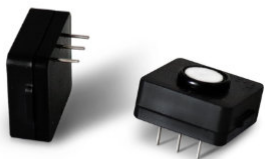




# SGX

## SENSORTECH

An Amphenol Company



**PS1-H2-20000**



**PS4-H2-20000**

# Hydrogen sensor Datasheet

### SGX Solid Polymer Electrolyte Gas Sensors

The SGX series of PS1 and PS4 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

Sensitivity	$3 \pm 2 \text{ nA / ppm}$
Measurement Range	0 – 2 %vol
Zero Current	$\pm 5 \text{ nA}$
Maximum Overload	4 %vol
Response Time	T50 < 10s, T90 < 30s
Repeatability	1%
Lower Detectable Limit (LDL)	$\leq 0.01 \%$
Linear Range	2 %vol
Resolution (16Bit ADC)	0.001%

## Environmental Details

Temperature Range	-40°C to +55°C
Pressure Range	800 to 1200 hPa
Operating Humidity Range	15-95% RH
Storage Temperature	0 to 20°C

## Lifetime Details

Long-Term Drift	< 1 %/month
Expected Lifetime	> 5 years in air
Zero Drift in Clean Air	< 0.001% ppm
Storage conditions	0-20°C
Storage Life	12 months
Warranty	12 months

## Operation

Operating Principle	Amperometric, 3-electrode
Bias Voltage	0 mV
Recommended Load Resistor	100 $\Omega$
Warm Up Time	< 60 s

## Housing

Housing Material	PPO
Weight	PS1-H2-20000 < 0.7g PS4-H2-20000 < 6g



**PS1-H2-20000**



**PS4-H2-20000**

## Features

- Small size
- Wide temperature range
- Fast response time
- No electrolyte leakage
- Excellent sensitivity at low temperatures
- Low cost at large volumes
- Strong signal to noise



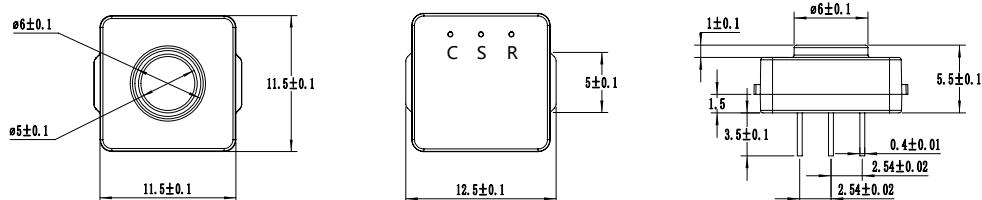
## Key applications

- Ambient Monitoring
- Very Sensitive Leak Detection
- Battery Produce
- Semiconductor
- Data Center Protect
- Propellant Detection

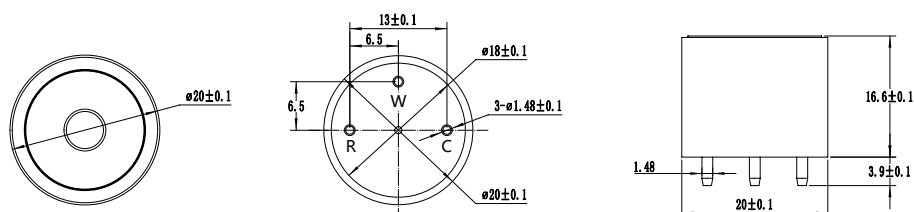
## Important Notes

- All performance is based on conditions at 20°C, 50% RH and 1 atm, flow rate > 150 qcm/min, using SGX recommended circuitry.
- Sensor performance is temperature dependant; please contact SGX for temperature performance other than 20°C.
- 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-H2-20000**



