Midas® Sensor Cartridge Specifications

Sulfur Dioxide (SO_2)
MIDAS-E-SO2, MIDAS-S-SO2

Gas Measured	Sulfur Dioxide (SO_2)
Cartridge Part Number	MIDAS-S-SO2 MIDAS-E-SO2
Sensor Technology	3 electrode electrochemical cell
Measuring Range	SO_2 0 – 8ppm
Minimum Alarm 1 Set Point	0.95ppm
Lower Detection Limit	0.70ppm
Linearity	<± 10% of measured value
Repeatability	<± 2% of measured value
Resolution	0.05ppm
Response Time $t_{62.5}$	≤ 5 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	<± 0.03ppm / °C
Sensitivity	<± 0.4% of measured value / °C
Operating Humidity	15 to 90% RH
Effect of Humidity	
Zero	No effect
Sensitivity	<± 1% of measured value / % RH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift	
Zero	No effect
Sensitivity	<± 2% of measured value / year
Calibration Gas	Sulfur Dioxide (SO_2)
Bump Test Gas	Sulfur Dioxide (SO_2)
Warm Up Time	< 10 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.

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 SO_2)
Phosphine	PH_3	0.6	1.5
Hydrogen Cyanide	HCN	10	4.4
Nitrogen Dioxide	NO_2	6	0 (Negative Drift)
Silane	SiH_4	10	8 (Over Range)
Carbon Monoxide	CO	300	0 (Negative Drift)
Hydrogen Chloride	HCl	4	0
Hydrogen	H_2	500	0
Chlorine	Cl_2	1	0
Ammonia	NH_3	50	0
Ozone	O_3	0.2	0
Hydrogen Fluoride	HF	6	0
Ethylene Oxide	C_2H_4O	20	0
Hydrogen Sulfide	H_2S	20	0
Nitric Oxide	NO	50	0
Carbon Dioxide	CO_2	10000	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.

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