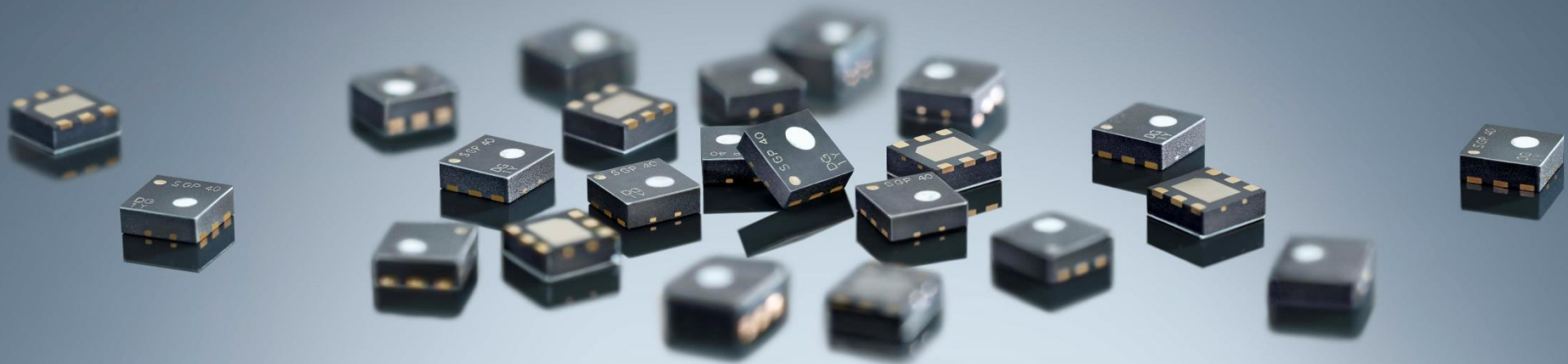


SEK-SVM4x – Quick Start Guide

Version 1.0
Stäfa, October 2021

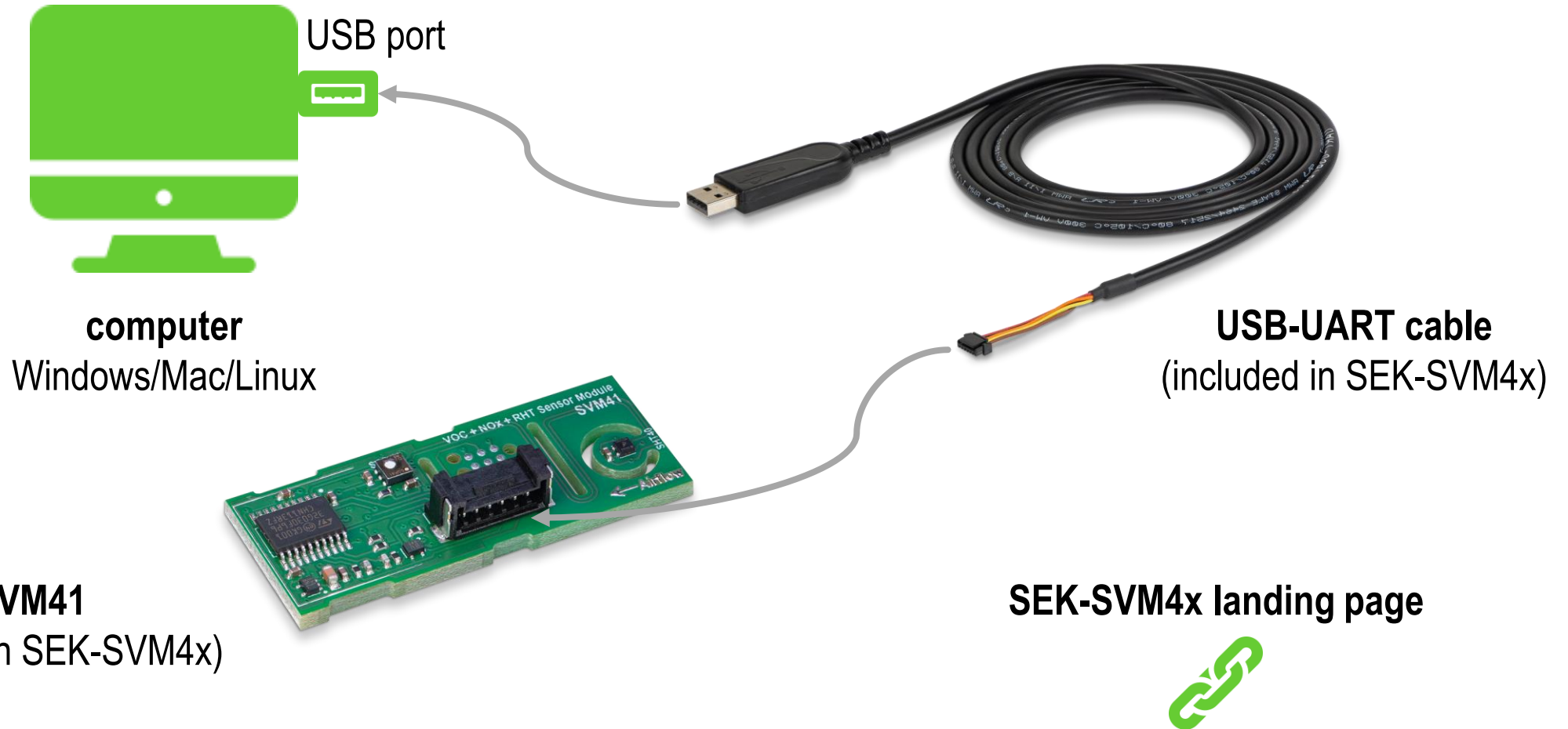


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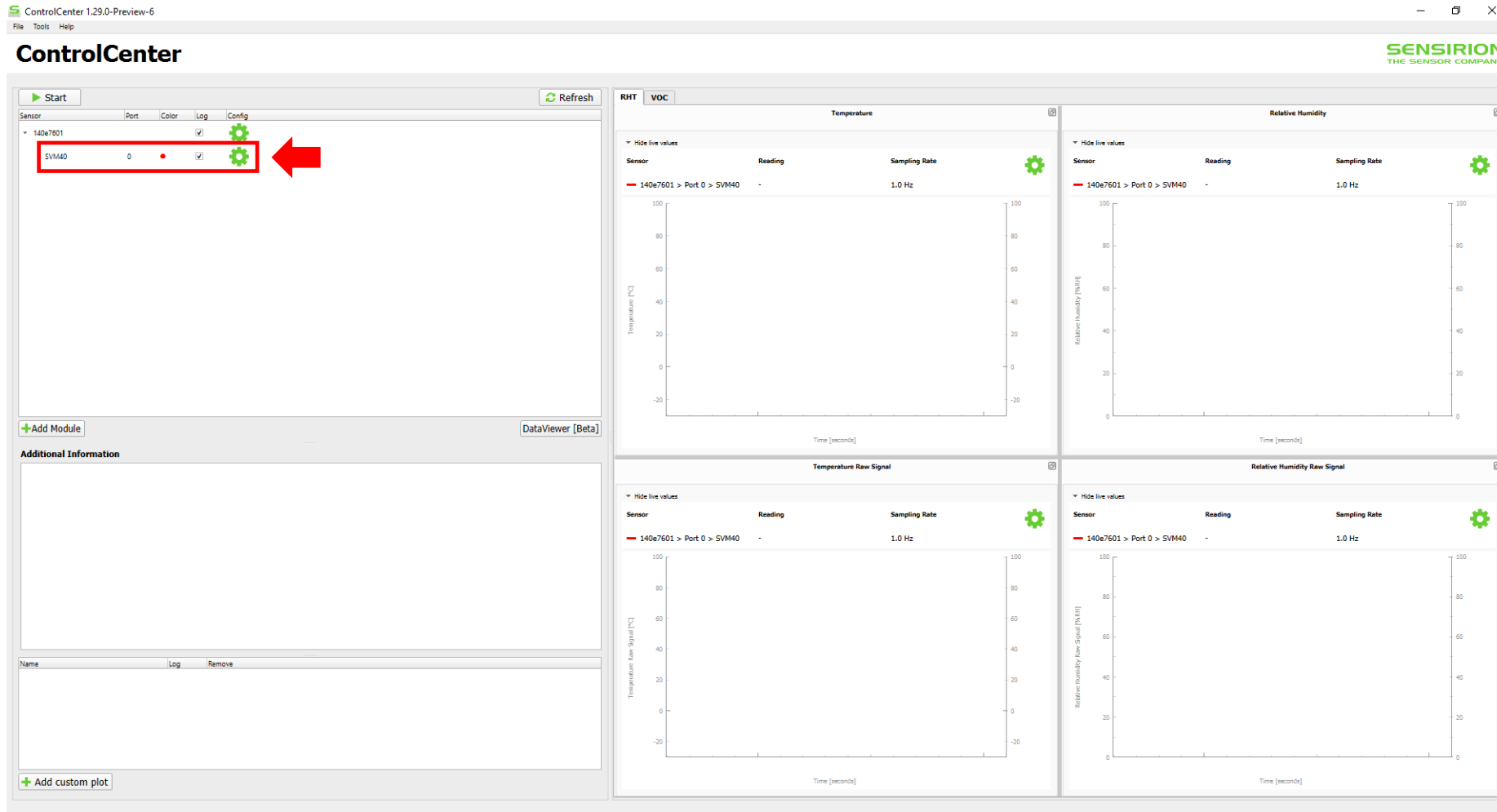
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4. Measuring VOC
