

REDLINK-3

Communications Software for PU Monitors

Operating manual

November 2013

REDPOST

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Introduction

Redlink-3 software allows you to transfer recorded data from Redpost PU Monitors into a PC. The software can be used with either the Redpost RPC-80 printer/charger or the Redpost RPC-50 battery charger. Either of these can act as a link between the PC and a PU Monitor.

The RPC-80 links to all types of Redpost PU monitor. The RPC-50 links to Redpost PU monitors type RPU-120+, RPU-351, RPU-352 and RPU-353.

Once transferred to the PC the recorded data can be saved and the archive can be sorted and viewed. Graphs and tabulated lists of each file can be viewed and printed. The data can also be saved in a format compatible with various spread-sheet programs.

Connections

Use with Redpost RPC-80

IMPORTANT: *The RPC-80 must have software version [p] or later installed for Redlink-3 to function with it. The version letter is shown on the RPC-80's display at switch on. Upgrade kits are available from Redpost.*

You can use Redlink-3 software with the RPC-80 to link all types of Redpost PU monitor to a PC. The data lead type RED 80-PC connects between the connector on the RPC-80 and the serial port of the PC.

You should adjust the RPC-80 communications settings to:
9600 baud, 8 bit, 1 stop, no parity, soft handshake.

These are the original factory default settings. See the RPC-80 configuration manual (Manual-2) for the adjustment details.

Use with Redpost RPC-50

You can use Redlink-3 software with the RPC-50 to link Redpost PU monitors type RPU-120+, RPU-351, 352 and 353 to a PC. The data lead type RED 80-PC connects between the connector on the RPC-50 and the serial port of the PC. If necessary use the 9-way adapter supplied.

There are no communications settings to make.

USB Interface

The RPC-50 and RPC-80 do not support the USB interface and must be used with a serial port. Some computers have no serial ports. In that case you can obtain a device to convert a USB port into a serial port. Follow the instructions supplied with the converter to set up a virtual serial port and then use it to communicate with Redlink-3.

Settings

For all Redpost equipment the final output device dictates all settings for PU calculation, date and time. Therefore, when connecting to a PC the settings and clock in the PC take priority when results are displayed or printed by the PC.

Redlink-3 recalculates the results from the raw data based on values you choose when setting up the software. The clock in the PC is also used as a reference for the file timing. These features make it easy to maintain a plant-wide standard for PU calculations and the date & time and to change those standards without making modifications to all the monitors. When using PU monitors with Redlink-3 you must be aware that different standards for PU calculation (including PU cut-off temperature) may apply to the results shown on the PC and those displayed directly by the monitors.

Display units

Redlink-3 will display all records, results etc. in the same units regardless of any settings in the individual PU monitors. The default units are **Celsius °C** for temperature and **bar gauge** for pressure, but you can select your preferred units in the *Configuration Window*.

See [Configuration Window](#).

System requirements

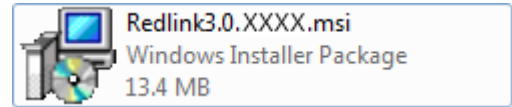
To install and run Redlink-3 you require at least:

- .NET Framework 4
- 800MHz processor
- 512 MB RAM
- 1024 x 768 screen resolution
- 200 MB hard drive space
- A DirectX 9 capable graphics adapter
- Redpost RPC-50 or Redpost RPC-80 with software version [p] or later

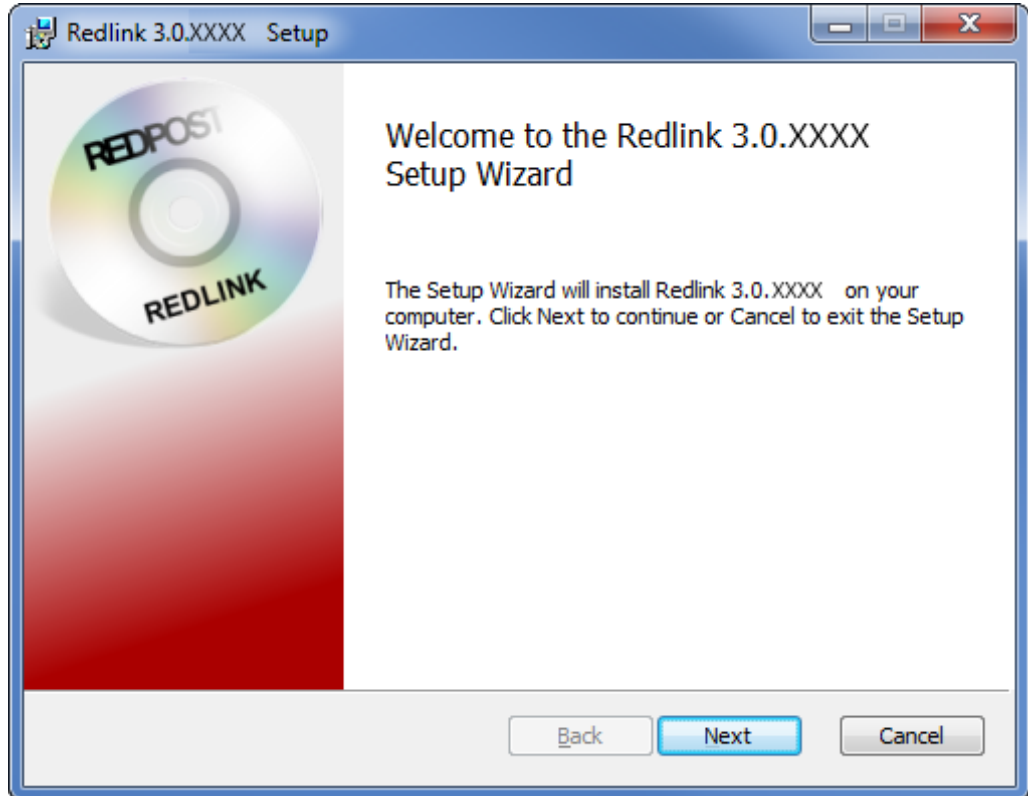
Redlink-3 has been tested for use on:

- Microsoft™ Windows XP™ SP3 (32bit)
- Microsoft™ Windows Vista™ (32/64bit)
- Microsoft™ Windows 7™ (32/64bit).

Installation



Locate the installation file **Redlink<version number>.msi** and double click.



The Installation Wizard will guide you through the installation process.

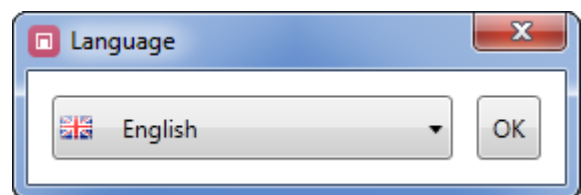
Using Redlink 3

Set up



Switch on your PC and ensure that the Redpost RPC-80 (or RPC-50) is connected to the mains and switched on. Start Redlink-3 by clicking the icon on the Windows desktop.

First Run



If Redlink-3 is newly installed you will first be asked for your preferred language, this will only be asked the first time Redlink-3 is run but can be changed at anytime from the *Configuration Window*.

As this is the first time you have run Redlink-3 you should proceed to the *Configuration Window* to set up the way that Redlink-3 will work.

