

FluoMini Software Suite

User manual

System Information

Software: version 2.21

Compatible with:

- FluoMini Pro O2|T (handheld/digital/analog)
- FluoMini Pro CF (handheld/digital/analog)
- FluoMini Pro CF-Seed (handheld/digital/analog)
- FluoMini Pro Eff% + PAR (handheld/digital/analog)
- FluoMini Pro pH (handheld/digital/analog)

www.sendot.nl

Contents

1. Getting started	3
2. Main screen	4
2.1. Graph area	5
3. File	7
4. Sensors	8
4.1. Refresh.....	9
4.2. Sensor settings.....	10
4.3. Calibrate.....	11
4.3.1. CF calibration procedure.....	12
4.3.2. O ₂ T calibration procedure.....	13
4.3.3. Calibration errors	15
4.4. Sensor data	16
5. Settings.....	17
6. Troubleshooting	18

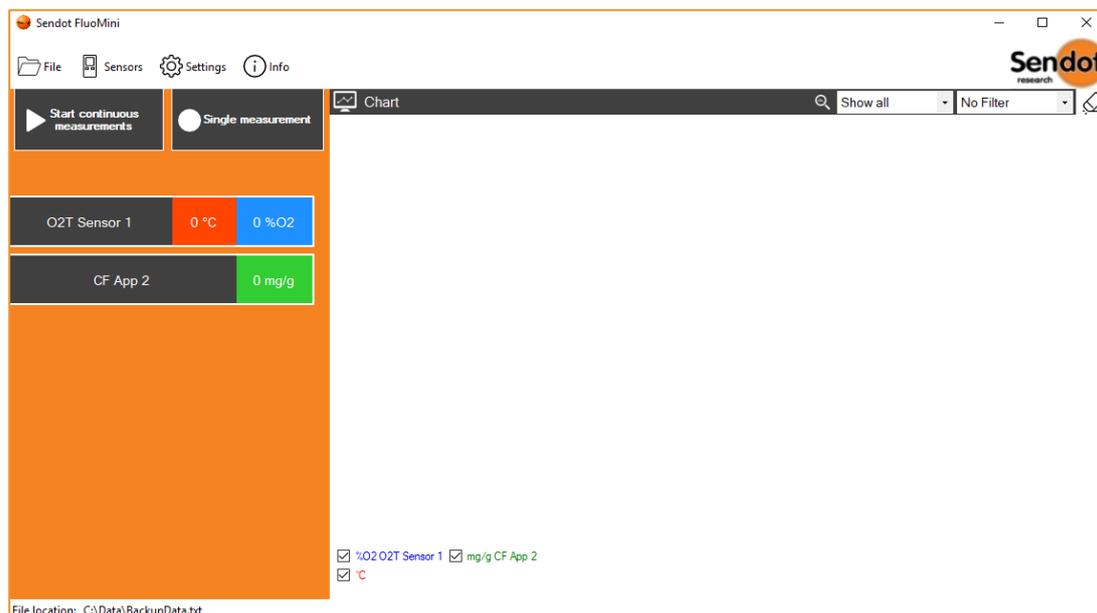
1. Getting started

When initiating the software, the loading screen, as shown on the righthand side, will appear. The screen will show the progress of checking the ports.

Please keep in mind that the software might detect a device attached to one of the ports which is not a Sendot FluoMini sensor. The Software Suite will indicate a