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6. Changing the temperature offset (expert mode)
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Connecting your SVM41 to a computer



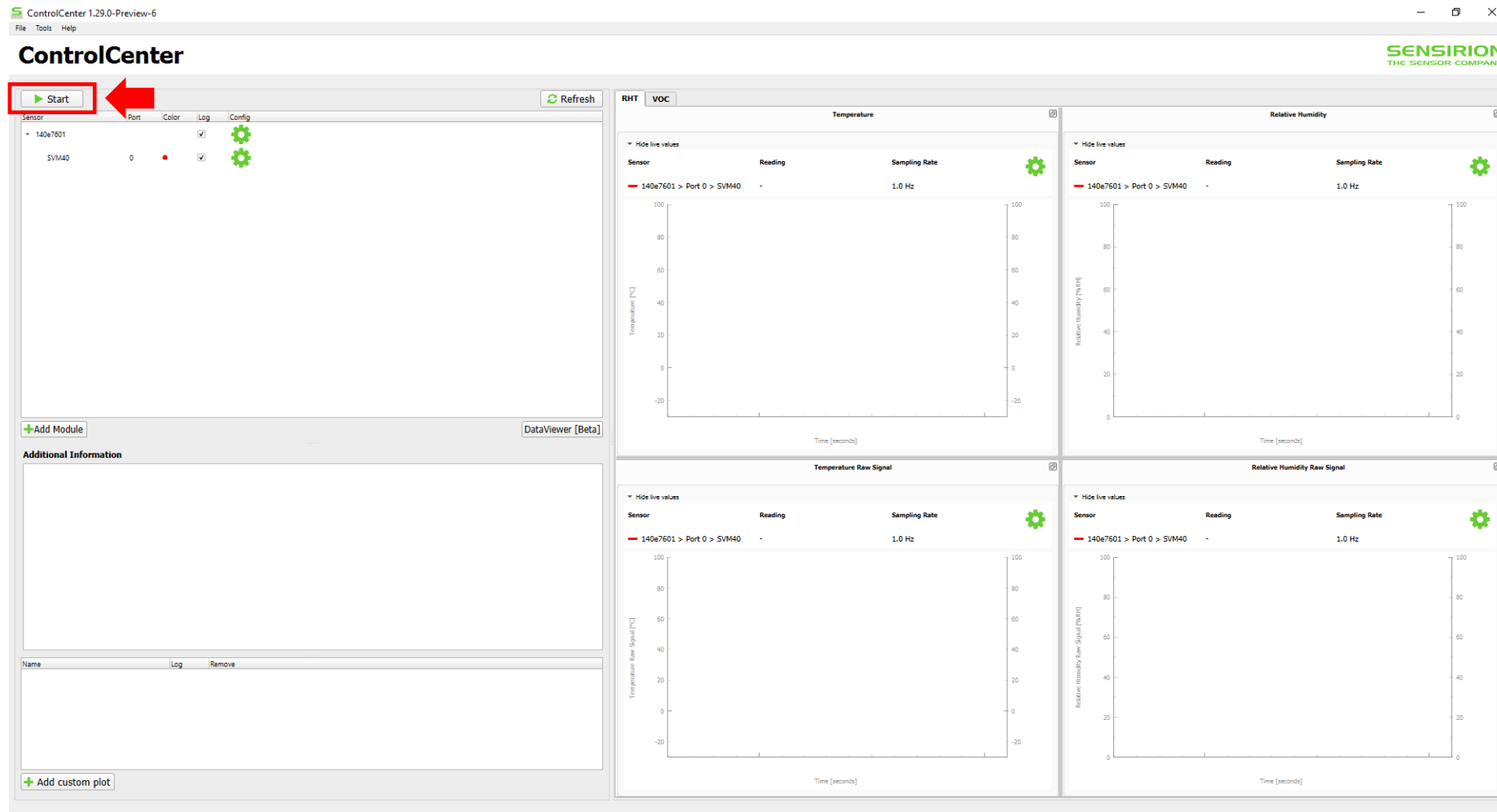
Get ControlCenter software...

