



This Help Guide refers to the EasyLog USB Data Loggers

EasyLog USB Software Guide

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Not all of the features described in this document apply to all of the data loggers, consult the relevant data logger datasheet for technical specifications, product information and important safety notices. Datasheets are available from www.lascarelectronics.com.



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1. Downloading and Installing the EasyLog USB Software

Download the latest version of the EasyLog USB software from www.lascarelectronics.com.

EasyLog USB is compatible with the following 32bit and 64bit operating systems (other operating systems are currently not supported):

- Microsoft Windows 7
- Microsoft Windows 8 and 8.
- Microsoft Windows 10 (32bit and 64bit)

Install EasyLog USB on your PC by double-clicking the software file that you have downloaded. If Windows asks you for permission to run and install this software, then give your consent. The software will install itself without the need for much user intervention. An EasyLog USB icon will appear on the desktop after the software installation is complete.

2. Hardware Preparation

Remove the cap

Most EasyLog data loggers require you to remove a translucent cap to gain access to the USB connector. The EL-OEM-3 requires the addition of your own purpose-built USB cable, unless it is used with EL-OEM-TEST.

Install the battery in the data logger

Consult your EasyLog module's technical datasheet for the correct battery installation procedure, the use of appropriate batteries, and the safe handling and disposal of batteries in accordance with local regulations.

If the data logger contains a rechargeable battery, then connect this data logger to an active USB port to recharge the battery. Consult the data logger's technical datasheet for the correct and safe battery charging procedure and charging state indication.



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If the data logger does not feature a battery, then consult the data logger's technical datasheet for the correct and safe method to power that data logger.

If a low battery warning appears on-screen while using EasyLog USB, then replace or re-charge the battery (depending on the battery type fitted) before starting a new data logging exercise.

Plug the data logger into a free USB port

Insert the data logger into a free USB port on your PC. The computer will automatically detect the presence of the data logger and start the hardware installation process.

3. Software Quick Start Guide

Starting the EasyLog USB Software

Double-click the EasyLog USB icon on the desktop to launch the control software. You will be presented with three round buttons on the main screen. Click on the green button to set up and start the data logger and complete the following procedure.

Note: A data logger may already contain readings that have not been downloaded, in which case you will receive a warning message. If this is sample data in a new data logger then click on OK to continue, else click on Cancel and then click on the red button to download the readings to the PC. Then click on the green button again to set up and start the data logger.

Data Logger Name, Scale, Calibration and Logging Rate

- enter the Logger Name
- select the required Scale and configure any other options
- select the Logging Rate
- click on Next



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Configuring Alarm Levels

- select the required Alarm Levels
- select the Alarm Trigger Levels for any selected alarms
- select Hold and any other options for any selected alarms
- click on Next

Configuring Start Options

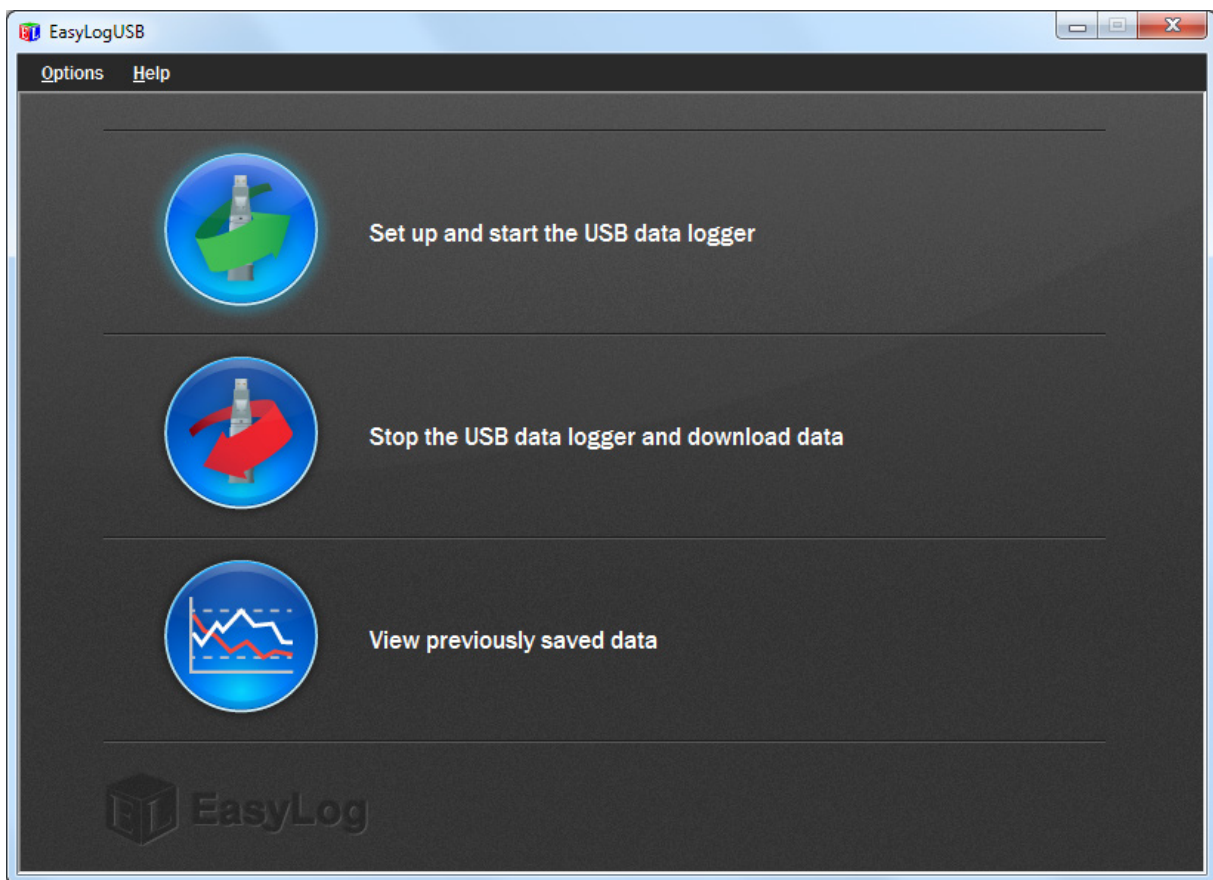
- either click Finish if you want to start logging immediately
- or configure to start logging at a later time and date
- click on Finish. With the data logger connected to the PC, you can at any time check the current status of the data logger by selecting Options > Current Status from the menu.



