• Description

This sensor is designed for the measurement of Hydrogen Chloride concentration in gas phase. It can be used as a pin-to-pin replacement for the standard 4-series electrochemical Hydrogen Chloride sensors made by other manufacturers.

• Performance Characteristics

Nominal Range:	0 ~ 100 ppm
Maximum Overload:	100 ppm
Sensitivity (20°C):	0.2 ± 0.1 µA/ppm
Response Time (T90):	≤ 70 s
Zero Signal (20°C):	< ±1 µA
Baseline Shift (-20°C ~ 50°C):	< 5 ppm
Resolution:	1.5 ppm
Linearity:	Linear up to 100 ppm
Bias Voltage:	+200 mV

• Environmental

Temperature Range:	-20°C ~ 50°C
Pressure Range:	1 ± 0.1 atm
Humidity Range:	15% ~ 90%RH non-condensing

• Life Time

LongTime Output Drift:	< 2% signal/month
Recommended Storage Temp:	10°C ~ 30°C
Expected Operating Life:	2 years in clean air
Storage Life:	6 months in original packaging
Warranty:	12 months

• Intrinsic Safety Data

Max. Current at 100ppm HCL:	< 0.2 mA
Max. O/C Voltage:	1.3 V
Max. S/C Current:	< 1.0 A

• Physical Characteristics

Housing Material:	ABS
Weight (Nominal):	5 g
Orientation:	None

• Installation

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.

• Product Dimensions
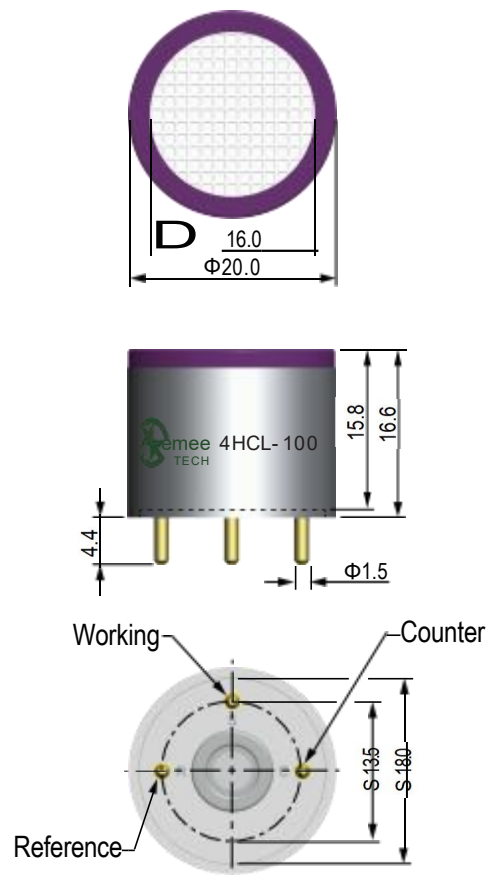
All dimensions in mm
All tolerances ±0.20mm unless otherwise stated

• Note

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

• Cross-Sensitivity Data

Gas	Concentration (ppm)	Output Signal (ppm HCL equivalent)
Carbon Monoxide	100	0.0
Sulfur Dioxide	20	35.0
Nitric Oxide	20	50.0
Nitrogen Dioxide	10	1.0
Hydrogen	2,000	0.0
Hydrogen Sulfide	25	100.0
Nitrogen	100%	0.0
Chlorine	20	-5.0

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

Temperature Performance of SemeaTech 4HCL-100 Sensor
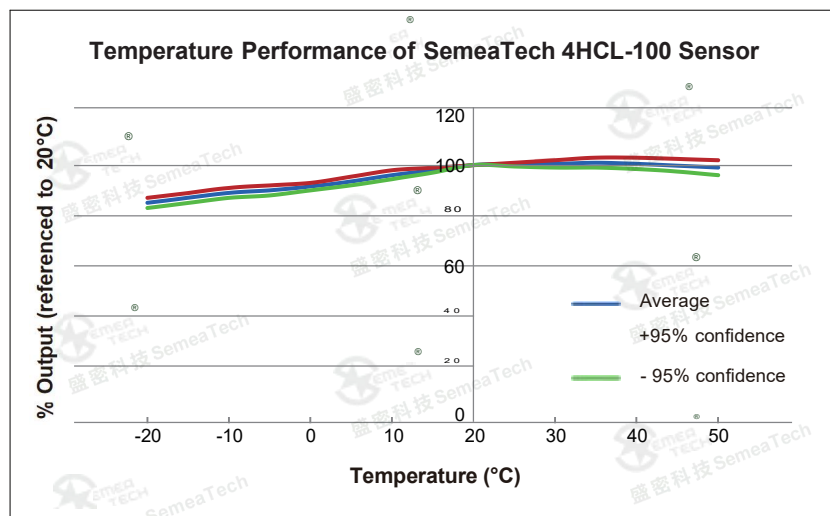
• Safety Note

This sensor is designed to be used in certain instruments for life critical applications. 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 by using certified target calibration gas before each use. Failure to do so may cause serious injury and fatality. Please do not open the sensor plastic enclosure because the electrolyte and other chemicals stored inside are harmful.

It is highly recommended for customers 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.