Minnow 2.0T & Minnow 2.0TH
User Guide

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1. INTRODUCTION TO MINNOW 2.0

The Minnow 2.0 logger is a high accuracy, water resistant, compact, temperature and humidity data logger. The logger features a compact LCD display. The logger comes with a free Windows and MAC application.

This user guide provides basic information about how to use the logger and Windows/MAC applications. Both the logger and the applications have been designed to be intuitive so that you will be up and running with the logger in a matter of minutes.

The Minnow 2.0 comes in two versions; Minnow 2.0T is a temperature only version and Minnow 2.0TH is a temperature and humidity logger. This user guide applies for both versions.

Figure 1: Senonics Minnow 2.0

2. TECHNICAL SPECIFICATION

For a technical specification of Minnow 2.0 please consult the product overview.

http://senonics.com/files/Minnow2ProductOverview.pdf

3. USING MINNOW 2.0

Minnow 2.0 logger includes two buttons:

START button:

When configured for "Button Press" logger start, this button starts and stops logging. In other configurations, this button is inactive.

DISPLAY button:

This button allows the user to cycle through all LCD views.

Figure 2: Buttons, LEDs and LCD

Minnow 2.0 includes two LEDs:

Status LED:

When the logger starts logging then this LED pulses **green** once for 1 second.

When logging this LED flashes **green** for 7 milliseconds and off for 6 seconds.

When the logger stops then this LED pulses **red** for 1 second then off.

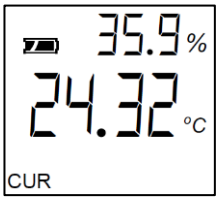
If the logger becomes full this LED flashes **red** for 7 milliseconds and off for 6 seconds.

Alarm LED:

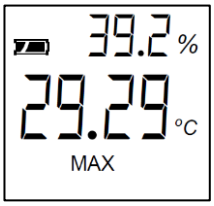
When a temperature and/or humidity alarm is triggered this LED flashes **red** for 7 milliseconds and off for 6 seconds.

A number of display screens can be stepped through by pressing the "display" button.

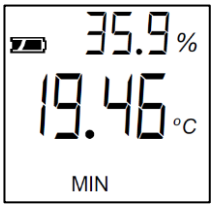
The current screen shows current temperature and humidity.



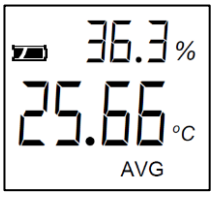
A further screen shows the maximum readings during a logging period.



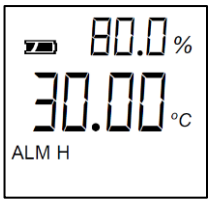
The third screen shows the minimum readings during a logging period.



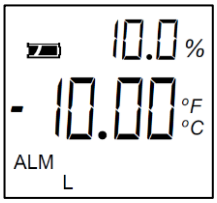
There is also a screen to show the average temperature and humidity during logging (from last configuration).



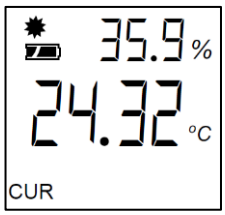
A screen shows upper alarm settings.



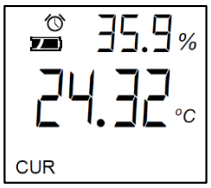
A further screen shows the lower alarm settings.



When the logger is logging the star-like logging indicator ✸ is displayed.



When alarms has been triggered, the alarm indication ⏰ is displayed.



4. PC APPLICATION

Your logger may be controlled from a Windows PC or Mac from USB using a simple application.

To install for Windows download:
http://senonics.com/bin/SenonicsPCApplication_Installer.zip

To install for Mac navigate to:
http://senonics.com/mac-installer.html

4.1. Senonics GUI Main Screen

The Senonics GUI includes a configuration pane, a graphical pane and a spreadsheet pane. Included also is a connection indication to signify connection or otherwise of a Senonics logger.