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4. Detailed Software Description

Main Screen





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Click on the green button to set up and start the data logger.

If the data logger is logging when you click on the green button, or if the data logger is set up for a delayed start, then you will be prompted to stop the logging process.

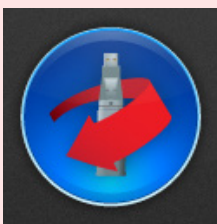


- If you select No, then the data logger will continue logging.

- If you select Yes, then the data logger will stop taking readings. Any stored readings will be permanently erased when the setup is finished. To save these readings, click on Cancel in the setup window and then click on the red button and then OK to download the stored readings.

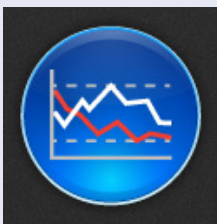
Important Note: Some data loggers require you to read, understand and agree to the terms laid out in a Safety Agreement, before a logging exercise can be started.

If you have any concerns with the contents of this agreement, then please contact your local Lascar distributor before continuing.



Click on the red button to stop the data logger and download any stored readings.

To avoid inadvertently interrupting a logging exercise, you will be asked to confirm that you would like to halt the logging process, and you will be able to download any stored readings.



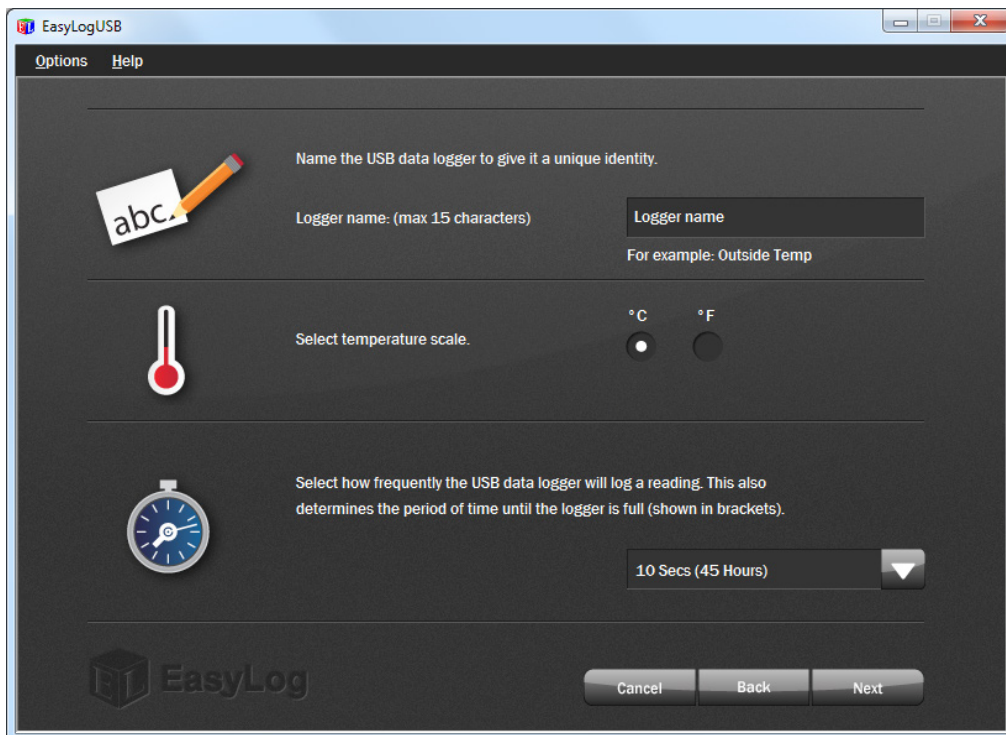
Click on the blue button to graph previously saved readings.

