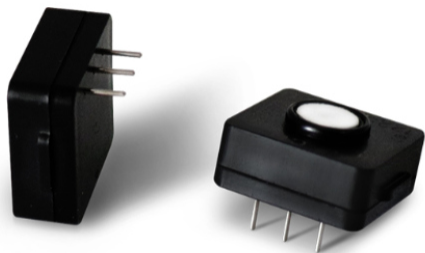




# SGX

## SENORTECH

An Amphenol Company



**PS1-VOC-10**

# VOC sensor Datasheet

### **SGX Solid Polymer Electrolyte Gas Sensors**

The SGX series of PS1 Electrochemical gas sensors are using a revolutionary 'Solid Polymer Electrolyte' technology that is based on the principle of catalytic reaction. The target gas to be measured generates a very small current, proportional to the gas concentration. Our technology offers a stable, high quality and cost-effective manufacturing process. The SGX solid polymer electrolyte gas sensors are available in a very small size, are highly sensitive, do not use power and have very low cross sensitivity from other gases.



*Quality, Safety, Responsibility*

# Technical Specifications

## Performance

<b>Sensitivity</b>	40 ± 10 nA/ppm <small>*Calibrated with CO Carbon Monoxide</small> 55 ± 15 nA/ppm <small>*Calibrated with C4H8 Isobutheen</small>
<b>Measurement Range</b>	0 – 10 ppm
<b>Zero Current</b>	± 100 nA
<b>Maximum Overload</b>	100 ppm
<b>Response Time</b>	T50 < 10s, T90 < 30s
<b>Repeatability</b>	< 1%
<b>Linear Range</b>	Linear
<b>Resolution (16Bit ADC)</b>	0.01ppm

## Environmental Details

<b>Temperature Range</b>	-40°C to +55°C
<b>Pressure Range</b>	800 to 1200 hPa
<b>Operating Humidity Range</b>	15-95% RH
<b>Storage Temperature</b>	0 to 20°C Optimum 4-6°C

## Lifetime Details

<b>Long-Term Drift</b>	< 1% /month
<b>Expected Lifetime</b>	> 3 years
<b>Zero Drift in Clean Air</b>	< 1 ppm
<b>Storage Life</b>	12 months
<b>Warranty</b>	12 months

## Operation

<b>Operating Principle</b>	Amperometric, 3-electrode
<b>Bias Voltage</b>	0 mV
<b>Recommended Load Resistor</b>	100 Ω
<b>Warm Up Time</b>	< 60 s

## Housing

<b>Housing Material</b>	PPO
<b>Weight</b>	< 0.7g



## Features

- Small size
- Long Lifetime > 3 years
- High sensitivity
- No-Poisoning
- Wide temperature range
- Fast response time
- No electrolyte leakage
- Low cost at large volumes
- Individually calibrated
- Detects with high selectivity a wide variety of gases
- RoHS compliant

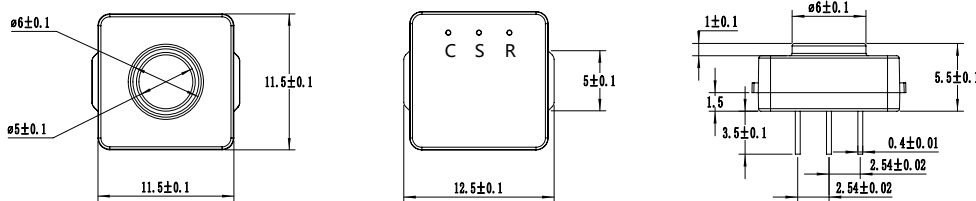
## Key applications

- Industrial Safety
- Leakage Detection
- Gas Manufacturing Process Monitoring
- Outdoor Air Quality
- Emission Monitoring
- Sewage/Water Treatment Plant
- Biogas
- Garbage Disposal
- Food Industry
- Indoor Air Quality
- Sanitary Facilities
- Garages
- Medical & Health Care

## Important Notes

- Do not solder to the connector pins as this may damage the sensor and thereby invalidate the warranty.
- Details on recommended connector pins can be found in the Frequently Asked Questions within the Gas Sensor section of the SGX website.