Download the recent version of ControlCenter for Windows, Mac, or Linux and install it. When launching the software, you should see the SVM41 appearing in the list of connected sensors.



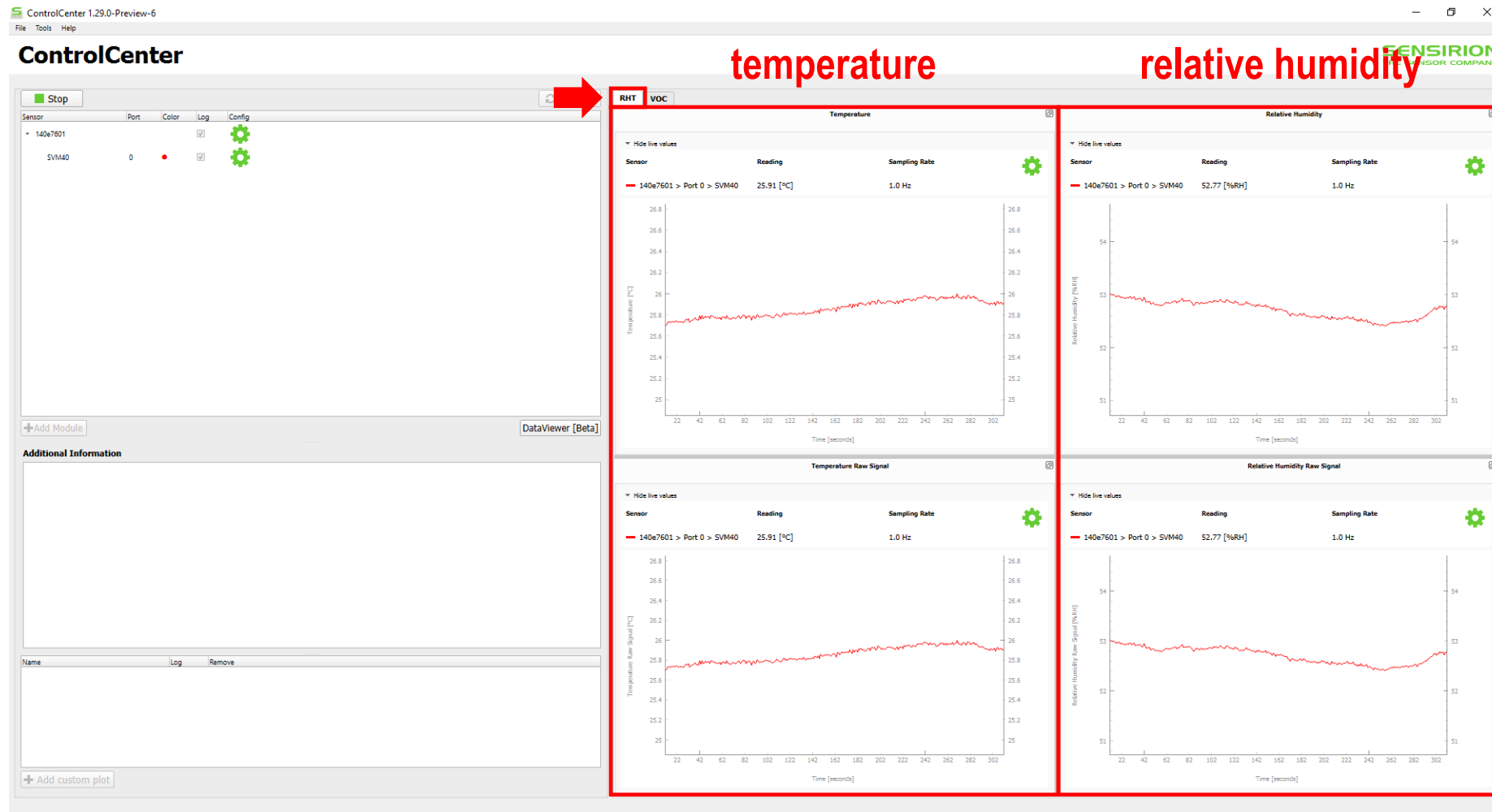
...and start using it

Now you are good to go for starting your first measurement by pressing the *Start* button.



