Starting Guide SGD43S-M3-Sx

The SGD43S-M3-Sx can be evaluated by connecting it to a PC equipped with Sensirion's ControlCenter software. The ControlCenter software is a powerful, user-friendly software platform for configuring, controlling, and monitoring Sensirion sensor solutions. It simplifies sensor evaluation, data visualization, and analysis with an intuitive interface. The software is targeted at applications and R&D engineers who wish to evaluate a Sensirion sensor within their application.

1 Download ControlCenter

Download the latest ControlCenter on Sensirion's website:
https://sensirion.com/products/sensor-evaluation/control-center

ControlCenter is available for Windows, MacOS and Linux Operating Systems. For a complete list of version compatibility and installation procedure please visit the ControlCenter manual:
https://sensirion.github.io/ControlCenterManual/#/?id=using-controlcenter

2 Connect the SGD43S-M3-Sx

The sensor requires a cable to connect to a computer following the steps below:

1.1 Harness

The SGD43S-M3-Sx connector is compatible with TE794821-1:
https://www.te.com/en/product-794821-1.html

1.2 USB to harness

Use a USB to RS-485 cable, such as the USB-RS485-WE-1800-BT:
https://ftdichip.com/products/usb-rs485-we-1800-bt/

Wiring:

- GND – Sensor Pin 2
- D+ RS-485 D+/A – Sensor Pin 3
- D- RS-485 D-/B – Sensor Pin 5

1.3 Power supply to harness

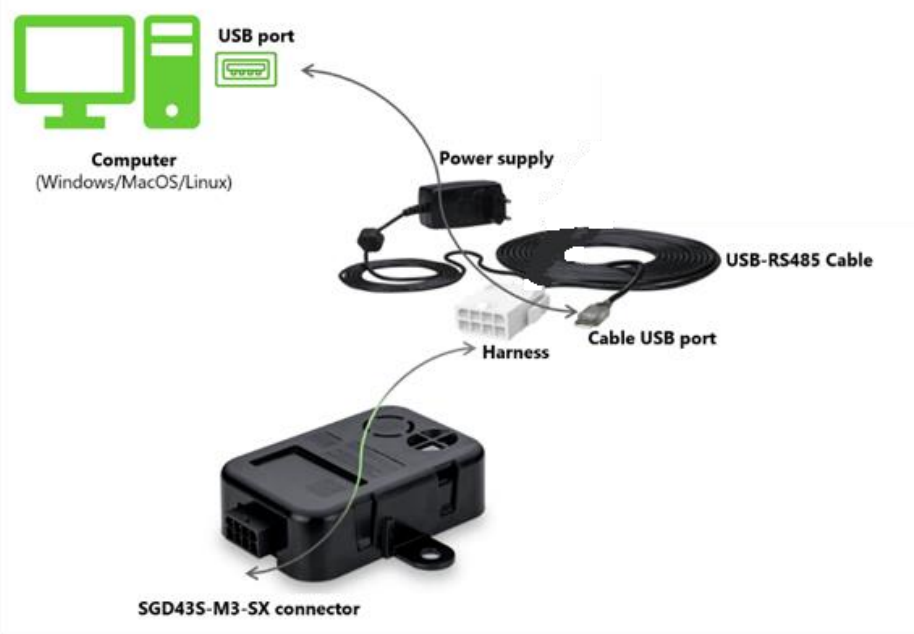
Wire the power supply to the harness:

- V_{IN} – Sensor Pin 1
- GND – Sensor Pin 2

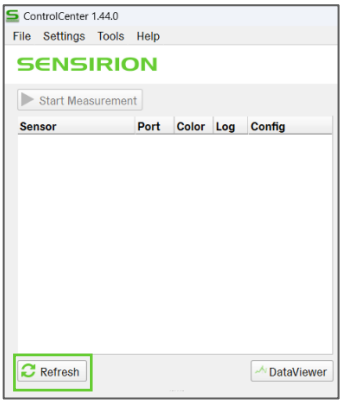
Make sure that the sensor's GND is connected to both the GND of the power supply and the GND of the USB to RS-485 cable.

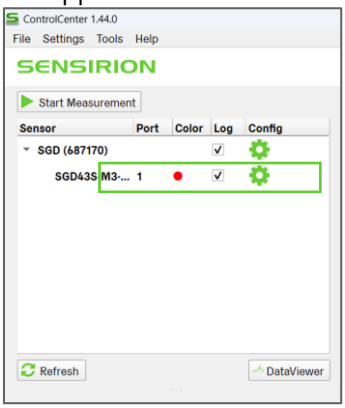
1.4 Wiring overview

Once the harness is assembled and wired to the sensor/computer/power supply, the setup looks as follows:



"Refresh" ControlCenter software. The SGD43S-M3-Sx should now appear under sensor section.

