SPC *Pulse*
USER MANUAL

WWW.SPCLOGGERS.COM

CONTENTS PAGE

INTRODUCTION

The three channel **SPC *Pulse*** is the world's first pulse logger designed specifically for energy and carbon management. Its unique 'auto-sensing' inputs make for foolproof hook-up even onto polarised meter outputs, and its dedicated software package 'PowerPackPro' is perfectly tailored for the job. Its connection cables convert easily to mate with ‘meter specific’ sockets, and Elcomponent keep all the commonly encountered cable types in stock. The unit is small, light and compact, but also tough enough to withstand years of professional use.

The **SPC *Pulse*** is suitable for logging any kind of meter, measuring any utility (gas/water/electricity etc). However, connecting to meter pulse outputs is not always straightforward, because many types use an 'electronic' as opposed to ‘electromechanical’ output style. The electronic output is usually polarised so the operator has to ensure the logger is connected the 'right way round' or no pulses will be detected. This can be difficult to assess with a non-intelligent logger, but with the **SPC *Pulse*** it's easy. The unit automatically detects the meter output polarity and automatically adjusts its own polarity to suit. Its detection circuits are highly sensitive so it can be used on all kinds of pulse output even where short duration or high contact resistance would normally cause problems.

The unit features a rechargeable Li-Ion battery for maximum survey length and minimum recharge times, whilst remaining light and compact. Surveys of up to six weeks are no problem with the **SPC *Pulse***. The unit looks the part too… housed in a weather resistant piano black 'Peli' case it comes in a neat zip-up pouch complete with a set of high quality connection cables.

DESCRIPTION

The **SPC *Pulse*** is a 3 channel pulse logger designed for the logging of all types of pulse output meter, or other pulse generating device. It is compatible with all types of commonly encountered pulse output styles including volt-free mechanical and electromechanical contacts, open collector, and most other solid state types.

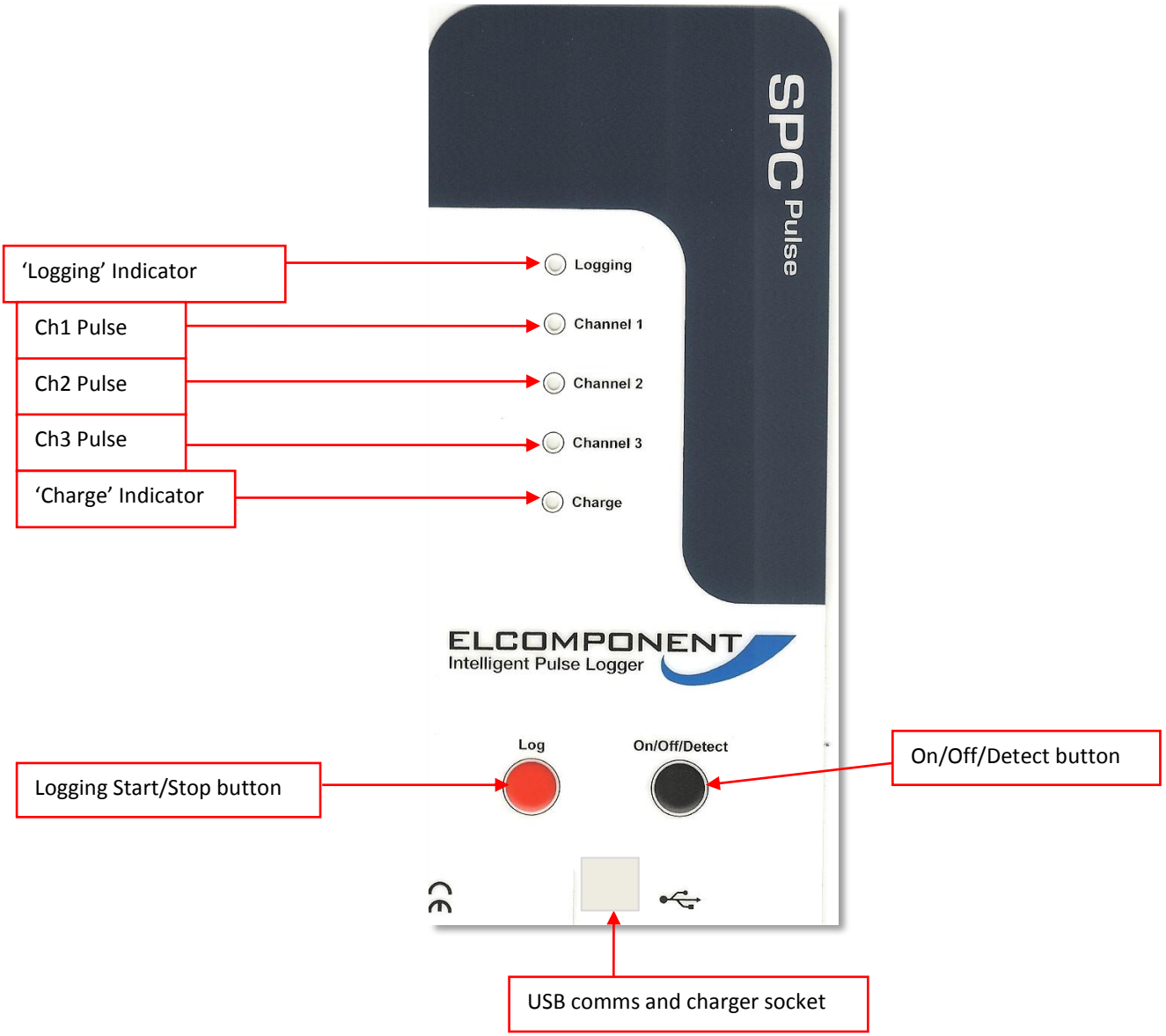
What's in the box?

1x Battery charger
1x USB connection cable
1x PowerPackPro PC software on minidisk
3x Pulse connection cables – fork type
1 X Zip Case

☞ NOTE: Alternative connection cables are available from Elcomponent to facilitate connection to meters with specific output styles & output socket.

The **SPC *Pulse*** is fully compatible with the **SPC *DTM*** Remote Download Module for extended surveys. Please visit www.spcloggers.com for further details.

The Front Panel



On/Off/Detect button:

Pressing the 'on/off/detect' button momentarily switches the unit on. This is confirmed by the **top four** L.E.Ds flashing **twice**.

Provided the unit is ***not*** logging, pressing the button momentarily a second time switches the unit off. This is confirmed by the **top four** L.E.Ds flashing **once**.

When the unit is logging, pressing the button momentarily toggles the unit in and out of 'detect' mode. Detect mode is indicated by the channel indicators flashing continuously in sequence.

☞ NOTE: The unit cannot be turned off if it is logging. Logging must be stopped (see below) before the unit can be switched off.

Log Button:

Pressing and holding the 'log' button starts the logging process. The button must be held down until the 'logging' L.E.D stops flashing, and then released.
Logging mode is confirmed by the 'logging' L.E.D flashing every few seconds.

The logging process is terminated by pressing and holding the 'log' button until the 'logging' L.E.D stops flashing.

Logging indicator:

This L.E.D flashes every few seconds to indicate that logging is in progress.

Channel indicators:

These L.E.Ds flash 'on' when a pulse is detected.

Charge indicator:

This L.E.D illuminates when the unit is connected to a power supply and the battery is charging. It will extinguish when the battery is fully charged or the charger is disconnected.

USB Socket:

The USB connection provides the charger input and PC interface, using the supplied cable.

CONNECTING AND USING THE SPC *PULSE*

The **SPC *Pulse*** has a internal high capacity lithium ion battery which will provide up to six weeks data logging. Indefinite logging is possible if the unit is connected to the power supply provided in the kit. If the battery condition is unknown, or charge level is low, it is recommended that the external power supply is used. To charge the battery fully prior to using the logger, it should be connected to the power supply and switched off for a period of 12-24 hours.

