



Phosphine 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.





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Technical Specifications

Performance

Sensitivity	150± 30 nA / ppm
Measurement Range	0 – 20 ppm
Zero Current	± 2 nA
Maximum Overload	50 ppm
Response Time	T50 < 10s, T90 < 30s
Repeatability	1%
Lower Detectable Limit (LDL)	0.1ppm
Linear Range	50ppm
Resolution (16Bit ADC)	0.01ppm



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		> 3 years in air
Zero Drift in Clean Air	$\overline{)}$	< 0.2 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 Ω
Warm Up Time)	< 60 s

Housing

Housing Material	PPO
Weight	PS1-PH3-20 < 0.7g
	PS4-PH3-20 < 6g





PS1-PH3-20

PS4-PH3-20

Features

- Small size
- High sensitivity
- · Wide temperature range
- Fast response time
- No electrolyte leakage
- · Low cost at large volumes
- Individually calibrated (including test report)



Key applications

- TLV Monitoring
- Parking Garages



Important Notes

- All performance is based on conditions at 20°C, 50% RH and 1 atm, flow rate>150qcm/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.

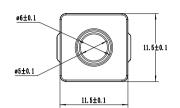


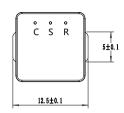
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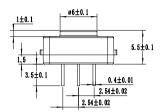
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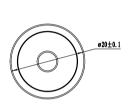
Dimensions

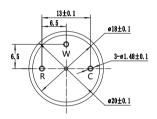


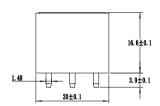




PS1-PH3-20







PS4-PH3-20

Cross Sensitivity

Gas	Formula	Test Concentration	Sensor Reading
Carbon Dioxide	CO ₂	1000ppm	0ррт
Carbon Monoxide	СО	100ppm	34ppm
Chlorine	CL ₂	50ppm	0ррт
Hydrogen Chloride	HCL	5ppm	0.14ppm
Hydrogen Cyanide	HCN	5ppm	0.18ppm
Hydrogen Fluoride	HF	5ppm	0.14ppm
Methane	CH₄	1%vol	0ррт
Nitrogen Dioxide	NO ₂	5ppm	-0.93ppm

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.

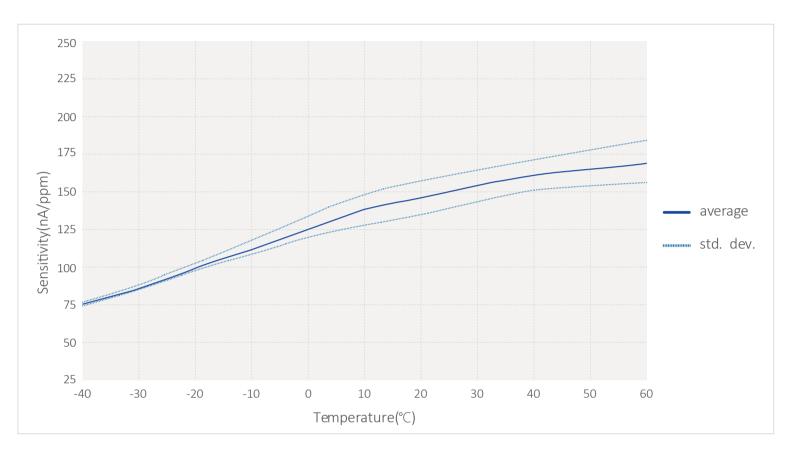


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Temperature Curve



DISCLAIMER:

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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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