EasyLog 21CFR Software

User Guide – Issue 4

Help File Contents

Quick Start Guide

Remove the transparent cap from data logger.

Install the battery.

Insert the 21CFR data logger into a free USB port on your computer. The computer will automatically detect the presence of the logger and start the hardware installation process. Double-click the EasyLog 21CFR Software icon on your desktop to launch the control software. After you have entered your login details you will be presented with three options on the Main Screen.

Click on the green button to set up and start the data logger and follow the setup procedure:-

USB Data Logger Name, Temperature Scale and Sample Rate:
- enter the Logger Name
- select the Temperature Scale
- select the Probe Type (only applicable to EL-21CFR-TP-LCD and EL-21CFR-TC models)
- select the Sample Rate
- then click Next

Note: If you are using this data logger for the first time, then it may contain some sample data, in which case you will receive a warning message. Click OK to continue.

Logger Options:
- select how the LCD should operate from the available options*
- select whether the logger should stop saving data when full or begin overwriting the oldest data*

Setting alarm levels for the USB Data Logger:
- select the Alarms, if required
- select the Alarm Trigger Levels for any selected alarms,
- select Hold for any selected alarms
- then click Next

Setting stop restrictions for the USB Data Logger:
It is possible to lock the data logger to a particular PC and / or user to restrict other users from inadvertently stopping a logging session.

- select any restrictions as required
- then click Next

Setting the start time and date:
- either click Finish if you want to start logging immediately or
- select either to start when you press the button* or to start at a defined time, then click Finish.

The summary screen will appear.

Remove the data logger from the computer and place it in the location where you want to measure temperature and humidity.
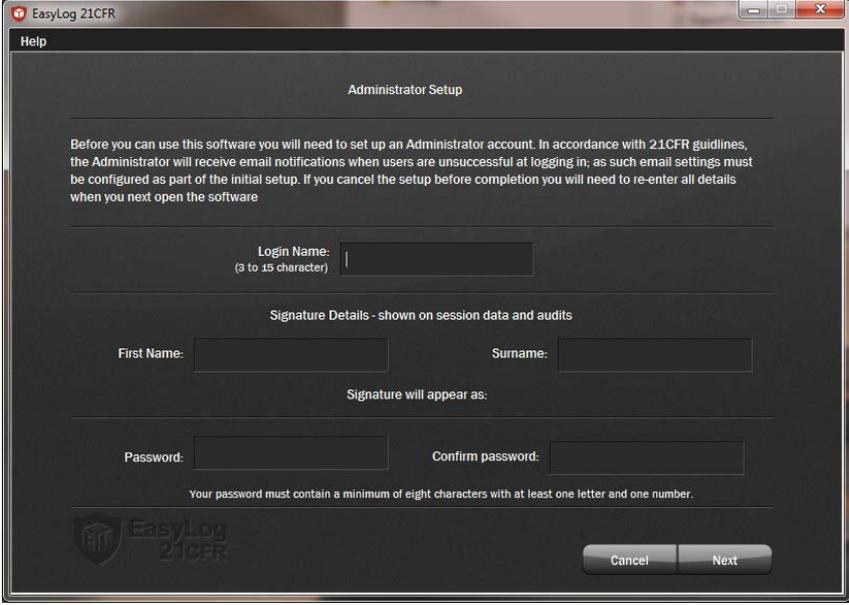
If you leave the data logger connected to your PC, the data logger will operate at an elevated temperature, due to a self-heating effect. This will cause the data logger to record erroneous temperature and humidity readings (if applicable). If the data logger is connected to the USB port for a long time (e.g. 15 minutes), then you should allow time for the logger to cool down after disconnecting it from the USB port.

*Not applicable to EL-21CFR-TC

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

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First Time Administrator Setup

On first use of the software you will need to create an Administrator for the software. It is then possible to set up further users with administrator rights or reduced rights if required.

The Login Name is required, along with the password, when any user logs in to the software. The Login Name should be between 3 and 15 characters.
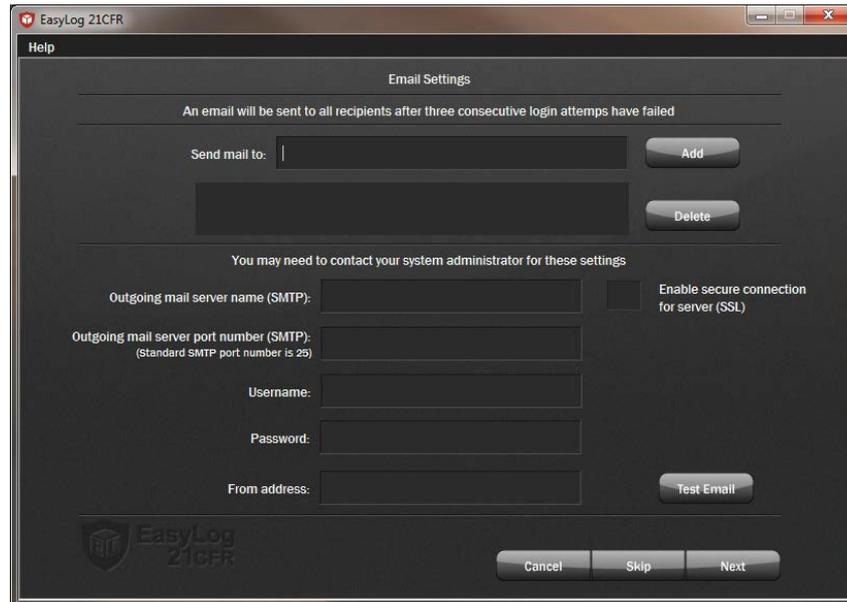
The First Name and Surname are used to record which users have carried out transactions. Each action in the software creates an entry in an Audit table and will have the Signature along with the date and time of the transaction. It is possible to have more than one person with the same Signature although they will require different Login Names. In the Audit tables it is possible to distinguish between users with the same Signature by looking at the USER_GUID which is a unique number associated to a user. The Signature is also shown in the graphing software for the person who started the data logger, stopped the session and approved the data. The signature for starting and stopping the session is stored on the data logger. This means that even if it is downloaded at a different location to the original setup the audit trail still maintains its links.