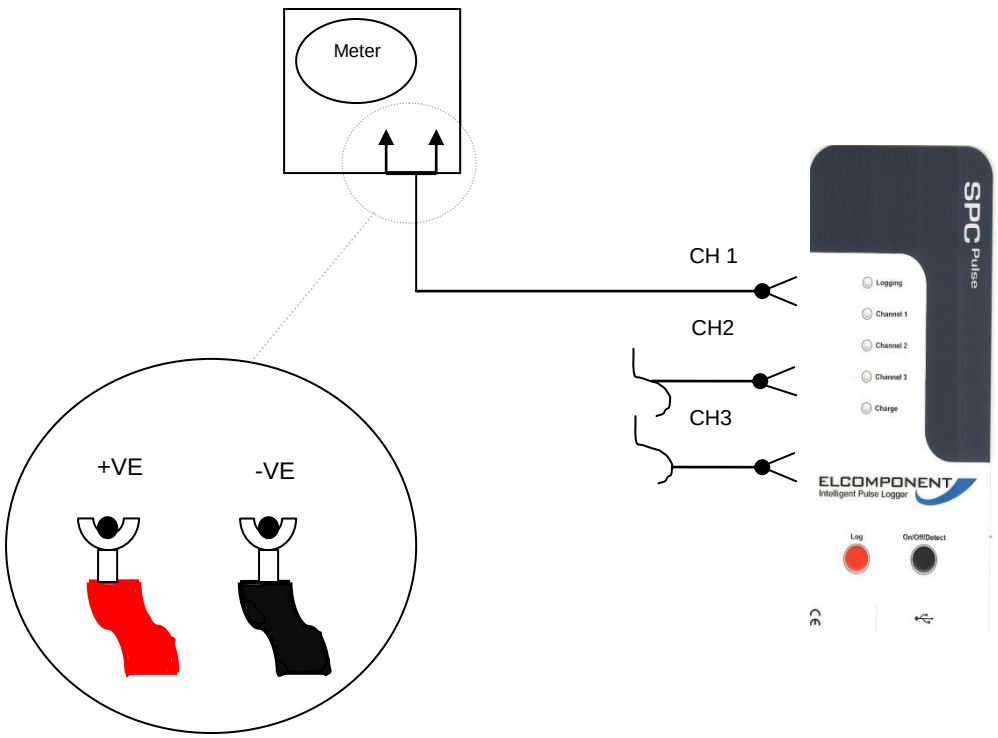
The **SPC *Pulse*** may be utilised to a standard pulse logger, or, by toggling into 'detect' mode, as an intelligent unit.

In standard mode, the logger does not attempt to detect the polarity (if any) of the pulse output. Volt-free mechanical or electromechanical contacts are not polarised but electronic outputs usually are. For pulses to be reliably detected on electronic contacts it is essential that the correct polarity is observed.

If this is known, the connections may be made using the cables supplied with the logger in standard mode. A selection of cables is available from Elcomponent to suit specific meter types, providing the correct connector for the pulse output socket. These will automatically polarise correctly as they are pre-wired. If the standard fork type connection cables are used, these should be connected red to + ve and black to – ve. Once the connections have been made, the **SPC *Pulse*** will detect pulses on all connected channels, and these will be indicated by the relevant L.E.D.

☞ **NOTE:** The channel L.E.D.s will flash once each time a pulse is detected. The SPC Pulse detects a 'rising edge' only. Shorting the inputs of the logger will cause the relevant channel L.E.D. to flash once, but not remain on. The unit cannot be used to indicate the status (high or low) of a pulse contact.

PULSE OUTPUT CONNECTION



If the pulse output polarity is not known, it is recommended that the **SPC *Pulse*** is used in intelligent mode, utilising the 'detect' function to establish the connection. This is achieved as follows:

I. Switch the logger on
II. Press and hold the 'log' button until the 'logging' L.E.D stops flashing, then release it

Logging mode is confirmed by the 'logging' L.E.D flashing every few seconds.

III. Connect the desired channels to the pulse outputs to be logged (polarity is unimportant)

IV. Momentarily press the on/off/detect button to toggle the logger into detect mode. This is indicated by the channel L.E.Ds flashing continuously in sequence.

The channel L.E.Ds will continue to flash in sequence until a pulse is detected. When this happens the L.E.D indication for the channel in question will extinguish, and the logger will automatically adjust its input to just the polarity of the pulse output. Once a pulse has been detected and the associated L.E.D extinguished, the channel L.E.D then behaves in the normal way and flashes when further pulses are detected. The **SPC *Pulse*** may now be left to log unattended.

STARTING A SURVEY

If the **SPC *Pulse*** is used in intelligent mode, logging is initiated as part of the detection process. However if polarity detection is not required, the following procedure is required to start a survey (commence logging).

- Press and hold the 'log' button until the 'logging' L.E.D stops flashing, then release it
  Logging mode is confirmed by the 'logging' L.E.D flashing every few seconds.

ENDING A SURVEY

A survey may be ended manually by pressing and holding the 'log' button until the 'logging' L.E.D stops flashing.
Surveys will end automatically if the programmed survey duration is reached, or if a power supply is not connected, when the battery life is exceeded.

DOWNLOADING A SURVEY

Please refer to the following section for details on data download and presentation.

POWERPACKPRO SOFTWARE (V3.0.0.1 and later)

OVERVIEW

The **SPC *Pulse*** ships complete with a dedicated PC utility program which provides communication, set up and data presentation capabilities. PowerPackPro is designed to run on Windows XP and later platforms.

PowerPackPro is a task-orientated program and is extremely easy to drive, even for new users. It provides the following functionality for the **SPC *Pulse***:

Logger Set Up
Logger Status Check
Logger Download
Data Presentation
Multiple Trace 'Zoom' Graphing
Carbon Footprint Calculation
Multi-rate Tariff costing
Alarm Reporting
Statistical Analysis
Summary Reporting
Data Export to MS Office
Survey Sharing via eMail (MS Outlook)

☞ **NOTE**: This manual is based on software version 3.0.0.1 and later. Earlier versions of PowerPackPro are not compatible with the **SPC *Pulse***. Please go to www.spcloggers.com for a free upgrade.

LOADING THE SOFTWARE

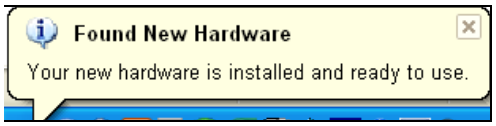
To load PowerPackPro, install the CD and follow the on-screen instructions.

☞ **NOTE**: PowerPackPro is available for free download at www.spcloggers.com However to avoid potential driver problems it is important to load the software on the CD supplied with the unit, even if a downloaded copy has already been installed. Future software updates may then be downloaded from the website as required.

The software ships with some sample data pre-loaded which can be used for familiarisation with the package, and is this used in the examples in the 'Using The Graphing Package' section.

SPC *PULSE* INITIALISATION PROCEDURE

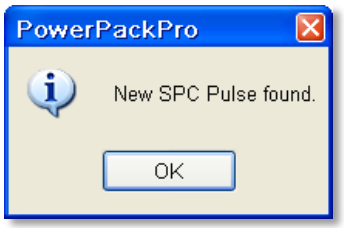
I) Connect the ***SPC Pulse*** to a spare USB port on your PC using the supplied A to B type USB cable. This will normally wake the unit up. If it does not, firmly press the On/Off/Detect button to do so. Windows should recognise the logger and install the necessary drivers etc. This is confirmed by a dialogue 'balloon' at the bottom right of the screen.



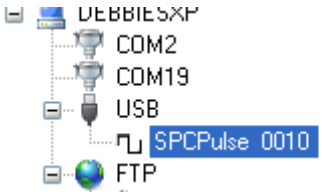
☞ **NOTE**: If the PC fails to recognise the **SPC *Pulse***, or displays a different message, refer to Appendix 1 'Loading the SPC drivers' to rectify the situation.

PROGRAMMING THE SPC *PULSE*

I) With PowerPackPro running connect the **SPC *Pulse*** to a spare USB port on your PC and after a few seconds the software will link to the logger and display the dialogue box:

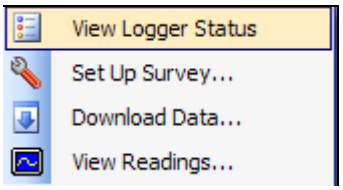


II) Press 'OK' to add the logger to the tree on the upper left of the desktop.