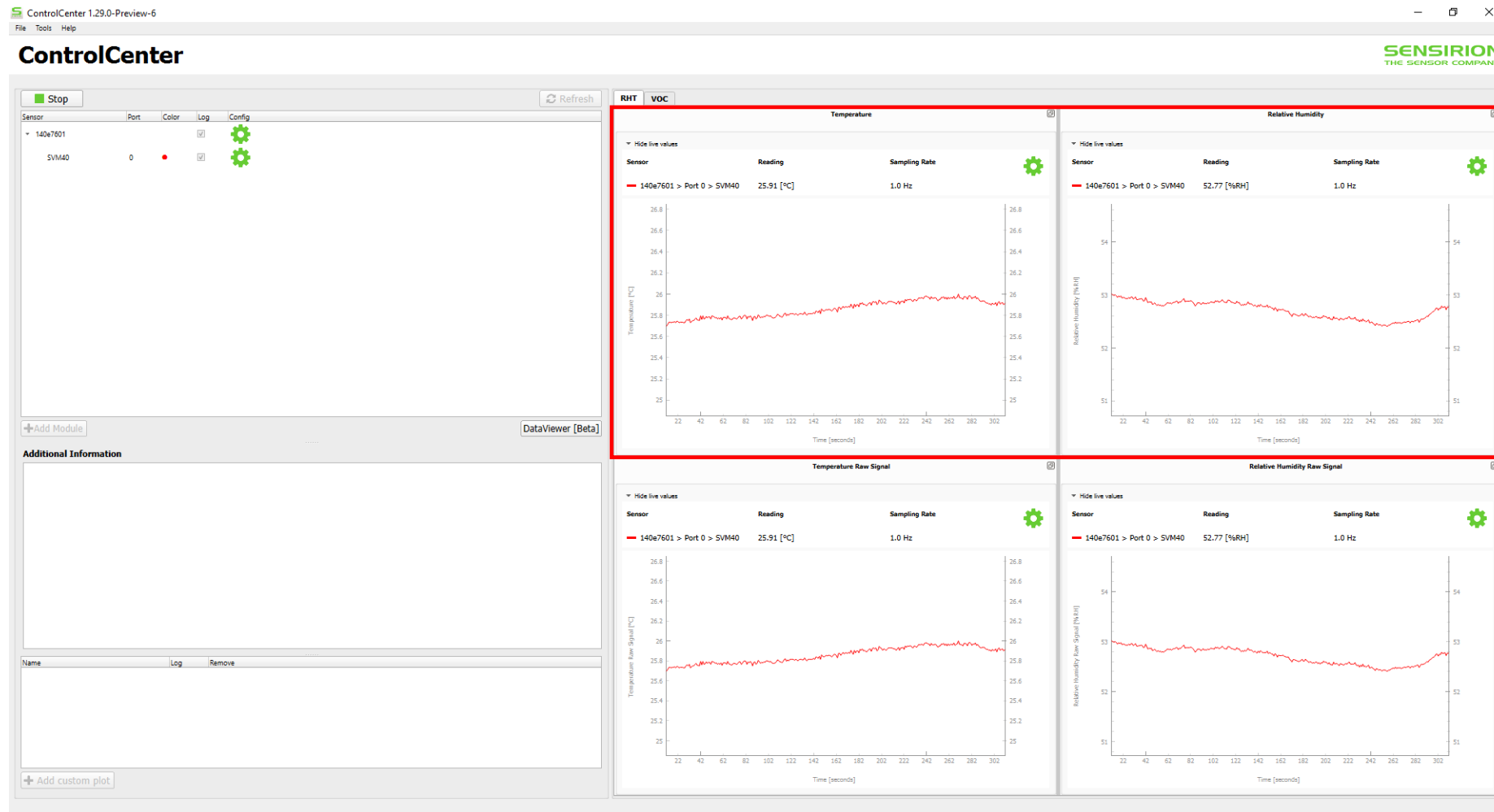
Measuring RHT

The results of temperature (left panels) and humidity (right panels) are displayed under the tab “RHT”.