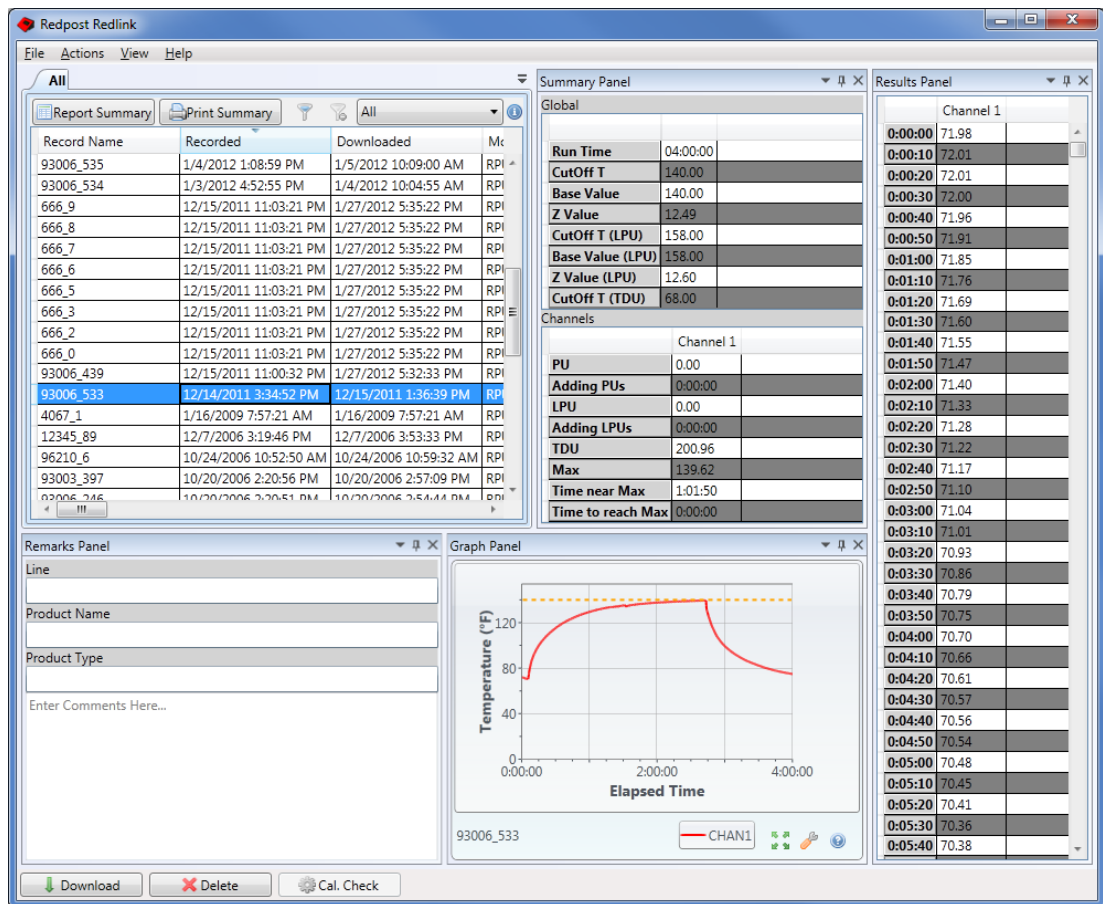
See [Configuration Window](#).

Importing from Redlink-2

Redlink 3 can import Redlink-2's data files. Select *Import* from the *File Menu*, this will prompt for the location of your Redlink-2 .rdf files. You may select one or multiple files. The files will be copied into Redlink-3's Data Folder and converted into .rdfx files. The original Redlink-2 files are not altered.

See [File Menu](#).

Main Window



The *Main Window* is split into 5 different “panels” each displays a selection of information from a stored record.



Most panels can be rearranged, closed or hidden so that the *Main Window* can be customised for your work flow.

1) Record List Panel

This panel displays a list of stored records along with a selection of data from each record.

2) Summary Panel

This panel shows calculated values from the selected record.

3) Results Panel

This panel shows raw temperature & pressure values for the selected record.

4) Remarks Panel

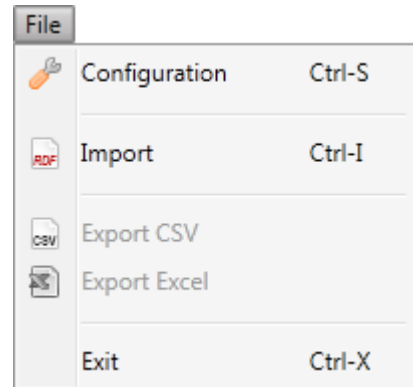
This panel allows you to add comments and additional information to the selected record.

5) Graph Panel

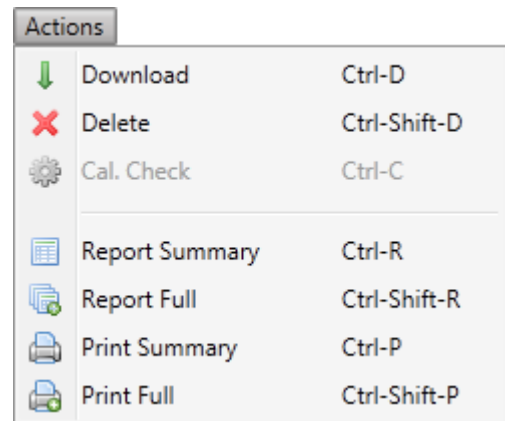
This panel displays a graph of temperature and pressure for the selected record.

Menus

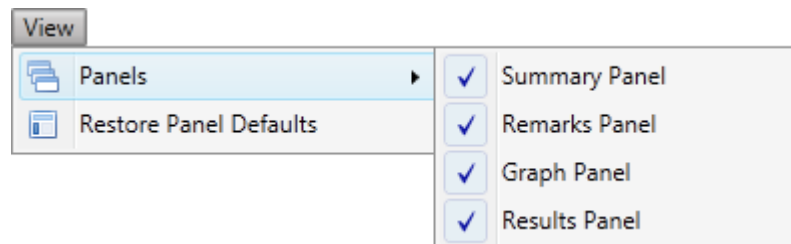
File Menu



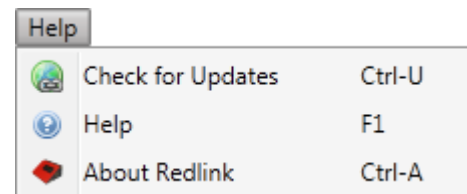
Actions Menu



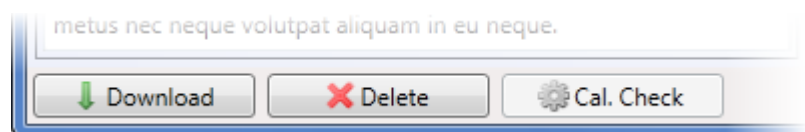
View Menu



Help Menu



Action Buttons



At the bottom of the Main Window are several action buttons, these are the equivalent of selecting the same option in the *Actions Menu*

Transferring data from a PU monitor

To read data from a Redpost PU monitor connect the monitor to the RPC-80 or RPC-50 using Redpost lead RED80-100/200.

See [Use with Redpost RPC-80](#).

See [Use with Redpost RPC-50](#).

Choose *Download* from the *Action Buttons* or from the *Actions Menu*.

