Honeywell

Midas® Sensor Cartridge Specifications



Hydrogen chloride (HCl)
MIDAS-E-HCl, MIDAS-S-HCl

Gas Measured	Hydrogen chloride (HCl)
Cartridge Part Number	MIDAS-S-HCl MIDAS-E-HCl
Sensor Technology	3 electrode electrochemical cell
Measuring Range	HCl 0 - 8ppm
Minimum Alarm 1 Set Point	0.3ppm
Lower Detection Limit	0.24ppm
Linearity	<± 20% of measured value
Repeatability	<± 10% of measured value
Resolution	0.05ppm
Response Time $t_{62.5}$	≤ 30 seconds based on 3 min. exposure
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	<± 0.005ppm / °C
Sensitivity	<± 0.4% of measured value / °C
Operating Humidity	10 to 90% RH
Effect of Humidity	
Zero	<± 0.002ppm / % RH
Sensitivity	<± 0.4% of measured value / % RH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift	
Zero	Negligible
Sensitivity	< 15% of measured value / year
Calibration Gas	Hydrogen Chloride (HCl)
Bump Test Gas	Hydrogen Chloride (HCl)
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
Dichlorosilane	SiH_2Cl_2	0 - 8ppm
Boron Trichloride	BCl_3	0-8ppm
Hydrogen Bromide	HBr	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 Measured	Chemical Formula	Concentration Applied(ppm)	Reading (ppm HCl)
Chlorine	Cl_2	1	3.5
Diborane	B_2H_6	1	0 (Negative Drift)
Hydrogen Fluoride	HF	6	8 (Over Range)
Hydrogen Sulfide	H_2S	25	0 (Negative Drift)
Nitrogen Dioxide	NO_2	5	0.9
Phosphine	PH_3	1	0 (Negative Drift)
Sulfur Dioxide	SO_2	4	4.1
Ozone	O_3	0.2	1.65
Arsine	AsH_3	1	0
Carbon Monoxide	CO	2000	0
Hydrogen	H_2	20000	0
Iso Propanol	C_3H_7OH	500	0
Methanol	CH_3OH	500	0
Silane	SiH_4	10	0
Ammonia	NH_3	50	0
Phosphine	PH_3	0.6	0
Ethylene Oxide	C_2H_4O	20	0
Nitric Oxide	NO	50	0
Carbon Dioxide	CO_2	10000	0
Hydrogen Cyanide	HCN	10	0

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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