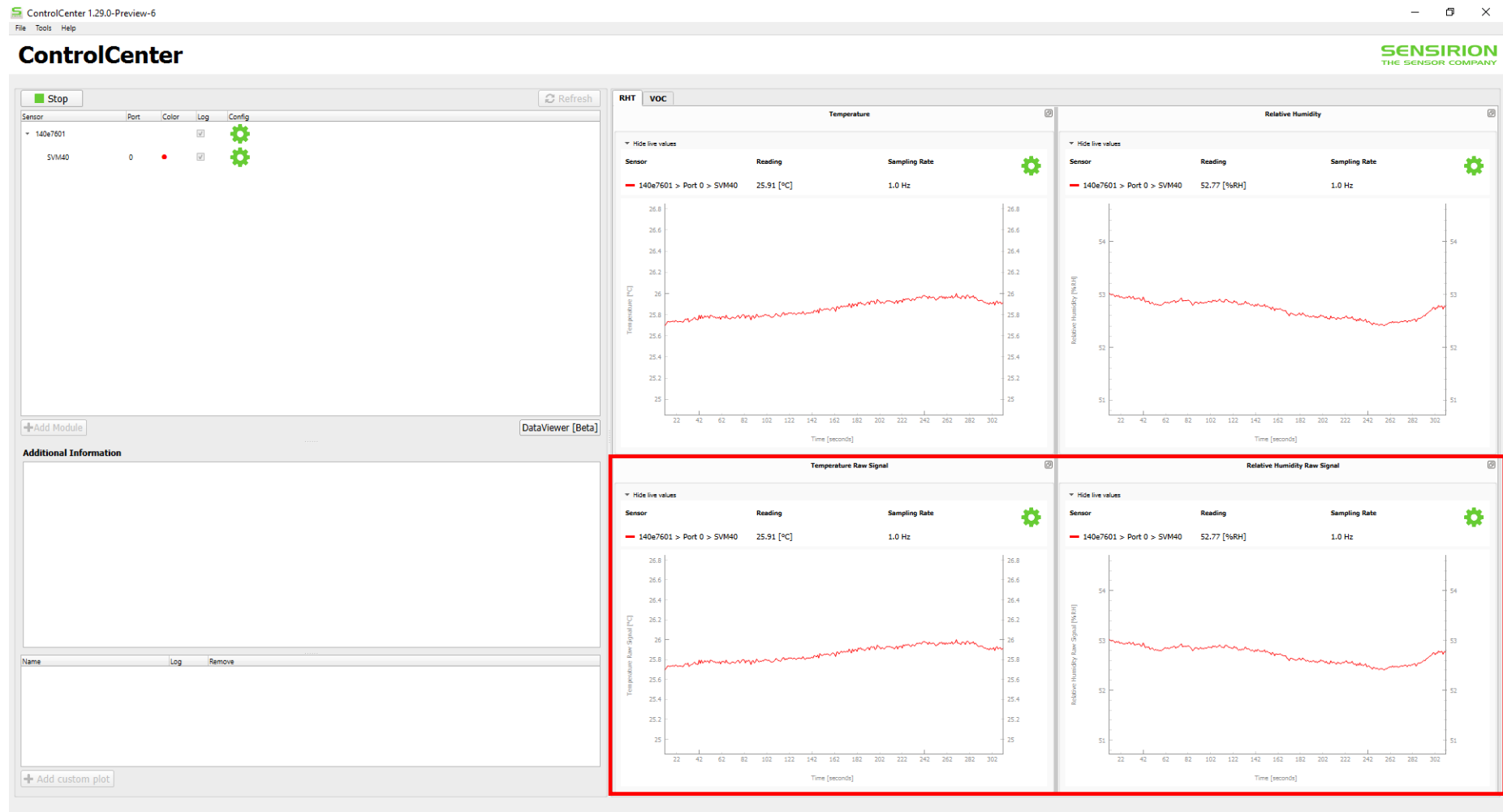
Measuring RHT

The upper panels show the values including temperature compensation. This is used, e.g., to compensate self-heating effects by the PCB. The temperature offset used for this compensation can be adjusted (see later).



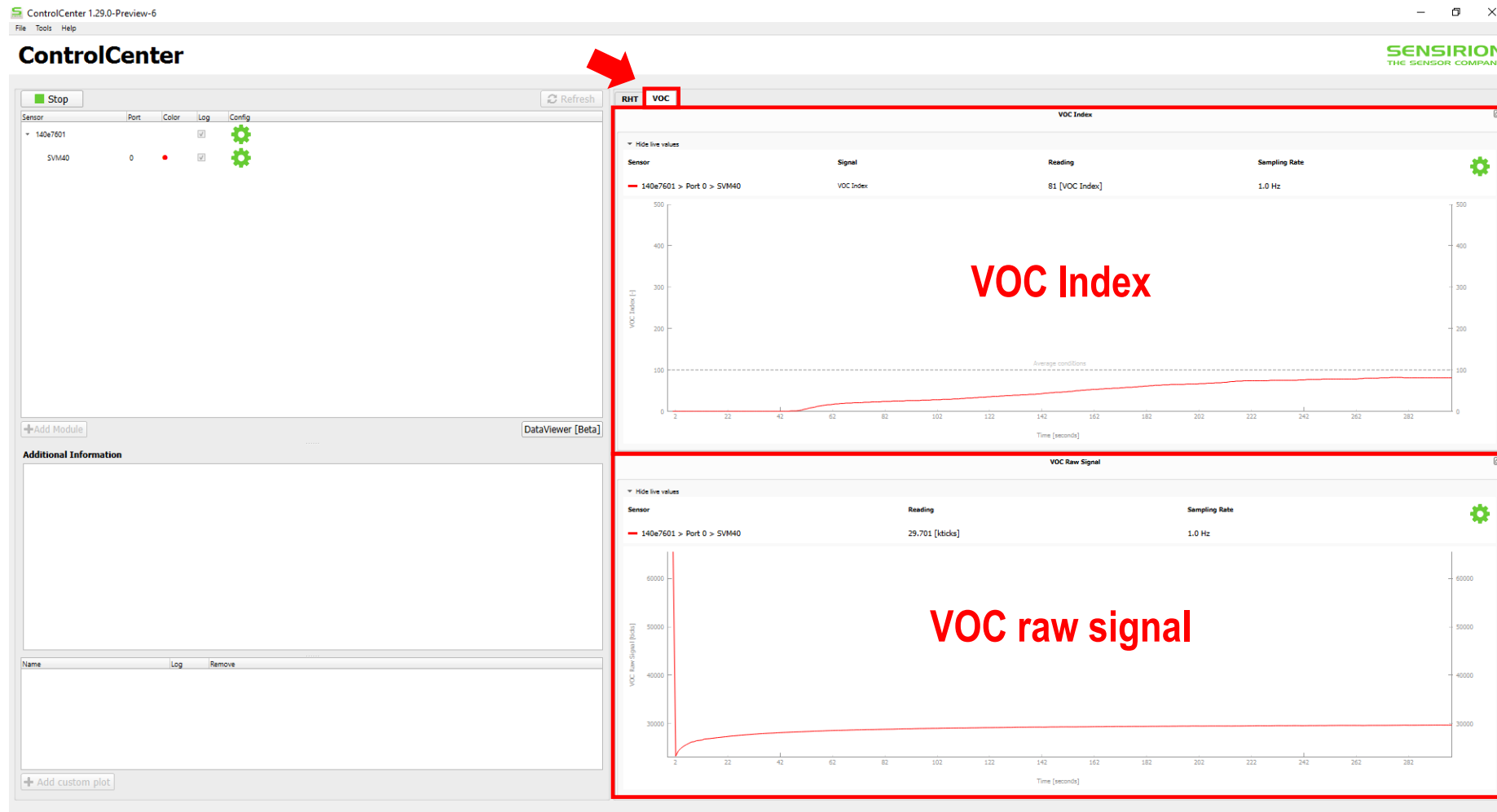
Measuring RHT

The lower panels show the values without any compensation.