The RPC-80 will show a message that it has sensed a monitor connected to its input. If the RPC-80 has Calibration Checking enabled (See RPC-80 Manual-2) you will need to either perform the calibration check, or dismiss the request before you can transfer data from the monitor. When the RPC-80 is ready the prompt "PRINT" will appear on the display.

If you are using an RPC-50 no preliminary action is needed.

The *Progress Window* will show the status of the transfer. For instruments such as the RPU-242, RPU-352 & RPU-353 there may be more than one file to transfer. Redlink-3 transfers these all at once and the progress bar displays the completion status for all files.

See [Progress Window](#).

When all files are transferred exit the *Progress Window* by clicking *Close*. This step can be automated from the *Configuration Window*.

See [Configuration Window](#).

Newly downloaded or altered records are highlighted in Yellow in the *Record List* for several seconds.

Deleting files from your monitor

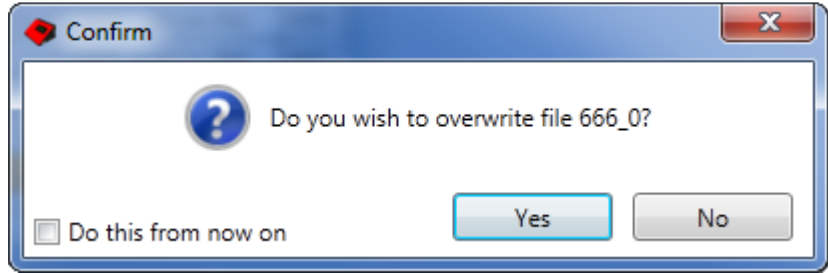
After transfer to the PC, remember to delete the file(s) in the monitor if you no longer need them.

The RPU-200 series, RPU-352 and 353 monitors are capable of storing more than one file. If you have transferred files from these monitors then you have to delete them from the monitor before you can record again. Refer to the monitor's manual for more information.

When using an RPC-50 with an RPC-120+ or RPU-300 series monitor you can select *Delete* from the bottom of the *Main Window* or from the *Actions* menu. If not using one of the above combinations you will have to delete files manually.

On 100 and 200 series monitors switch the monitor off (see monitor manual). On an RPU-120+ (RPU-351) monitor hold the actuator over the on/off button and wait until the display confirms that the file has been erased.

Repeatedly transferring data from a PU monitor



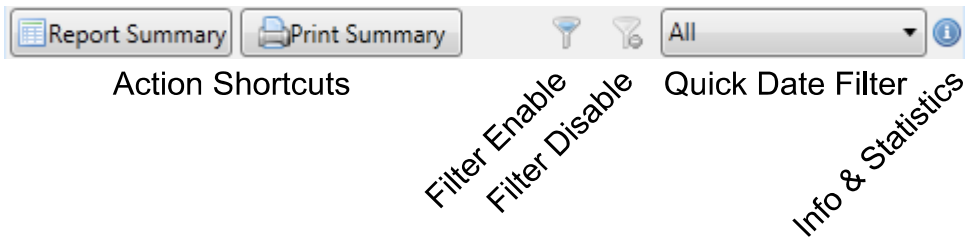
Redlink checks each file to see it has been previously transferred, if so Redlink will prompt you to overwrite. This prevents accidental overwriting of any remarks that you might have added.

See [About file numbers](#).

Record List Panel

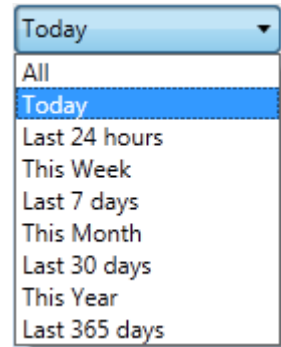
Record Name	Recorded	Downloaded	Monitor Type	Monitor	Product Name	Product Type
96425_284	9/5/2012 9:37:47 AM	9/5/2012 3:05:05 PM	RPU-352	96425		
96425_283	9/4/2012 5:14:48 PM	9/5/2012 3:05:05 PM	RPU-352	96425		
E219_1	9/4/2012 1:50:57 PM	9/4/2012 3:50:57 PM	RPT-122	E219		
96425_282	8/23/2012 11:49:13 AM	8/24/2012 12:58:14 PM	RPU-352	96425		
93522_575	8/23/2012 9:24:26 AM	8/23/2012 10:28:10 AM	RPU120+	93522		
12345_7	6/17/2012 4:56:56 PM	7/30/2012 11:28:57 AM	RPU-363	12345		
12345_6	6/17/2012 4:56:56 PM	7/30/2012 11:28:57 AM	RPU-363	12345		
96425_280	6/12/2012 3:36:33 PM	8/7/2012 10:30:40 AM	RPU-352	96425		
4068_1	3/6/2012 1:39:07 PM	3/6/2012 12:43:49 PM	RPU-120	4068		
4068_3	3/6/2012 1:26:44 PM	3/6/2012 12:31:10 PM	RPU-120	4068		
4068_2	3/6/2012 1:26:05 PM	3/6/2012 12:30:17 PM	RPU-120	4068	My Product	Typical Beverage
4068_0	3/6/2012 10:26:09 AM	3/6/2012 11:24:01 AM	RPU-120	4068	Product Two	Product 3
12345_8	1/23/2012 2:30:21 PM	1/23/2012 2:32:42 PM	RPU-353	12345	My Product	Typical Beverage
666_1	1/19/2012 10:19:57 PM	3/2/2012 4:51:58 PM	RPU-353	666		
666_4	1/19/2012 8:17:25 PM	3/2/2012 2:49:26 PM	RPU-353	666		
12345_5	1/12/2012 10:23:41 AM	1/16/2012 5:34:22 PM	RPU-353	12345		
12345_3	1/5/2012 11:57:00 AM	1/16/2012 5:34:22 PM	RPU-353	12345		
93006_535	1/4/2012 1:08:59 PM	1/5/2012 10:09:00 AM	RPU120+	93006		
93006_534	1/3/2012 4:52:55 PM	1/4/2012 10:04:55 AM	RPU120+	93006		
666_9	12/15/2011 11:03:21 PM	1/27/2012 5:35:22 PM	RPU-353	666		
666_8	12/15/2011 11:03:21 PM	1/27/2012 5:35:22 PM	RPU-353	666		
666_7	12/15/2011 11:03:21 PM	1/27/2012 5:35:22 PM	RPU-353	666		
666_6	12/15/2011 11:03:21 PM	1/27/2012 5:35:22 PM	RPU-353	666		
666_5	12/15/2011 11:03:21 PM	1/27/2012 5:35:22 PM	RPU-353	666		
666_3	12/15/2011 11:03:21 PM	1/27/2012 5:35:22 PM	RPU-353	666		
666_2	12/15/2011 11:03:21 PM	1/27/2012 5:35:22 PM	RPU-353	666		
666_0	12/15/2011 11:03:21 PM	1/27/2012 5:35:22 PM	RPU-353	666		
93006_439	12/15/2011 11:00:32 PM	1/27/2012 5:32:33 PM	RPU-353	93006		

Record List Toolbar



Filtering Data

You can choose the records that are displayed by selecting from the *Quick Date Filter* drop-down. NOTE it is the *recording* date that is important, not the date that you transfer the files ^{*}.



