

All dimensions in mm  
All tolerances  $\pm 0.20$ mm unless otherwise stated

## ✂ Description

This Phosphine gas sensor can be used in semiconductor processes where measuring the concentration of Phosphine gas is required.

## ⚙ Performance Characteristics

Parameter	Specifications
Nominal Range	0 ~ 2 ppm
Maximum Overload	2 ppm
Sensitivity (20°C)	$0.6 \pm 0.2 \mu\text{A/ppm}$
Response Time (T90)	$\leq 75 \text{ s}$
Zero Signal (20°C)	$< \pm 0.2 \mu\text{A}$
Baseline Shift (0°C ~ 40°C)	$\leq 0.2 \text{ ppm}$
Resolution	$< 0.015 \text{ ppm}$
Linearity	Linear up to 2 ppm
Bias Voltage	0 mV
Temperature Range	0°C ~ 40°C
Pressure Range	$1 \pm 0.1 \text{ atm}$
Humidity Range	15% ~ 90%RH non-condensing

### Reliability and Lifespan

Long Time Output Drift:  
< 2% signal/month  
Expected Operating Life:  
> 2 years in clean air



### Storage

Storage Temp: 10°C ~ 30°C  
Storage Life: 6 months  
in original packaging  
Warranty: 24 months



### Physical Characteristics

Housing Material: ABS  
Weight (Nominal): 5 g  
RoHS Compliance: Yes



Output signals from the sensor pins are different. Inappropriate use of the pins in product design will affect the sensor functionality. Exposure to high concentrations of solvent vapors should be avoided under any condition. Mechanical overstress may cause deformation or cracks of the plastic enclosure of the sensor. If the sensor is used in extreme environmental conditions, please contact us for more details.



The performance data in this document are conducted by using SemeaTech recommended test circuitry and test environment at 20°C, 50%RH and 1 atm. Sensor performance varies under different environmental conditions. Please contact us if you need more details.

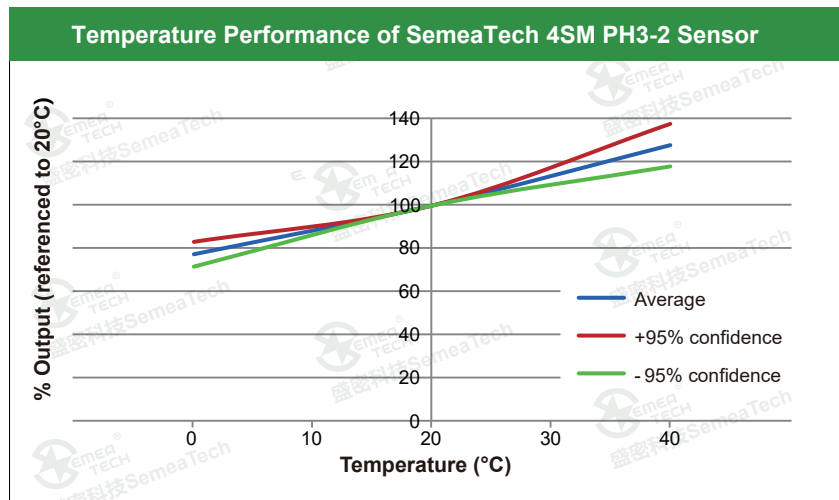


## Cross-Sensitivity Data

Gas	Concentration (ppm)	Output Signal (ppm PH3 equivalent)
Hydrogen	1,000	0.0
Nitrogen Dioxide	10	-0.5
Chlorine	1	-0.3
Silane	10	5.5
Ethanol	5,000	0.0
Ammonia	50	0.8
Hydrogen Sulfide	5	1.7
Carbon Monoxide	50	0.0
Sulfur Dioxide	20	7.0
Nitric Oxide	50	-0.1

Note: The cross sensitivities include but not limited to the above gases. It may also respond to other gases. The data in the table above may vary from different batches of sensors and the changes of test environment. Calibration using the gases that have the cross sensitivities to this sensor is not recommended.

## Temperature Data



This sensor is designed to be used in certain instruments for water closet/restroom odor detection. To ensure the sensor functions per its specifications inside the instrument, it is required to read the instrument user's guide carefully and comply with the calibration procedures to maximize the sensor performance. Please do not open the sensor plastic enclosure because the electrolyte and other chemicals stored inside are harmful.

It is highly recommended for instrument manufacturers to validate the sensor performance using this document as a reference for their product designs or applications.

This product data sheet is used for reference only.

SemeaTech is committed to providing its customers the most accurate data based on its best knowledge. SemeaTech does not provide a product warranty for failures of using its products in accordance with product specifications that are described in the datasheet, or other misuses, abuse, negligence to the product.