Honeywell

Midas® SENSOR CARTRIDGE SPECIFICATIONS

Phosphine (PH_3)
MIDAS-S-PH3, MIDAS-E-PH3

Gas Measured	Phosphine (PH_3)
Cartridge Part Number	MIDAS-S-PH3 1 year standard warranty MIDAS-E-PH3 2 year extended warranty
Sensor Technology	3 electrode electrochemical cell
Measuring Range (ppm)	PH_3 0 – 1.2ppm
Minimum Alarm 1 Set Point	0.15ppm
Repeatability	< ± 5% of measured value
Linearity	< ± 10% of measured value
Response Time $t_{62.5}$	≤ 2 seconds
Sensor Cartridge Life Expectancy	≥ 24 months under typical application conditions
Operating Temperature **Effect of Temperature** Zero Sensitivity	0°C to +40°C (32°F to 104°F) < ± 0.001ppm / °C (0°C to 20°C) < ± 0.003ppm / °C (20°C to 40°C) < ± 0.6% of measured value / °C
Operating Humidity (continuous) **Effect of Humidity** Zero Sensitivity	10 – 90% rH < 0.0015ppm / % rH < ± 1% of measured value / % rH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift Zero Sensitivity	 < ± 0.02ppm / year < ± 10% of measured value / year
Calibration Gas	Phosphine (PH_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)

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 PH_3)
Ammonia	NH_3	100	1.05
Arsine	AsH_3	1	0.68
Carbon Monoxide	CO	2000	< 0.01
Chlorine	Cl_2	1	- 0.07
Diborane	B_2H_6	1	0.45
Ethanol	C_2H_5OH	2000	< 0.01
Germane	GeH_4	1	0.45
Hydrogen	H_2	5000	< 0.01
Hydrogen Chloride	HCl	10	< 0.01
Hydrogen Fluoride	HF	10	< 0.01
Hydrogen Sulphide	H_2S	0.5	0.07
Iso Propanol	C_3H_7OH	2000	0
Nitrogen Dioxide	NO_2	8	- 0.86
Silane	SiH_4	1	0.36
Sulphur Dioxide	SO_2	50	0.55

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