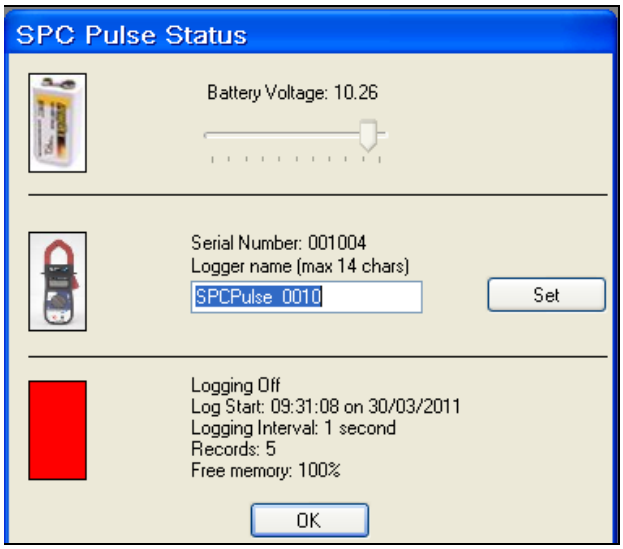
SETTING UP

Right click the **SPC** Icon to open the command menu



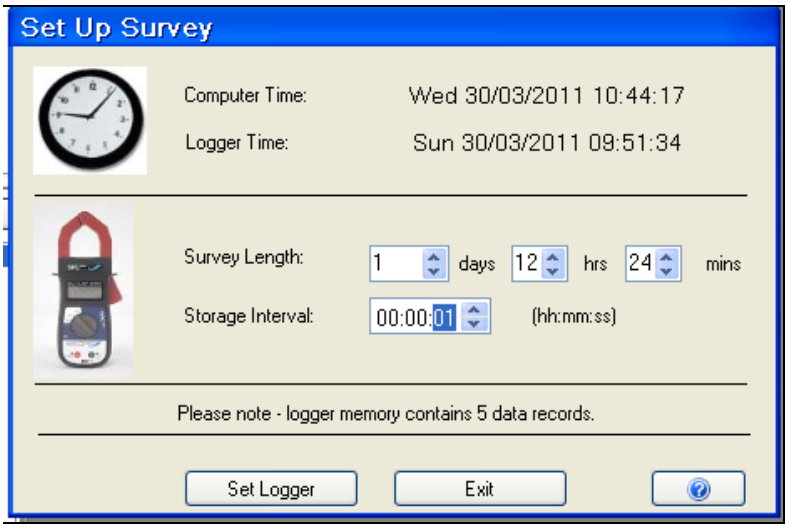
This provides four options:

'View Logger Status' (also available via the  icon)



Details of the device and any recorded data are shown, along with the logging status indicator. Green for 'on' and red for 'off'. Note that the logger name can be set as desired.

'Set Up Survey' (also available via the  icon)

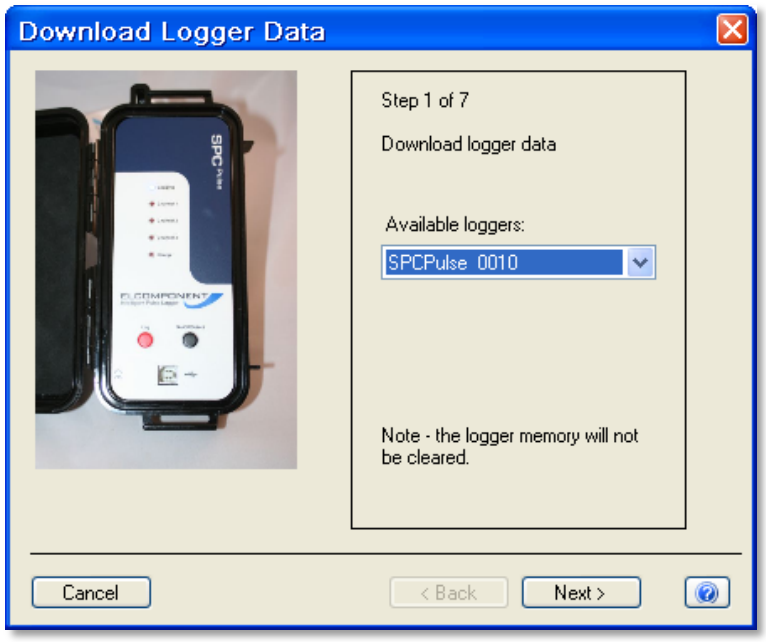


Use this window to set the desired storage interval/survey period. For maximum resolution it is recommended that the unit is set to use the entire memory to complete the required survey.

Click 'Set Logger' to update the unit.

☞ **NOTE**: The **SPC *Pulse*** internal clock will be se to match the PC clock at this point. It is therefore essential that the PC calendar/clock is correct

'Download Data' (also available via the  icon).



Step 1

Click 'Next' to download the data.

☞**NOTE**: This does not clear the logger memory.

Step 2

When the download reaches 100%, click 'next' to enter the survey name, location and any relevant notes.

Step 3 (Enter Channel 1 Details)

At this point the description, utility and unit of measure must be entered for each channel, along with the pulse value. The utility is selected from a menu of options which will determine the 'Units' options available for the relevant utility. The pulse value may be entered either as 'Pulses per Unit' or 'Units per Pulse'. Note that these two fields are interdependent, and each will reflect the value entered in the other.
I

Click 'Next' to repeat the process for channels 2 & 3.

☞**NOTE**: If one or more channels are unused, select 'None' from the utility list.

☞**NOTE:** All entered values may be freely edited later if required (see page 20)

STEP 6 (Select Tariffs

Select a tariff from the drop down menu for use in cost calculations.

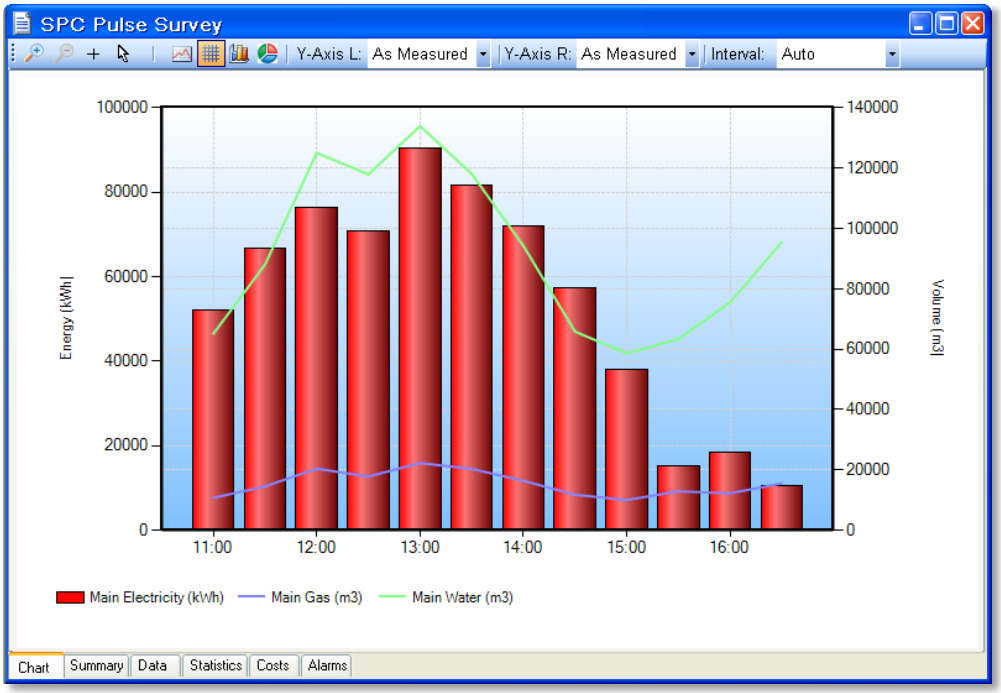
☞ **NOTE**: PowerPackPro is pre-loaded with default single rate and day/night tariffs. Other tariffs may be added by the user (see page 25).

Click 'finish' to open a graph showing the survey results

USING THE GRAPHING PACKAGE

PowerPackPro will automatically open a graph after a survey has been successfully downloaded. Graphs may also be opened by clicking on the relevant survey in the survey list, or via the  icon.

Depending on the length of the downloaded survey, the default settings will create a graph of the entire survey, or in the case of longer surveys will create a graph using a 30 minute data interval with an initial view of a 1 week period. These settings may be altered manually if desired. PowerPackPro is shipped with a **SPC *Pulse*** sample survey pre-loaded which is used in the following pages.



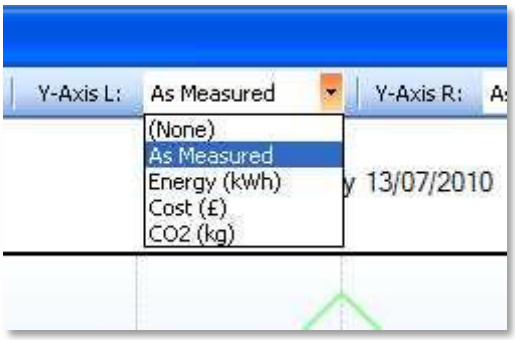
The above window shows the default view for the sample survey. Note that it is a dual axis graph showing energy in kWh on the LH axis and Volume on the right, and three data traces are present for electricity, water and gas (1 X bar chart and 2 X line chart traces). The bar chart is always referenced to the LH Y axis, and the line charts to the RH one.