This opens the File Open dialog box which prompts you to select the data file that you wish to graph.



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Data Logger Name, Scale, Calibration and Logging Rate



To distinguish between several data loggers, give each a unique name, up to 15 characters long. The name can contain letters (upper and lower case), numbers, and all special characters except any of the following: “ % & * , . / : < > ? \ () |



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Depending on the data logger that you are using, you will be able to select one or more settings. Follow the on-screen instructions in consultation with the data logger's technical datasheet to configure the data logger correctly for your application.

Some data loggers offer a fixed choice of scale, others allow you to choose your own sensor type and measurement unit.

Some data loggers offer a choice between standard calibration and custom calibration. Select your preference and enter the requested calibration data.

Where modes of operation are offered, select the one that fits your application, and apply the required settings.

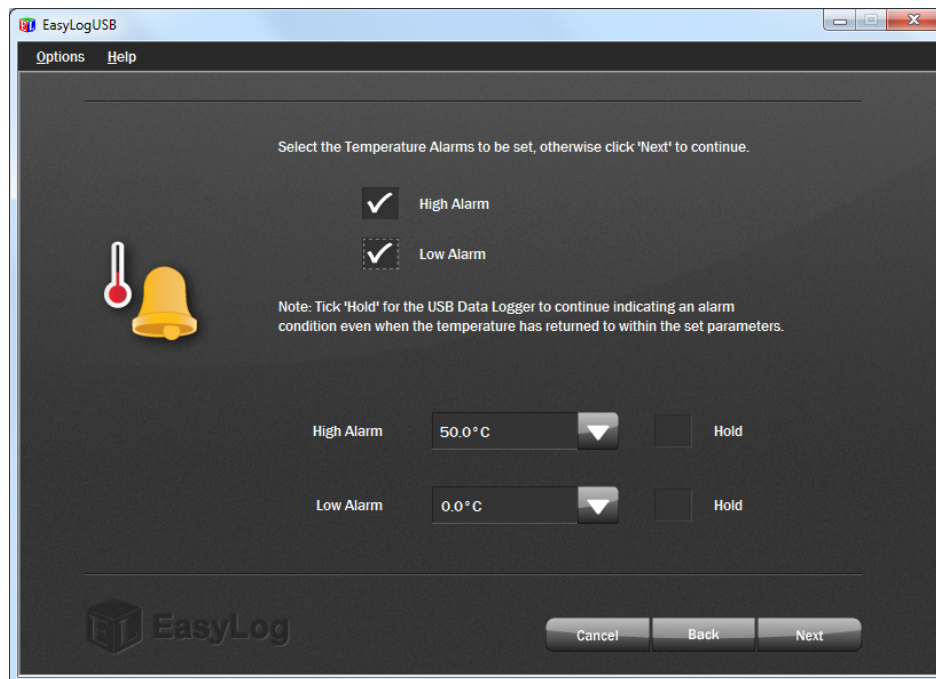
Some data loggers within the EasyLog range allow you to specify when the LCD and LED backlighting operate. This may reduce the power consumption of the device and extend the battery life.

Some data loggers offer a choice of behavior when the memory is full. Either the data logger is set to stop, or it can be configured to overwrite the oldest data, which are then lost.



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Configuring Alarm Levels



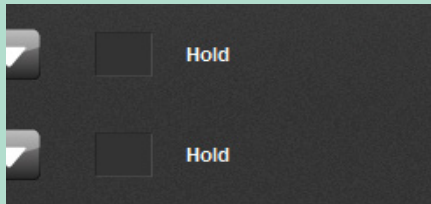
LEDs on some data loggers indicate whether an alarm has been activated. Consult the relevant data logger datasheet for details of the availability of this feature and the LED flashing modes.

An LED will flash red when the logged reading has exceeded a Low or High alarm level. By default Hold is disabled. In this mode the red LED will no longer continue to flash after the logged reading has returned to normal from an alarm condition.

Hold can be turned on via the EasyLog USB software. In this mode, the red LED that indicates an alarm condition will continue to flash, even after the logged reading has returned to normal. The red LED will effectively have latched into its alarm condition. This feature ensures that you are notified that an alarm level has been exceeded, without the need to download the data from the logger.



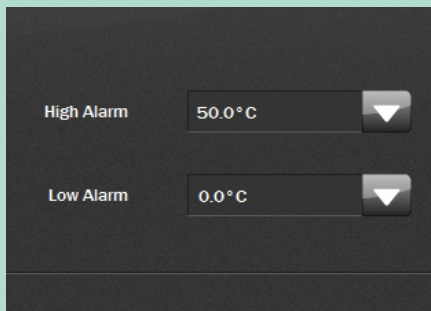
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You have the option to set no alarms, one alarm or both alarms.

Depending on the data logger that you are using, you may also be able to disable the LEDs on the data logger.

Some data loggers allow you to set warning levels and enable a sounder instead of setting alarm levels.



