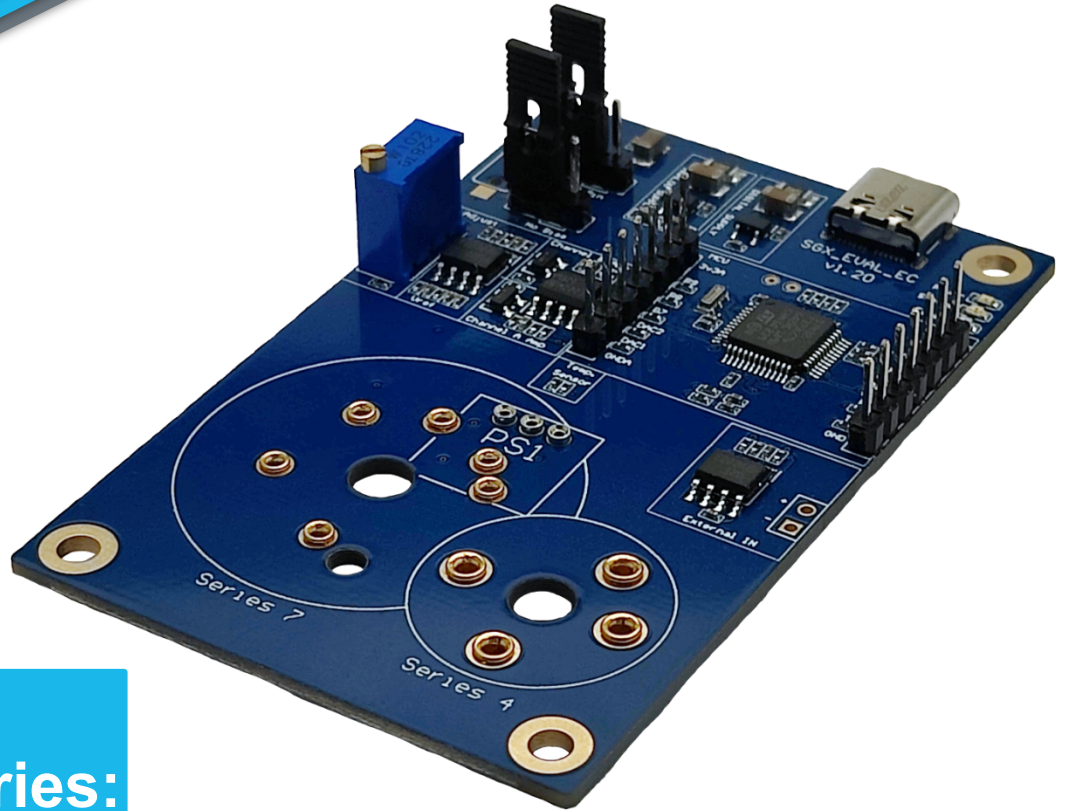




**SENSORTECH**

An Amphenol Company



**Dedicated to  
our sensor series:**

**SGX-4**<sub>xxx</sub>

**SGX-7**<sub>xxx</sub>

**PS1 & PS4**

**SGX-AOX/EOX/VOX**

# **SGX\_EVAL\_EC**

## **Electrochemical Gas Sensor Evaluation Kit**

# **Datasheet**

**Get started quickly in gas sensor instrument design using electrochemical gas sensors from SGX.**  
Simply plug into the USB port of your computer and connect the SGX electrochemical gas sensor.

The SGX data logging and control software allows the performance of electrochemical gas sensors to be assessed and makes it easy to capture data.

Users can experiment with different settings before designing their own instrument.



*Quality, Safety, Responsibility*

# Functional specifications

## Features

- For use with SGX electrochemical gas sensors
- Simple control and set-up of sensors
- PC application software for control and data logging
- Adjustable electrochemical bias voltage
- 16-bit Analog to Digital Conversion (ADC) for sensor outputs
- Calibrate sensors with linear response and monitor gas concentration levels
- PCB mounted temperature sensor
- User manual available on website
- Gas flow hoods sold separately
- Dual gas sensors (Series 4) can be connected
- Socket for TTL (RS232) communication

## Introduction

The SGX\_EVAL\_EC - Gas Sensor Evaluation Kit allows you to connect and read data from a wide range of SGX series electrochemical sensors. With our device, you can easily read out the gas concentration levels measured by the sensor or even several gases simultaneously (Dual gas series).

In addition to the device and a cable for connecting to a computer, our kit also includes software for control and data logging. In our application you can calibrate the sensor with just a few clicks, so that you can personalise the data displayed and the results can be tailored even more to your needs.

Please note that the calibration performed with our software is stored in Evaluation kit, not in the sensor.