Because the chart only has 2 Y axes and the **SPC *Pulse*** is a 3 channel device, the graph behaviour is dependent on the number of channels used in the survey, and the unit(s) of measure defined during the download process detailed above. If only one or two channels are used during the survey, the graph will automatically show both channels regardless of the programmed units. If all three channels are populated, the graph will show three data channels provided that no more than two units of measure are in use. If three different units are present (e.g. kWh, m^3 and ft^3) the graph will display channels 1 & 2. The third channel may be manually accessed via the axis controls as detailed below.

GRAPH CONTROLS

Axis Controls:

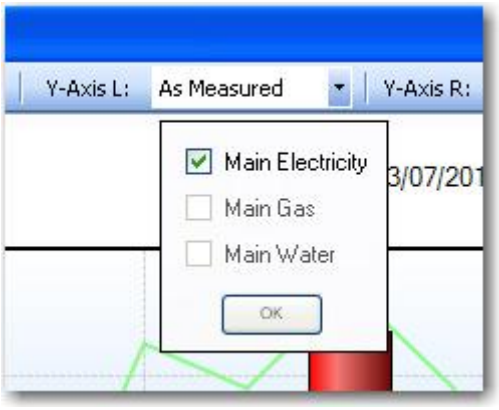
It will be noted from the above graph image that Y-Axis controls are present on the menu bar providing individual control of the LH and RH axes. Click the menu arrow against the desired axis label to open the main option list.



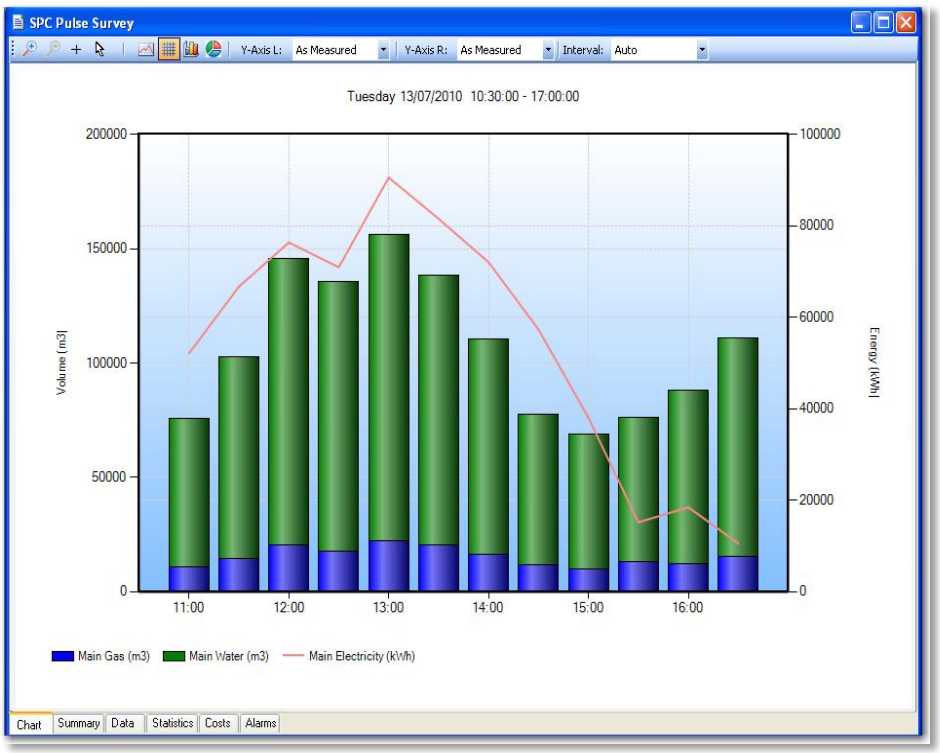
PowerPackPro is an energy and carbon management software package and therefore allows instant presentation of all data acquired via the **SPC *Pulse*** to be displayed either 'As Measured' or as energy in kWh, cost in £, or as kilograms of CO_2.

- 'As Measured' will display the channel in the unit chosen during the download process. In the case of electricity consumption, the as measured value will be expressed as energy in kWh, but in the case of gas, water and other utilities will be expressed in volume or mass or other relevant unit.
- 'Energy' will automatically convert the 'as measured' value into kWh, if applicable. In the case of gas or oil for example, the software calculates the kWh equivalent of the measured volume using standard calorific values. The calorific values and calorific kWh factors may be adjusted from the pre-loaded settings if required (see page 21). This option is not applicable to utilities such as water, which cannot be expressed as energy.
- 'Cost' will automatically convert the 'as measured' value into a cost figure using the tariff information loaded by the user. If no tariff information has been loaded, the pre-loaded tariff will be used.
- 'CO_2' will automatically convert the 'as measured' value into kgs of CO_2, if applicable, using the standard carbon equivalent for the utility in question. Carbon equivalent values may be adjusted from the pre-loaded settings if required (see page 21).

Selecting the desired option will open a second menu window as below:



This allows the user to define which axis the channel(s) are allocated to. Note that the LH axis displays the data as a *bar chart*, whereas the RH axis displays data as a *line chart*. When 2 or 3 data sets are allocated to the LH axis they will be displayed as a *stacked bar chart*, as in the example below. This is the same chart as that shown on page 13 but the axis preferences have been changed to show the gas and water against the LH axis and the electricity on the RH axis.



Check the boxes as required, and press the 'OK' button to set.

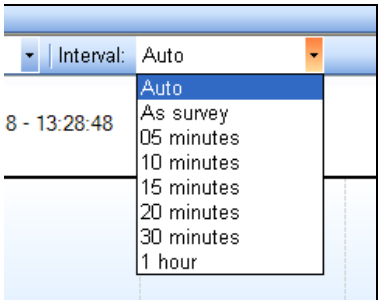
☞ **NOTE**: The axis channel settings are context dependent. Non viable options will be inhibited. I.e. it is not possible to add a 'non energy' utility such as water to an 'energy' axis. Therefore the selection of 'As Measured' followed by the selection an 'Electricity' channel and a 'Water' channel on the same axis is not possible. On the other hand, selecting 'Cost' followed

by an ‘Electricity’ channel and a ‘Water’ channel is valid, as both utilities can be expressed as a cost.

☞**NOTE:** It may be necessary to uncheck a channel before checking another to remove a ‘conflict of units’.

Data Interval:

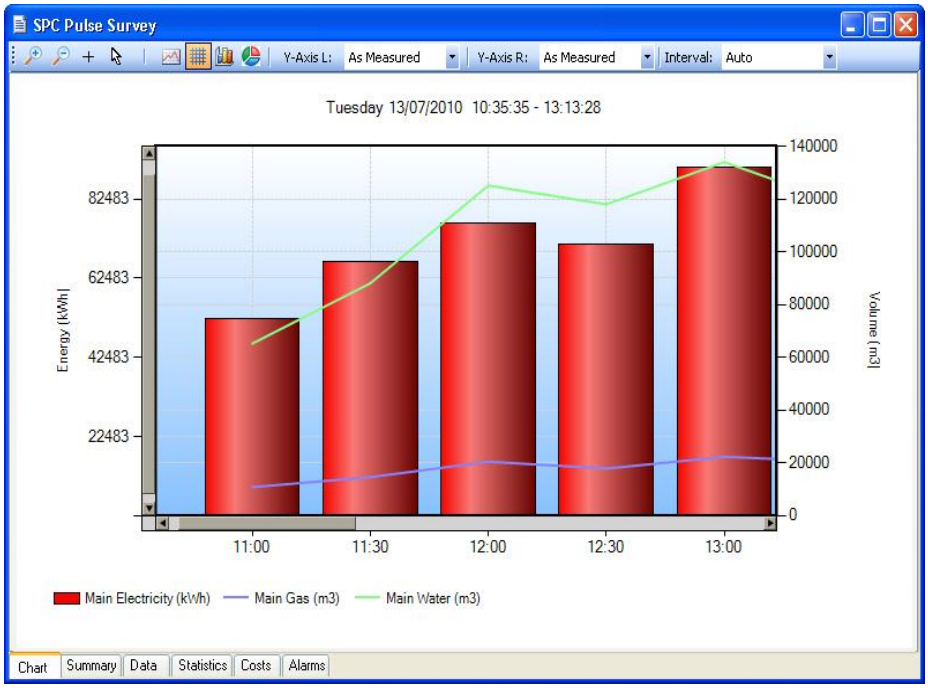
Select the down arrow on the graph “Interval” option to change the data integration period. The default behaviour will utilise the ‘As survey’ option for short surveys (up to approximately 18 hours duration, and the ’30 minutes’ option for longer surveys.



