Honeywell

Midas® SENSOR CARTRIDGE SPECIFICATIONS

Arsine (AsH_3), Germane (GeH_4)
MIDAS-S-ASH, MIDAS-E-ASH

Gas Measured	Measured Arsine (AsH_3)
Cartridge Part Number	MIDAS-S-ASH 1 year standard warranty MIDAS-E-ASH 2 year extended warranty
Sensor Technology	3 electrode electrochemical cell
Measuring Range (ppm)	AsH_3 0 – 0.2ppm
Minimum Alarm 1 Set Point	0.005ppm
Repeatability	< ± 2% of measured value
Linearity	< ± 10% of measured value
Response Time $t_{62.5}$	< 15 seconds
Sensor Cartridge Life Expectancy	≥ 24 months under typical application conditions
Operating Temperature	0°C to + 40°C (32°C to 104°F)
Effect of Temperature Zero Sensitivity	 < ± 0.004 ppm / °C (0° to 40°C) < ± 0.9% of measured value / °C
Operating Humidity (continuous)	10 – 95% rH non-condensing
Effect of Humidity Zero Sensitivity	 Initial short term drift at abrupt rH change (< 0.001 ppm / % rH) < ± 0.2% of measured value / % rH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift Zero Sensitivity	 < 0.05ppm / year < 5% of measured value / 6 months
Calibration Gas	Arsine (AsH_3)
Challenge Gas (Bump Test)	Phosphine (PH_3)
Warm Up Time	< 20 minutes
Storage Temperature	+5°C to +25°C (+41°F to +77°F)

Calibration	Range	LAL
AsH_3	0-0.2ppm	0.005ppm
GeH_4	0-0.8ppm	0.095ppm

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 / Vapor	Chemical Formula	Concentration applied (ppm)	Reading (ppm AsH_3)
Ammonia	NH_3	108	<0.1
Carbon Dioxide	CO_2	5,000	0
Carbon Monoxide	CO	85	0
Chlorine	Cl_2	TBD	<-0.05
Diborane	B_2H_6	0.1	0.05
Disilane	Si_2H_6	0.27	0.12
Germane	GeH_4	0.27	0.05
Hydrogen	H_2	3100	<-0.05
Hydrogen Chloride	HCl	7.9	0
Hydrogen Cyanide	HCN	3.6	0.2
Hydrogen Fluoride	HF	7.2	0
Hydrogen Selenide	H_2Se	0.8	0.24
Hydrogen Sulphide	H_2S	18.2	0
Iso Propanol	C_3H_2OH	20,000	0
Methane	CH_4	18,000	0
Nitrogen Dioxide	NO_2	10	-2.2
Phosphine	PH_3	0.1	0.12
Silane	SIH_4	0.3	0.05
Sulphur Dioxide	SO_2	17.8	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.

Find out more

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Toll-free: 800.538.0363

SS01115B_v4 2/20