Honeywell

Midas® Sensor Cartridge Specifications



Mineral Acids (HF Group)
MIDAS-E-HFU

Gas Measured	Hydrogen Fluoride (HF)
Cartridge Part Number	MIDAS-E-HFU 2 year extended warranty
Sensor Technology	3 electrode electrochemical cell
Measuring Range	HF 0 - 2ppm
Minimum Alarm 1 Set Point	0.45ppm
Lower Detection Limit	0.37ppm
Linearity	<± 10% of measured value
Repeatability	<± 10% of measured value
Resolution	0.01ppm
Response Time $t_{62.5}$	≤ 30 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	<± 0.008ppm / °C
Sensitivity	<± 0.4% of measured value / °C
Operating Humidity	10 to 90% RH
Effect of Humidity	
Zero	<± 0.003ppm / % RH
Sensitivity	<± 1% of measured value / % RH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift	
Zero	No drift
Sensitivity	< 15% of measured value / year
Calibration Gas	Hydrogen Fluoride (HF)
Bump Test Gas	Chlorine (Cl_2)
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
Tungsten Hexafluoride	WF_3	0-2ppm
Boron Trifluoride	BF_3	0-2ppm

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 HF)
Arsine	AsH_3	1	0
Carbon Monoxide	CO	2000	0
Chlorine	Cl_2	5	3.4
Diborane	B_2H_6	1	-1.3
Hydrogen	H_2	20000	0
Hydrogen Chloride	HCl	8	14
Hydrogen Sulfide	H_2S	25	-3.6
Iso Propanol	C_3H_7OH	500	0
Methanol	CH_3OH	500	0
Nitrogen Dioxide	NO_2	5	0.65
Phosphine	PH_3	1	-0.14
Sulfur Dioxide	SO_2	50	28.3

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.

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H_MIDAS-E-HFU_v4 12/23

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