Zoom*:*

Click the zoom tool buttons  to activate the zoom cursor. Drag the cursor over the desired graph area whilst holding down the left mouse button to define a zoom area.

Release the mouse button to display the zoom area



☞ **NOTE**: The zoom function can be repeated as many times as necessary to provide a macro zoom capability. The button reverses the zoom-in process by one step per click.

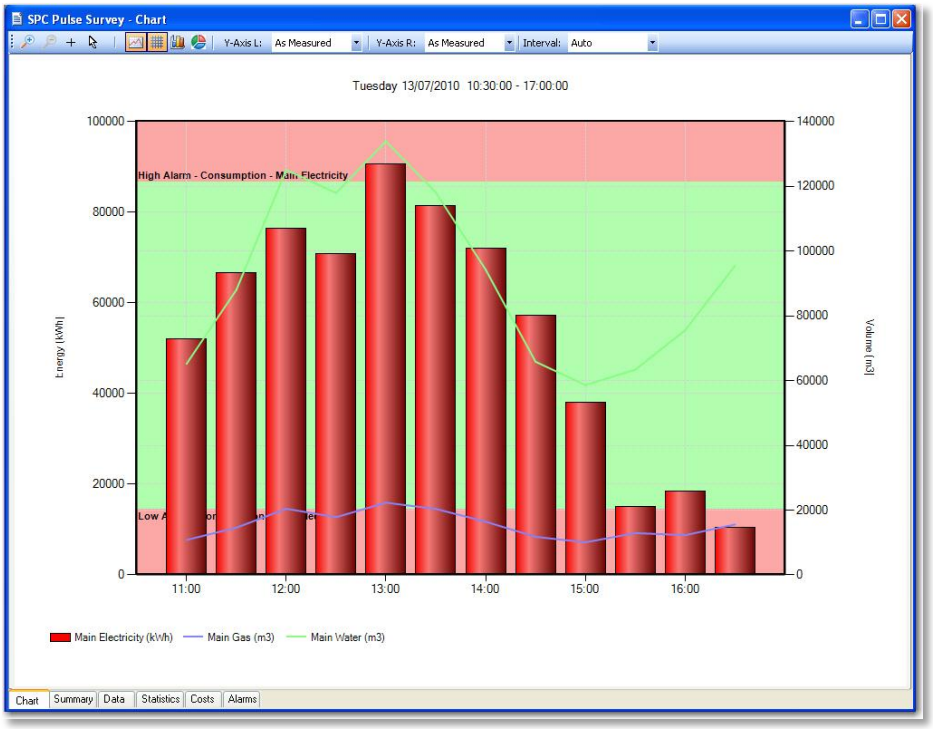
Application of the zoom tool creates scroll bars on the X and Y axes. These allow the user to scroll backwards and forwards and up and down through the full extent of the data, whilst maintaining the desired zoom resolution.

Show Data Values:

Select the 'crosshairs' button to see the graph data values on mouse-over.

Show Alarm Levels:

Click the  button to display the alarm values on the graph. The alarm areas (high and low) appear as pink areas on the chart with the 'normal' value area showing a green tint. See page 23 for setting alarm levels.

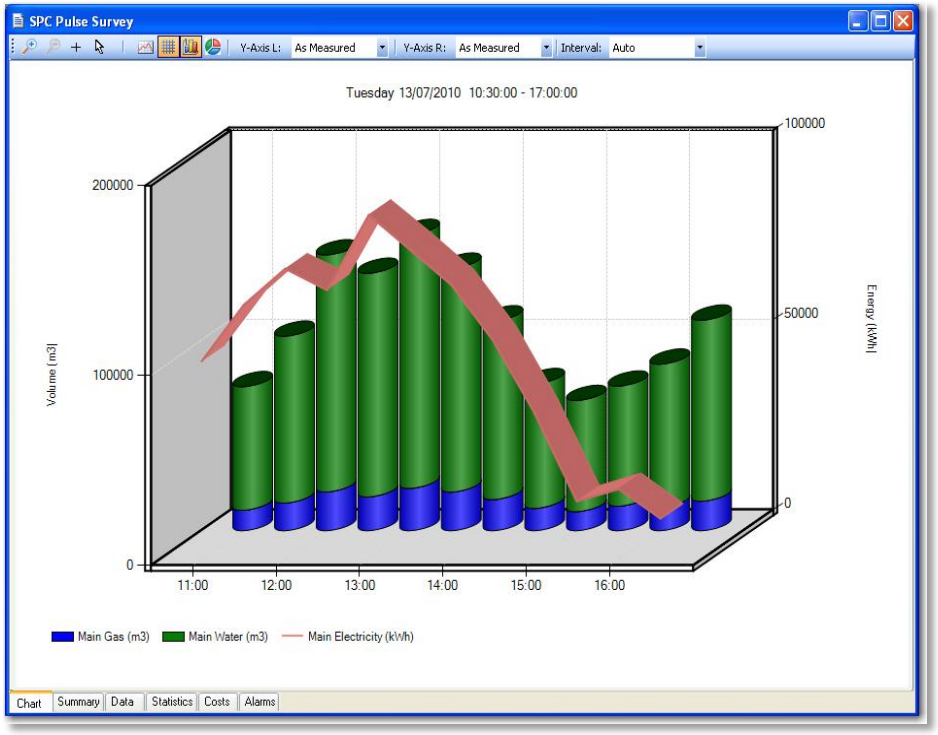


Show Gridlines:

Click the  button to toggle the graph gridlines on and off.

3D View:

Click the  button to toggle between 2D and 3D graph view. Chart below shows 3D view.



Pie Chart:

Click the  button to switch to a pie chart view.

MS Office Interface:

PowerPackPro makes it easy to transfer data and charts into MS Word and Excel, and to distribute surveys by email using MS Outlook. If you have MS Office 2003 or later on your PC, the interface buttons will automatically appear on the main toolbar.

The buttons are active when a graph is open and can be used as follows:

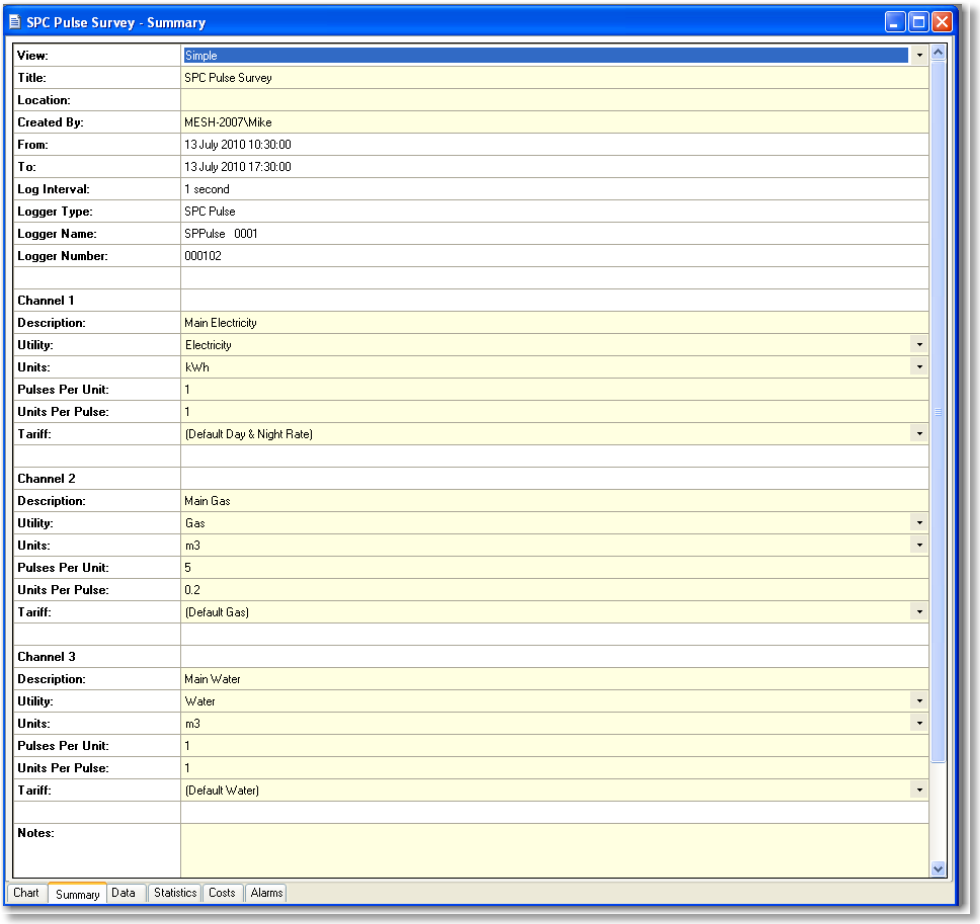
- Transfer chart as an image to Excel and Word
- Open an email in Outlook with the graph inserted as an image in the message body and the survey file as an attachment

☞ **NOTE**: Survey data can be transferred to Excel in tabular form if the 'Data' tab is selected instead of the 'Chart' tab. The values to be transferred must be selected manually in the table. Note that an entire survey displaying 'as survey' may comprise 100,000 records and may be beyond the capacity of the destination spreadsheet.