When logging in the user will also need to enter a Password to confirm they are who they say they are. This must contain a minimum of eight characters with at least one letter and one number and is case sensitive. As well as when logging in, the user may be prompted to re-enter their password when carrying out certain transactions.

Clicking Next will take you to the Email Settings wizard.

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Email Settings

The requirements of 21CFR part 11 state that system administrators need to be immediately informed if there appears to be unauthorised use of the software. This is achieved by sending email alerts after someone has tried to log in unsuccessfully three consecutive times. It is possible to send this email to multiple recipients.

Only users that are setup as Administrators have the ability to change the Email settings.

On first use of the software you are taken to this screen after completing the Administrator Setup and clicking Next or Skip will take you to the Software Settings wizard. If you have accessed Email Settings from the Admin menu then Skip and Next are not available.

Enter the email address and click on Add. Once in the list, recipients can be removed by selecting them and clicking delete.

To use the email facilities, a POP/SMTP email account is required. The software will not send emails using a Windows Live / hotmail account or Windows Exchange server only works for internal emails unless a Relay Connector is setup. Google Mail offers a free email service that has POP/SMTP functionality, if you do not already have one.
Before setting configuring the email setting, the following information is required:

- Outgoing mail server name (SMTP)
- Outgoing mail server port number (SMTP)
- User Name
- Password
- From Address
- Enable secure connection for server (SSL)

If you do not know this information it can be obtained from your email software or from your email provider (This information is normally available on email provider help pages). Not all web based email accounts support POP / SMTP functionality (such as hotmail). Please consult your provider directly or their help pages.

To verify the settings, press the 'Test Email' button.

If you are unsure of the correct settings for emails it is possible to skip this step and return to it later. If you do not set them up at this time, a warning will appear at the top of the main software screen which links back to the email settings screen.

Locating email account settings from your email client:

If you use a client application to download your email, such as Microsoft Outlook or Outlook Express the settings you require can be obtained from the account settings page of these applications. These steps are only valid for POP / SMTP type email accounts.

Windows Live Mail

- Select the 'Accounts' tab and then click the 'Properties' button.
- The 'General' tab indicates the email address. Select the 'Servers' tab and make a note of the 'Outgoing mail (SMTP)' and 'Account Name' (User Name) details.
- To check which port is used and whether it needs to be a secure connection, select the 'Advanced' tab. Take note of the 'Outgoing server (SMTP)' port number and whether 'This server requires a secure connection (SSL)' is enabled.

Microsoft Outlook 2007

- Select the 'Tools' menu and then 'Account Settings'. Under the 'email' tab, highlight the account you wish to use and click the 'Change…' button on the menu bar.
- From the 'Internet email Settings' screen take note of your 'Outgoing mail server (SMTP)', 'User name' and email address. To check which port is used and whether it needs to be a secure connection click the 'More Settings' button and select the 'Advanced' tab. Take note of the 'Outgoing server (SMTP)' number and whether 'This server requires an encrypted connection (SSL)' is enabled.

Common Provider Email Settings:

Office365

Office 365 server details:

Outgoing mail server name (SMTP)	smtp.office365.com
Outgoing mail server port number (SMTP)	587
User Name	<your full office email address>
Password	<your office password>
From Address	<your email address>
Enable secure connection for server	Enabled

Gmail

Ensure that your account is POP enabled by checking the 'Forwarding and POP / IMAP' tab in your Gmail settings, POP should be enabled for all mail. Also ensure that in 'Connected apps & sites' found in 'My Account' has the 'Allow less secure apps' set to On.

Gmail server details:

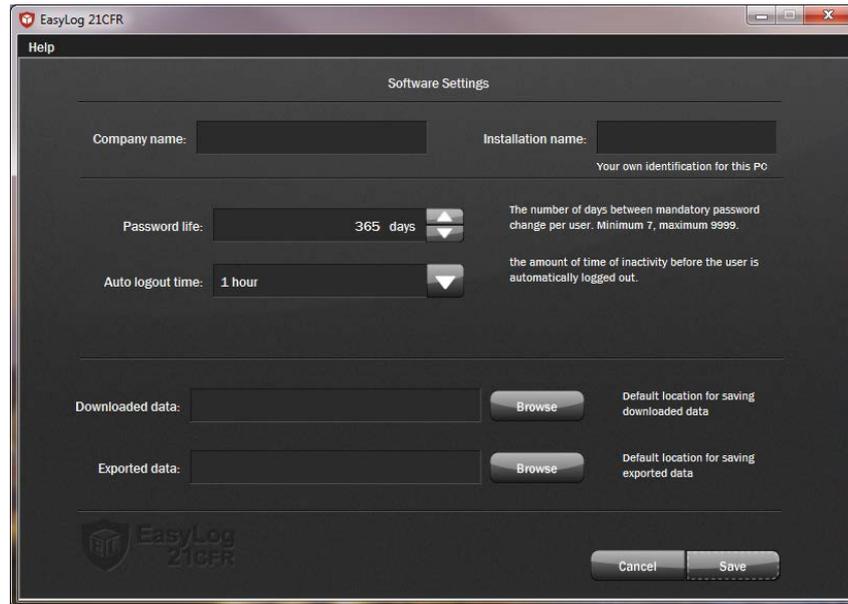|	
Outgoing mail server name (SMTP)	smtp.gmail.com
Outgoing mail server port number (SMTP)	587
User Name	<your Gmail address, including @gmail.com>
Password	<your Gmail password>
From Address	<your Gmail address, including @gmail.com>
Enable secure connection for server	Enabled

Yahoo!

Not all Yahoo! domains provide free POP email access. It is freely available to www.yahoo.co.uk and www.yahoo.ca domains. Other yahoo users may have to pay for a 'Yahoo! Mail Plus' account.

If POP access is available on your Yahoo! Account, you will need to switch to the 'Mail Classic' interface to view the necessary options. To enable POP access, log in to your account, click options, select 'POP access and Forwarding' and tick the 'Web & POP Access' option. The interface can then be returned to normal if required.

