

MIDAS[®]-M PHOSPHINE (PH₃)

Smart Sensor Specifications

Bringing new visibility, reliability, and ease-of-use to gas detection in semiconductor processing and industrial manufacturing.



GAS MEASURED	PHOSPHINE (PH ₃)
Cartridge Part Number	MMS-R2
Sensor Technology	3 electrode electrochemical cell
Measuring Range	PH ₃ 0 ppb to 1200 ppb
Default Alarm 1	150 ppb (rising)
Default Alarm 2	300 ppb (rising)
Accuracy	<±5% of measured value Exposure to PH ₃ 600 ppb for 5 minutes
Response Time (t _{62.5})	Typical 6 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	<±1 ppb/°C
Sensitivity	<±0.6% of measured value/°C
Operating Humidity (continuous)	10% RH to 90% RH
Effect of Humidity	
Zero	<±0.5 ppb/% RH
Sensitivity	<±0.5% of measured value/% RH
Operating Pressure	90 kPa to 110 kPa
Effect of Position	No effect in typical application
Long Term Drift	
Zero	
Sensitivity	<±5% of measured value/6 month
Calibration Gas	Phosphine (300 ppb to 900 ppb, default 600 ppb)
Challenge Gas (Bump Test)	Phosphine (PH ₃ 600 ppb)
Warm Up Time	<20 minutes
Storage Temperature	5°C to 25°C (41°F to 77°F)

The sensor data listed is based on the test data under normal lab test conditions (20°C to 25°C, 0% RH to 60% RH, normal atmosphere pressure); observed performance may vary based on the actual monitoring system and the sampling conditions employed.

Midas[®]-M Phosphine (PH₃) Specifications

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[®]-M transmitter with the designated identification code for each of the following gas types:

DETECTABLE GAS	CHEMICAL FORMULA	MEASURING RANGE

CROSS SENSITIVITIES

Each Midas-M 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).

NOTE: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation.

GAS/VAPOR	CHEMICAL FORMULA	CONCENTRATION APPLIED (ppm)	READING (ppm PH ₃)
Ammonia	NH ₃	50	<380
Arsine	AsH ₃	0.15	120
Carbon Dioxide	CO ₂	5000	0
Carbon Monoxide	CO	85	0
Chlorine	Cl ₂	0.85	<-50
Diborane	B ₂ H ₆	0.2	10
Hydrocarbons	CH ₄	18000	0
Hydrogen	H ₂	3100	<50
Hydrogen Chloride	HCl	7.9	0
Hydrogen Cyanide	HCN	12.6	300
Hydrogen Fluoride	HF	7.2	0
Hydrogen Selenide	SeH ₂	0.85	0
Hydrogen Sulphide	H ₂ S	18.2	0
Nitrogen Dioxide	NO ₂	10.1	-1600
Propan-2-ol	C ₃ H ₇ OH	20000	<50
Silane	SiH ₄	10	1200 (Overrange)
Sulphur Dioxide	SO ₂	17.8	0

HONEYWELL SAFETY PRODUCTS

Americas

Honeywell Analytics
405 Barclay Boulevard
Lincolnshire, IL 60069
Tel: +1 847 955 8200
Toll free: +1 800 538 0363
Fax: +1 847 955 8208
detectgas@honeywell.com

Europe, Middle East, and Africa

Life Safety Distribution AG (LSD)
Javastrasse 2
8604 Hegnau
Switzerland
Tel: +41 (0)44 943 4300
Fax: +41 (0)44 943 4398
gasdetection@honeywell.com

Asia Pacific, India

Honeywell Analytics Asia Pacific, Co., Ltd.
7F SangAm IT Tower
434 Worldcup Buk-ro, Mapo-gu
Seoul 03922
South Korea
Tel: +82 (0)2 6909 0300
Fax: +82 (0)2 2025 0388
India Tel: +91 124 4752700
analytics.ap@honeywell.com

Mainland China

Honeywell Industrial Safety Gas Detectors
Building#1, 555 Huanke Road Zhang Jiang
Hi-Tech Park Pudong New Area Shanghai
201203, China
Tel: 021-80386800
Fax: 021-60246070
gaschina@honeywell.com

Taiwan

Honeywell Taiwan Ltd
6F-2, No.8, ZiQiang S. Road, Jubei City,
30264 Taiwan
Tel: +886-3-5169284
Fax: +886-3-5169339
analytics.tw@honeywell.com

Manuals and other information about this product are available at:
www.honeywellanalytics.com/en/products/Midas-M



**THE
FUTURE
IS
WHAT
WE
MAKE IT**

Honeywell