For each alarm that you have set, you must also set the level at which the alarm is triggered.

For each alarm that you have set, you have the option to set Hold.

The High Alarm cannot be set lower than the Low Alarm.

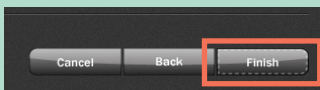
If both alarms have been set to Hold, then Hold will only apply to the alarm trigger level that was first exceeded.

Depending on the data logger that you are using, you may be able to delay the High and Low Alarm indications until several consecutive alarm readings have been logged. The logging rate chosen will be displayed on the page to assist in calculating the number of alarms that can be ignored.



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Configuring Start Options



To start logging immediately, click on the Finish button.

Start when the data logger button is pressed

Some data loggers allow you to start when the data logger button is pressed.

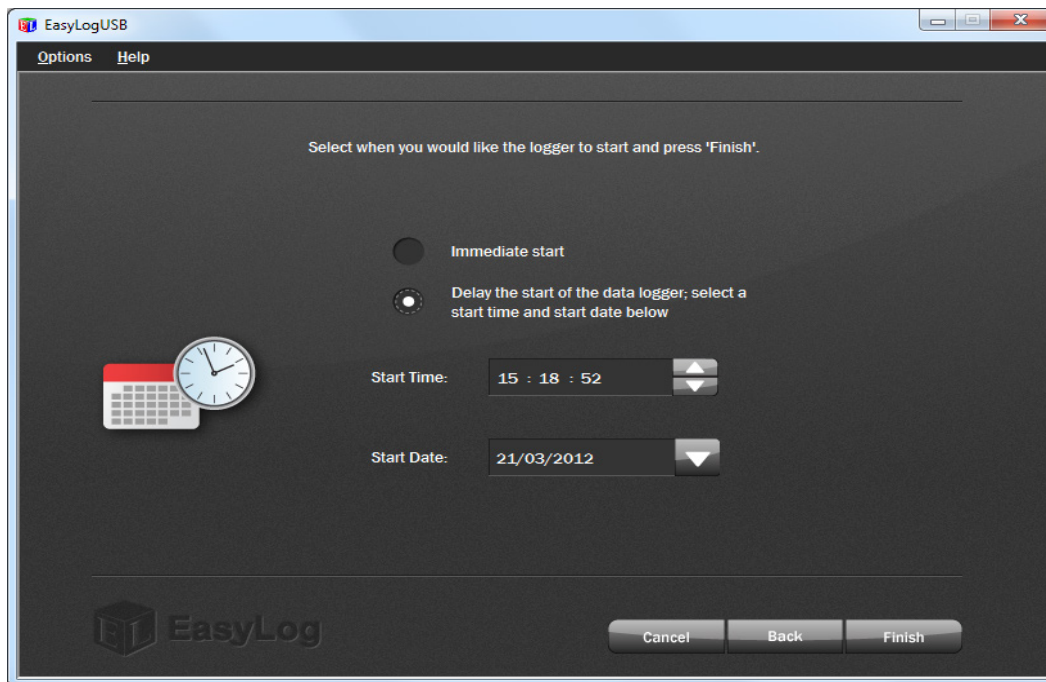
Delay the start of the data logger until a threshold is reached

Temperature Threshold °C

Some data loggers allow you to delay the start until a measurement threshold has been reached. Enter the correct threshold data.




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To delay the start of the data logger to a preset time and date, select that option and select the Start Time (hh:mm:ss format) and Start Date (dd/mm/yyyy format) at which you want to start logging, and click on the Finish button.

To select the Start Time, highlight that part of the time (hh, mm or ss) that you want to modify. That part will turn blue. Use the up and down arrows to increase or decrease the selection.

To select the Start Date, click on the down arrow next to the date. This opens up a calendar which allows you to select a date in the future. The current date is circled. Use the left and right arrows at the top of the calendar to navigate through the months. Click on the required start date, then click on the Finish button.



Select the level of security for the data logger.

Allow users to view settings and enable Stop/Start logging

NOTE: If this is not ticked a user will only be able to view the current measurements. The Datalogger can still be stopped, set-up and started using the PC.