Yahoo! Mail Plus server details:

Outgoing mail server name (SMTP)	plus.smtp.mail.yahoo.com
Outgoing mail server port number (SMTP)	587
User Name	<your email address, without the @yahoo.com>
Password	<your email password>
From Address	<your email address, including @yahoo.com>
Enable secure connection for server	Enabled

Yahoo.co.uk server details:

Outgoing mail server name (SMTP)	smtp.mail.yahoo.co.uk
Outgoing mail server port number (SMTP)	587
User Name	<your email address, without the @yahoo.co.uk>
Password	<your Yahoo password>
From Address	<your email address, including @yahoo.co.uk>
Enable secure connection for server	Enabled

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Software Settings

These are global settings that apply to all users of the software, some of which are required as part of the 21CFR standard.

Only users that are setup as Administrators have the ability to change the Software settings.

Company Name: The Company Name will appear along with the signatures in the graphing software. As with the Signature information, the Company Name for the user that started or stopped the session is stored on the data logger for the current session.

Installation Name: The Installation Name appears in the Audit tables to show on which PC transactions were carried out. If there is more than one PC given the same name you can distinguish between them with the unique PC_GUID which appears in the Advanced Audit view.

Password Life: The Password Life dictates how often a user will need to change their password. Once the password has expired each user will be prompted to create a new password when they next log in and will not be able to continue without doing so.

Auto Logout Time: If a user has been inactive for this amount of time the user will be logged out of the software automatically. They will then need to re-enter their password before being able to continue using the software.

Downloaded Data: When session data is downloaded from the data logger you can choose where you would like it to be saved. The Downloaded Data folder will be the default location for this although it is possible for you to change it when saving each file.

Exported Data: It is possible to export session data in to various formats for example for inclusion in reports or for further analysis. When exported they will default to this directory although it is possible to change it when saving each file.

Create / Edit User

Only users that are set up as an Administrator have the ability to create new users or to edit the details of existing users.

The Login Name is required, along with the password, when any user logs in to the software. The Login Name should be between 3 and 15 characters.

The First Name and Surname are used as a signature to record which users have carried out transactions. Each action in the software creates an entry in an Audit table and will have the Signature along with the date and time of the transaction. It is possible to have more than one person with the same Signature although they will require different Login Names. The Signature is also shown in the graphing software for the person who started the data logger, stopped the session and approved the data. The signature for starting and stopping the session is stored on the data logger. This means that even if it is downloaded at a different location to the original setup the audit trail still maintains its links.

In the Audit tables it is possible to distinguish between users with the same Signature by looking at the USER_GUID which is a unique number associated to a user.

The first time the new user logs in to the software they will be prompted to generate a password:

When logging in the user will also need to enter a Password. This must contain a minimum of eight characters with at least one letter and one number and is case sensitive. As well as when logging in, the user may be prompted to re-enter their password when carrying out certain transactions.
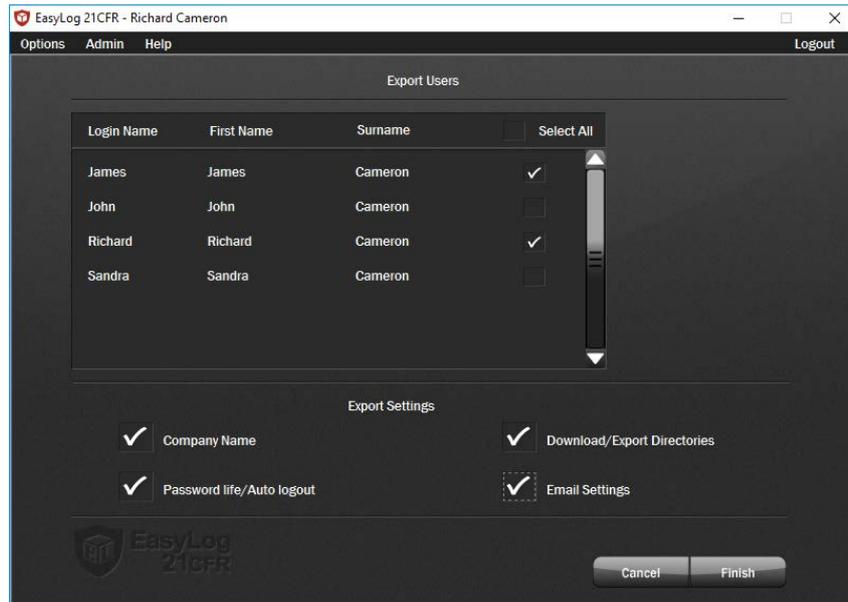
If a user has forgotten their password then the Edit User option provides the ability to reset their password when they next log in to the software

User rights can be set up to control what they can do within the software:

Administrator	• User has access to all software and data logger functions. New users can be created or edited, email and software settings edited and logger 'stop' restrictions overridden.
Initialise Logger	• User can start a logger. If the logger is already logging and they do not have the correct stop permissions then this may not be possible.
Allow stop/download restrictions	• User can restrict how is logger is stopped; to just themselves or to the PC on which it was started. An Administrator on any software installation can override this feature.
Stop & download logger	• User can stop the data logger and download the data. If the logger has 'stop' restrictions applied then the logger takes priority.
Add/edit comments to data	• User can add comments to individual data entries via the graphing software.
Export data	• User is able to export the data from the graphing software.
Approve/un-approve data	• User can add or remove the final approval signature to the logging session via the graphing software.
View/export Software audit	• User can view and export the Software audit trail showing all user transactions that have occurred.

Export Users / Settings

Once setup, it is possible to export users and settings from one installation of the EasyLog 21CFR software so that they can be imported into other installations to maintain the same profile.

Only users that are setup as Administrators have the ability to export Users and Software settings.

Export Users: Use the Select All option or select individual users with the tick boxes next to the names. The Login details and user rights will be exported but none of their password details. It is not possible to export users that have their account disabled.

Export Settings: Select any of the required software settings to export to another installation. When choosing Email Settings, the password will not be exported.

The file will be exported as an encrypted .elu file type, defaulting to your chosen export directory. An entry is created in the Software Audit for Users Exported and Settings Exported detailing which Login names and settings have been selected, as well as the file name and location.
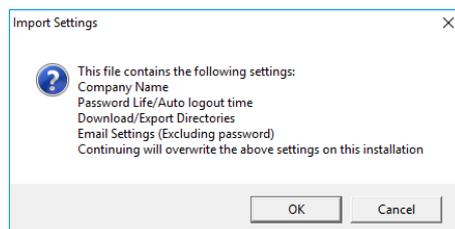
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Import Users / Settings

Once you have created an administrator it is possible to import users and software settings from another installation of EasyLog 21CFR software.

