



SENSORTECH

An Amphenol Company



SGX-HCL-30

Fluorine sensor Datasheet

SGX Liquid Electrochemical Gas Sensors

These SGX Sensors use a revolutionary innovation in electrochemical sensing, which detects the output signals from the electrochemical reactions of different gases. Furthermore, it accurately measures gas concentration through the magnitude of the signal. These specialised sensors consist of three catalytic electrodes, liquid electrolyte and gas diffusion holes. Through the diffusion holes, the gas reaches the sensor's working electrode, where an electrochemical reaction takes place at the so-called 3-phase boundary. A current signal is generated at the output, which is linearly proportional to the gas concentration.



Quality, Safety, Responsibility

Technical Specifications

Performance

Sensitivity	-330 ± 100 nA/ppm
Measurement Range	0 – 30 ppm
Zero Current	± 20 nA
Maximum Overload	100 ppm
Response Time	T50 < 40s, T90 < 80s
Repeatability	2%
Lower Detectable Limit (LDL)	≤ 0.3 ppm
Linear Range	30 ppm
Resolution (16Bit ADC)	< 0.1ppm

Environmental Details

Temperature Range	-20°C to +40°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	24 months
Zero Drift in Clean Air	< 1 ppm
Storage conditions	0-20°C
Storage Life	6 months
Warranty	12 months

Operation

Operating Principle	Amperometric
Bias Voltage	0 mV
Recommended Load Resistor	220 Ω
Warm Up Time	< 60 s

Housing

Housing Material	PPO
Weight	< 6g



Features

- Small size
- Water based electrolyte
- High selectivity
- High sensitivity
- Excellent sensitivity at low temperatures
- Double sealed housing for advanced leakage protection

Key applications

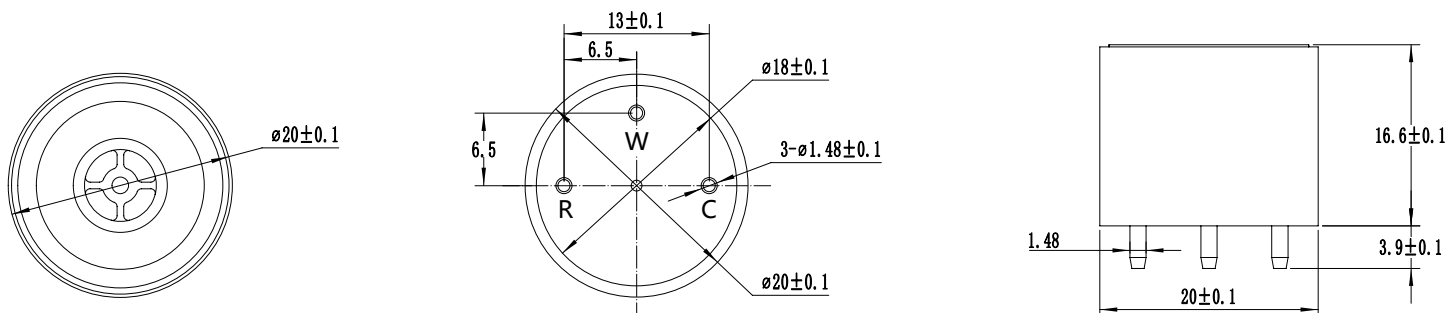
- General Industry
- Environmental Monitoring
- Leak detection
- Emissions
- TLV-monitoring
- Semiconductor Industry
- Industrial Safety