Measuring VOC

The results of VOC are displayed under the tab “VOC”. The upper panel shows the processed VOC Index while the lower panel visualizes the VOC raw signal (*i.e.*, resistance of the MOX layer).



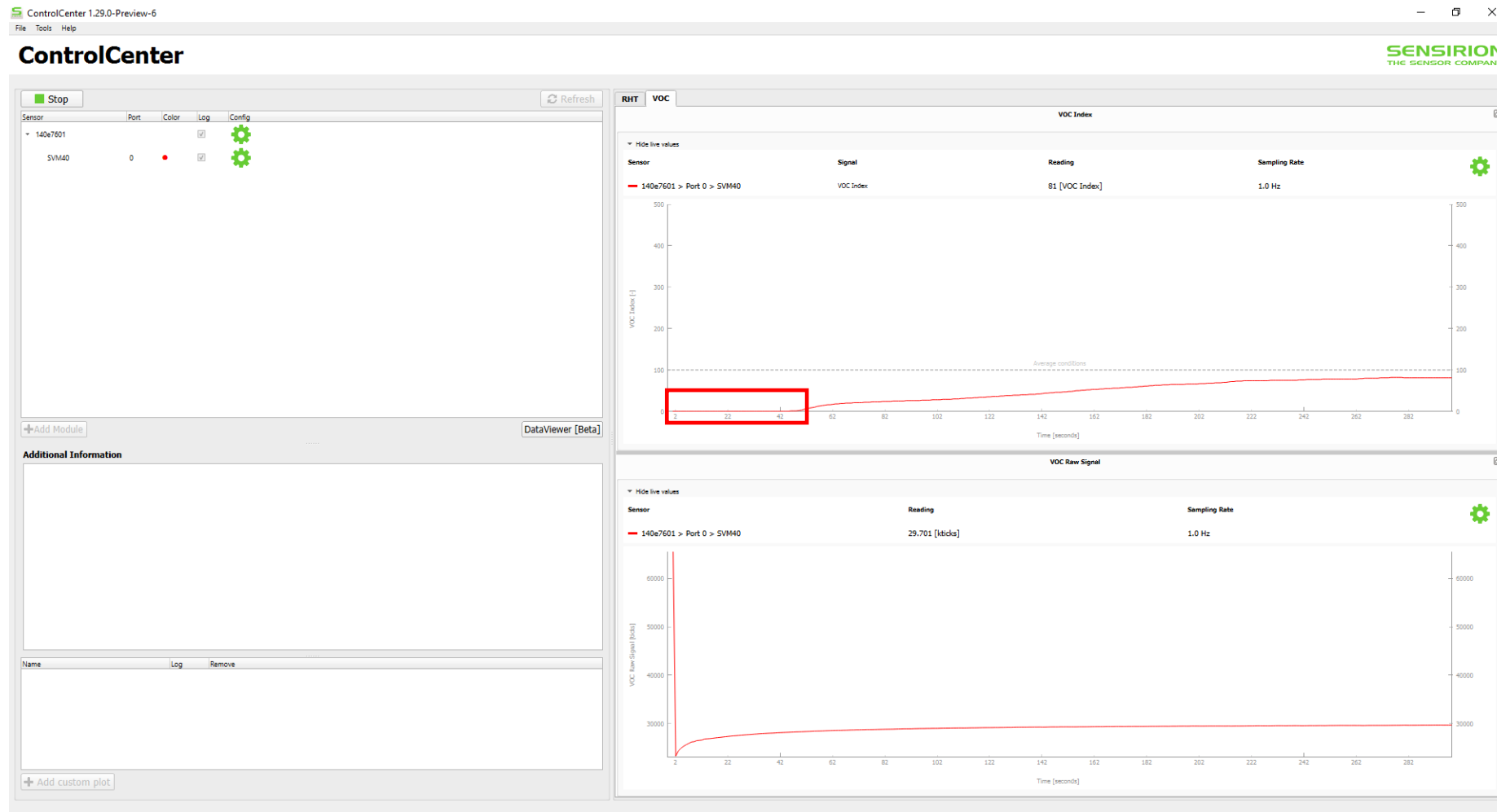
Measuring NO_x

The results of NO_x are displayed under the tab “NOx”. The upper panel shows the processed NO_x Index while the lower panel visualizes the NO_x raw signal (*i.e.*, resistance of the MOX layer).



Measuring VOC/NO_x

You may notice that upon each restart, the VOC/NO_x Index output will be 0 for 45 s. This blackout time is normal and required by the sensor and Gas Index Algorithm to deliver first reliable data.



Ready for some events?!

Try the following:

- Place the SVM41 on top of a glass filled with water (but do not let the SVM41 touch the water)
→ How does it affect the RH signal?
- Hold the SVM41 between your closed hands
→ How does it affect the T signal?
- Hold a text marker next to the SVM41 (preferably close to the SGP41 without touching it)
→ How does it affect the gas signals?
- Exhale onto the SVM41
→ How does it affect all signals?