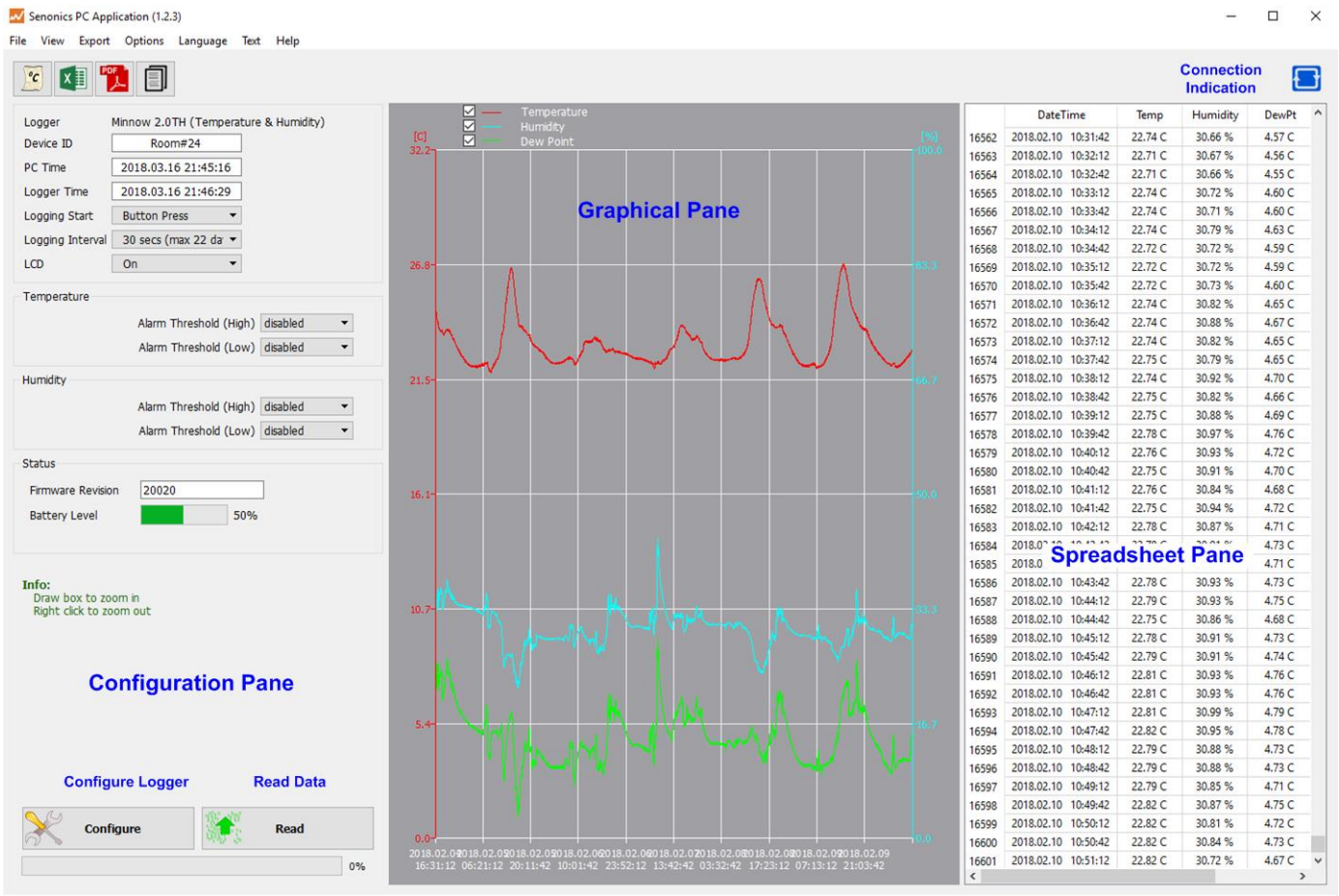


Figure 3: Senonics GUI

4.2. Configuring a Logger

Configuration of the logger is performed with the logger connected.

Update all settings on the configuration pane such as logger name, logger start option (on disconnection, button press or at specified time), logging interval (1 second, 10 seconds, 30 seconds, 1 minute, 10 minutes, 30 minutes or 1 hour), temperature and humidity logging enables, temperature and humidity alarm levels.

When complete press the configure button.

Configure

Wait for the logger to finish configuration (indicated by the busy indication disappearing).

