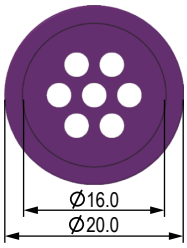
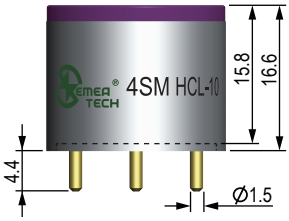
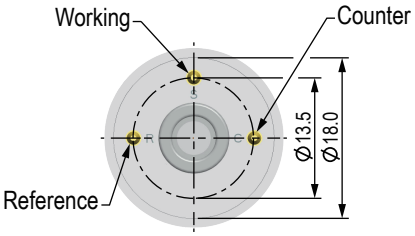
Product Manual (PN: 063-6000-000) Electrochemical 4SM HCL-10 Sensor







All dimensions in mm
All tolerances ±0.20mm unless otherwise stated

Description

This hydrogen chloride gas sensor can be applied in situations where the semiconductor process industry needs to measure the concentration of hydrogen chloride gas.

Performance Characteristics

Parameter	Specifications
Nominal Range	0 ~ 10 ppm
Maximum Overload	20 ppm
Sensitivity (20°C)	-0.55 ± 0.15 μA/ppm
Response Time (T90)	≤ 140 s
Zero Signal (20°C)	< ±0.2 μA
Baseline Shift (0°C ~ 40°C)	≤ 1 ppm
Resolution	0.003 ppm
Linearity	Linear up to 10 ppm
Bias Voltage	0 mV
Temperature Range	0°C ~ 40°C
Pressure Range	1 ± 0.1 atm
Humidity Range	15% ~ 90%RH non-condensing

Reliability and Lifespan

Long Time Output Drift:
< 2% signal/year
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
Orientation: None

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.

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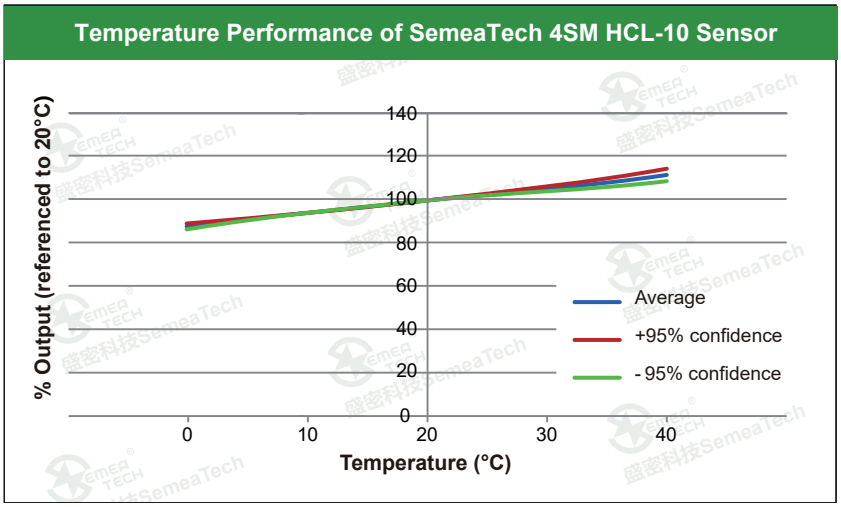
Cross-Sensitivity Data

Gas	Concentration (ppm)	Output Signal (ppm HCL equivalent)
Arsine	1	0.1
Carbon Monoxide	2,000	< 1.0
Chlorine	5	4.8
Hydrogen	1,000	< 1.0
Hydrogen Fluoride	5	2.7
Hydrogen Sulfide	25	< 2.0
Nitrogen Dioxide	5	0.6
Phospine	1	-0.2
Sulfur Dioxide	10	< 3.6
Ethanol	5,000	0.0

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.

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