Setting	Displays...
All	All records
Today	Recorded since 00:00
Last 24 hours	Recorded in last 24 hours
This Week	Recorded on or since Monday**
Last 7 days	Recorded in the last 7 days
This Month	Recorded on or since the 1 st of the Month
Last 30 days	Recorded in the last 30 days
This Year	Recorded on or since the 1 st of January
Last 365 days	Recorded in the last 365 days

* Except RPU-120, RPU-122 and RPT-122.

** First day of the week is selectable in the Configuration Window

Advanced Filtering

The *Advanced Filter Window* allows a fine-grained control over filtering allowing you to filter singly or in any combination by:

- Date Recorded
- Time Recorded
- Product Name
- Line

Open the *Advanced Filter Window* by selecting the *Filter Enable* icon from the *Record List Toolbar*.

See [Record List Toolbar](#).

If you require more complicated filter rules then you may *Export* the data to a spreadsheet program and create your own filter rules.

See [Exporting results](#).

Sorting Data

By clicking the heading of the columns in the *Record List Panel* you can sort it according to the chosen column. Up to three columns can be used to sort the data, with the most recently selected column being the main sorting criteria and previous selections being sub-criteria.

Reordering the Record List

By dragging the heading of the columns in the *Record List Panel* you are able to reorder the columns to put the information you need most in view. Right clicking anywhere on the *Record List* brings up a list of the columns from the *Record List* with checkboxes, unchecking the boxes will remove the column from the *Record List*.

Statistics, Sort & Filter status

In the top right of the *Record List Toolbar* is an information icon. Hovering over this icon will show you information on the current state of sorting, filtering as well as some basic statistics on the visible records.

Showing	29 of 55
Sorting	Recorded ↓, Line ↑, Record Name ↓
Filtering	Advanced Filter
Statistics	PU(CHAN1) Mean: 61.79, SD: 133.21 PU(CHAN2) Mean: 1.79, SD: 5.24 Max(CHAN3)(bar) Mean: 11.000, SD: 3.46

Viewing the results

Select the record you want to view by clicking on its row in the *Record List*. The other panels now populate with the data from the selected record.

Viewing, Printing and saving your results

From the *Actions Menu* or the *Record List Toolbar* you have the choice to view either the full results list or just a summary of the results. NOTE: long recordings will need several pages to show the full results.

Click either “*Report Full*” or “*Report Summary*”. The *Print Preview Window* will open. From here you can choose to send your results to a printer or to save them as a report that can be viewed later.

You also have the option to select “*Print Full*” or “*Print Summary*” which will skip the *Print Preview Window* and print immediately to the system’s default printer.

Exporting results

You can also save your results in a form that can be read by a spreadsheet program such Microsoft™ Excel™. The “*Export Excel*” option in the *File Menu* allows you to save your file as an Excel .xls file which can be opened with Microsoft™ Excel™, OpenOffice™, LibreOffice™ etc.

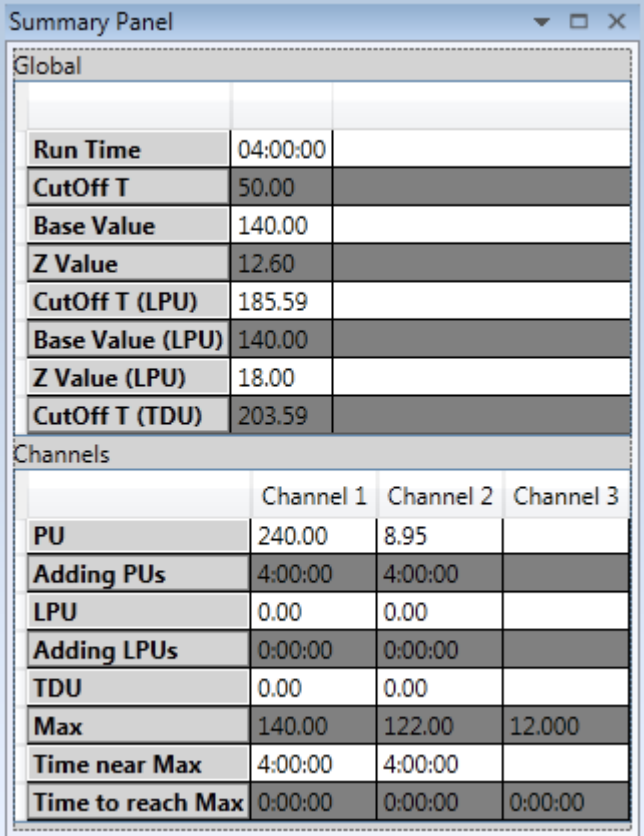
The “*Export CSV*” option in the *File Menu* allows you to save your file as a Comma Separated Variable .csv file type which is a format common to many spreadsheet programs.

About file numbers

All Redpost PU monitors except RPU-120, RPU-122 and RPT-122 create a unique number for every recording run. The number is made up from two parts. The first part is the monitor’s serial number and the second part is an incrementing number that the monitor creates each time it does a recording. Redlink checks each file to ensure it has not been transferred previously.

In the case of the RPU-120, RPU-122 and RPT-122 the first part of the file number is the monitor serial number, but Redlink generates the second part from a running number that it stores. This means that for these monitors repeatedly downloading a file will result in duplicate files with different file numbers.

Summary Panel



The Summary Panel window is divided into two main sections: Global and Channels. The Global section contains a table with 10 rows of parameters. The Channels section contains a table with 10 rows of parameters across three channels.

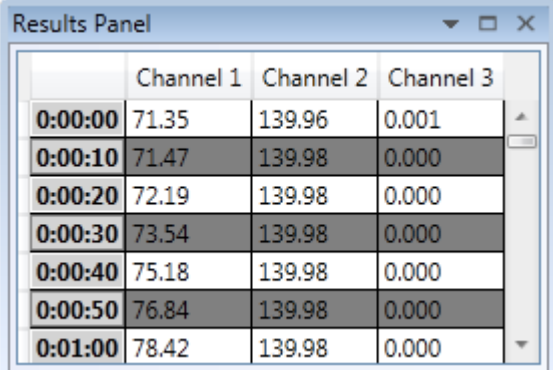
Global		
Run Time	04:00:00	
CutOff T	50.00	
Base Value	140.00	
Z Value	12.60	
CutOff T (LPU)	185.59	
Base Value (LPU)	140.00	
Z Value (LPU)	18.00	
CutOff T (TDU)	203.59	

Channels			
	Channel 1	Channel 2	Channel 3
PU	240.00	8.95	
Adding PUs	4:00:00	4:00:00	
LPU	0.00	0.00	
Adding LPUs	0:00:00	0:00:00	
TDU	0.00	0.00	
Max	140.00	122.00	12.000
Time near Max	4:00:00	4:00:00	
Time to reach Max	0:00:00	0:00:00	0:00:00

The top part of the *Summary Panel* provides general information about the selected record as well as the parameters used in PU calculation.

The bottom part provides channel by channel information. Where a value is not available for that channel it will appear blank.

Results Panel



The Results Panel window displays a table of raw measurements for three channels over a period of one minute. The first column shows the timestamp, and the next three columns show the measurements for Channel 1, Channel 2, and Channel 3.