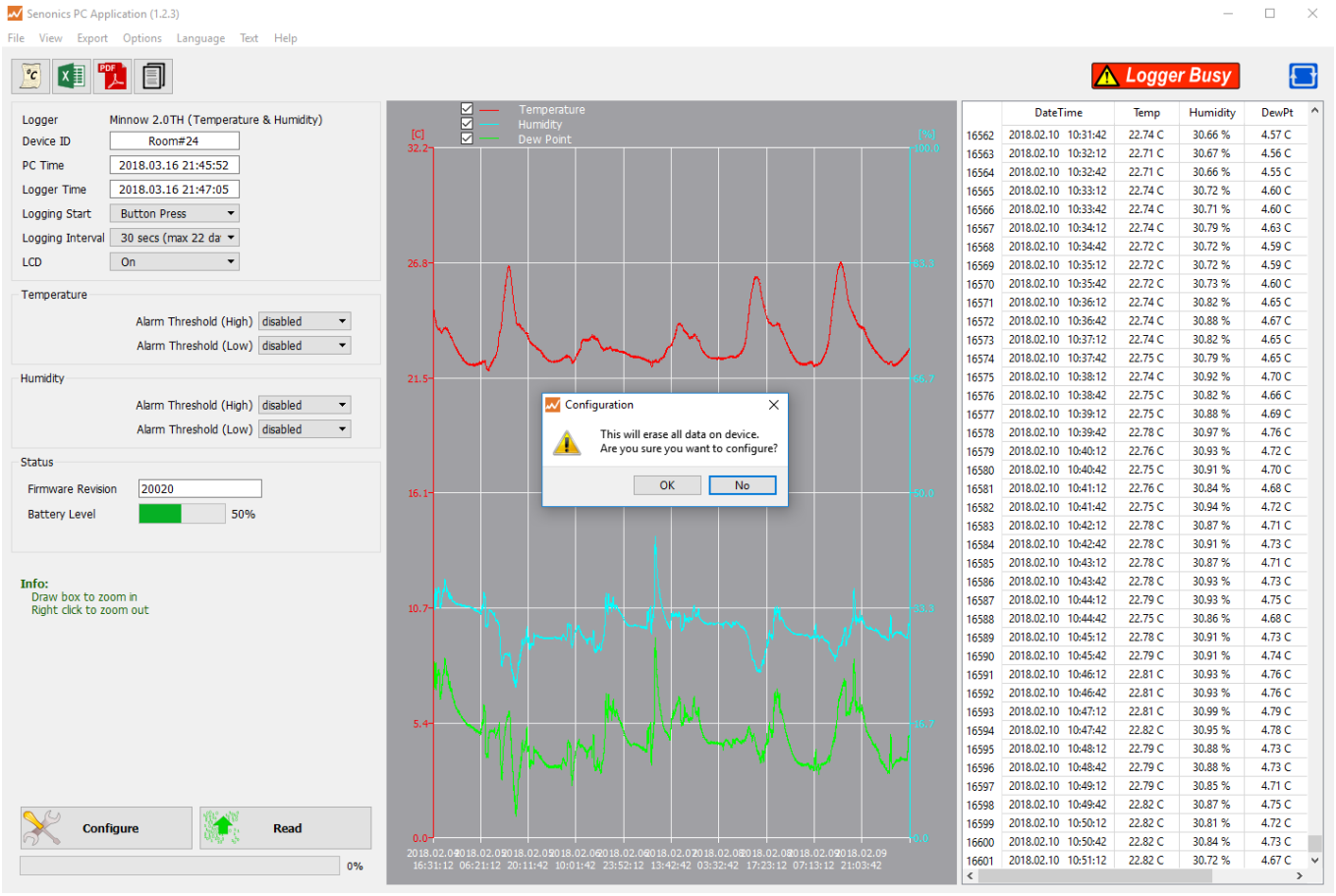


Figure 4: Configuration

4.3. Retrieving Logger Data

Data can be retrieved from the logger by connecting to the logger and then pressing the read button at the bottom left of the GUI. Both the device configuration and logged data will become uploaded and viewable in the configuration, graphical and spreadsheet views.