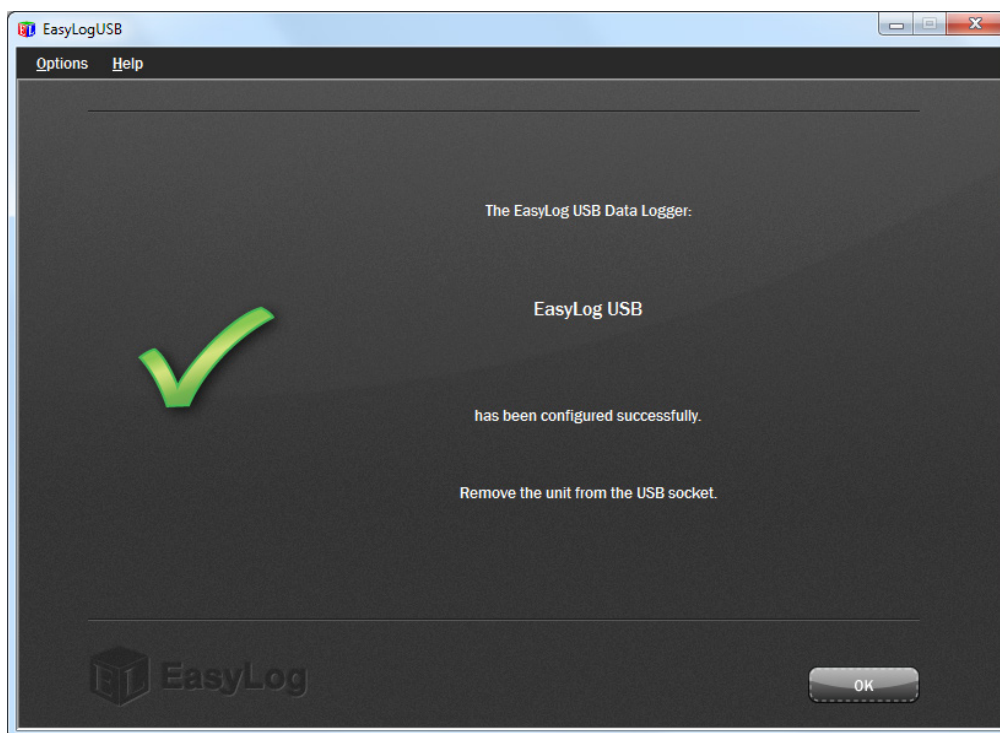
Some data loggers allow you to start, stop and then re-start data logging without the need for a PC.



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Configuration Completed

After the computer has configured the data logger with your chosen parameters, the following confirmation screen is displayed.



Remove the data logger from the computer, re-fit the translucent cap, and place the data logger in the location where you want to measure.

With the data logger connected to the PC, you can at any time check the current status of the data logger by selecting Options > Current Status from the menu.

Note: If you leave a temperature or humidity data logger connected to the PC, then the it will operate at an elevated temperature due to a self heating effect. This may cause the data logger to record incorrect readings.

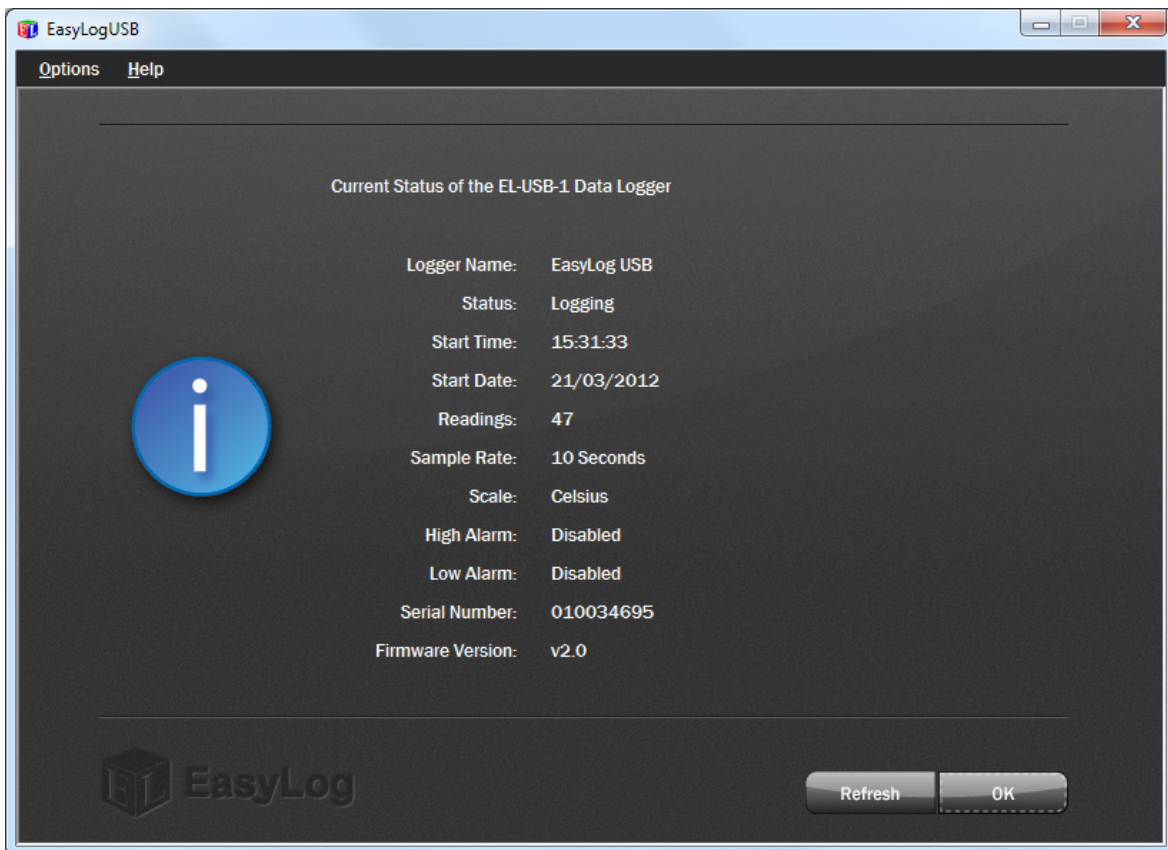
If the data logger is connected to the USB port for a long time (e.g. 15 minutes), then you should allow time for the data logger to cool down after disconnecting it from the USB port.

