCN	12	0.35
Hydrogen Fluoride	HF	7.2	0
Hydrogen Selenide	H_2Se	0.8	0.2
Hydrogen Sulphide	H_2S	1.8	0.75
Iso Propanol	C_3H_7OH	20,000	<0.05
Methane	CH_4	18,000	0
Nitrogen Dioxide	NO_2	10.1	-1.5
Phosphine	PH_3	0.3	0.23
Silane	SiH_4	2.0	0.18
Sulphur Dioxide	SO_2	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
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