Only users that are setup as Administrators have the ability to import Users and Software settings.

Selecting Import Users/Settings from the Admin menu will take you through the Import Wizard. If the .elu file selected contains software settings an initial warning is displayed indicating which settings will be overwritten.

The Import Wizard will detect any duplicate login names and not allow them to be imported as well as checking for duplicate signatures which you can choose to import. The list of users that will be imported is presented before progressing completing the import.
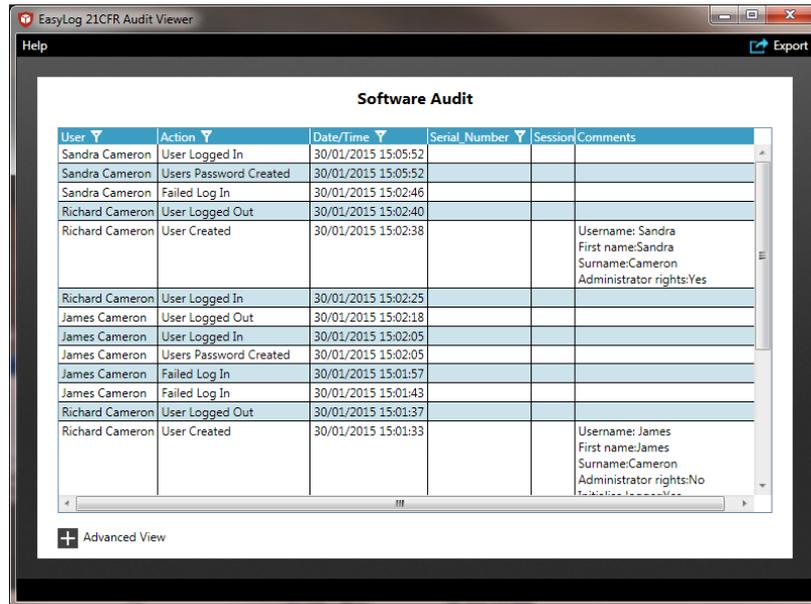
Choosing Cancel at any point will stop the import of both Users and Settings and your original settings will be maintained.

A 'Settings Imported' audit entry is created as well as individual 'User Imported' entries for each user listing the relevant details as well as the installation name that created the file used for import.

No passwords are imported as part of this process; users will be prompted for a new passwords at first login and you will need to set the password for Email Settings.

Software Audit

In line with the requirements of 21CFR, the Software Audit provides a full, time-stamped, audit trail of interaction with the software.

Audit entries are created for the following actions:
- Creating a User
- User password created
- User logs in
- User failed log in
- User logs out
- User edited
- Users exported
- Logger initialised
- Logger stopped
- Data downloaded
- Comments added to logging session
- Data exported from graphing software
- Data approved
- Data un-approved
- Software settings changed
- Settings exported

In most cases a comment will be added to the Audit entry to provide more detail on what happened.

It is possible to filter or sort the information by User, Action type, Date/Time or the Serial Number of the data loggers used. Clicking on the header line will sort the data in alpha/numeric order or filter by clicking on the filter icon.

Clicking on the Advanced View option shows the GUID references for each of the entries. This can help show when different installations of the software have been used to start or stop a logger or differentiate between users that have the same name.

It is possible to export the Audit trail to a PDF.

The Logging Interface
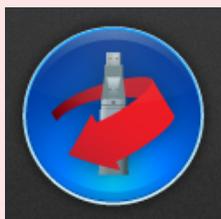

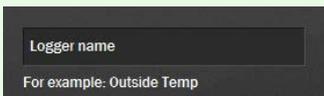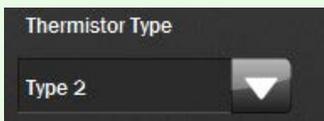|	
	Click on the green button to set up and start the data logger. If the data logger is logging when you click on the green button, or if the data logger is set up for a delayed start, then you will be prompted to stop the logging process. • If you select No, then the data logger will continue logging. • If you select Yes, then the data logger will stop taking readings. Any stored data will be permanently erased when Setup is Finished. To enable you to save this data before it is lost, click cancel in the Setup window and then click on the red button to download any stored data.
	Click on the red button to stop the data logger and download any stored data. To avoid inadvertently interrupting a logging exercise, you will be asked to confirm that you would like to halt the logging process.
	Click on the blue button to graph previously saved data. This opens the File Open dialog box which prompts you to select the data file you wish to graph.

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USB Data Logger Name, Temperature Scale and Sample Rate

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

Check the appropriate box to store the readings in degrees Celsius or degrees Fahrenheit.

On some loggers it is possible to change the probe type. Use the drop down menu and ensure that the selection matches the probe you are using or your results will be incorrect.

Select the sample rate for the logger. The sample rate shows the time interval between stored readings. Selecting a short sample rate results in the memory being full faster than when a longer sample rate is selected.

Note: Always ensure that the remaining charge in the battery is sufficient to last the complete duration of your logging exercise. If in doubt, we recommend that you always install a fresh battery before logging critical data. Changing the battery whilst logging is in progress will halt the logging operation.

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Display and Logging Options

Select the most suitable LCD setting for your application:

Selecting 'LCD Off' will give the longest battery life but you will not be able to see the data until it is downloaded.

Selecting 'LCD Always On' will give the shortest battery life but you are always able to see the data shown on the display.

Selecting 'On for 30 seconds' allows the logger to stay in a low power state most of the time, but will show the data at the touch of the button.