	Channel 1	Channel 2	Channel 3
0:00:00	71.35	139.96	0.001
0:00:10	71.47	139.98	0.000
0:00:20	72.19	139.98	0.000
0:00:30	73.54	139.98	0.000
0:00:40	75.18	139.98	0.000
0:00:50	76.84	139.98	0.000
0:01:00	78.42	139.98	0.000

The *Results Panel* shows the raw temperature and pressure measurements for each channel along with their timestamp. This information is required less frequently and so it is recommended that this panel is closed or hidden.

Remarks Panel



The image shows a window titled "Remarks Panel" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains four input fields stacked vertically. The first field is labeled "Line", the second "Product Name", and the third "Product Type". The fourth field is a larger text area with the placeholder text "Enter Comments Here...".

The *Remarks Panel* allows you to enter extra data about the selected record; this data is saved inside the file on disk. There are 4 sections:

Line – The production line where the recording was taken. If this installation of Redlink is only used on one line then you may choose to leave this blank or set a default value for this field in the *Configuration Window*.

See [Configuration Window](#).

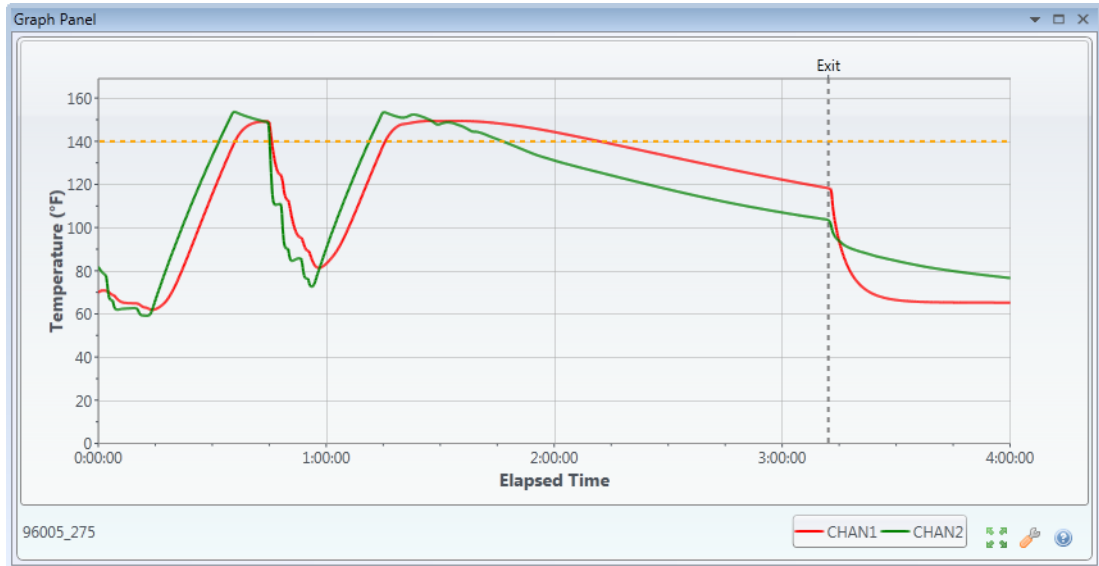
Product Name – The name of the product under test. The *Record List* can be filtered on this data in the *Advanced Filter Window*.

See [Advanced Filtering](#).

Product Type – The type of beverage “Alcoholic”, “Non-Alcoholic” etc.






Free Comments – Here you can write multiline comments. This can be used to make a note about any special circumstances that occurred during this recording such as a line hold up or power cut.

Graph Panel



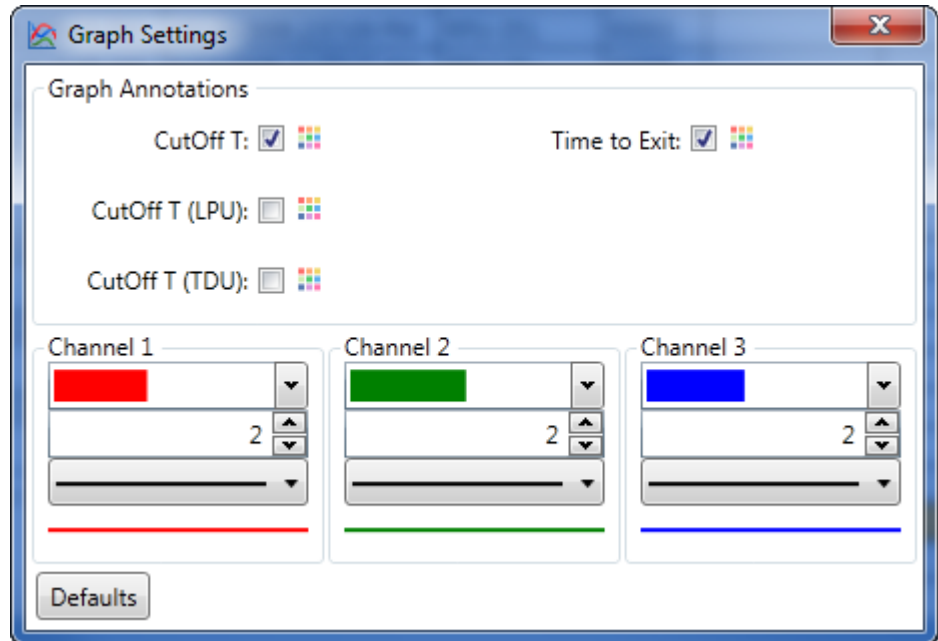
The *Graph Panel* gives you a visual display of the raw temperature and pressure data. This can be useful to identify problems within the pasteuriser.

Zoom by dragging a box with the mouse or by using the Ctrl key with the mouse wheel. Double click to reset the zoom. Pan using the middle mouse button

	Make the graph full-screen
	Access the <i>Graph Settings Window</i>
	Hover to display Graph Help
 *	Save an image of the graph to disk
 *	Copy an image of the graph to the clipboard

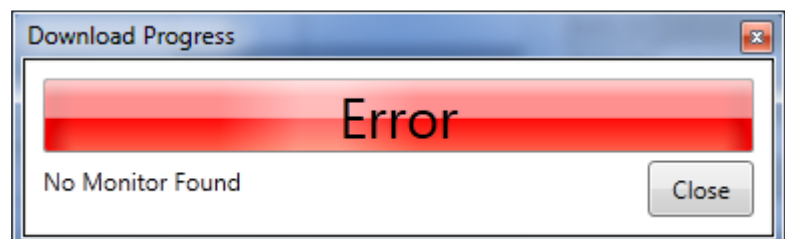
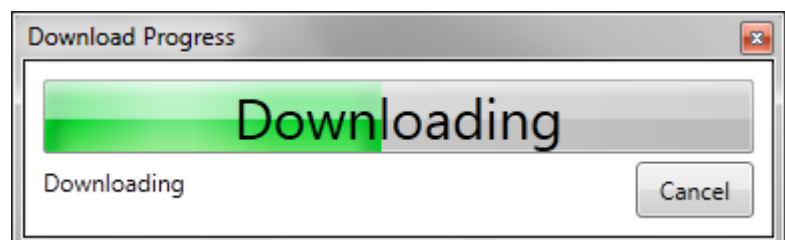
*Only available in right click menu

Graph Settings Window



The *Graph Settings Window* allows you to change the display style of lines in the graph. It also allows you to enable or disable different graph annotations and change the display style. The display style includes the colour, width and dash type.