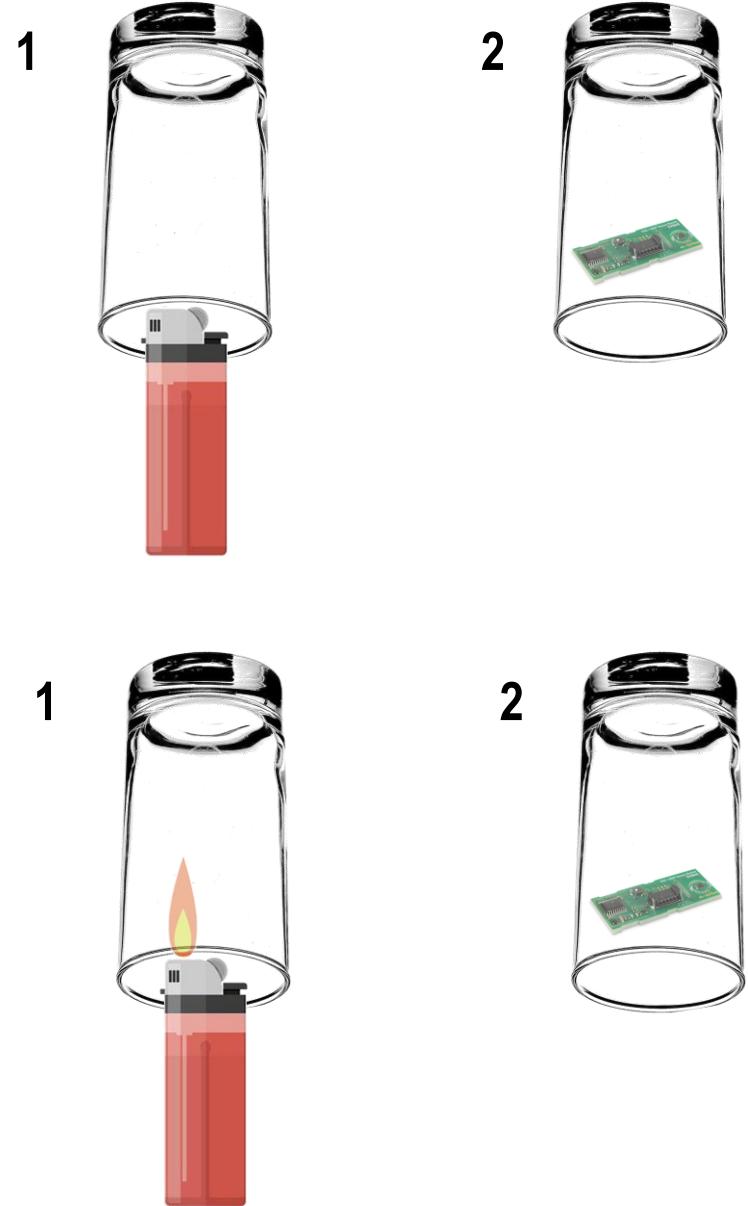


Ready for some events?!

Try the following:

- Use a gas lighter without igniting the flame and hold a glass on top of it before putting the SVM41 into the glass. This will release VOC gas.
→ How does it affect the VOC and the NO_x signals?
- Use a new glass and now ignite the flame, remove the lighter, and put the SVM41 into the glass. This will produce NO_x .
→ How do the gas signals look like now?

Caution: Use only temperature-resistant glass. Do not perform the test next to flammable products.



As you are an expert now you, may want to dig a little deeper

First, stop the measurement by clicking the *Stop* button (1). Subsequently, press on the gear wheel next to the SVM41 in the sensor list (2).

ControlCenter 1.29.0-Preview-6

File Tools Help

ControlCenter

Stop (1)

Sensor

- 140e7601
 - SVM40 0 • [gear icon] (2)

Port Color Log Config Refresh

+ Add Module

Additional Information

Name Log Remove

+ Add custom plot

DataViewer [Beta]

VOC Index

Hide live values

Sensor	Signal	Reading	Sampling Rate
140e7601 > Port 0 > SVM40	VOC Index	81 [VOC Index]	1.0 Hz

VOC Index [I]

Time [seconds]

VOC Raw Signal

Hide live values

Sensor	Reading	Sampling Rate
140e7601 > Port 0 > SVM40	29.701 [ticks]	1.0 Hz

VOC Raw Signal [ticks]

Time [seconds]

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Changing the temperature offset

You can change the temperature offset by entering a new value under the *Device Parameters* section and subsequently pressing the *Apply* button (1).

You can check if such compensation is needed by comparing the temperature raw value of the SVM41 with the temperature measured by an SHT on an FPCB (e.g., from a SEK-SHTxx) when placing both next to each other. The difference between both sensors is the temperature offset.

If you want the temperature offset to be saved permanently on the SVM41 press the *Store* button at the bottom (2).

The screenshot shows the 'SVM40 - Configuration' window. The 'General' section is at the top, showing connection details and basic settings. The 'Device Parameters' section is highlighted with a red box and a red arrow labeled '1'. It contains a text input field for 'Compensation temperature offset in °C' with the value '0.0' and an 'Apply' button. Below this is the 'VOC Algorithm Parameters' section, which includes a table with columns for 'Min' and 'Max' values for various parameters. At the bottom, there is a 'Store' button highlighted with a red box and a red arrow labeled '2'. The 'Done' button is at the very bottom right.

	Min	Max
VOC Index mapping for avg conditions	1	250
Learning time (in h)	1	72
Max gating duration (in min)	0	720
Initial standard deviation	10	500

Set the tuning parameters for the VOC/NO_x Index

There are six different parameters which can be set by the user to influence the behavior of the Gas Index Algorithm. For each parameter, you can place the cursor on top of the **i** icon to receive more information about it (incl. default values in case you forget).

Enter the values in the fields keeping them within *Min* and *Max* ranges (1). Feel free to play with the parameters; you cannot destroy anything. Confirm the settings by pressing the *Apply Algorithm Parameters* button (2).

If you want the tuning parameters to be saved permanently on the SVM41 press the *Store* button at the bottom (3).

For more information, please, consult the application note *Sensirion's VOC Index for Indoor Air Applications*.