There are 2 available options for how the logger will respond once the memory is full:
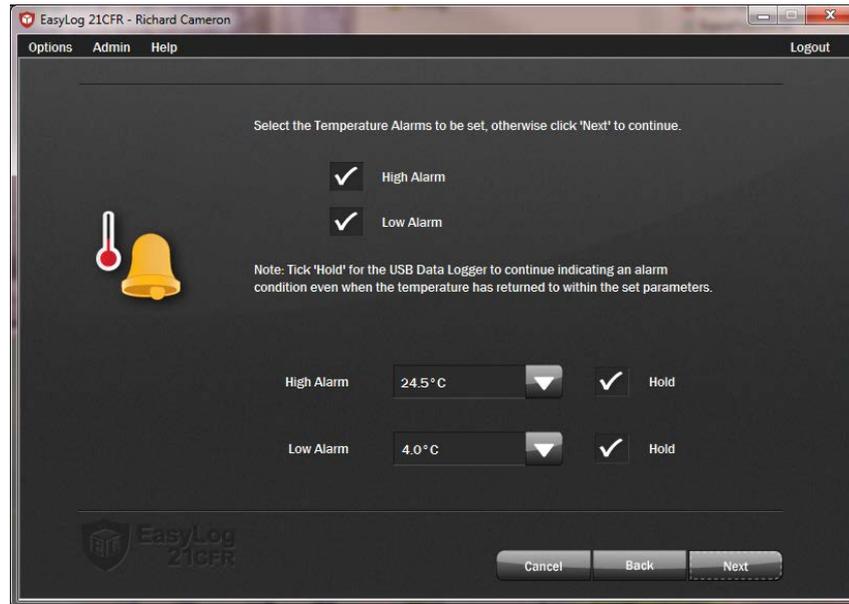
Selecting 'Logger stops' will cease the logging session once memory capacity has been reached. All data will be saved until it has been downloaded.

Selecting 'Logger continues to log' means once the memory is full it will begin overwriting the oldest data to produce a rolling data set. Any data that is overwritten cannot be recovered.

Note: Neither of the above options are available for the EL-21CFR-TC logger.

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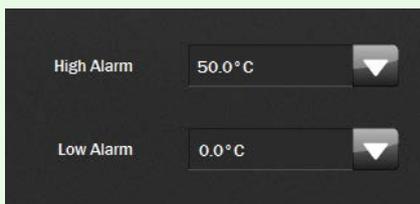
Setting Alarm Levels

You have the option to set no, one or both alarms for all channels on the logger.

If no alarms are set, then the logger flashes its green LED.

If one or both alarms have been set, then the red LED will flash as defined in the product's datasheet. If no alarm level has been breached, then the logger flashes its green LED.

On some products it is possible to disable the LEDs to extend the battery life. The alarm conditions are still recorded and will show when the data is downloaded.

Note: When the battery is depleted, the logger will stop and the LEDs will not flash.

For each alarm that you have set, you must set the alarm trigger level (the level at which the alarm is activated) by using the drop-down list box. Note: The High Alarm cannot be set lower than the Low Alarm.

You also have the option to set Hold for each alarm. By selecting this option, the LED status for the channel will continue to show the alarm level has been exceeded even if the value being measured is no longer in an alarm condition. This ensures that you always know whether the Alarm trigger level has been breached.

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

The colour and flashing rate of the LED only relates to the stored measurements. It does not relate to any temperature or humidity fluctuations which may occur between stored measurements, or after the last stored measurement.

Some of the data loggers have a function to delay an alarm from triggering. In some situations you may not want to show an alarm on the LEDs until several consecutive alarm readings have been gathered. Perhaps a single alarm condition log doesn't warrant any corrective action but several logs in alarm mode might. In these instances, it is possible to delay the LED indication by a user-selectable number of logs in alarm mode.
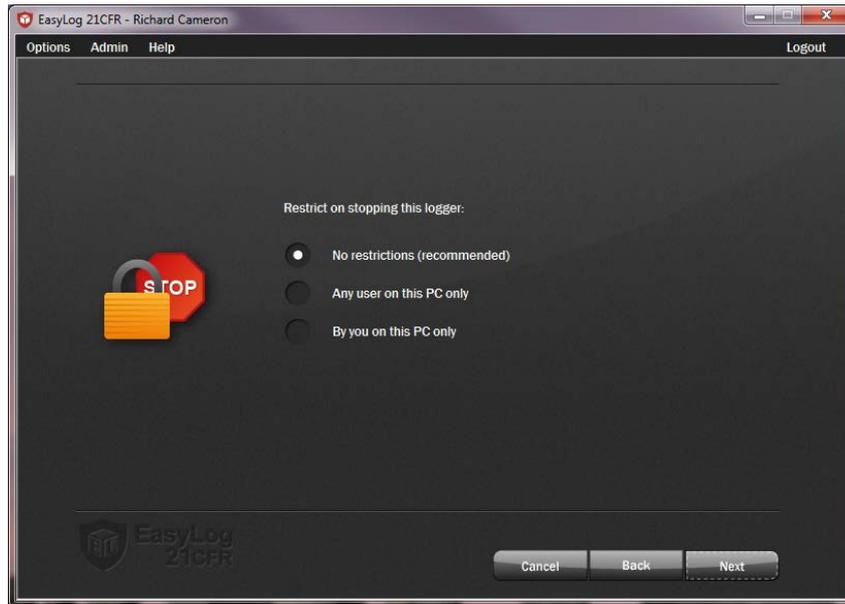
For both high and Low Alarms input the number of consecutive alarm logs that can be registered before the LEDs indicate an alarm. If no delay is required, the user should type the number '1'. If more than one alarm can be registered before the LEDs start indicating an alarm, the user should input that number. Please note a maximum delay of 250 readings is allowed.

The sample rate chosen will be displayed on the page to assist in calculating the number of alarms that can be ignored.

Example: A user wishes to setup a data logger to measure temperature at five minute intervals in a refrigerator used for vaccine storage. By opening the refrigerator door for a period of time, a user may inadvertently push the data logger into high alarm mode and the LEDs would start indicating an alarm. In fact, the user knows that until the logger has been exposed to these higher temperatures for a period of at least half an hour, there is no corrective action needed and so it is not necessary for the LEDs to indicate an alarm mode. As the data logger is sampling in 5 minute intervals the user would type '6' in the Number of High Alarms section to provide a half-hour window before an alarm condition is indicated (6x5 samples = half an hour).