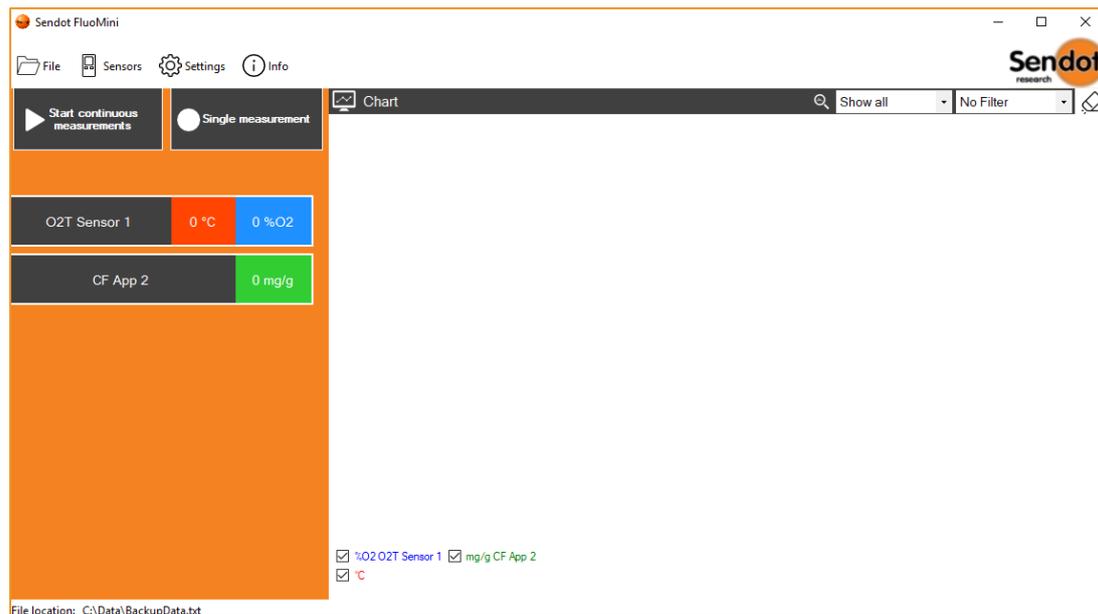
Device not responding error since the foreign device is unfamiliar to the software commands.



Once all ports have been checked, the FluoMini Software Suite will start and show all connected sensors on the left-hand side.

If you initiate the Software Suite without any sensors being attached, most functions will be disabled. Sensors can be added at any time, during the use of the Software Suite (see chapter 4.1). Even if no sensor is attached to the laptop or PC, the Software Suite will allow you to open and interact with measurements previously stored on your computer (see chapter 3). With a sensor attached, it is possible to perform measurements (see chapter 2) or to load the sensors log file (see chapter 4.4).

2. Main screen



In the above example the main screen is shown. If no measurement has been performed or no data has been loaded, no chart is visible.

On the top, the main menu is visible. For further information see chapters 3 – 5. On the left-hand side, all attached and selected sensors are listed. Above this list you can click on one of the following buttons:

- **Start continuous measurements**

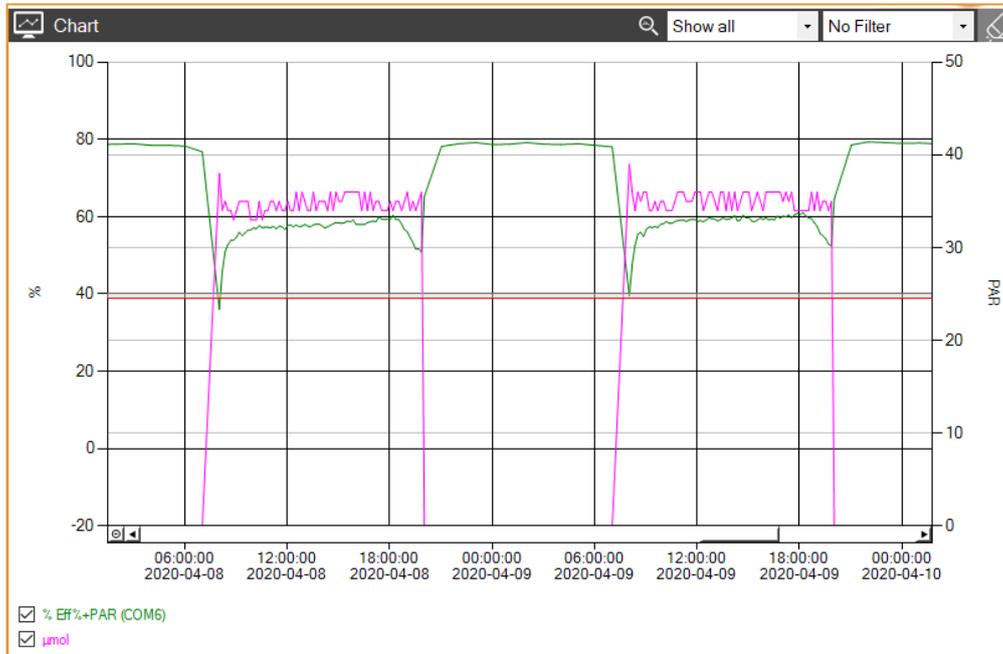
Start performing continuous measurements with the listed sensor(s) with a custom interval. You can change the interval in the settings (see chapter 5). Those measurements will be visible real-time in a graph. Continuous measurements can also be started using a defined hotkey (see chapter 5).

