



Midas® Sensor Cartridge Specifications

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

Gas Measured	Phosphine (PH ₃)
Cartridge Part Number	MIDAS-S-PH3 1 year extended warranty MIDAS-E-PH3 2 year extended warranty
Sensor Technology	3 electrode electrochemical cell
Measuring Range	PH ₃ 0 – 1200ppb
Minimum Alarm 1 Set Point	150ppb
Lower Detection Limit	135ppb
Linearity	< ± 10% of measured value
Repeatability	< ± 5% of measured value
Resolution	5ppb
Response Time t_{62.5}	≤ 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	
Zero	< ± 3ppb / °C
Sensitivity	< ± 0.6% of measured value / °C
Operating Humidity	10 to 90% RH
Effect of Humidity	
Zero	< ± 1.5ppb / % RH
Sensitivity	< ± 1% of measured value / % RH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift	
Zero	< 20ppb / year
Sensitivity	< 10% of measured value / year
Calibration Gas	Phosphine (PH ₃)
Bump Test Gas	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.

Find out more

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Please Note:

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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 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 Sulfide	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
Sulfur Dioxide	SO ₂	50	0.55

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.