ADDITIONAL SURVEY FUNCTIONS

Summary Tab:

Click the 'Summary' tab at the bottom of the chart window to open the survey summary page.



The tinted fields are open to user editing and may be freely altered or option selected as required.

- View – Simple or Advanced
- Title
- Location
- Created By
- Channel Parameters
- Notes

If the 'Advanced View is selected, the following additional channel parameters are available for user editing:

- CO_2 Factor in kg/kWh
- Calorific value in MJ/m^3
- Meter Factor
- Standard Units Factor
- Calorific kWh Factor

☞ **NOTE**: Changes are indicated by the text changing from black to red. The option to 'save changes' appears when exiting from the summary page. Click 'yes' to save changes.

DATA TAB

Click the 'data' tab to display the survey data in tabular format.

☞ **NOTE**: The data displayed will match the graph settings for data integration interval (see page 16) and graph period selected.

Selecting Data:
Hold down the left mouse button and drag the cursor to select data. To select the whole table click "Edit/Select All' button on the main menu bar.

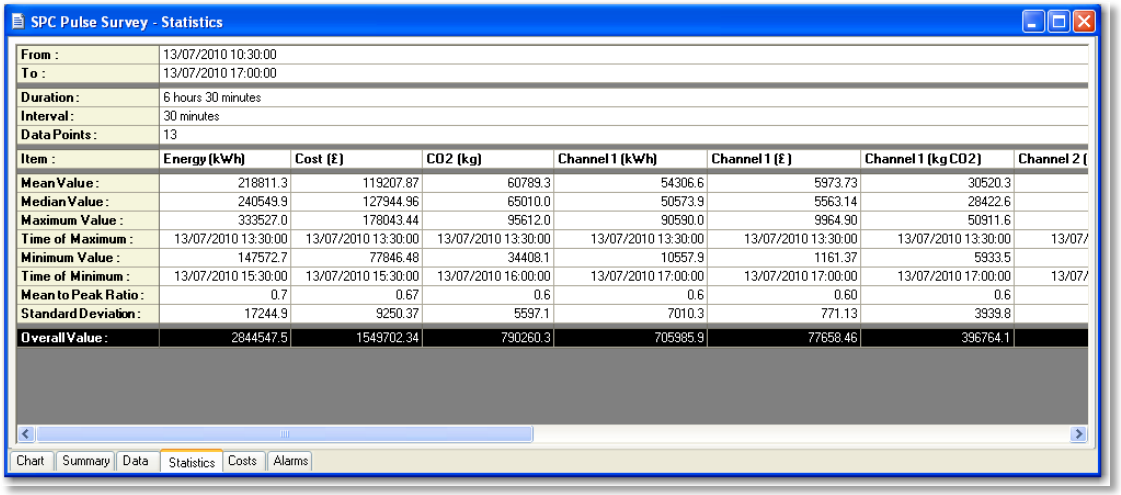
Selected data may be copied and pasted as required using the relevant buttons on the main toolbar.

Exporting Data:
Data may be exported in tabular form to Excel or Word by clicking the relevant buttons  on the main toolbar or emailed to a third party by clicking the  button.

STATISTICS TAB

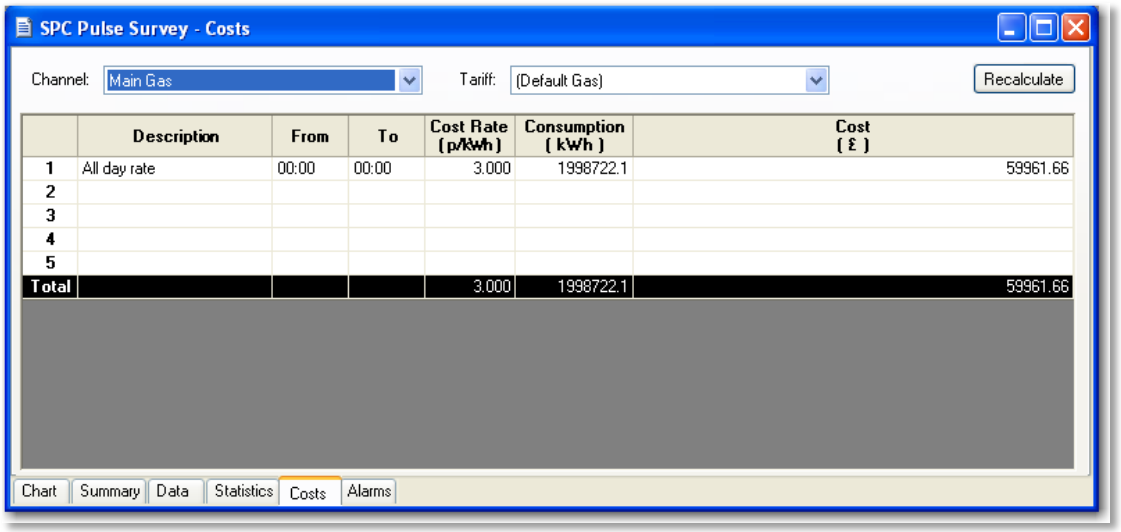
Click the 'Statistics' tab to display the stats window showing the key values and ratios for all parameters.

☞**NOTE**: The data displayed will match the graph settings for the graph period selected.



COSTS TAB:

Click the 'costs' tab to display the tariff window. PowerPackPro is supplied with preloaded default tariffs for electricity gas and water. These are provided as examples and do not necessarily reflect actual tariffs.



ADDING AND AMENDING TARIFFS:

PowerPackPro supports the entry of multiple tariffs with up to 5 time bands per tariff.

☞ **NOTE:** Time bands cannot span a date change. If a desired time band runs across midnight it must be entered as two bands.

To amend an existing tariff, overtype the description field as required and enter the desired cost rates also. Ensure that costs are correctly entered against the unit of measure in use. Select the desired start/finish times for each time period from the drop-down menu.

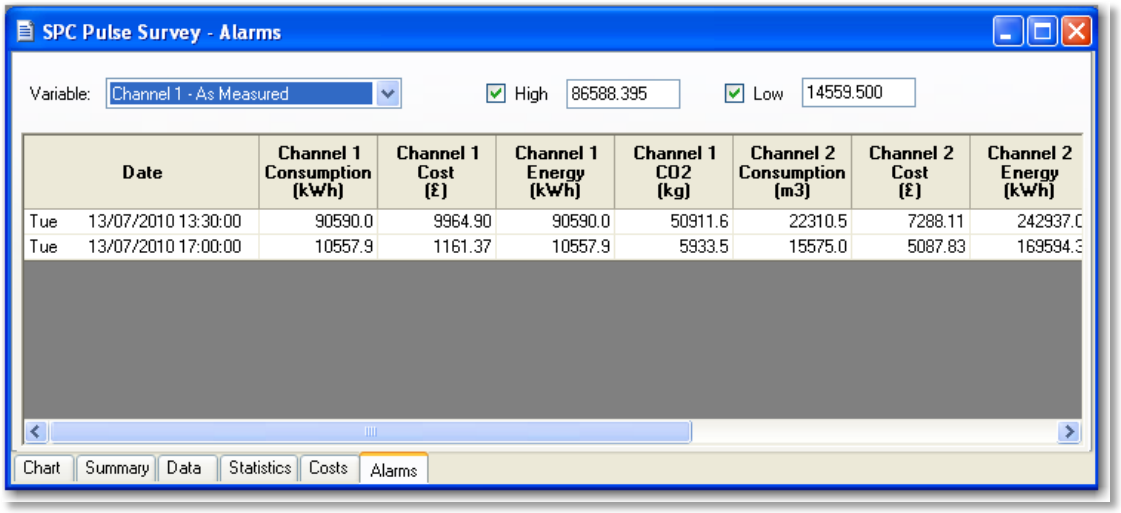
Amended values will change from black to red. Click the 'recalculate' button to apply the revised rates to the survey data.