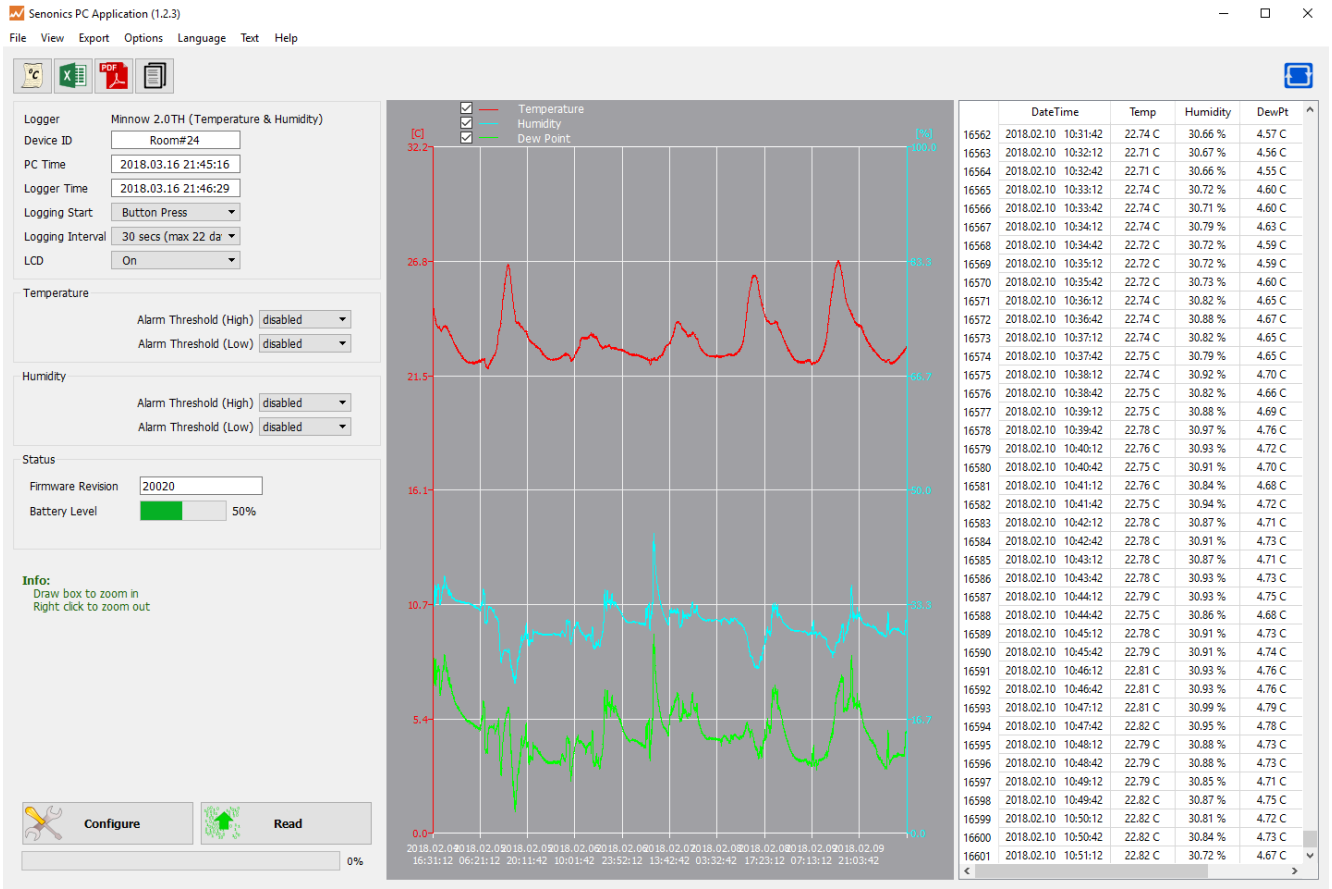


Figure 5: Retrieving Logger Data

4.4. Saving and Opening CSV

Logger data and configuration may be exported to file in Comma Separated Value (CSV) format. This format can be edited by third party software such as Microsoft Excel or read back into the Logger PC application at a later point.

To write a CSV file navigate **`File>Save CSV`**.

To read a CSV file back select **`File>Open CSV`**, and then navigate to the CSV file.

4.5. Cloning Loggers

For customers that expect to configure multiple loggers with the same configuration, Senonics offer the clone feature.