Setting Stopping Restrictions

Select any level of restrictions as to who can stop the logging session:

Selecting 'No restrictions' will enable any user logged in to any installation of EasyLog 21CFR software to stop the logger as long as the user has rights to Stop & download loggers.
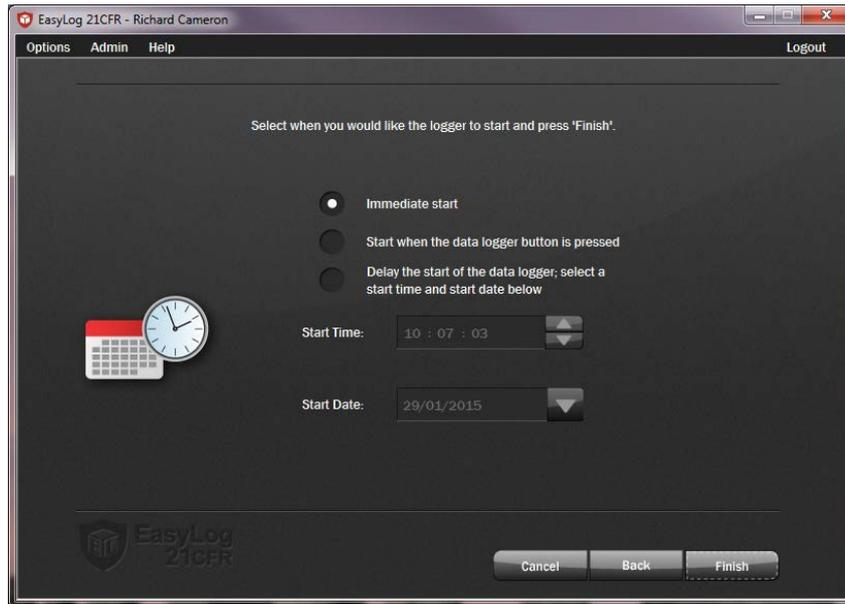
Selecting 'Any user on this PC only' will enable any user with Stop & download rights to stop the data logger on the same PC that it was originally set up on.

Selecting 'By you on this PC only' will restrict stopping the logger to the same user that set the logger up on the same PC.
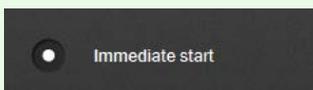
Note: Any user that has been created as an Administrator can override this setting.

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Setting Start Time and Date

The data logger can be setup to start in three different ways:

Immediate start:

Select the appropriate radio button and click 'Finish'. The data logger will take its first reading immediately thereafter.

Start when the data logger button is pressed:

Select the appropriate radio button and click 'Finish'. The data logger screen will flash 'PS' to indicate it is in 'Push-to-Start' mode. When the button is pressed the data logger will take its first reading immediately thereafter. Note: This mode is not available for the EL-21CFR-TC.

To start logging at a later time and date:

First select the appropriate radio button. The current time and date will be shown.
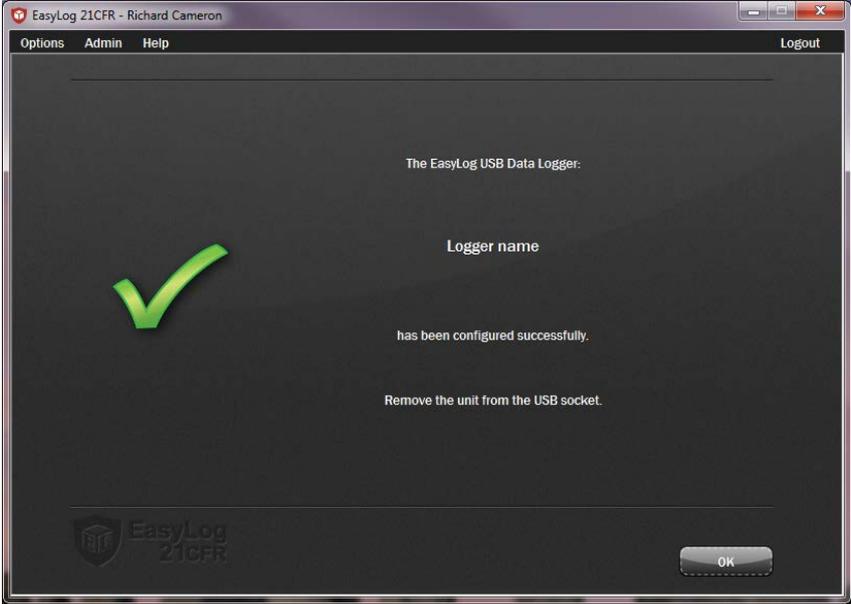
To change the start time select the part of the time (hh, mm or ss) that you want to modify. Then use the up/down arrows to the right of the text box or type over to select the desired start time.

To change the start date select the part of the date (dd, mm or yyyy) that you want to modify. Then use the down arrow next to the date to open up a calendar from which the and either type over to select the desired date, or click the down arrow next to the date to open up a calendar from which the desired start date can be selected.

Setup Summary

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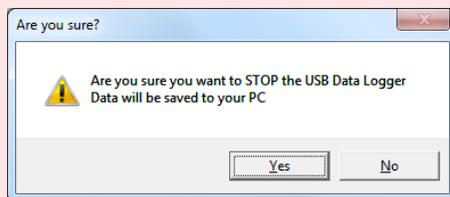

Remove the Data Logger from the computer and place it in the location where you want to measure temperature and relative humidity.

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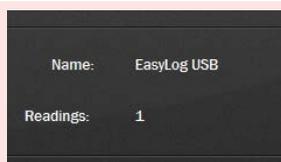
Stop Logging and Download Data

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

To avoid inadvertently interrupting a logging exercise, you will be asked to confirm that you would like to halt the logging process.

Click Yes to stop the logging exercise.

A window pops up to show 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.

To save the data to the PC and graph it, click OK. After selecting a suitable filename for the logged data*, the graph program will open automatically and display the readings as a graph.