When a data logger is connected to a USB port, the battery inside the data logger is discharged at a higher rate than normal. To conserve battery life, do not leave the data logger connected to a USB port for a prolonged period of time.



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View Data Logger Status

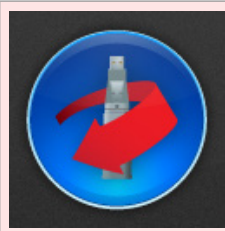


Click on Options > Current Status from the menu to display the current status of the attached data logger.

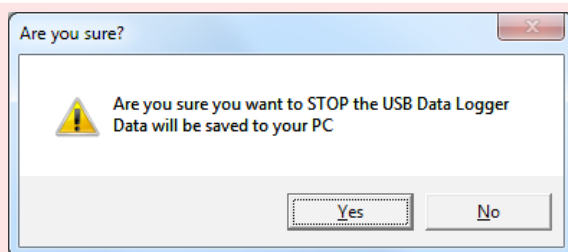
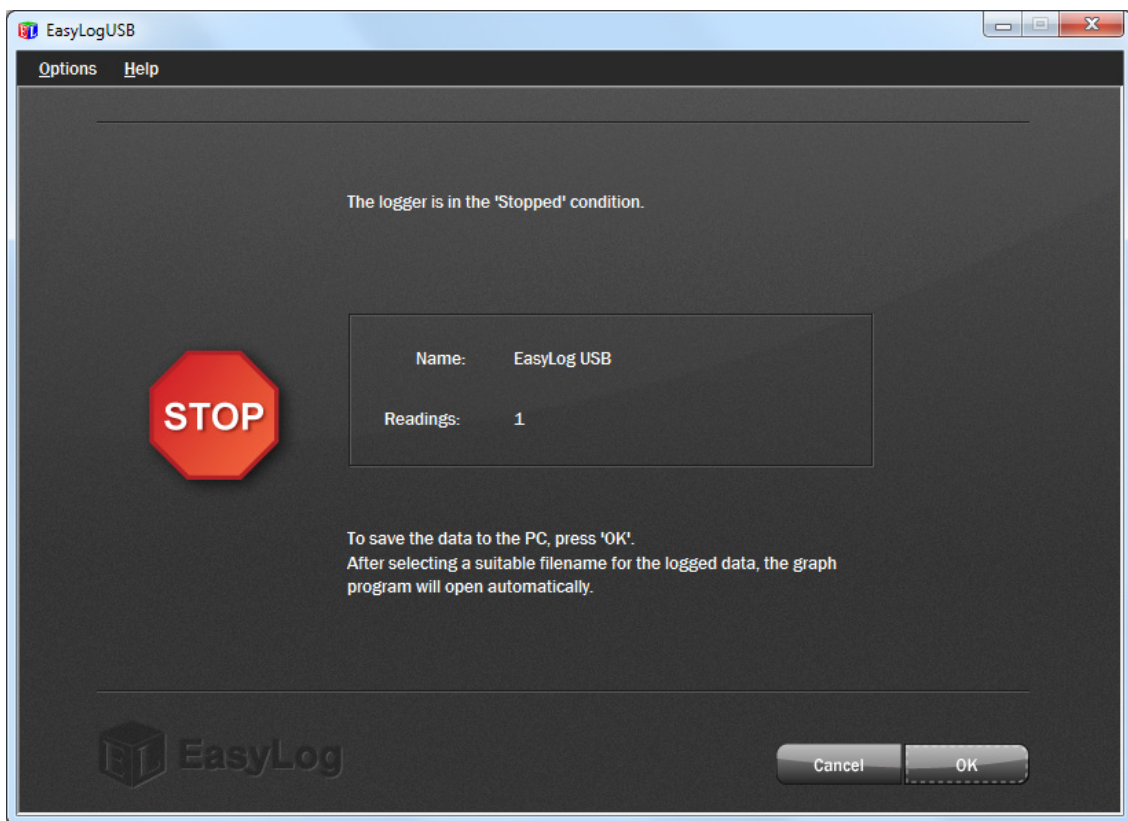


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Stop Logging and Download Data



Click on the red button to stop the data logger and download any stored readings.



To avoid inadvertently interrupting a logging exercise, you will be asked to confirm that you would like to stop the logging process. Click on the Yes button to stop the logging exercise.



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The next window shows that the data logger is in the Stopped condition. It also displays the data logger's Name and the number of Readings stored inside its memory.



Click on the OK button to download any stored readings. After selecting a suitable filename for the logged data, the graph program will open automatically and display the readings as a graph.

Note: - If you do not choose a file name, then EasyLog USB will attempt to save the data to a file and provide it with a default name.