- **Single measurement**

A single measurement will be performed with the listed sensor(s). Single measurements can also be performed using a defined hotkey (see chapter 5).

2.1. Graph area

Once measurements have been performed or data of old measurements imported (see chapter 3 and 4.4), a graph will show these. Date and time will be shown on the x-axis. For



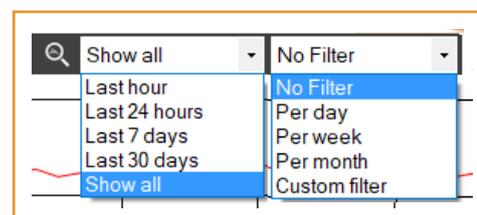
O₂|T, CF and CF Seed you will only see one y-axis for the measurement value. In case of the Eff%+PAR sensor, two y-axis are visible – left-side for Eff% and right-side for PAR (see following picture).

The graph will update itself real-time during the performance of continuous or single measurements. Each sensor has its own line in the graph. When you hover with your mouse over the line in the graph, you will see a tooltip with the value of the line at that measurement point. This will allow you to view a specific point in the graph. By scrolling in the chart or with drag & drop, you can zoom in or out.

Within the graph area you can do the following:

- **Filter data**

You can show specific data by using the dropdown boxes at the top right of the graph area.



The first dropdown list allows you to track the data of the last 24 hours/7 days/30 days or show the complete data. With the second dropdown list you can choose to filter the data by day/week/month, or you can set a customized filter. You will zoom into the

respective timeframe and can jump forward and backward depending on the chosen timeframe.

- **Clear the graph**

By clicking on the pencil button [] at the top right of the graph you can remove the graph. This will only clear the graph, not the collected data. The file containing the stored data will not be affected.

Additionally, you can click the right mouse button and chose [Clear graph] to remove the graph.

- **Show or hide graph lines**

You can show or hide graph lines by clicking on the checkboxes at the bottom of the graph.

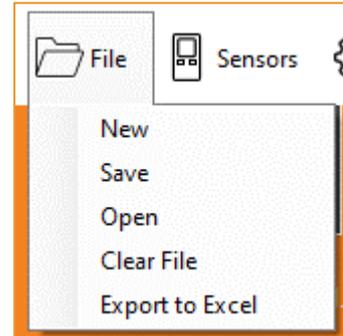
- **Create an image**

You can create an image of the graph by right clicking on the graph and selecting [Create Image].

3. File

Default, the Software Suite will always work from a back-up file (BackUpData.txt) unless you create a new file or open another file. In the bottom left corner of the screen you can always see in what file you are working.

Within this menu, you can do the following:



- **New**

Create a new file or select an existing file to start working in.

- **Save**

Select a file to save all the current measurements in.

- **Open**

Select a file to open. All measurements in this file will be loaded into the current graph. You will continue measuring in this file.

- **Clear File**

Clear the current file from all measurements. You will keep measuring in this file after it is cleared.

