



PS4-CO-1000

# Carbon Monoxide 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	25 ± 10 nA / ppm	
Measurement Range	0 – 1000 ppm	
Zero Current	± 100 nA	
Maximum Overload	2000 ppm	
Response Time	T50 < 10s, T90 < 30s	
Repeatability	< 1%	
Lower Detectable Limit (LDL)	≤ 2 ppm	
Linear Range	1000 ppm	
Resolution (16Bit ADC)	0.1ppm	

#### **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	< 2 ppm	
Storage conditions	0-20°C	
Storage Life	12 months	
Warranty	12 months	

#### Operation

Amperometric, 3-electrode
0 mV
100 Ω
< 60 s

#### Housing

Housing Material	PPO
Weight	PS1-CO-1000 < 0.7g PS4-CO-1000 < 6g





PS1-CO-1000

#### **Features**

- Small size
- Wide teperature range
- Low cross sensitivity
- No electrolyte leakage
- · High sensitivity
- Fast response time
- Extreme linear response up to high concentration

#### **Key applications**

- TLV Monitoring
- Oil & Petrochemical Industry
- Leak detection
- Steel Industry
- 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.





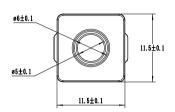


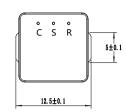


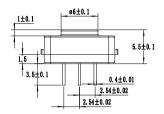




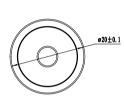
### **Dimensions**

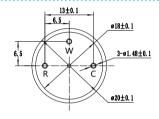


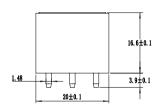




PS1-CO-1000







PS4-CO-1000

# **Cross Sensitivity**

Gas	Formula	Test Concentration	Sensor Reading
Alcohols	R-OH	1000ppm	0ppm
Ammonia	NH₃	50ppm	0ррт
Carbon Dioxide	CO <sub>2</sub>	1000ppm	0ррт
Chlorine	CL <sub>2</sub>	1ppm	0ррт
Ethylene	C <sub>2</sub> H <sub>4</sub>	10ppm	0ррт
Hydrogen Cyanide	HCN	50ppm	0ррт
Hydrogen	H <sub>2</sub>	100ppm	20ppm
Hydrogen Sulphide	H₂S	50ppm	0ррт
Isopropanol	C₃H <sub>7</sub> OH	1000ppm	0ррт
Methanal	CH₄	1%vol	0ррт
Nitric Oxide	NO	25ppm	n.e
Nitrogen Dioxide	NO <sub>2</sub>	10ppm	0ррт
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.

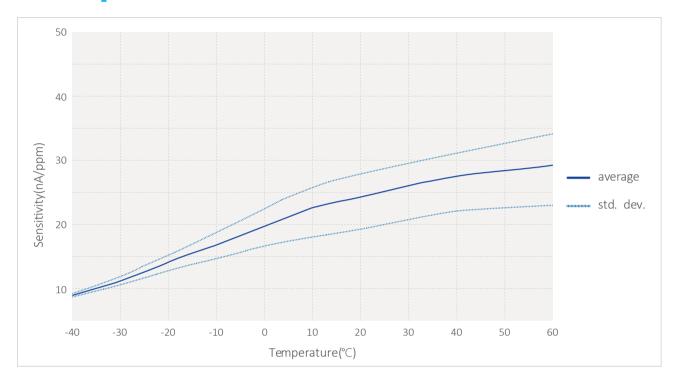


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## **Temperature Curve**



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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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