First, press the clone icon  or navigate **`File>Clone Logger`**.

You are then presented with two copies of the configuration pane. Enter your configuration in the left-most pane. When you are complete press the "Clone Settings" button. This will copy all settings across to the right-most pane. When you are satisfied press the "Lock Settings" tick-box.

You can then connect loggers to your PC. When you press "Configure" the new logger is programmed each time with the same cloned settings.

Be aware that the Device ID is not cloned, in order to preserve the logger identification. At any time, you can unlock, change settings and then lock again.

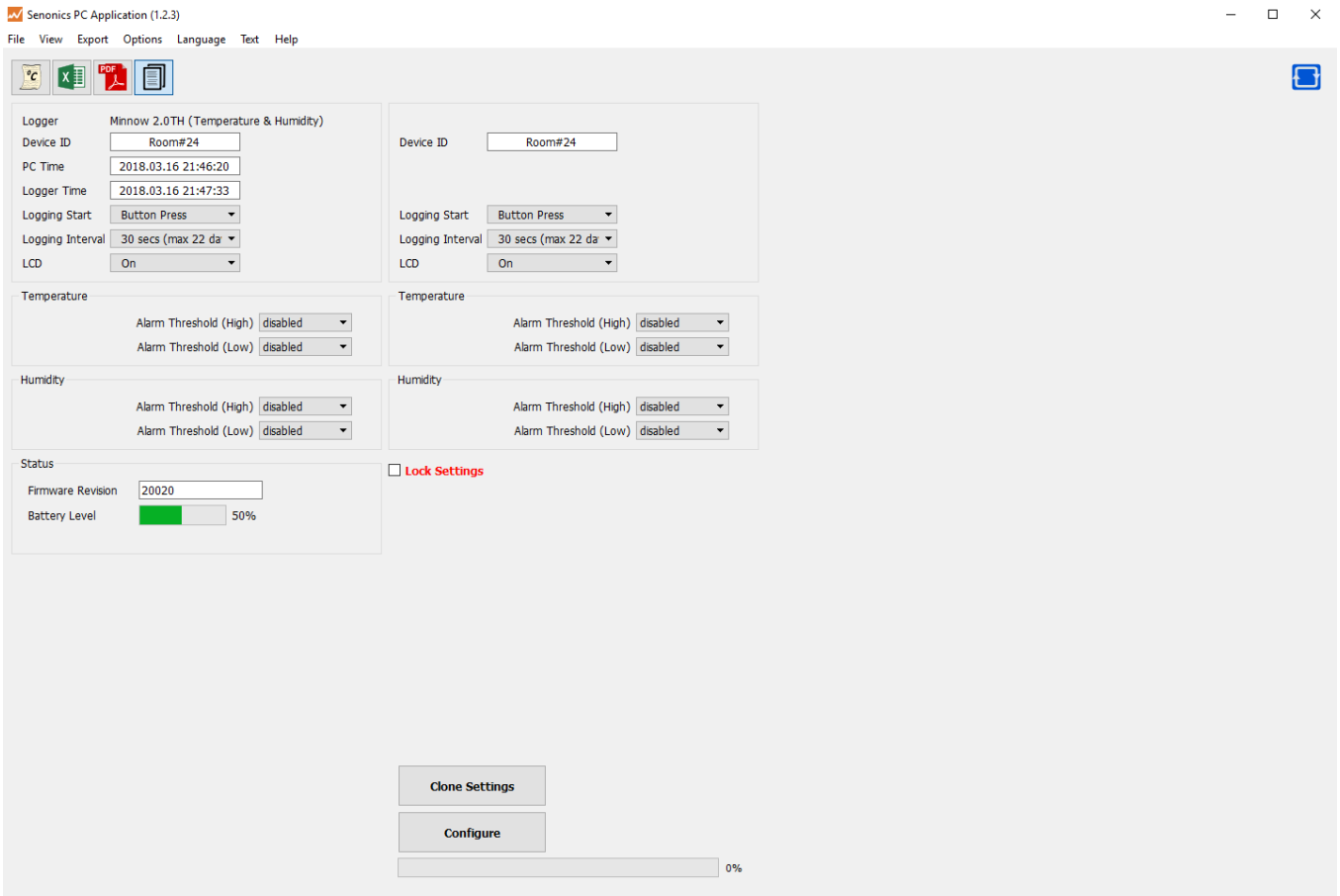


Figure 6: Logger Cloning

4.6. Auto Read to File

Some customers like the ability to be able to connect a logger and automatically download and save data to file.