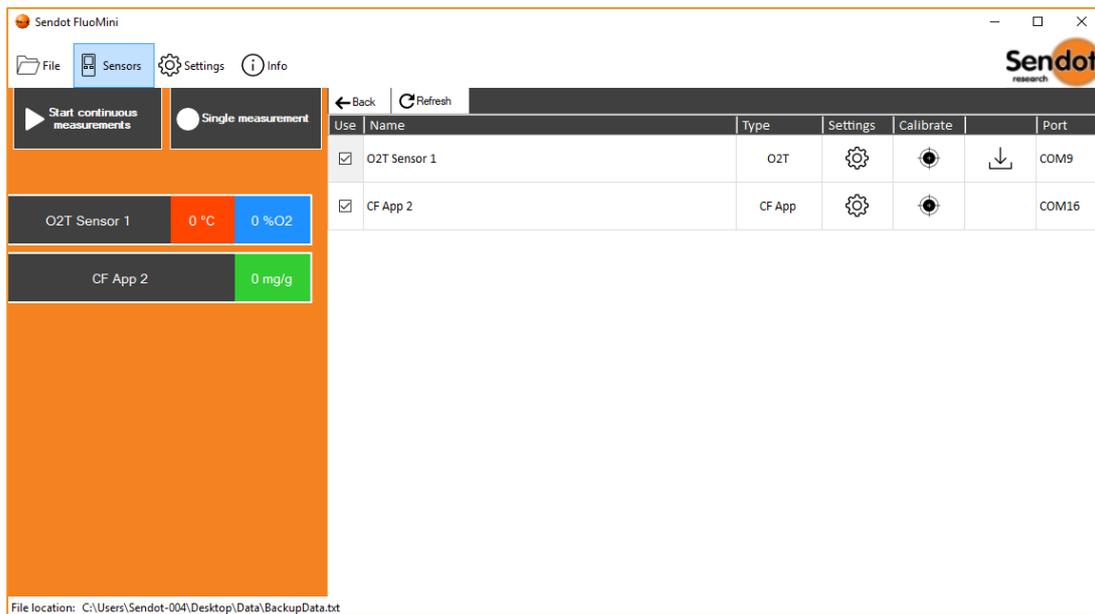
NOTE: All previous measurements will be deleted and cannot be loaded anymore.

- **Export to Excel**

Export all measurements from the current file to a selected excel file. This will create a file with all the measurements from the graph. The measurements for each sensor will be stored in a different tab named as in the Software Suite.

4. Sensors

When you click on [Sensors] you will see a list with all the sensors that have been found.



By selecting the checkbox to the left of the sensor name, you can choose to use the sensor when measuring. Only selected sensors will be visible in the graph.

4.1. Refresh

When you click [Refresh], the Software Suite will check all ports for connected sensors again. Subsequently, the sensor list will be updated. All newly attached sensors will be added, and unattached sensors be removed.

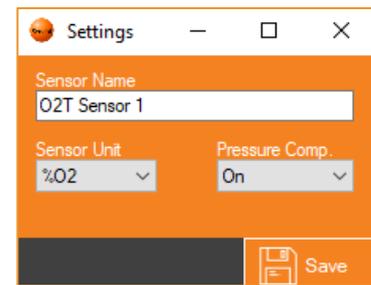
NOTE: You must click the checkbox left of the sensor name, if you want to measure with it, as well.

4.2. Sensor settings

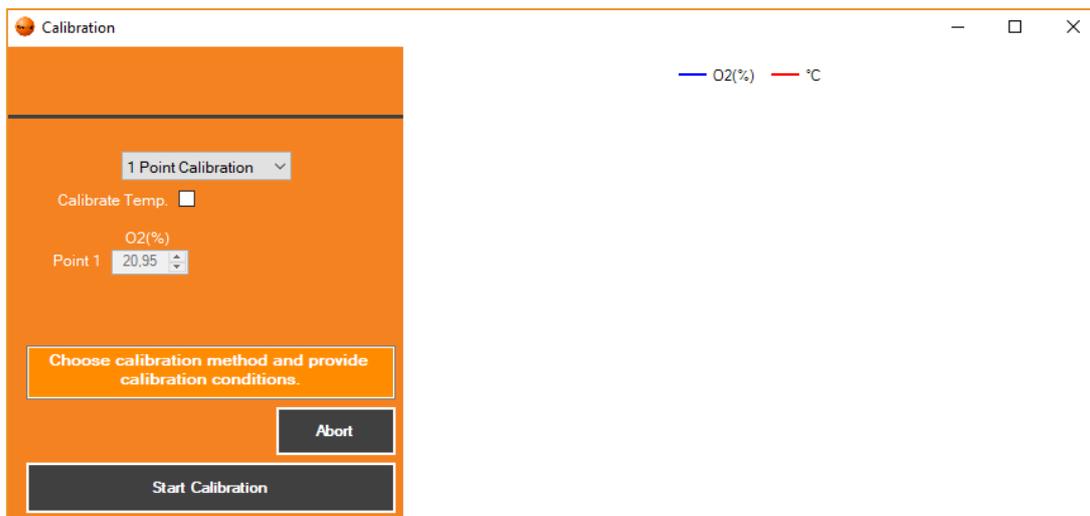
Each sensor has its own settings screen, as every sensor has its own parameters needed for the measurements. Here, you can change the name and measurement unit for every sensor, all the other settings are type specific.

