

MIDAS S2

MINERAL ACID GROUP (BCl₃, HBr, HCl, SiH₂Cl₂)

Sensor Cartridge Specifications

Selectable gases	Boron Trichloride (BCl ₃) Hydrogen Bromide (HBr) Hydrogen Chloride (HCl) Dichlorosilane (SiH ₂ Cl ₂)
Cartridge Part Number	MIDAS S2-E-HCL 2-year extended warranty
Sensor Technology	Electrochemical sensor
Measuring Range	BCl ₃ 0 – 8ppm HBr 0 – 8ppm HCl 0 – 8ppm SiH ₂ Cl ₂ 0 – 8ppm
Default Alarm 1	BCl ₃ 1ppm HBr 1ppm HCl 1ppm SiH ₂ Cl ₂ 1ppm
Default Alarm 2	BCl ₃ 2ppm HBr 2ppm HCl 2ppm SiH ₂ Cl ₂ 2ppm
LDL, LAL	BCl ₃ 0.24ppm HBr 0.24ppm HCl 0.24ppm HSiH ₂ Cl ₂ 0.24ppm
Resolution	BCl ₃ 0.05ppm HBr 0.05ppm HCl 0.05ppm SiH ₂ Cl ₂ 0.05ppm
Accuracy	≤ ± 10% of measured value
Response Time t ₆₂₋₅	Typical 90 seconds
Sensor Cartridge Life Expectancy (Expiration Period)	24 months under typical application conditions Extendable for 1 year through calibration after 24 months
Operating Temperature Effect of Temperature Sensitivity	0°C to +40°C (32°F to 104°F) ≤ ± 20% of measured value at 20°C
Operating Humidity	20 to 75% non-condensing
Operating Pressure	90 – 110kPa
Calibration Gas	BCl ₃ 4ppm HBr 4ppm HCl 4ppm SiH ₂ Cl ₂ 4ppm
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 with HCl gas 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.

CROSS SENSITIVITIES

Each Midas S2 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 ₂ H ₆	1	0 (Negative Drift)
Hydrogen Fluoride	HF	6	100 (Over Range)
Hydrogen Sulfide	H ₂ S	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 ₃ H ₇ OH	500	0
Methanol	CH ₃ OH	500	0
Silane	SiH ₄	10	0
Ammonia	NH ₃	50	0
Phosphine	PH ₃	0.6	0
Ethylene Oxide	C ₂ H ₄ O	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.

For more information

automation.honeywell.com

**Honeywell Process
Measurement and Control**

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