The data that has just been downloaded will remain in the logger's memory until it has been set up again.
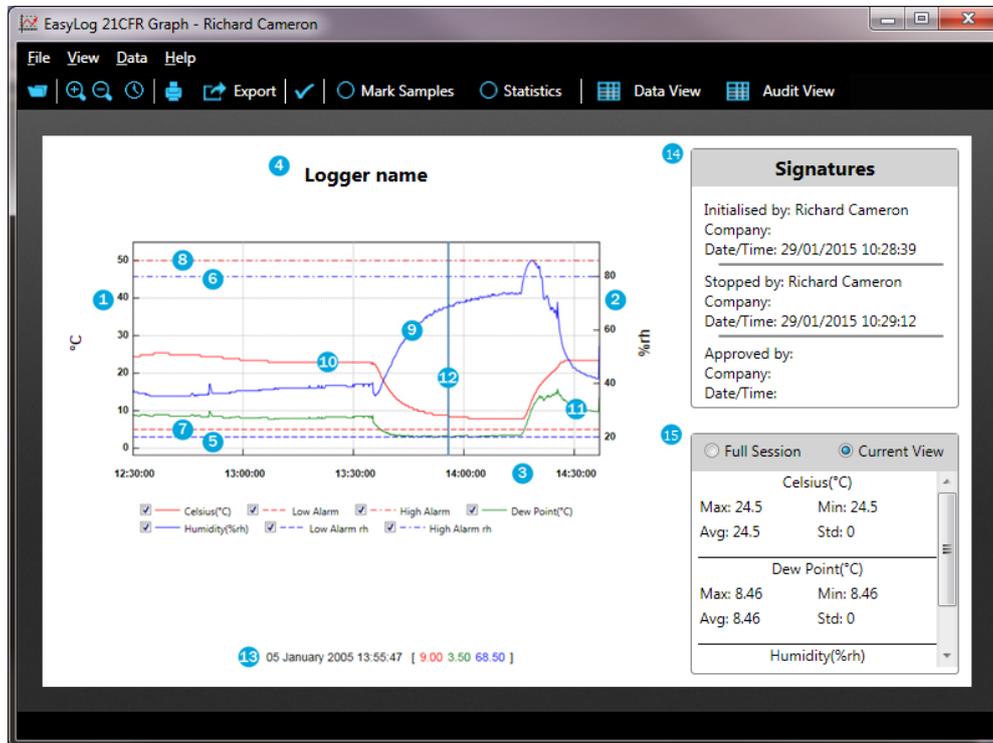
* If you do not choose a file name, then the EasyLog 21CFR software will attempt to save the data to a file with a name comprised of the logger name, serial number and logging session number.

Graphing

There are two ways to open the graphing program:-

- Clicking the red button on the main program screen stops the logging process, prompts you for a file name to save to and then opens up the graphing program to show the logged data as a graph.
- Clicking the blue button on the main program screen, which prompts you for a file name to open and then opens up the graphing program to show the previously saved data as a graph.

The graph shows the following information:-

1. The left hand vertical axis, including temperature scale and unit.
2. The right hand vertical axis, including humidity scale and unit.
3. The horizontal axis including time related information.
4. The data logger name.
5. The low humidity alarm trigger level, shown as a blue horizontal dashed line.
6. The high humidity alarm trigger level, shown as a blue horizontal dashed line.
7. The low temperature alarm trigger level, shown as a red horizontal dashed line.
8. The high temperature alarm trigger level, shown as a red horizontal dashed line.
9. Plotted humidity data, shown as a blue line.
10. Plotted temperature data, shown as a red line.
11. Plotted dew point data, shown as a green line.
12. Marker line, shown as a blue vertical line that follows the mouse pointer.
13. Marker line data, showing the data relevant to the current marker line position, or the logging period, if no marker line is shown.
14. Digital Signatures for the user(s) that started, stopped and approved the data.
15. Summary Statistics for the session data.

Traces:-

When graphing data, the image can get cluttered with multiple traces; up to 7 traces can be displayed depending on the logger type used. In order to reduce the clutter, individual traces can be turned off by clicking on *View - Show traces* and clicking on the listed trace name that you wish to switch off. Similarly, the trace can later be switched back on again by clicking on the same menu option. It is also possible to toggle traces on and off using the tick box at the bottom of the graph.

Grid lines:-

When graphing data, the image will by default automatically include horizontal (y-axis) and vertical (x-axis) grid lines to facilitate interpretation of the data. These lines can be turned off by clicking on *View - Grid Lines* and clicking on the horizontal or vertical grid line that you wish to switch off. Similarly, the grid lines can later be switched back on again by clicking on the same menu option.

Notes:
- The horizontal grid line will be aligned to specific values on the temperature axis, while any alignment with specific values on the relative humidity axis is merely coincidental.
- When plotting another graph, the graphing software will remember your grid line preferences. When exiting the graphing software, your grid line preferences are lost.

The toolbar shows the following buttons:-

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

Zoom in - Click 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 and no further zooming in is achieved.

Zoom out - Every time you click this button, the zoom level is decreased to the previous zoom level until, eventually, the minimum zoom level is reached and no further zooming out is achieved.

Zoom Date / Time – Clicking this will bring up a date and time picker to zoom the graph to a user specified range.

Print - Click this button to open the Print dialogue box.

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

Export – Automatically exports the saved data in to various formats:

CSV – Comma separated data for import in to spreadsheet applications.
JPEG – An export of the graph image only.
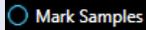PDF – Select either to export the data or graph image as a PDF.
EXCEL – A direct export of the graph and data to Microsoft Excel.
Summary Report – A pdf report with detailed information about the session including alarm durations and occurrences.

Approve / Unapprove - Click this button to add or remove the approval signature to the logging session. Once a session has been approved it is not possible to add further comments until it has been unapproved.

Mark Samples - Toggle this option to add markers for each logged reading.

Note: Marking samples when there are large numbers of readings may slow the software considerably.

Statistics - Toggle this option to show summary information for the logged data included Average, Minimum and Maximum values. If the graph has been zoomed in the software will prompt to show summary information for either the full data set or the data in the current view

Data View / Graph View – Toggle this to view the data in graphical or tabular format. If the graph has been zoomed in the software, the Data View will only show for the currently selected range. In Data View some of the software options are disabled.
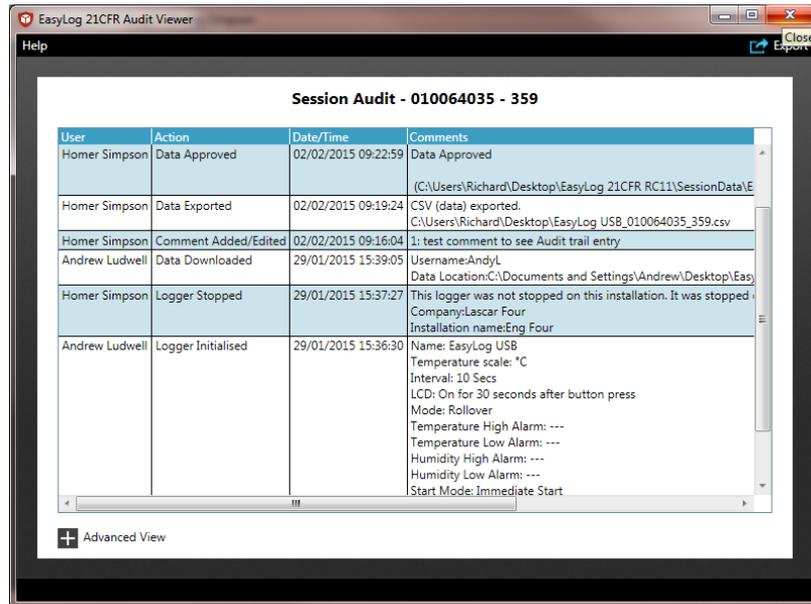
Audit View – Open the Audit View software to view a complete audit of all transactions involving the session data.