Changing the name of a sensor can help you distinguish sensors, when you have multiple of the same type being attached. These changes will also affect the storage file.

NOTE: The settings will only be changed after clicking on [Save].



4.3. Calibrate



Here, you can calibrate each sensor. The software automatically recognizes the sensor type and shows the corresponding instruction to perform the calibration.

Before you can start the calibration, you must select the calibration method and fill in the reference points. Often, you can choose between a 1- or 2-point calibration. When you have selected a calibration method and filled in the reference values you can start the calibration by clicking on [Start Calibration].

NOTE: Please pay attention to the orange field above the buttons. It will guide you through the calibration and give you step-by-step instructions.

When you click [Abort], you can stop the calibration at any time during the calibration procedure. The sensor will reset all changes done during the calibration, so far.

4.3.1. CF calibration procedure

For a 1-point calibration:

1. Attach the calibration sample to the probe.
2. Enter the reference value (noted on the calibration sample)
3. Click [Calibrate CF]. The sensor will perform the calibration. This step may take several minutes.
4. When the calibration is completed, the Software Suite will indicate “Calibration Finished”.

For a 2-point calibration:

1. Enter the reference value (noted on the calibration sample).
2. Ensure that no calibration sample is attached to the probe.
3. Click [Calibrate CF Point 1] and wait a few seconds.
4. Click [Start Calibrate CF Point 2].
5. Attach the calibration sample to the probe.
6. Wait until the measured value stabilized.
5. Click [Calibrate CF Point 2]. The sensor will perform the calibration. This step may take several minutes.
7. When the calibration is completed, the Software Suite will indicate “Calibration Finished”.

4.3.2. O₂|T calibration procedure

For a 1-point calibration:

1. If you want to perform a temperature calibration, as well, tick the field next to “Calibrate temperature” and proceed with step 2. If not, do not tick this field and proceed with step 6.
2. Enter the reference temperature value.
3. Expose the probe to the 20.95 % O₂.
4. Wait until the temperature measurement is stable.
5. Click [Calibrate Temperature]. The sensor will perform a calibration. This step might take several minutes.
6. Click [Start O₂ Calibration Point 1]
7. Keep the probe exposed to 20.95 % O₂.
8. Wait until the O₂ measurement is stable.
9. Click [Calibrate O₂]. The sensor will perform a calibration. This step may take several minutes.
10. When the calibration is completed, the Software Suite will indicate “Calibration Finished”.

For a 2-point calibration:

1. If you want to perform a temperature calibration, as well, tick the field next to “Calibrate temperature” and proceed with step 2. If not, do not tick this field and proceed with step 6.
2. Enter the reference temperature value.
3. Expose the probe to the 20.95 % O₂.
4. Wait until the temperature measurement is stable.
5. Click [Calibrate Temperature]. The sensor will perform a calibration. This step may take several minutes.
6. Click [Start O₂ Calibration Point 1]
7. Expose the probe to 0 % O₂.

8. Wait until the O₂ measurement is stable. This might take several minutes.
9. Click [Calibrate O2 Point 1]. The sensor will perform a calibration. This step might take several minutes.
10. Click [Start O2 Calibration Point 2].
11. Wait until the O₂ measurement is stable. This might take several minutes.
12. Click [Calibrate O2 Point 2]. The sensor will perform a calibration. This step may take several minutes.
13. When the calibration is completed, the Software Suite will indicate "Calibration Finished".