Select **`Options>Read and Save Options`**.

You are then presented with three options:

a) to disable auto-reading of the logger (default)
b) to automatically read the logger data on connection to the Senonics GUI
c) to automatically read the logger data on connection to the GUI and save to file

In saving to file you can change the order of the date, time and logger ID as they appear in the file name.

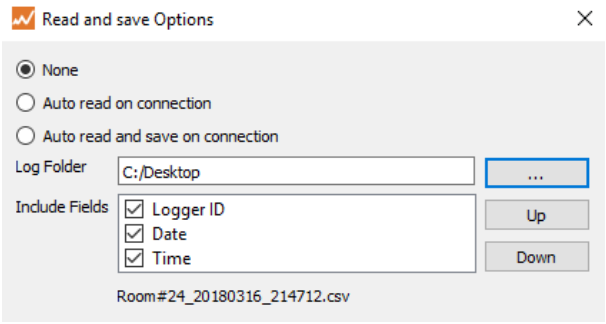


Figure 7: Read and Save Options

4.7. Opening Excel

It is possible to press the Excel button or navigate **`Export>Open Excel`** to show the data in Microsoft Excel. During this process the user needs to select if your version of Excel is expecting and "." or "," to represent the number decimal point.

This capability assumes that Microsoft excel is installed on your PC. If not, then the option will not work. This option is not available on the Mac version of the GUI.

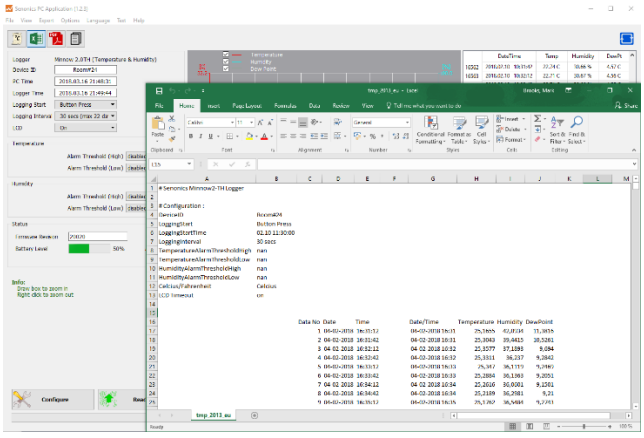


Figure 8: Opening Excel

4.8. PDF Reports

Open a one-page PDF report by pressing the PDF icon or navigating **`Export>Save PDF`**. A PDF is written to summarize the data in the logger by way of statistics and as a graph. The PDF can be written either in US Letter page size of A4 page size.

The user can enter one's own notes at the footer of the PDF. PDFs are written to file and can be opened by any standard PDF reader – like Adobe Acrobat.

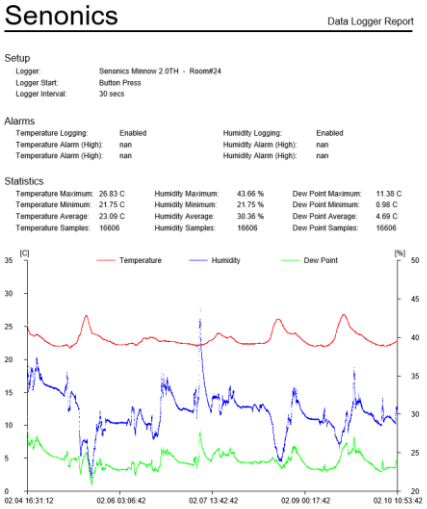


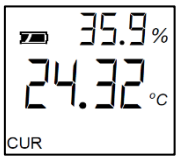
Figure 9: Writing PDF Reports

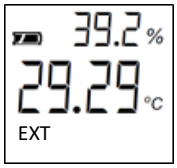
4.9. External Sensors

Minnow 2.0 is capable of working with an external sensor.