To create a new tariff, proceed as above, adding additional bands if required.

The option to save changes appears when exiting from the costs page. Click 'Yes' to save changes. Enter a new tariff name in the 'Save Tariff As' box to create a new tariff, or save as the existing name to amend a tariff.

ALARMS TAB

Click the 'Alarms tab to display the alarm screen.



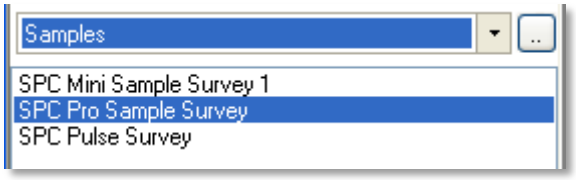
PowerPackPro provides extensive alarm options for the **SPC *Pulse***. The 'Variable' menu allows the user to select individual channel alarms against 'As Measured' 'Energy' 'Cost' and 'CO_2'. The high and low threshold values are then entered as required in the boxes provided. Alarms may be enabled or disabled via the relevant check box. The alarm events matching the user settings will be listed in the main window in tabular form as shown.

☞ **NOTE**: Alarm thresholds may also be viewed on the chart, with the alarm zones appearing in pink (see page 18)

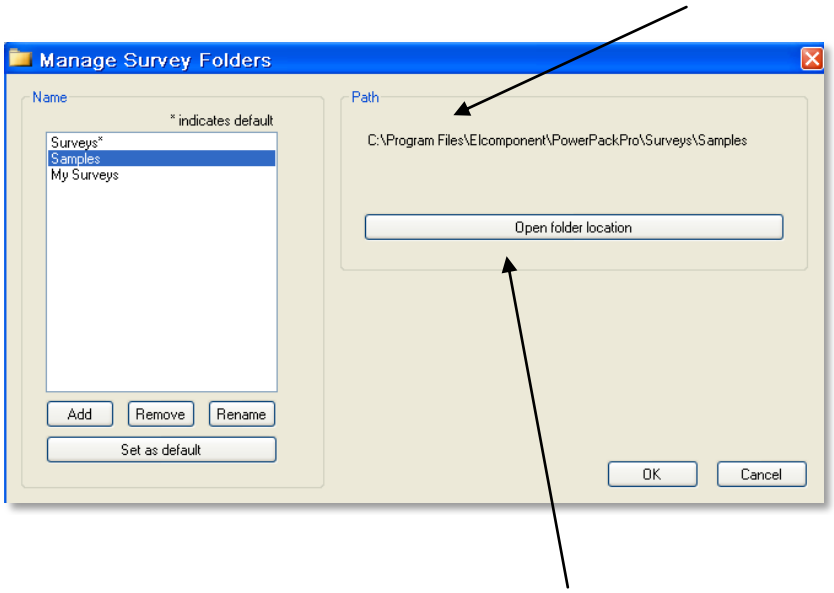
ADDITIONAL FEATURES

File/Folder Management:

PowerPackPro ships with two survey folders preloaded. These are 'Samples' and 'My Surveys'. Where earlier versions of PPP have been upgraded, a third folder named 'Surveys' will also be present. The lower part of the desktop tree shows all the survey files available in the selected folder. Use the drop down menu to select the desired folder.



Click the browse button on the extreme right of the tree to open the 'Manage Survey Folders' Window. Folders may be added, removed or renamed as required. To set a folder as the default view on the desktop, highlight the desired folder in the list and click the 'Set as Default' button. Note that the default folder will be marked with an asterisk.

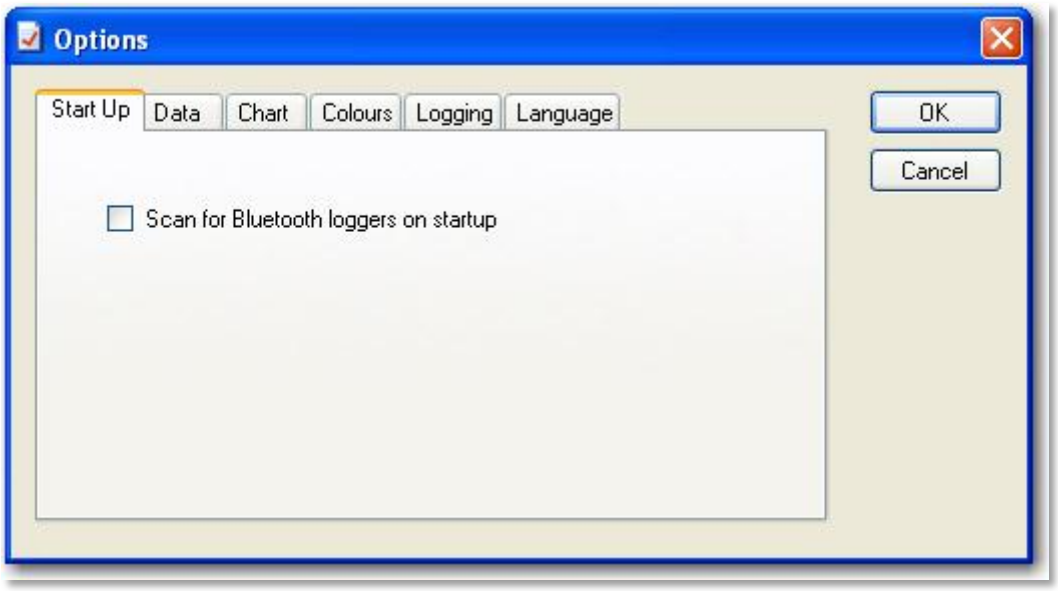


This window also shows the physical location of the survey folder on the PC (see above). The folder location may be opened directly if access to the survey files is required.

Software Tools:

The Tolls menu is accessed from the main menu bar as shown:

Select ‘Options to open the following window:



APPENDIX 1

LOADING THE SPC DRIVERS

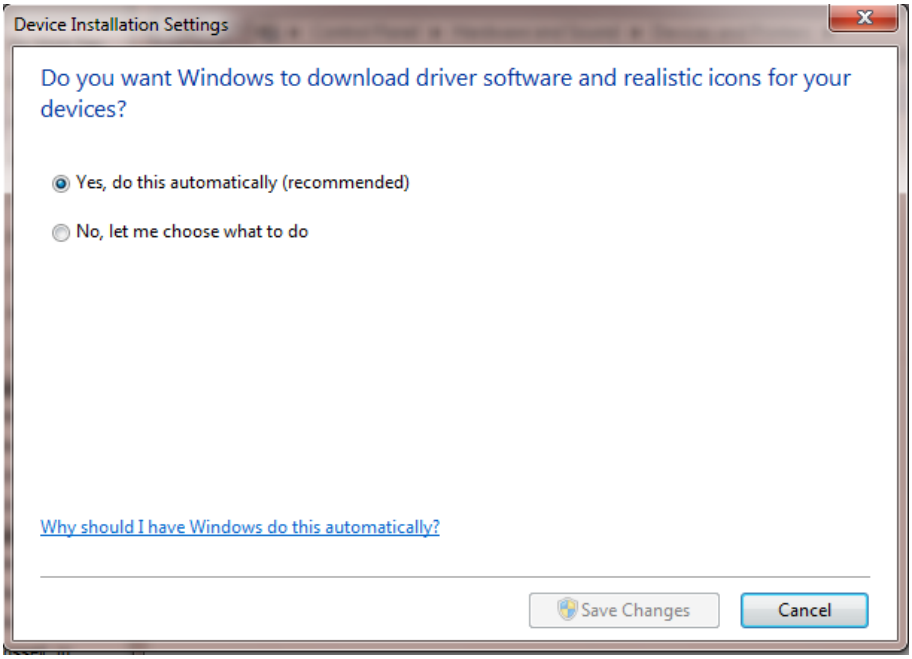
All SPC devices link to the PC via a USB connection. This provides fast reliable communications, and requires no additional configuration by the user. However, in most cases the PC must load the necessary driver files before it will recognise the SPC connected to it. Almost all communication problems can be traced to missing or incorrect drivers.

Normally the load process is automatic, but depending on PC settings, web connection and Windows platform, there may be occasions when drivers do not load as they should. In this situation some manual intervention may be necessary. In the event that the PC does not recognise an SPC device, please proceed as detailed below.