Help File Contents

Session Audit

The Session Audit provides a time-stamped audit trail for interaction with the specific logging session open in the graphing software.

Audit entries are shown for the following actions:
- Logger initialised
- Logger stopped
- Data downloaded
- Comments added to logging session
- Data exported
- Data approved
- Data un-approved

In most cases a comment will be added to the Audit entry to provide more detail on what happened.

It is possible to filter or sort the information by User, Action type, Date/Time. Clicking on the header line will sort the data in alpha/numeric order or filter by clicking on the filter icon.

Clicking on the Advanced View option shows the GUID references for each of the entries. This can help show when different installations of the software have been used to start or stop a logger or differentiate between users that have the same name.

It is possible to export the Audit trail to a PDF.

Help File Contents

View the Data Logger Status

Click on 'Options', then 'Current Status...' to display the current status of the Data Logger.
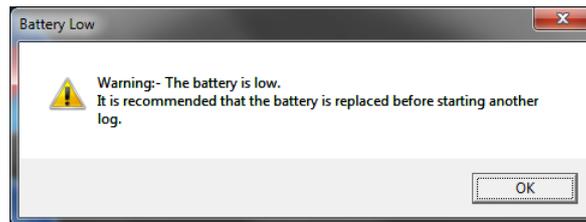
[Help File Contents](#)

Installing / Replacing the Battery

We recommend that a suitable, new battery is used if any low battery state is detected.

When the LEDs indicate that the battery inside the data logger is nearly empty, the battery should be replaced immediately. If a battery is completely discharged, all previously logged readings are stored securely inside the data logger, but no new readings are being taken.
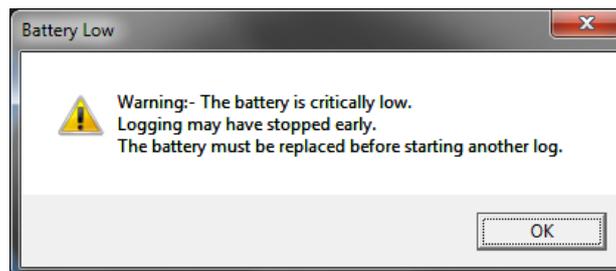
When communicating with the data logger, the PC will detect if the battery is in need of replacing.

1. The first state is a 'BATTERY LOW' warning.

The data logger will still work in this state but the battery has a very limited life.

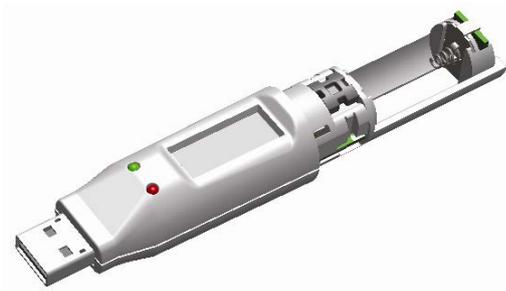2. The final state is a 'BATTERY CRITICAL' warning.

The data logger has stored any readings taken and safely shut itself down. No more readings will be logged and the battery MUST be replaced.

- Do not open, puncture, or mutilate the batteries
- Do not heat batteries or attempt to recharge them
- Do not use a fire to dispose of batteries
- Keep batteries out of reach of children
- Always remove old, weak, or worn-out batteries promptly and recycle or dispose of them in accordance with local regulations
- Remove the batteries if your device is to be stored for longer than a month without being used

To replace the battery, proceed as follows:

Use a small flat blade screwdriver to gently push down the tab, by moving the screwdriver in the direction of the arrow. Take care not to push the tab down too far, as this may damage the tab.

While the tab is pushed down, gently pull apart the two parts of the data logger enclosure.

Remove the old battery and dispose of it in accordance with local regulations. Observe warnings on the battery casing.

Fit a new 1/2AA battery of the same type, making sure it is fitted the correct way round and noting the polarity symbols moulded into the battery bay. Only use 3.6V 1/2AA lithium batteries. Before replacing the battery, remove the data logger from the PC. We recommend the following part:-

MANUFACTURER	BATTERY PART NUMBER
Tekcell	SB-AA02P

Slide the two parts of the data logger enclosure back together again, until a click is heard. This confirms that the two parts are snapped together correctly.

After the battery has been replaced, connect the data logger to your PC to download any data that may be stored from a previous exercise.

The data logger is now ready to be set up to start a new logging exercise.

The LCD

The LCD on the data logger provides information on the logging status of the unit at the touch of a button. The table below shows the various displays possible.
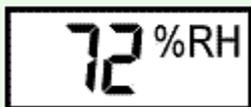
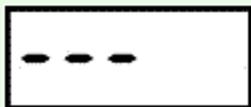|	
d5	The logger is in 'Delayed Start' mode and will begin logging at the time specified during setup.
P5	The logger is in 'Push-to-Start' mode and will start taking readings when the button is pressed.
lo9	When the LCD has been disabled (see Display and Logging Options), pressing the button will momentarily show 'log' to indicate that the unit is functioning correctly.
72 %RH	A reading with no 'triangle' annunciator before it indicates the latest logged reading for either temperature or humidity.
▲ **38 °F**	An upwards pointing triangle indicates this is the Maximum recorded reading.
▼ **16.5°C**	A downwards pointing triangle indicates this is the Minimum recorded reading.
PrOb	'Prob' followed by a letter or number indicates that the probe is not connected or has an error. Check the connection and the display should update when the next reading is taken. Only applicable to EL-21CFR-TP-LCD models.
- - -	The logger is in a 'stopped' condition.

Help File Contents