

SGX-PH3-20

Phosphine Sensor

The SGX series Electrochemical sensors come in a standard 20mm diameter/4-series housing, use a liquid electrolyte, and contain 3 electrodes, the Working (or Sensing), Counter and Reference. The gas to be measured diffuses into the sensor via the membrane to the Working electrode where it is oxidized or reduced. An electric current is the result of this electrochemical reaction. The amount of current generated depends on the amount of gas (ppm) that is oxidized or reduced at the working electrode. The SGX Electrochemical sensors use low power, are highly sensitive, offer linear output vs the gas concentration and are available for a broad range of toxic gases.

PERFORMANCE

Nominal Range	0 - 20 ppm
Maximum Overload	100 ppm
Sensitivity (20°C)	1.4 ± 0.6 µA/ppm
Response Time (T90)	≤ 30 s
Zero Signal (20°C)	< ±0.4 µA
Baseline Shift (-20°C ~ 50°C)	< 1 ppm
Resolution	0.05 ppm
Linearity	Linear up to 20 ppm
Bias Voltage	0 mV

OPERATING CONDITIONS

Temperature Range	-20°C to +50°C
Pressure Range	1 ± 0.1 atm
Operating Humidity Range	15% to 90% RH non-condensing

LIFETIME

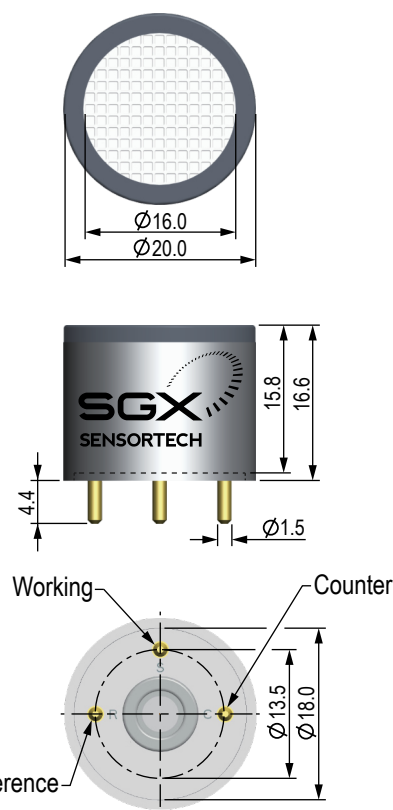
Long Time Output Drift	< 2% signal/month
Storage Temp	10°C ~ 30°C
Expected Operating Life	2 years in clean air
Storage Life	6 months in original packaging

INTRINSIC SAFETY DATA

Max. Current at 100ppm PH3	< 0.5mA
Max. O/C Voltage	1.3 V
Max. S/C Current	< 1.0 A

PHYSICAL CHARACTERISTICS

Housing Material	ABS
Weight (Nominal)	5 g



OUTLINE

All dimensions are in mm
All tolerances are ±0.2mm

NOTE

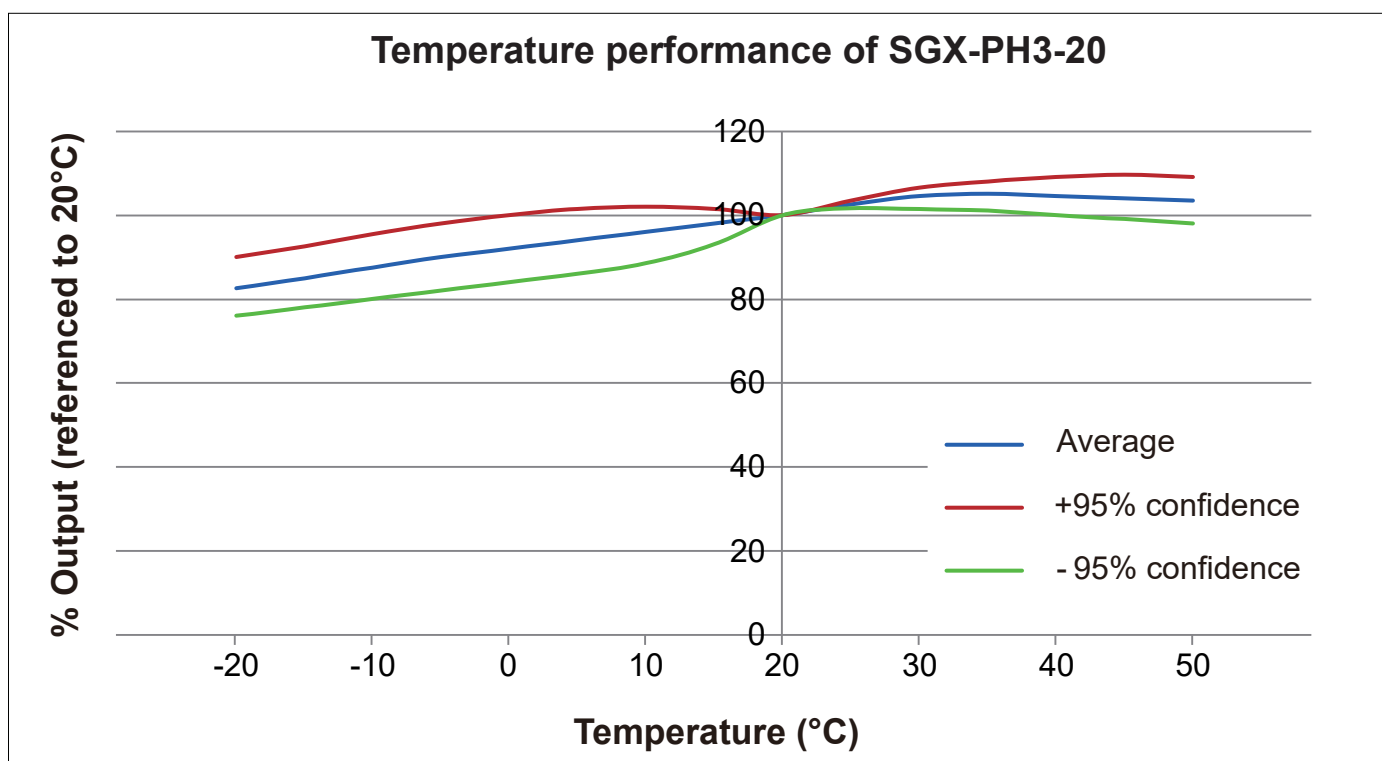
1. All performance specifications are based upon the following environmental conditions: 20°C, 50% relative humidity, 101kPa (1 atm)
2. Cross Sensitivity Data is for information only. Calibration is recommended with target gas as the accuracy of calibration and measurement cannot be ensured.
3. The cross sensitivities are including but not limited to the gases stated in the table (see page 2). It may respond to other gases.
4. The cross sensitivities may fluctuate between ± 30% and may differ from batch to batch or across sensor's lifetime.
5. The device is designed to be RoHS compliant.
6. Poisoning - 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 vapors is avoided, both during storage, fitting into instrument and operation.
7. When using sensors on printed circuit boards (PCB's), degreasing agents should be used prior to the sensor being fitted.

CROSS SENSITIVITY

Gas	Test Concentration	Sensor Reading
Hydrogen Sulfide	15 ppm	12 ppm
Sulfur Dioxide	20 ppm	6.2 ppm
Ammonia	50 ppm	0 ppm
Hydrogen	1,000 ppm	0 ppm
Carbon Monoxide	1,000 ppm	0 ppm
Ethylene	100 ppm	0 ppm

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



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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