Honeywell

Midas® SENSOR CARTRIDGE SPECIFICATIONS

HCl Group
MIDAS-S-HCL, MIDAS-E-HCL

Gas Measured	Hydrogen Chloride (HCl)
Cartridge Part Number	MIDAS-S-HCL 1 year extended warranty MIDAS-E-HCL 2 year extended warranty
Sensor Technology	3 electrode electrochemical cell
Measuring Range (ppm)	HCl 0 – 8ppm
Minimum Alarm 1 Set Point	1ppm
Repeatability	< ± 10% of measured value
Linearity	< ± 20% of measured value
Response Time	$t_{62.5}$ < 30 seconds based on 3 min. exposure t_{90} < 140 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	< ± 0.001ppm / °C (0°C to 20°C)
Sensitivity	< ± 0.005ppm / °C (20°C to 40°C) < ± 0.4% of measured value / °C
Operating Humidity (continuous)	20 – 75% 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 (4-6ppm HCl)
Challenge Gas (Bump Test)	Hydrogen Chloride (4-6ppm 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 the test data 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

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	H_2SiCl_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 / Vapor	Chemical Formula	Concentration Applied (ppm)	Reading (ppm HCl)
Arsine	AsH_3	1	0
Carbon Monoxide	CO	2000	0
Chlorine	Cl_2	5	5.6
Diborane	B_2H_6	1	-1.3
Hydrogen	H_2	20000	0
Hydrogen Fluoride	HF	5	6.7
Hydrogen Sulfide	H_2S	25	-3.6
Iso Propanol	C_3H7OH	500	0
Methanol	CH_3OH	500	0
Nitrogen Dioxide	NO_2	5	0.9
Phosphine	PH_3	1	-0.14
Sulfur Dioxide	SO_2	10	4.5

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