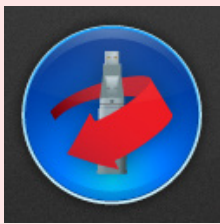
- The data that has just been downloaded will remain in the data logger's memory until it has been set up again.



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5. Graphing

There are two ways to open the graphing program.



Click on the red button to stop the data logger and download any stored readings.

You are prompted to save the stored readings in a file. Then the graphing program opens and displays the stored readings as a graph.

or

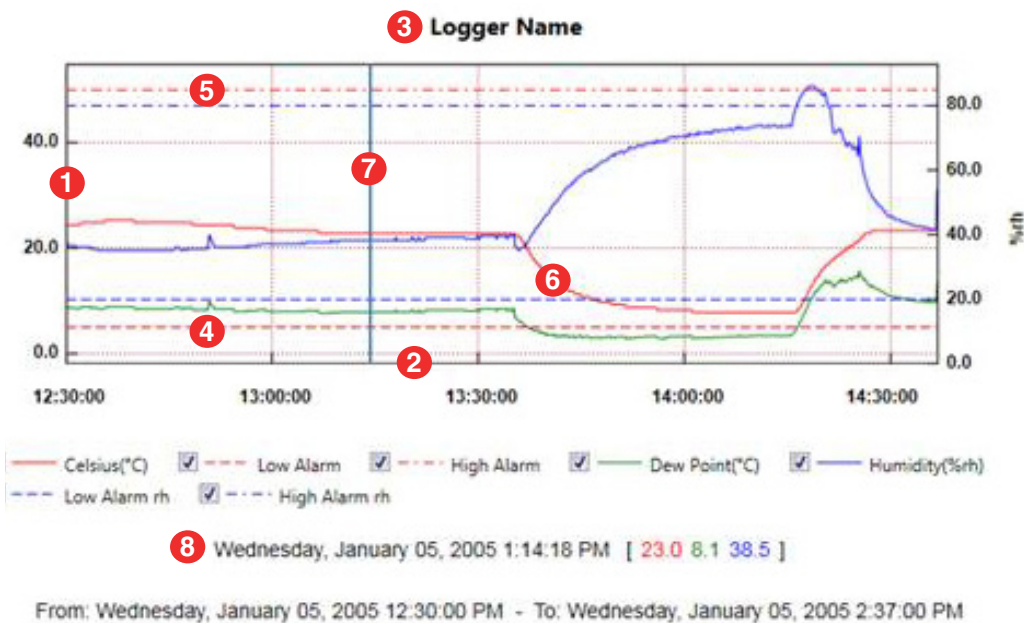


Click on the blue button to graph previously saved readings.

This opens the File Open dialog box which prompts you to select the data file that you wish to graph.



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1. Vertical axis, including scale and unit
2. Horizontal axis, including time related information
3. Data logger name
4. Low alarm trigger level, a horizontal dashed line
5. High alarm trigger level, a horizontal dashed line
6. Plotted data line
7. Marker line that follows the mouse pointer
8. Marker line data for the current marker line position, or the logging period if no marker line is shown

More information may be available on the graph, depending on the data logger that was used.



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To reduce clutter in the graph window, individual traces can be turned on or off by ticking or unticking the relevant boxes below the graph.

Menu Items (View option)

Toolbar	Click on Toolbar to display or hide the toolbar.
Status Bar	Click on Status Bar to display or hide the status bar at the bottom of the screen. The status bar offers hints when the mouse is positioned over a button on the toolbar.
Zoom In	<p>Click on Zoom In and then drag a square over the graph area that you want to view in more detail.</p> <p>You can zoom in several times before the maximum zoom level is reached.</p> <p>This option is also available via the toolbar.</p>
Zoom Out	<p>Click on Zoom Out to zoom out a level.</p> <p>Every time you click on Zoom Out, the zoom level is decreased to the previous zoom level until the minimum zoom level is reached.</p> <p>This option is also available via the toolbar.</p>
Data Range	Click on Data Range, then select the time and date period for which you want to graph data.
Gridlines > X Axis Y Axis	<p>The graph will automatically include horizontal and vertical gridlines to facilitate interpretation of the data. Gridlines can be turned on or off by clicking on Gridlines and then clicking on the X Axis (horizontal) or Y Axis (vertical) option.</p> <p>When plotting another graph, the graphing software will remember your gridline preferences until you exit the graphing software.</p>



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Mark Samples Click on Mark Samples to show the actual measured data points on the graph.
Large data sets may result in a slight delay while all the data points are plotted.
Click on this option again to hide the data points.

Statistics Click on Statistics to show the statistics window for the data. Click on this option again to hide the statistics window.
Note: Statistics are available for the full session and for the current view.

Data View Click on Data View to display a table of logged readings against time and date. Readings that exceed the alarm levels are automatically highlighted in red. Click on the Graph View button on the graphing toolbar to return to the graph.
Note: Click on the Show Alarms Only button to show only those readings that exceed the alarm levels.