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



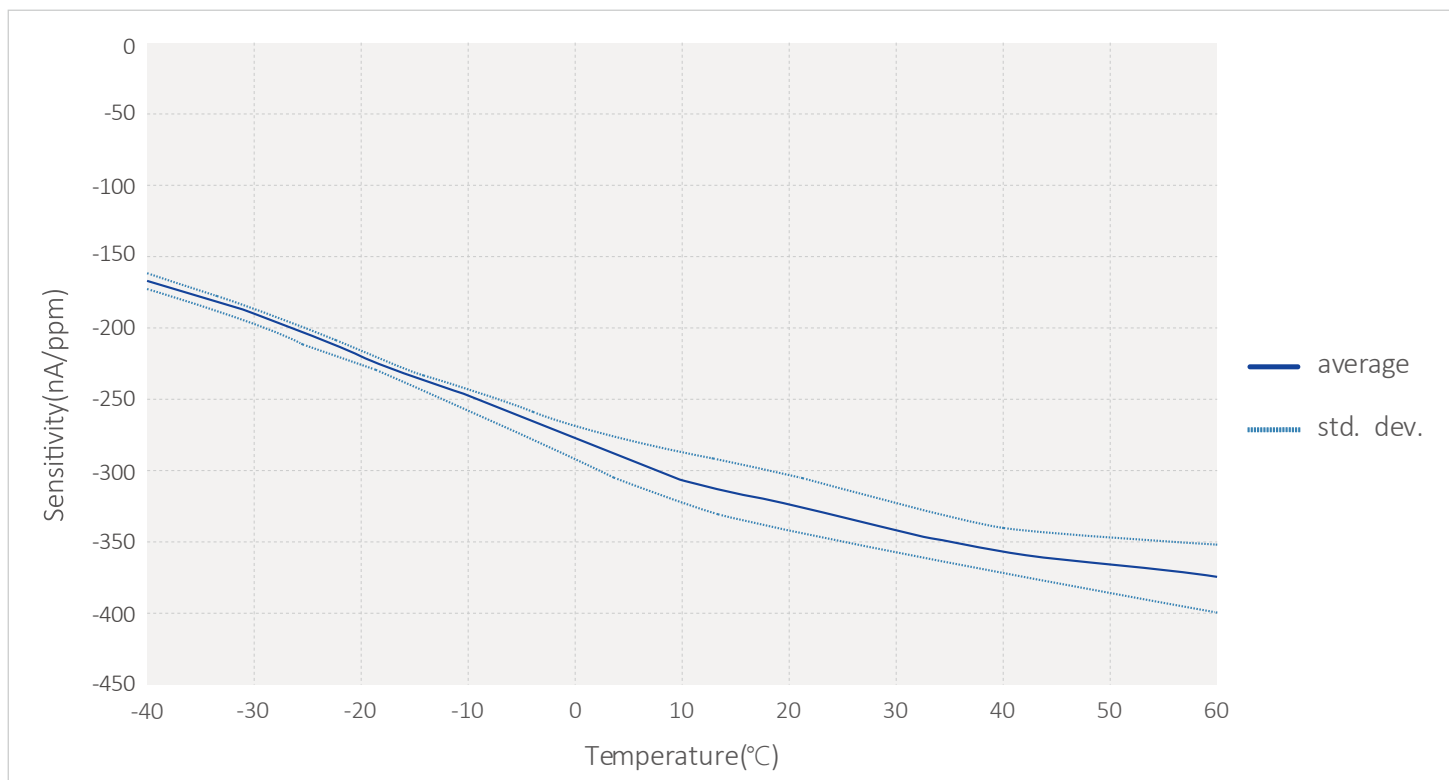
Cross Sensitivity

Gas	Formula	Test Concentration	Sensor Reading
Ammonia	NH ₃	300ppm	0ppm
Arsine	AsH ₃	0.3ppm	1ppm
Carbon Monoxide	CO	100ppm	0ppm
Chlorine	CL ₂	5ppm	-3.5ppm
Hydrogen	H ₂	100ppm	0ppm
Hydrogen Bromide	HBr	5ppm	2ppm
Nitric Oxide	NO	10ppm	≈ 2ppm
Phosgene	COCL ₃	0.5ppm	0ppm
Phosphine	PH ₃	0.3ppm	≈ 1ppm
Silane	SiH ₄	10ppm	0ppm
Sulphur Dioxide	SO ₂	5ppm	≈ 1.8ppm

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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