1. Plug your Minnow 2.0 into the PC with the PC application running. The extension cable will be disconnected.
2. Select all desired configuration.
3. Select the type of extension cable you have.
4. Configure.
5. Disconnect the logger
6. Connect the extension cable.

The logger will be showing internal (CUR) and external (EXT) readings as one cycles through the display screens.





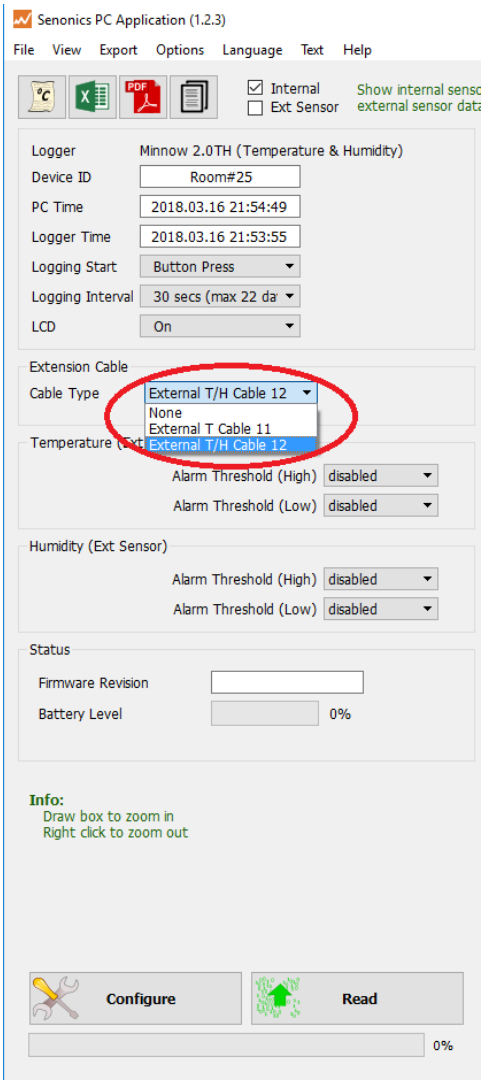


Figure 10: External Sensor Configuration

When you are ready to download the data:

1. Disconnect the external sensor
2. Connect the logger to the PC
3. Read the logger. Both internal and external data is downloaded.