# Dimensions



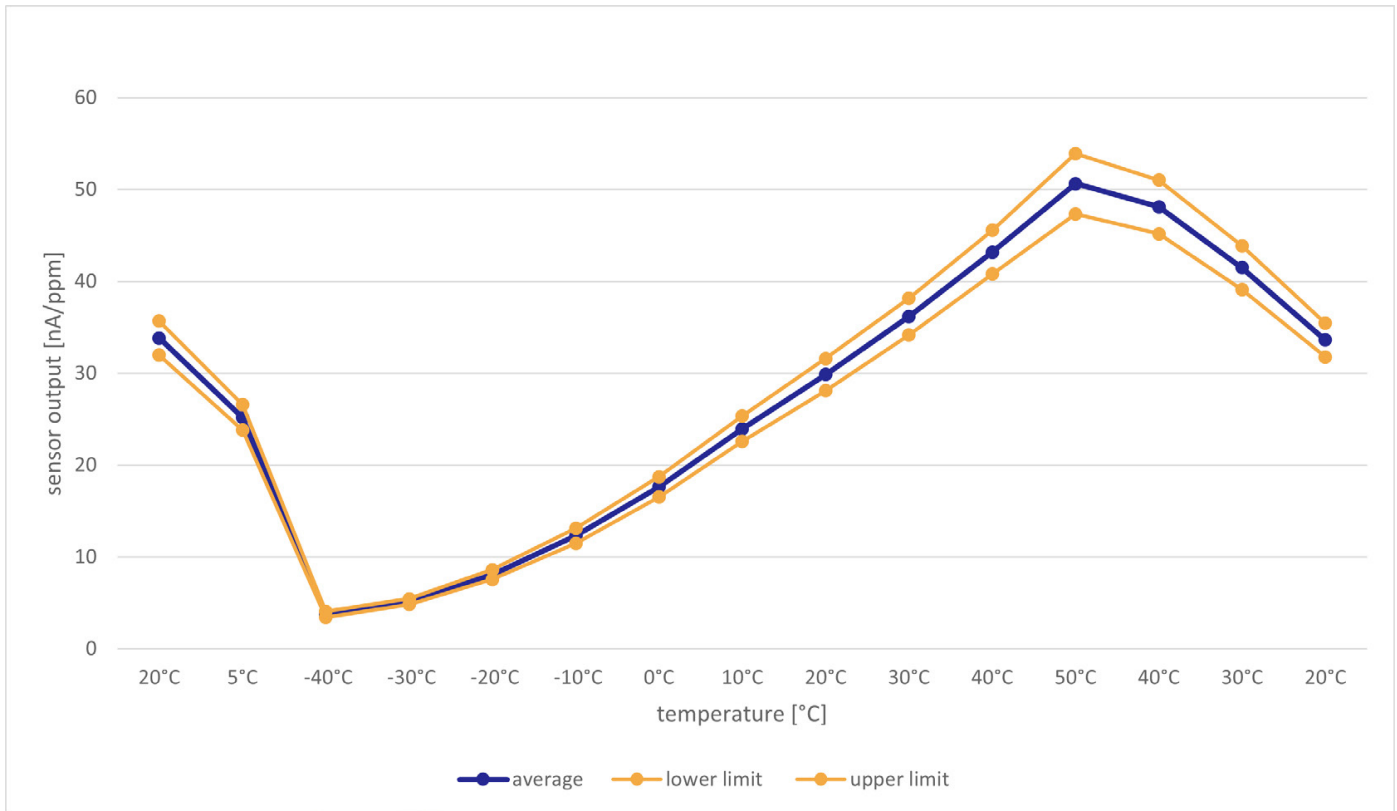
## PS1-VOC-10

# Cross Sensitivity

Gas	Formula	Test Concentration	Sensor Reading
Benzene	C <sub>6</sub> H <sub>6</sub>	1 ppm	NE***
Carbon Dioxide	CO <sub>2</sub>	10 %	0ppm
Carbon Monoxide	CO	1 ppm	PRE*
Chlorine	CL <sub>2</sub>	1 ppm	NRE**
Chlorine Dioxide	CLO <sub>2</sub>	1 ppm	NRE**
Dimethyl Disulfide	C <sub>2</sub> H <sub>6</sub> S <sub>2</sub>	1 ppm	PRE*
Dining Lampblack	/	1 ppm	PRE*
Formaldehyde	HCHO	1 ppm	PRE*
Gasoline Volatilization	/	1 ppm	PRE*
Hydrocarbons (unsaturated)	/	1 ppm	NE***
Isopropanol	C <sub>3</sub> H <sub>8</sub> O	1 ppm	PRE*
Methane	CH <sub>4</sub>	1%	0 ppm
Methanol	CH <sub>3</sub> OH	1 ppm	PRE*
Sulfur Dioxide	SO <sub>2</sub>	1 ppm	0.6 ppm
Tetrahydrothiophene	C <sub>4</sub> H <sub>8</sub> S	1 ppm	PRE*
Trimethylamine	/	1 ppm	PRE*

- Note:**
- 1) The above interference factors may vary due to different sensors and service life, please refer to the actual test results.
  - 2) This table is not complete for all cross gases. Please contact us for other gases.
  - 3) The above parameters are the test results at a temperature of 25°C, a relative humidity of 50%RH and a normal pressure environment. The performance of the sensor varies under different environmental conditions. If you have any questions, please contact us.
  - 4) The above cross interferences are represented by a low concentration of the gas.

# Temperature Curve



## DISCLAIMER:

SGX Europe Sp. z o.o. reserves the right to change design features and specifications without prior notification. We do not accept any legal responsibility for customer applications of our sensors. SGX Europe Sp. z o.o. accepts no liability for any consequential losses, injury or damage resulting from the use of this document, the information contained within or from any omissions or errors herein. This document does not constitute an offer for sale and the data contained is for guidance only and may not be taken as warranty. Any use of the given data must be assessed and determined by the user thereof to be in accordance with federal, state and local laws and regulations. All specifications outlined are subject to change without notice.

SGX Europe Sp. z o.o. sensors are designed to operate in a wide range of harsh environments and conditions. However, it is important that exposure to high concentrations of solvent vapours is to be avoided, both during storage, fitting into instruments and operation. When using sensors on printed circuit boards (PCBs), degreasing agents should be used prior to the sensor being fitted. SGX Europe Sp. z o.o. makes every effort to ensure the reliability of its products. Where life safety is a performance requirement of the product, we recommend that all sensors and instruments using these sensors are checked for response to gas before use.

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