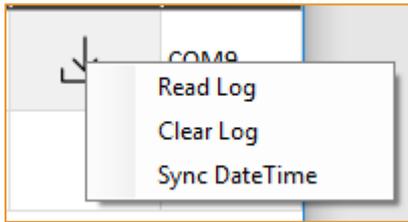
4.3.3. Calibration errors

The following errors can be displayed during calibration:

- *Out of range*
- *Could not get a stable measurement*

For further information, see chapter 6.

4.4. Sensor data



When clicking on the download button [↓] you will see the following options:

- **Read Log**

You can load the measurements from the SD card (log file) of the selected sensor and store those in a selected file. You will continue to measure in this file until you clear the graph (see chapter 2.1).

- **Clear Log**

You can clear all the measurements from the SD card in the selected sensor.

NOTE: All measurements stored on the sensor will be deleted. It is advisable to read the file and store it on the computer before clearing the log file.

- **Sync DateTime**

You can synchronize the date and time of the selected sensor with the current date and time on the computer.

5. Settings

When you click on [Settings] in the menu, you will get the screen shown on the right-hand sight. Here, you can change the following settings:

- **Interval time**

This is the interval time that is used for performing continuous measurements. If you are changing this setting while you are performing continuous measurements, you will have to restart the measurements to apply this change.

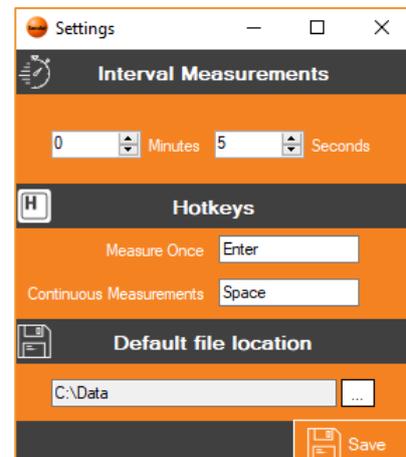
- **Hotkeys**

Here, you can define hotkeys to perform single and continuous measurements. Simply click inside of the respective text field and press the desired button on the keyboard to set a hotkey. Default Single measurements can be performed with the Enter button and continuous measurements with the Space button.

- **Default file location**

This is the location of the standard BackUpData.txt file. You can change this either by typing in the desired location or by clicking on the box behind the text field. After you have saved the new file location, the current back-up file will be moved to the new location.

NOTE: All settings will only be changed by pressing the Save button.



6. Troubleshooting

The following errors can be identified by the Software Suite and will be shown in a pop-up window:

Out of range

During calibration, the sensor could not have been calibrated to match the reference values.

1. Please, perform another measurement run.
2. If this message is still shown, the lifetime of the coating might have been reached. In this case the probe needs to be exchanged. Therefore, please contact Sendot Research *via* phone (+31 (0)30-636-8477) or e-mail (info@sendot.nl).

Could not get a stable measurement

The sensor was not able to acquire a stable measurement after 5 trials.

1. Check, if the battery is fully charged. In case of an almost empty battery a constant measurement might not be possible.
2. Please, perform another measurement run.
3. If this message is still shown, the lifetime of the coating might have been reached. In this case the probe needs to be exchanged. Therefore, please contact Sendot Research *via* phone (+31 (0)30-636-8477) or e-mail (info@sendot.nl).

Device not responding

The software could not find the sensor.

1. Please reconnect the device and click on [Refresh] (see chapter 4.1).
2. If this message is still shown, restart the software.

No measurement received

The sensor returns the wrong data, or the sensor does not respond to a measurement command.

1. Please reconnect the device and click on [Refresh] (see chapter 4.1).

2. If this message is still shown, restart the software.

If you observe an error you cannot solve with help of the above instructions, please contact Sendot Research *via* phone (+31 (0)30-636-8477) or e-mail (info@sendot.nl). Details of any error will be written in an error log file at the default file location (see chapter 5). If you send us this file *via* e-mail (info@sendot.nl), we will contact you as soon as possible to help you.