The software is available on our website:

[https://software.sgxsensortech.com/SGX\\_EVAL\\_EC\\_169.zip](https://software.sgxsensortech.com/SGX_EVAL_EC_169.zip)

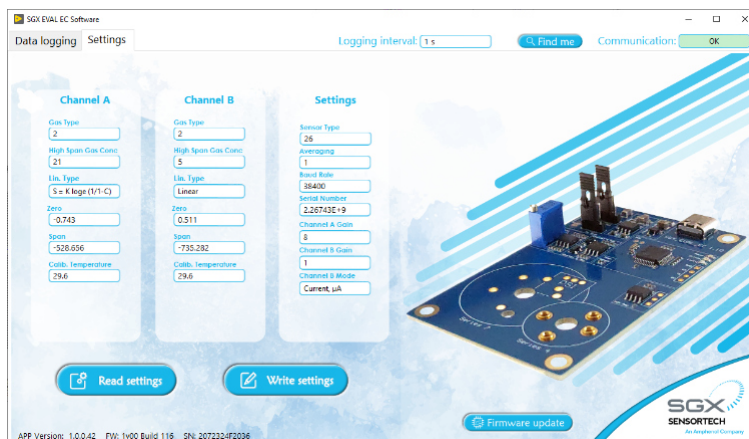
Alternatively, a terminal program such as HyperTerminal can be used to send simple commands to the embedded microcontroller. The user manual contains a comprehensive set of commands.

The PCB includes sockets for use with SGX electrochemical gas sensors (Series7, Series 4, PS1, PS4,SGX-VOX/AOX/EOX). The temperature measurement IC is located on the PCB near the sensor sockets. In addition, our device is equipped with an input for modules to increase and extend its capabilities (Input marked (PS1) in the structure diagram on the next page).

The evaluation kit allows the polarity voltage to be adjusted or set to zero. If the sensor has a linear concentration response, a basic calibration can be performed using the supplied software to obtain a concentration reading in ppm, % volume or %LEL (lower explosive limit).



View of application interface (Data logging).



View of application interface (Settings).

## Minimum PC Requirements

<b>Processor</b>	Intel Core i3 or higher
<b>Operating System</b>	Windows 7 or later
<b>Screen resolution</b>	1280 x 720 Pixels
<b>RAM</b>	1 GB
<b>Disk Space</b>	1.6 GB

## Performance Data

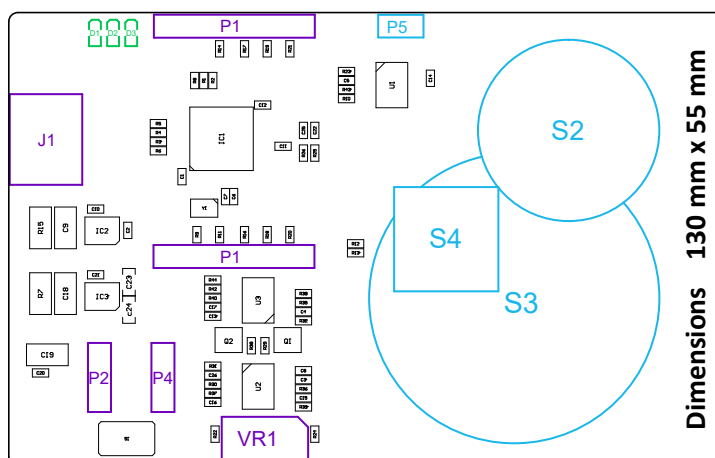
<b>ADC Resolution</b>	16-Bit
<b>Electrochemical bias</b>	-700mV to +350mV (adjustable)
<b>ADC Resolution (Elect.)</b>	16nA (high range, +/-500µA) 4nA (low range, +/-125µA) 2.6 µV (+/-86 mV) <sup>1</sup>
<b>Temperature sensor IC accuracy</b>	2 °C (at 25 °C) 3 °C (-25 °C to +85 °C)

<sup>1</sup>For SGX-AOX/EOX/VOX sensors

## Operating Temperature Range

<b>PCBs</b>	Operation and storage from -30 °C to +60 °C
<b>Sensors</b>	See individual sensor data sheets

## Structure Diagram



## Electrical Data

Sensor Sockets	Series 4, Series 7, PS1, PS4 SGX-VOX/AOX/EOX
D1	Green LED (Flash = PCB functional)
D2	Status LED
D3	Fault LED
USB	USB-C
VR1	Electrochemical bias voltage (-700mV to +350mV)
P4	1-2 (biased); 2-3 (unbiased)

## Ordering Information

**SGX\_EVAL\_EC** – Electrochemical Gas Sensor Evaluation Kit contains:

- Evaluation PCB
- USB-C lead
- Data Logging Software and User Guide on website

### ACCESSORIES (Order separately if required)

- **JAS767906AA** – Standard Gas Flow Hood for VQ500 series, Infrared mini-sensors and electrochemical (non-reactive gas) sensors
- **JAS769638AA** – Premium Gas Flow Hood recommended for reactive gases e.g. H<sub>2</sub>S, NO<sub>2</sub>, Cl<sub>2</sub>, ClO<sub>2</sub>, ETO
- **PS1 Flow Cap** – Gas Flow Hood for series PS1, Electrochemical sensor.

**Notes:** Electrochemical gas sensors are not included with the SGX\_EVAL\_EC Kit. All Sensors are sold separately.

Name	Description
S2	Socket for SGX-4xx sensors / PS4
S3	Socket for SGX-7xx sensors
S4	Socket for PS1
P5	Connector for SGX-VOX / AOX / EOX
J1	USB-C connector
P1	Socket for additional modules
P2	1-2 for sensor with 3 pins; 2-3 for sensor with 2 pins
P4	1-2 for sensor with Bias; 2-3 for Non-Bias
VR1	Bias adjust
D1	Power Led (Green colour)
D2	Status Led (Yellow colour)
D3	Error Led (Red colour)

### 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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