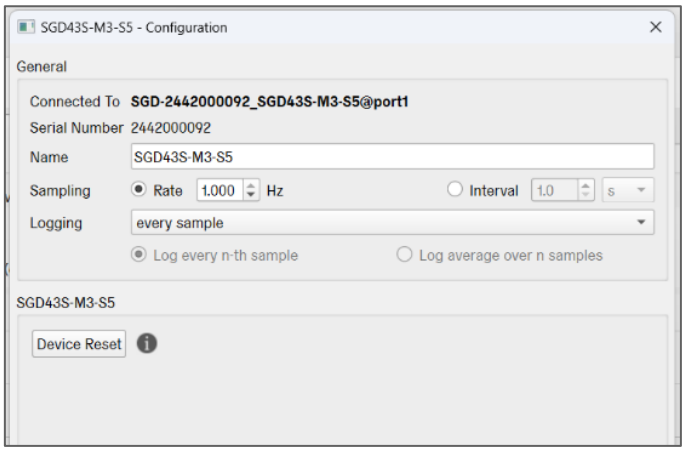




A connection is now established between the sensor and the software. Control Center comes with reasonable default configurations for each sensor to start the sensor evaluation.

3 Configurations

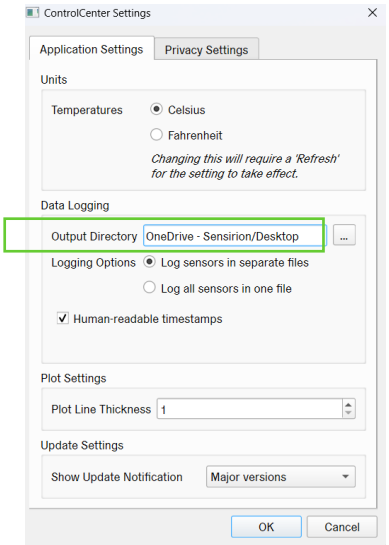
To further customize sensor configuration, the sensor settings can be found as a green gear button in the "**Config**" column next to each connected sensor in the device list (1).



The window above will appear when clicking on the gear icon. The enables the change of the measurement and logging frequency; or resetting the sensor. After applying the changes close the window, the changes will automatically be saved.

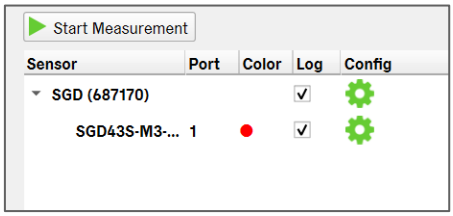
Note: This setting can only be changed when the sensor is not in active measurement mode. If the sensor is collecting data, ControlCenter needs to stop measuring before changing the sensor settings or the configuration can be made.

To select where your log file will be saved in, click on "**setting**" from tool bar and select "**Application settings**". Insert the file directory in "**output directory**" section and then click "**Ok**".



4 Start measuring

Click on **"Start measurement"** to start measuring and logging sensor data.



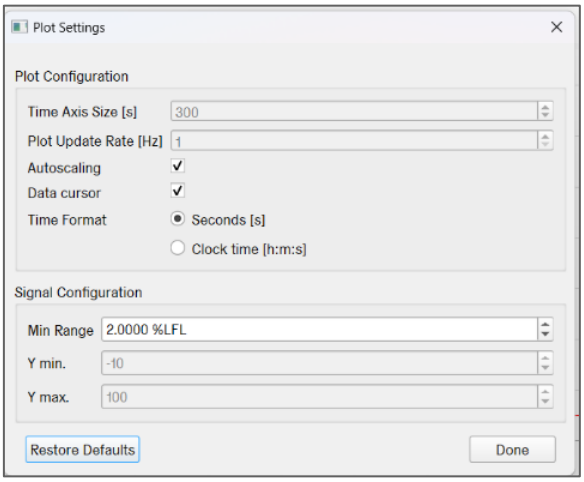
The measurement values will be displayed as a live graph (2). Users can switch between refrigerant concentration (Gas Conc.), and temperature and humidity (RHT) live graphs using the tabs (3). Additionally, users can view the measured values along with their timeline or adjust the timeline range at any point during the measurement by selecting the **"Data Viewer"** option (4).

	NOTICE: Note that the gas concentration output is only given in %LFL R-454B on the SGD43S-M3-S5, and only given in %LFL R-454C on the SGD43S-M3-S7.

5 Plotting

At any point during the measurement, the user can modify the graph settings by clicking on the gear icon located at the top right of the graph (5). This action opens the settings window below, allowing the user to:

- Toggle on/off the autoscaling
- Adjust the time format
- Toggle on/off the data value visualization on hovering over the data
- Adjust the minimum range for the y axis of the plot
- Restore the defaults

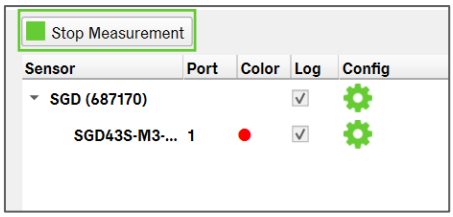


6 Data logging

The logging and sampling rate, as well as additional information about the sensor such as Firmware version, gas type, error state, leak state, leak threshold, system uptime and maintenance state listed in "**addition information**" tab (6).

Depending on which version of the sensor we are using, different information will be displayed in the tab.

The data collection will stop when the user clicks on "**Stop measurement**" and the data file will be saved as an .edf file accessible through the following path on toolbar: **File** > **Open data log folder**.



7 Revision History

Date	Version	Pages	Changes
January 2025	1.0	all	Initial version