Honeywell

Midas® SENSOR CARTRIDGE SPECIFICATIONS

Silane Group (SiH_4 Si_2H_6)
MIDAS-S-SHX, MIDAS-E-SHX

GAS MEASURED	Silane (SiH_4)
CARTRIDGE PART NUMBER	MIDAS-S-SHX 1 year standard warranty MIDAS-E-SHX 2 year extended warranty
SENSOR TECHNOLOGY	3 electrode electrochemical cell
MEASURING RANGE (PPM)	SiH_4 0 – 20 ppm
MINIMUM ALARM 1 SET POINT	2.50 ppm
REPEATABILITY	< ± 5% of measured value
LINEARITY	< ± 5% of measured value
RESPONSE TIME $T_{62.5}$	< 3 seconds
SENSOR CARTRIDGE LIFE EXPECTANCY	≥ 24 months under typical application conditions
OPERATING TEMPERATURE EFFECT OF TEMPERATURE ZERO SENSITIVITY	0° to + 40°C (32° to 104°F) < ± 0.01 ppm / °C (0° to 20°C) < ± 0.04 ppm / °C (20° to 40°C) < ± 0.8% of measured value / °C
OPERATING HUMIDITY (CONTINUOUS) EFFECT OF HUMIDITY ZERO SENSITIVITY	10 – 90 % rH < 0.005 ppm / % rH < ± 2% of measured value / % rH
OPERATING PRESSURE	90 - 110kPa
EFFECT OF POSITION	No effect in typical application
LONG TERM DRIFT ZERO SENSITIVITY	 < 2 ppm / year < ± 10% of measured value / year
CALIBRATION GAS	Silane (SiH_4)
CHALLENGE GAS (BUMP TEST)	Hydrogen Sulfide (H_2S)
WARM UP TIME	< 20 minutes
STORAGE TEMPERATURE	+5° to + 25°C (+41° 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
Disilane	Si_2H_6	0 – 2 ppm

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 HF)
Ammonia	NH_3	100	0
Arsine	AsH_3	1	0.54
Carbon Monoxide	CO	2000	0.56
Chlorine	Cl_2	5	-0.86
Diborane	B_2H_6	1	0.75
Ethanol	C_2H_5OH	500	0
Hydrogen	H_2	5000	0.45
Hydrogen Chloride	HCl	12.5	2.1
Hydrogen Fluoride	HF	10	0
Hydrogen Sulfide	H_2S	10	2.7
Iso Propanol	C_3H_7OH	2000	0
Nitrogen Dioxide	NO_2	6	-0.89
Phosphine	PH_3	1	1.13
Sulfur Dioxide	SO_2	50	3.5

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