



Midas® Sensor Cartridge Specifications

Silane (SiH₄), Disilane (Si₂H₆) MIDAS-E-SHX, MIDAS-S-SHX

Gas Measured	Silane (SiH ₄)
Cartridge Part Number	MIDAS-S-SHX 1 year extended warranty MIDAS-E-SHX 2 year extended warranty
Sensor Technology	3 electrode electrochemical cell
Measuring Range	SiH ₄ 0 – 20ppm
Minimum Alarm 1 Set Point	2.5ppm
Lower Detection Limit	2.2ppm
Linearity	< ± 5% of measured value
Repeatability	< ± 5% of measured value
Resolution	0.1ppm
Response Time t_{62.5}	≤ 3 seconds
Sensor Cartridge Life Expectancy	≥ 24 months under typical application conditions
Operating Temperature	0°C to +40°C (32°F to 104°F)
Effect of Temperature	
Zero	< ± 0.04ppm / °C
Sensitivity	< ± 0.8% of measured value / °C
Operating Humidity	10 to 90% RH
Effect of Humidity	
Zero	< ± 0.005ppm / % RH
Sensitivity	< ± 2% of measured value / % RH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift	
Zero	< 2ppm/year
Sensitivity	< ± 10% of measured value / year
Calibration Gas	Silane (SiH ₄)
Bump Test Gas	Hydrogen Sulfide (H ₂ S)
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.

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
Disilane	Si ₂ H ₆	0 - 20ppm

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 SiH ₄)
Ammonia	NH ₃	100	0
Arsine	AsH ₃	1	0.54
Carbon Monoxide	CO	2000	0.56
Chlorine	Cl ₂	5	-0.86
Diborane	B ₂ H ₆	1	0.75
Ethanol	C ₂ H ₅ OH	500	0
Hydrogen	H ₂	5000	0.45
Hydrogen Chloride	HCl	12.5	2.1
Hydrogen Fluoride	HF	10	0
Hydrogen Sulfide	H ₂ S	10	2.7
Iso Propanol	C ₃ H ₇ OH	2000	0
Nitrogen Dioxide	NO ₂	6	-0.89
Silane	SiH ₄	1	1.13
Sulfur Dioxide	SO ₂	50	3.5

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
 Korea Tel: +82 (0)2 6909 0300
 Singapore Tel: +65-65803776
 Australia Tel: +61-3-94642770
 Japan Tel: +81-3-6730-7320
 India Tel: +91-124 4752700

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