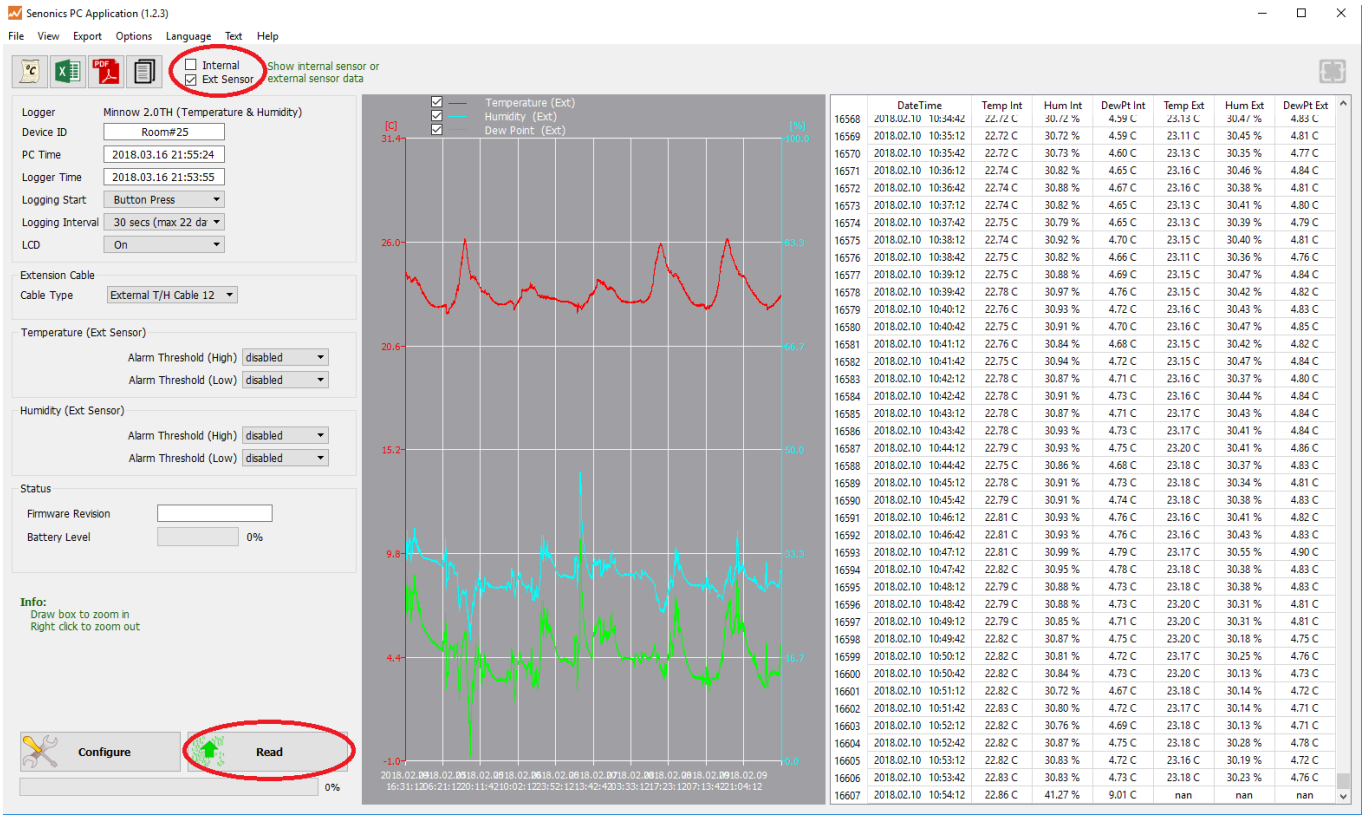


Figure 11: Downloading with an External Sensor

- CVS files and Excel files will contain both sets of data.
- PDF reports are of the external data.
- The PC application graph can show internal data by clicking on the "Internal" checkbox and then “Read”. To show the external data click on the "External" checkbox and then “Read”.

4.10. Text Size

It is possible to change the application text size by selecting from the Text pulldown on the program header. The Auto setting selects one of the sizes based on screen resolution. When the application reopens, text size is remembered.

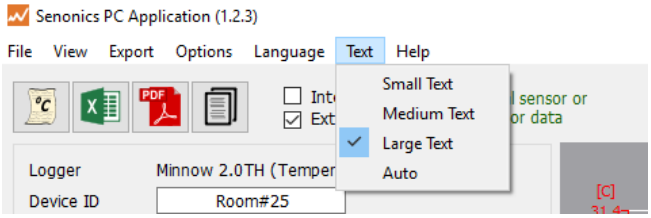


Figure 12: Altering Text Size

4.11. Language

The GUI application comes with language translation. Today one can select between English, German and Danish from the Language pulldown on the program header. Future versions will support more languages. When the application re-opens, language preference is kept.

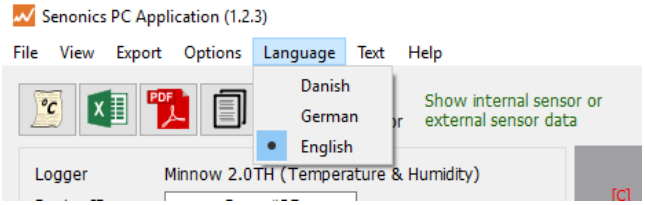


Figure 13: Language Preference

5. BATTERY REPLACEMENT

The Minnow 2.0 logger runs from two standard coin cell batteries. We recommend a CR2032 240mAH coin cell battery. There are different manufacturers but a good one is Panasonic CR-2032. You can find it easily on the web from different places such as www.digikey.com, www2.mouser.com and probably in your local supermarket. The key thing is to choose a CR2450 battery with high capacity since this will translate into a longer logger battery life.

First remove the Minnow cover by unscrewing the four fastener screws (#1 Philips) at the rear of the logger.

Insert two new batteries as shown being careful not to touch any exposed electronics in the process. Be careful also to connect the batteries in the correct orientation.

Finally re-attach the cover and tighten the fastener screws again (be careful not to over tighten).

6. SUPPORT

For technical support regarding your Senonics logger please contact:

support@senonics.com