**PS4-H2-20000**

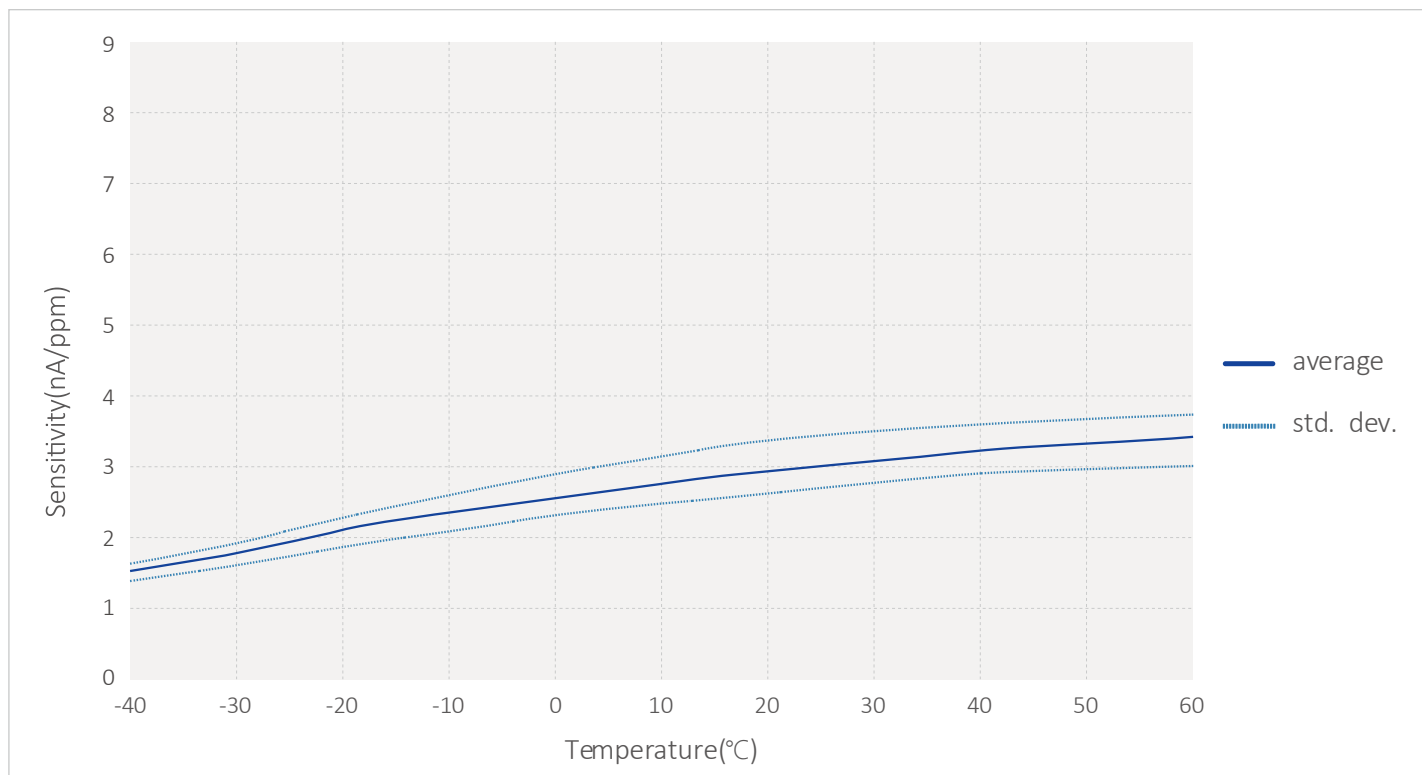
## Cross Sensitivity

Gas	Formula	Test Concentration	Sensor Reading
Ammonia	NH <sub>3</sub>	50ppm	0ppm
Carbon Dioxide	CO <sub>2</sub>	1000ppm	0ppm
Carbon Monoxide	CO	200ppm	1000ppm
Chlorine	CL <sub>2</sub>	5ppm	0ppm
Hydrogen Chloride	HCL	20ppm	0ppm
Hydrogen Cyanide	HCN	10ppm	0ppm
Hydrogen Fluoride	HF	3ppm	0ppm
Hydrogen Sulphide	H <sub>2</sub> S	10ppm	0ppm
Isopropanol	C <sub>3</sub> H <sub>8</sub> O	10ppm	0ppm
Methane	CH <sub>4</sub>	1%vol	0ppm
Nitric Oxide	NO	25ppm	0ppm
Nitrogen Dioxide	NO <sub>2</sub>	10ppm	0ppm
Silane	SiH <sub>4</sub>	5ppm	0ppm
Sulphur Dioxide	SO <sub>2</sub>	10ppm	0ppm

**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, other gas please contact with us.

# 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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