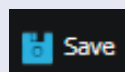
6. Graphing Toolbar - Producing Professional Reports



Reports: The Export button is designed to produce professional reports very quickly. It saves the logged data as a CSV data file, or produces a JPEG image, a PDF document of the data, graph or summary report (see example below), or an Excel spreadsheet of the data and graph.



Open - Clicking on this button opens the Open dialogue box. This prompts you to select the data file that you want to graph, and then displays the data as a graph.



Save - Clicking on this button opens the Save dialogue box. This prompts you to select a file name and file location for the data file.



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Zoom in - Click on this button, then select the zoom area by holding the left mouse button down and dragging a box over that part of the graph that you wish to inspect more closely. You can zoom in several times before the maximum zoom level is reached.



Zoom out - Every time you click on this button, the zoom level is decreased to the previous zoom level until the minimum zoom level is reached.

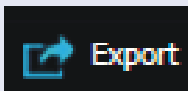


Zoom Time/Date – Click on this button, then select the time and date period for which you want to graph data.



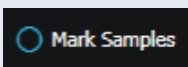
Print - Click on this button to open the Print dialogue box and print the graph.

Note: Selecting Landscape orientation for your printer allows you to print larger graphs, showing more detail.

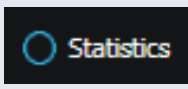


Click on this button to save the data as a CSV data file, or produce a JPEG image, a PDF data or graph document, an Excel data and graph spreadsheet, or a PDF summary report.

This is a very powerful feature, designed to produce professional reports quickly.

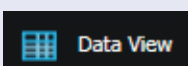


Click on this option to show the actual measured data points on the graph. Click on this option again to hide the data points.



Click on this option to show the statistics window for the data. Click on this option again to hide the statistics window.

Note: Statistics are available for the full session and for the current view.



Click on this button to display a table of logged readings against time and date. Readings that exceed the alarm levels are automatically highlighted in red. Click on the Graph View button on the graphing toolbar to return to the graph.

Note: Click on the Show Alarms Only button to show only those readings that exceed the alarm levels.



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Summary Report

Serial Number 10230
Logger Name Easylog USB

First Reading 02:00:00 12/01/2016
Last Reading 22:45:00 08/03/2016
Elapsed Time 56 days, 20 hours, 45 minutes
Total Readings 16378

Alarm *Triggered*
Logging Rate 5 Minutes

Celsius		Low Alarm 10.0°C	High Alarm 25.0°C
Minimum 9.0°C 05:15:00 15/01/2016	Maximum 21.0°C 22:45:00 08/03/2016	Alarm Occurrences 180	Alarm Occurrences 0
Average Reading 15.4°C	Mean Kinetic Temperature 15.3°C (ΔH83.14472)	Total time in alarm 15 hours 0 minutes	Total time in alarm 0 seconds
Standard Deviation 2.2°C		First Alarm Triggered 02:50:00 15/01/2016	First Alarm Triggered N/A
		Longest Alarm 3 hours 40 minutes	Longest Alarm N/A

Humidity		Low Alarm Not Set	High Alarm 80.0%rh
Minimum 44.5%rh 21:20:00 25/02/2016	Maximum 91.0%rh 06:55:00 22/01/2016	Alarm Occurrences 0	Alarm Occurrences 347
Average Reading 63.7%rh	Standard Deviation 6.9%rh	Total time in alarm 0 seconds	Total time in alarm 1 day 4 hours
		First Alarm Triggered N/A	First Alarm Triggered 06:50:00 12/01/2016
		Longest Alarm N/A	Longest Alarm 2 hours 15 minutes

Dew Point	
Minimum 0.8°C 04:25:00 20/01/2016	Maximum 18.2°C 08:25:00 21/02/2016
Average Reading 8.5°C	Standard Deviation 2.9°C

Easylog USB

From: 12 January 2016 02:00:00 - To: 06 March 2016 22:45:00

example of automatically generated summary report in PDF format



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7. Error Messages

EasyLog USB reports any detected errors via on-screen messages. Most of these messages are self-explanatory and are designed to help the user find a quick solution.

Example error messages include the following:

No EasyLog USB Data Logger found, is the Data Logger:

- a) Plugged in?
- b) Battery OK?
- c) USB driver installed?

To verify whether the USB driver is installed, and how to manually install the drivers, please consult How do I manually install drivers for my EasyLog USB data logger? from the USB Data Loggers part of the FAQs section at www.lascarelectronics.com.



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The USB device currently connected is not compatible with this version of the software.

Contact your supplier for further assistance.

(See About box for contact details)

This error message appears when the USB data logger requires a later version of the EasyLog USB software than is currently installed on your computer. Download, install and use the latest EasyLog USB software version from www.lascarelectronics.com.

Note: If you have a 21CFR data logger, then do not use the EasyLog USB software.

Instead, download, install and use the latest version of the EasyLog 21CFR software from www.lascarelectronics.com.

The USB Data Loggers part of the FAQs section at www.lascarelectronics.com is a valuable source of practical information about EasyLog data loggers and the EasyLog USB software.

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