

Midas[®] SENSOR CARTRIDGE SPECIFICATIONS

Phosphine (PH₃) 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 _{t62.5}	≤ 2 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	< ± 0.001ppm / °C (0°C to 20°C) < ± 0.003ppm / °C (20°C to 40°C)
Zero Sensitivity	< ± 0.6% of measured value / °C
Operating Humidity (continuous)	10 – 90% rH
Effect of Humidity	
Zero Sensitivity	< 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 ₂ H ₆	1	0.45
Ethanol	C ₂ H ₅ OH	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 ₂ S	0.5	0.07
Iso Propanol	C ₃ H ₇ OH	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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