Progress Window



The *Progress Window* appears when downloading or deleting records. It will show the status of the download and any errors that occur.

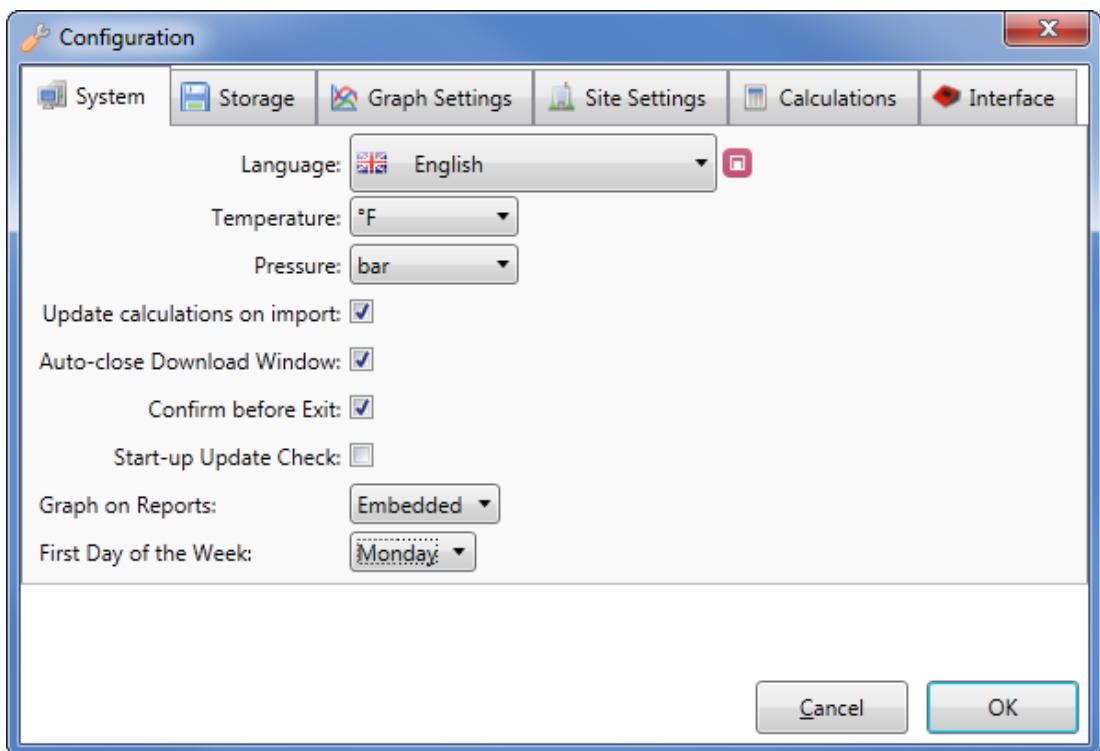
Configuration Window

The *Configuration Window* enables you to set various items that will be used by Redlink to store your data files, perform PU calculations and select the language that Redlink uses.

The window is split into several 'tabs' that can be selected by clicking one of the tab headers at the top of the window.

When finished, save your changes by clicking *OK*, Redlink will momentarily close and then automatically restart with your new settings. If you instead choose to click *Cancel* or to close the window you will be returned to Redlink 3 without any changes to settings.

System



Language

Select your preferred language from the list of languages in the dropdown.

Temperature & Pressure

Select your preferred units of measurement here

Temperature:

- °C
- °F

Pressure:

- **bar**
- **kPa** – Kilo pascals
- **PSI** – Pounds per Square Inch

Update calculations on Import

When importing records from Redlink-2 some calculated values may be missing, when enabled this option recalculates all calculated values during the import process.

See [Importing from Redlink-2](#).

Auto-close Download Window

Use this option to automatically close the *Progress Window* after a successful download.

Confirm before Exit

Use this option to be asked for confirmation before closing Redlink.

Graph on Reports

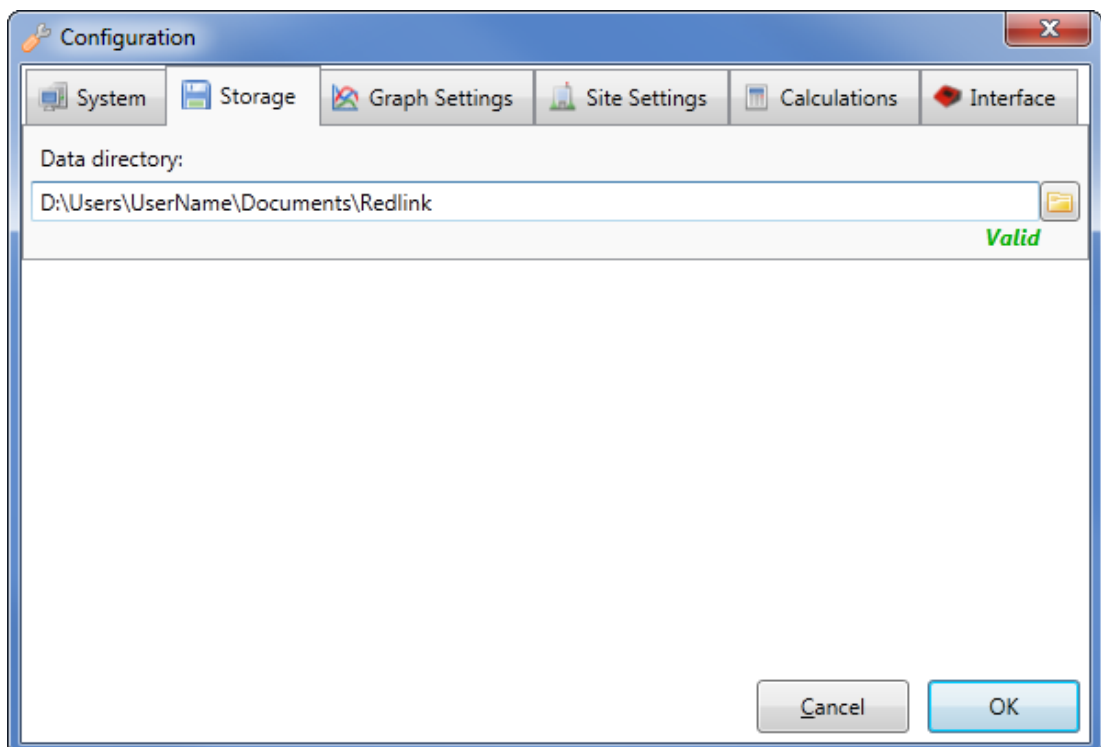
Printed reports can include a copy of the graph; use the drop down to select:

- *None* – No Graph is included with Reports
- *Embedded* – A small graph is included on the summary page
- *Full Page* – A full page graph is included as a separate page

First Day of the Week

Use this option to select the first day of your working week.

Storage



When installed Redlink will have created a data folder on the PC to hold all your downloaded records.