The screenshot shows the 'SVM40 - Configuration' window. The 'General' tab is active, displaying connection details and sampling/logging settings. The 'Device Parameters' section is expanded, showing 'Compensation temperature offset in °C' set to 0.0. The 'VOC Algorithm Parameters' section is highlighted with a red box and contains the following table:

		Min	Max
VOC Index mapping for avg conditions	100	1	250
Learning time (in h)	12	1	72
Max gating duration (in min)	180	0	720
Initial standard deviation	50	10	500

Below the table is an 'Apply Algorithm Parameters' button. Further down, the 'Memory-Feature enabled' checkbox is checked. At the bottom, there is a 'Store device and VOC Algorithm parameters to non-volatile memory' section with a 'Store' button. Three red arrows point to the parameter input fields (1), the 'Apply Algorithm Parameters' button (2), and the 'Store' button (3).

Using the memory feature for the VOC Index

After restart, the VOC Algorithm on the SVM41 normally forgets everything which had been previously learned.

By checking the box next to *Memory-Feature enabled*, the VOC Algorithm remembers previous data and avoids the situation that the algorithm needs to learn from scratch.

Note: this feature must only be used for short interruptions (≤ 10 min). For more information, please, consult the application note *Sensirion's VOC Index for Indoor Air Applications*. This feature is only available for the VOC Index and not for the NO_x Index.

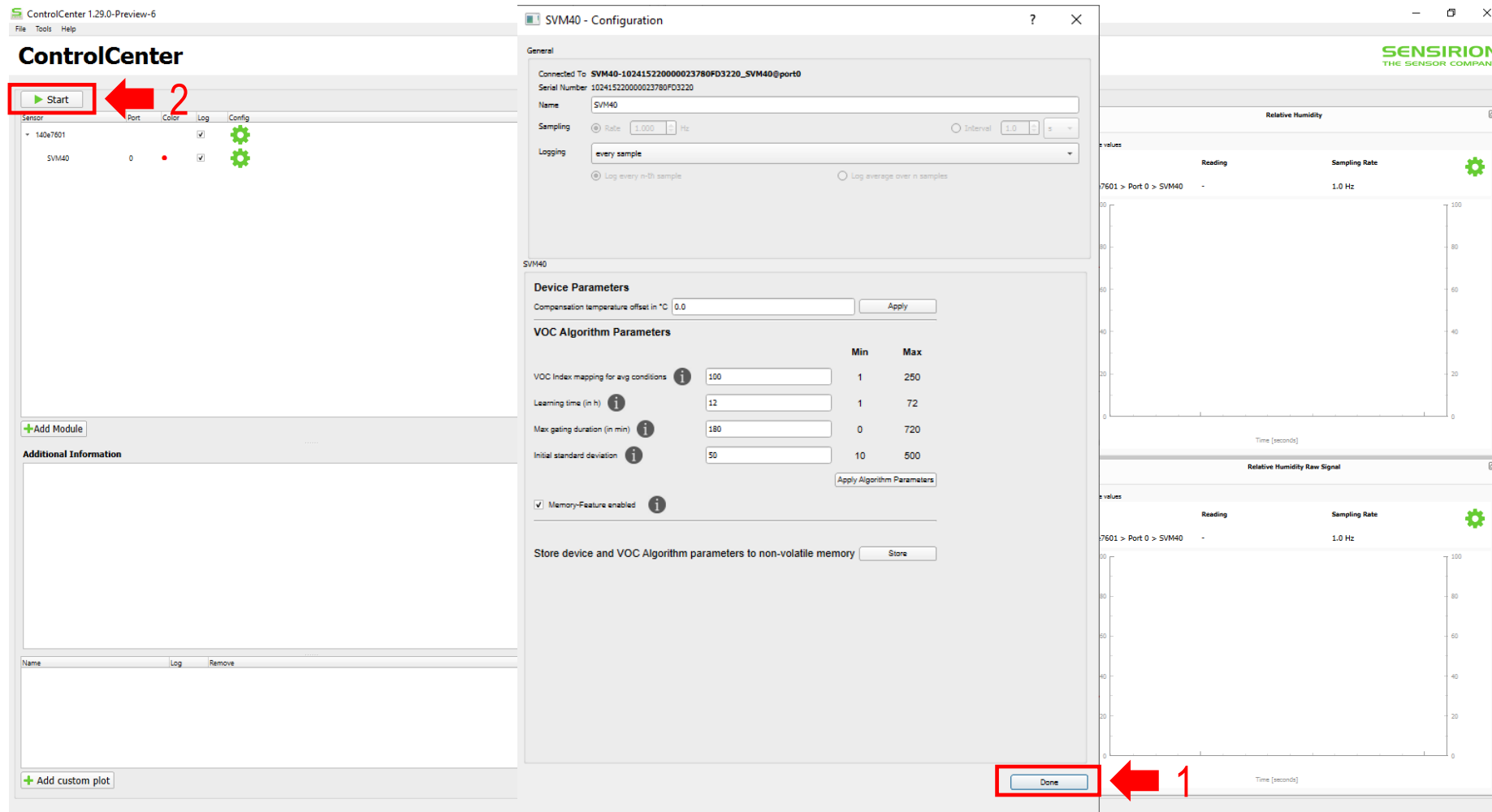
The screenshot shows the 'SVM40 - Configuration' window. The 'General' tab is selected, showing connection details and sampling/logging settings. The 'SVM40' section contains 'Device Parameters' and 'VOC Algorithm Parameters'. The 'VOC Algorithm Parameters' section includes a table of parameters with 'Min' and 'Max' values. The 'Memory-Feature enabled' checkbox is checked and highlighted with a red box and a red arrow.

		Min	Max
VOC Index mapping for avg conditions	100	1	250
Learning time (in h)	12	1	72
Max gating duration (in min)	180	0	720
Initial standard deviation	50	10	500

☒ Memory-Feature enabled

Restarting the SVM41 with the new parameters

Press the *Done* button (1). The configuration window will close automatically. Subsequently, press the *Start* button in the main window (2). All set parameters will now be applied for the new measurement.



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