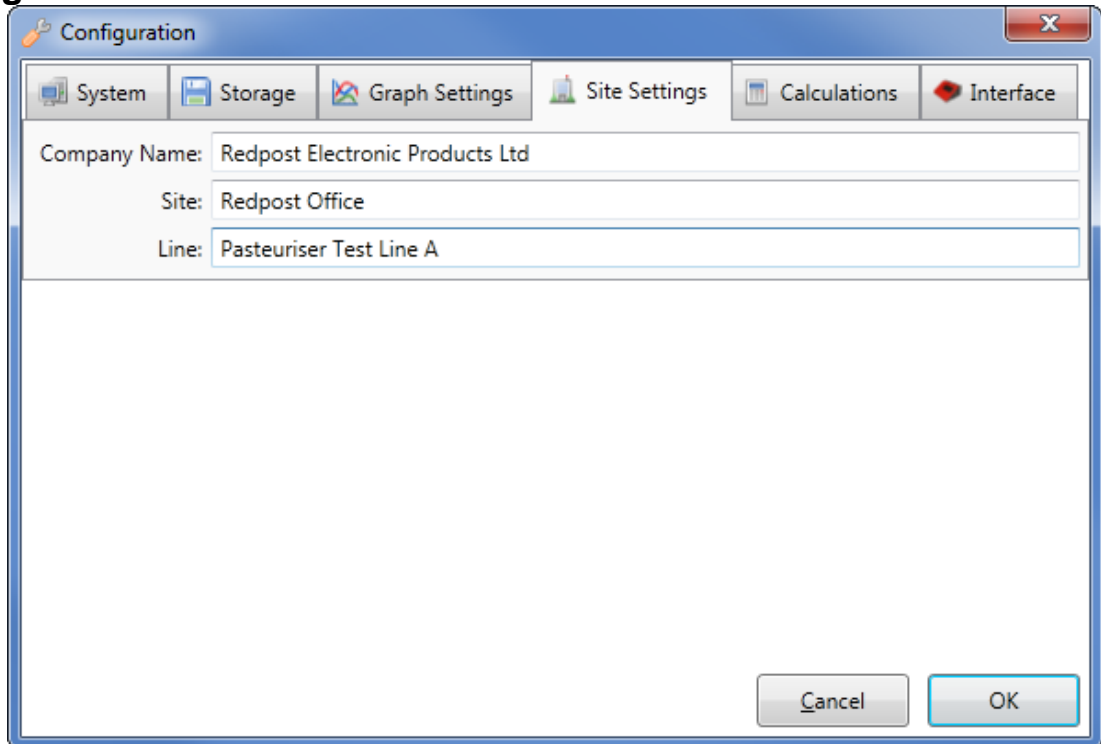
See [Installation](#).

If you wish to change the location of this folder you can do so from this tab.

Graph Settings

See [Graph Settings Window](#).

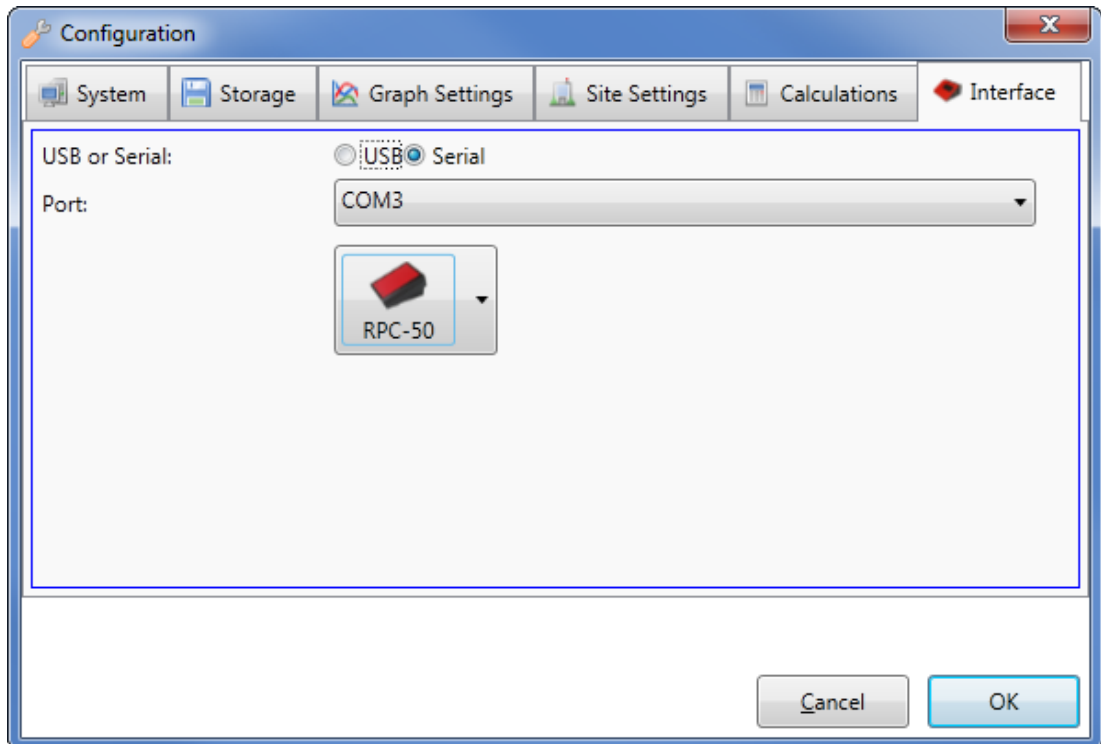
Site Settings



The image shows a screenshot of a software configuration window titled "Configuration". The window has a blue title bar with a close button (X) in the top right corner. Below the title bar is a tabbed interface with six tabs: "System", "Storage", "Graph Settings", "Site Settings", "Calculations", and "Interface". The "Site Settings" tab is currently selected and active. Inside this tab, there are three text input fields. The first field is labeled "Company Name:" and contains the text "Redpost Electronic Products Ltd". The second field is labeled "Site:" and contains the text "Redpost Office". The third field is labeled "Line:" and contains the text "Pasteuriser Test Line A". At the bottom right of the dialog box, there are two buttons: "Cancel" and "OK".

This tab allows you to set default values for Company Name, Site and Production Line. These will be printed on reports.

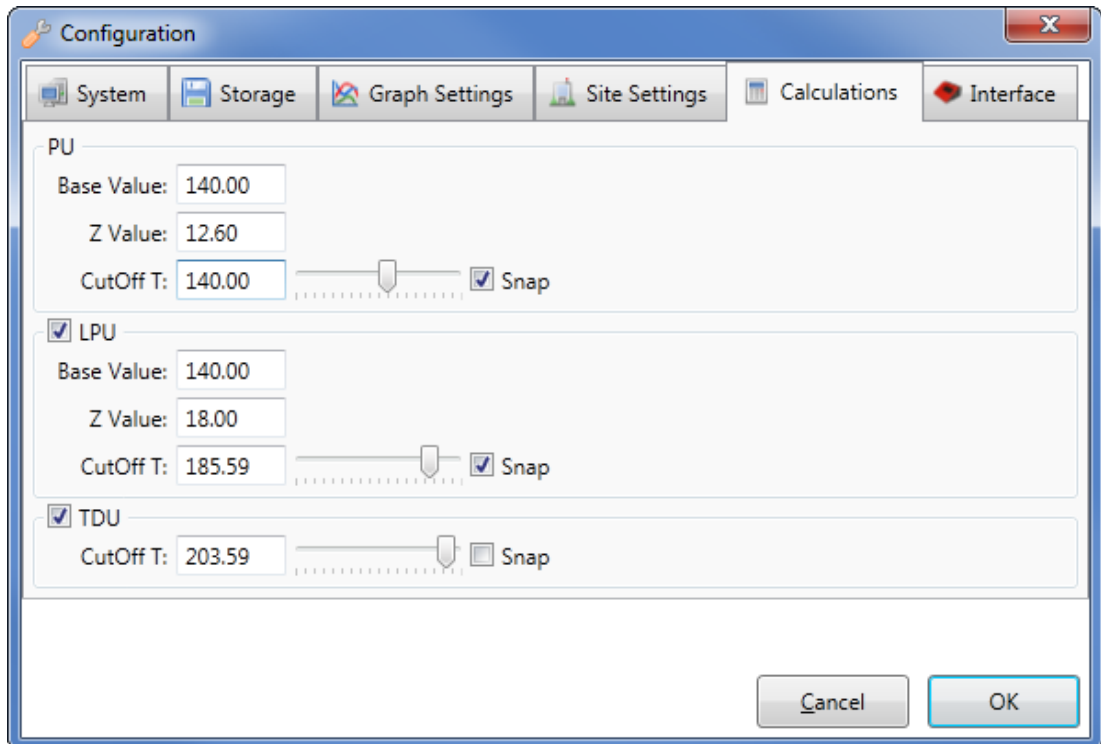
Interface



Use the Port dropdown menu to select the serial port that the RPC-50 or RPC-80 is attached to.

Select the type of interface from the drop down menu, if the setting is wrong then Redlink will still work but may be slower than with the correct setting.

Calculations



This tab allows you to change the way in which Redlink calculates PU values according to the settings of Base Value, Z Value and PU cutoff.

Remember that if you change these settings then the PU values that Redlink calculates may be different from those shown on the monitor or on the RPC-80 print-out.

PU Background

The Pasteurisation Unit (PU) is defined as relating to the sterilising effect observed when the product is held for one minute at a temperature termed the Base value. At this temperature therefore, 1 PU per minute is achieved.

Experiments on various mixtures of the common brewery biological contaminants showed that at temperatures over about 50°C there is an approximately ten-fold increase in sterilising effect for every 7°C increase in temperature. For example, if the time required to kill a population of micro-organisms at 60°C is found to be 5 minutes then if the temperature were to be increased to 67°C the time required would be only 0.5 minutes. The increase in temperature required to produce a ten-fold increase in kill rate is termed the Z value. The Z value in this case is therefore 7°C.

For beer the PU is normally defined by a Base value of 60°C and a Z value of 7°C. The same definition is often used for soft drinks and other beverages. Where there is any possibility of spore-forming bacterial contamination being present (for example in tomato juice) very much higher temperatures are required for pasteurisation. In these situations the definition of Base value 80°C and Z value 10°C is often used. Other definitions are also in use outside the brewing industry.

At product temperatures below about 50°C it is doubtful that any significant sterilising effect is achieved even though from a strictly mathematical point of view the correct PU total could still be obtained, given enough time in the pasteuriser. For this reason it is desirable to set a temperature level below which no PUs are added to the total calculated by a PU monitor. This is termed the PU cut-off temperature.

Set the PU cut-off temperature at least 5°C lower than the planned product temperature in the holding zone of the pasteuriser. Higher values will give a very conservative figure for PU achieved and will reduce the repeatability of the result because the product temperature will be changing only slowly as it crosses the cut-off temperature threshold. For beer the cut-off is not normally set below 50°C.

PU cut-off temperature

You can change the cut-off temperature in steps of 0.01°C. Popular settings for beer are 50°C and 55°C.

PU calculation – Base

You can change the Base value in steps of 0.01°C. Redlink provides shortcuts for Base values of 60, 70 or 80°C. The normal setting for beer is 60°C.

PU calculation – Z

You can change the Z value in steps of 0.01°C. Redlink provides shortcuts for Z values of 6.94*, 7 or 10°C. The normal setting for beer is 7°C.

*Note that 6.94°C is equivalent to a value of 12.5°F : a value often used in American text books.

LPU

Lethal PUs are used by some brewers and bottlers as an extension to the PU system. Rather than having just one PU Cutoff value, under this system there are Total-PU values and Lethal-PU values. The Total-PU cutoff would be set at say 55°C and the Lethal-PU cutoff at 65°C the PU Monitor would then give the two PU results.

The common reason for using this methodology is as a backup to ensure that the product has completed the expected temperature curve. With some resilient microorganisms the temperature curve is important and the product must be above the Lethal Cutoff for a certain time to ensure stability.

Redlink allows you to set calculation values for LPUs entirely independently from PUs.

TDU

*Thermal Degradation Units or Taste Degradation Units.
Sometimes called Flavour Degradation Units or FDUs.*

Thermal Degradation Units give a measure of the amount of flavour change that has been caused by the pasteurisation process. Flavour degradation is produced as a result of chemical reactions within the product. It is generally accepted that chemical reactions occur twice as fast for each increase of 10°C. From the flavour degradation point of view it is better to achieve the PU target by using a higher temperature for a shorter time.

Redlink allows you to alter a cutoff where below that temperature no TDUs are accumulated.

Troubleshooting

If you are getting error messages from Redlink first check that the Redpost equipment (RPC-80 or RPC-50) is connected to the mains and switched on. Then check that the connecting lead is firmly plugged in at both ends.

If you are using a Redpost RPC-80 verify that it has software version [p] or later. The version letter is shown at start-up on the RPC-80 display as a letter enclosed in square brackets [].

RPC-80 Cal-check

If you are connecting to PU monitors via the RPC-80 then the RPC-80 may be waiting for you to choose whether or not to perform a Cal-check. This depends on the setting you have made in the RPC-80. You can't download data until you have answered this question and the "PRINT" prompt is showing on the RPC-80.

100 series monitors

If you are connecting to the older 100 series PU monitors via the RPC-80 then the whole file may take several minutes to transfer into the RPC-80. During this period the ON/OFF light on the monitor will be permanently lit. You must wait until the ON/OFF light is flashing again before beginning to download.

The 100 series monitors are models RPU-120, RPU-122 and RPT-122.

Data Lead

You may be using the wrong data lead to connect to the PC. There are several similar looking PC leads available for various functions. Use only the lead supplied with Redlink which will be marked "RED 80-PC".

Communication Port

You may have plugged the data lead into the wrong socket on the PC. The physical socket number must match the Communication Port number you chose on the Configuration Screen. Use the Windows "Device Manager" to check which ports are available on your system.

If using a USB to Serial converter then you may need to unplug and reinsert the USB lead, this is usually a problem with the drivers provided with the converter, check you have the latest version.

RPC-80 Baud Rate

You may have set the RPC-80 to the wrong baud rate etc. See the RPC-80 Configuration manual section on "EXTERNAL LINK SETUP".

RPC-80 Handshake

You may have set the RPC-80 to the wrong handshake for the type of cable you are using. On some cables the RTS and CTS lines are not included; in this case the RPC-80 must be set to SOFT handshake. See the RPC-80 Configuration manual section on "EXTERNAL LINK SETUP".

PU's appear incorrect

The PU results calculated by Redlink may be different from those displayed by the monitor, or printed by the RPC-80. The reason for this will be one or more of the calculation constants - Cut Off temperature, Base or "Z" has been set differently in Redlink from the values in the monitor or the RPC-80.