Windows 7:

Windows 7 is designed to obtain any driver files that it needs from the web via the 'windows update' function. If the PC has a web connection, and this behaviour has not been disabled, driver file installation is automatic and seamless.

To check if automatic driver loading is enabled, click the start button and select 'devices and printers'. One of the available devices is the PC itself. Right click on the PC icon and select 'Device Installation Settings'. Ensure the 'automatic' option is selected and reconnect your SPC device to a spare USB port. If the PC is connected to the web, the drivers will now load.



If no web connection is available the drivers can be loaded manually as follows:

Ensure that your SPC Device is connected to the PC

Ensure the CD minidisk supplied with your SPC device is installed in the CD drive on your PC. Click the start button and select Control Panel. Click 'Device Manager". (You may need to select 'large icons' from the 'viewing' menu at the top right of the page).
From the Device Manager list, select 'Other Devices'. Note: There will be a yellow warning triangle showing, which may be identified as 'SPC xxx'. Click on the yellow triangle, and click 'Update Driver'
Select the option which allows the driver to be installed from a location on the PC (not the automatic search).
Browse to the CD location [DRIVE]:\V..**.**\SPC----Drivers\ and click 'next'.*
Click install, and exit when complete. Note: It may be necessary to load a second driver for the COM port. If the Device Manager list shows a second yellow triangle, click on this and repeat the above procedure

Windows Vista:

Windows Vista is designed to obtain any driver files that it needs from the web via the 'windows update' function. If the PC has a web connection, and this behaviour has not been disabled, driver file installation is automatic and seamless.

To check if automatic drivers loading is enabled click the start button and select 'control panel' and click the 'system' icon (you may need to select 'classic view' from the sidebar)

Select 'advanced system settings' from the sidebar and click the hardware tab and select 'Windows Update Driver Settings' to display the following screen

Ensure that 'Check for drivers automatically' is selected and reconnect your SPC device to a spare USB port. If the PC is connected to the web, the drivers will now load.

If no web connection is available the drivers can be loaded manually as follows:

Ensure that your SPC Device is connected to the PC
Ensure the CD Minidisk supplied with your SPC device is installed in the CD drive of your PC
Click the start button and select control panel and click the device manager icon (you may need to select classic view from the side bar)
From the Device Manager list, select 'Other Devices'. Note: There will be a yellow warning triangle showing, which may be identified as 'SPC Pro'. Click on the yellow triangle, and click 'Update Driver'
Select the option which allows the driver to be installed from a location on the PC (not the automatic search).
Browse to the CD location [DRIVE]:\V..**.**\SPC----Drivers\ and click 'next'.*
Click install, and exit when complete. Note: It may be necessary to load a second driver for the COM port. If the Device Manager list shows a second yellow triangle, click on this and repeat the above procedure

Windows XP:

The later versions of Windows XP Pro (Service Packs 2 & 3) are designed to obtain any driver files that are needed from the web via the 'windows update' function. If the PC has a web connection, and this behaviour has not been disabled, driver file installation is automatic and seamless.

To check if automatic drivers loading is enabled click the start button and select 'control panel' and click the 'system' icon. Select the hardware tab and click the 'Windows Update' button to display the following screen

Select either of the first two options to enable Windows Update reconnect your SPC device to a spare USB port. If the PC is connected to the web, the drivers will now load.

If the above option is not present, proceed as follows:

Ensure that your SPC Device is connected to the PC
Ensure the CD Minidisk supplied with your SPC device is installed in the CD drive of your PC
Open "Control Panel" from the Windows 'Start' button.
In XP, select 'System' and click the 'Hardware' tab, and then 'Device Manager'.
From the Device Manager list, select 'Other Devices'. Note: There will be a yellow warning triangle showing, which may be identified as 'SPC Pro'. Click on the yellow triangle, and click 'Update Driver'
Select the option which allows the driver to be installed from a location on the PC (not the automatic search).
Browse to the CD location [DRIVE]:\V..**.**\SPC----Drivers\ and click 'next'.*
Click install, and exit when complete. Note: It may be necessary to load a second driver for the COM port. If the Device Manager list shows a second yellow triangle, click on this and repeat the above procedure.

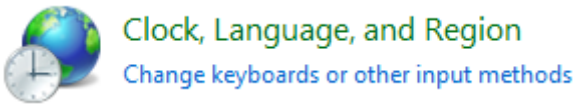
APPENDIX 2

EUROPEAN SETTINGS

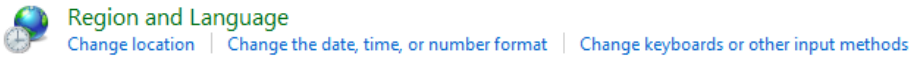
PowerPack Pro should be set for English Regional and Language Settings . Instructions for carrying this out follows below:

WINDOWS 7

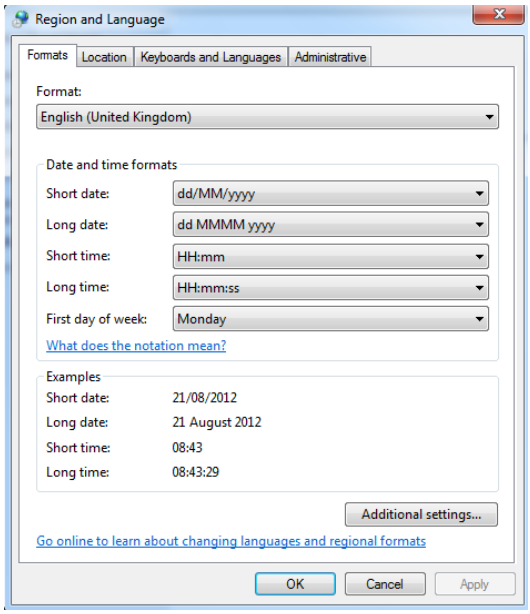
Select Control Panel and "Clock, Language, and Region"



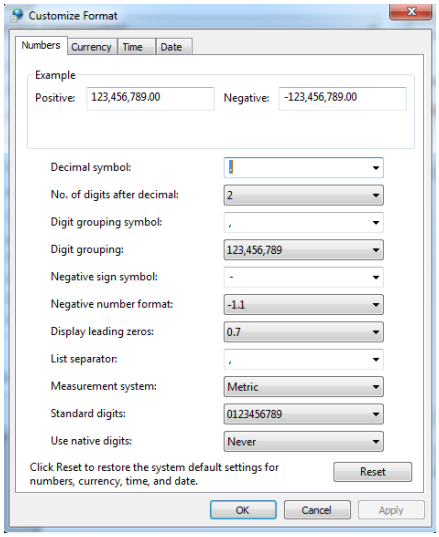
Selection Region & Language / Change the date, time or number format



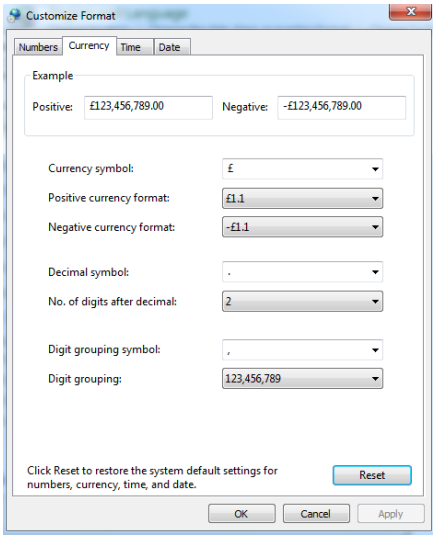
Format should be English (United Kingdom) and set as below dd/MM/yyyy



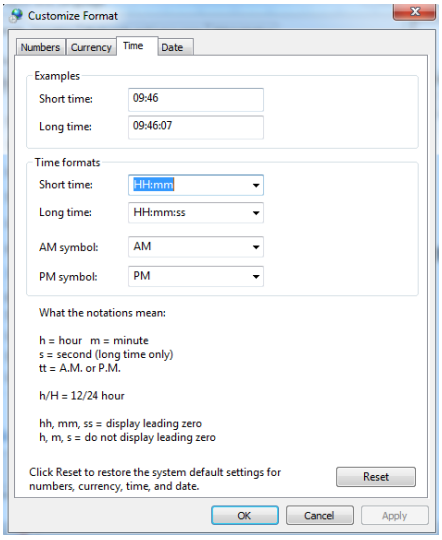
Select "Additional Settings". Ensure that the Decimal symbol is a full stop (.) this can simply be overwritten in the box below. Secondly, ensure that the list separator is a comma (,).



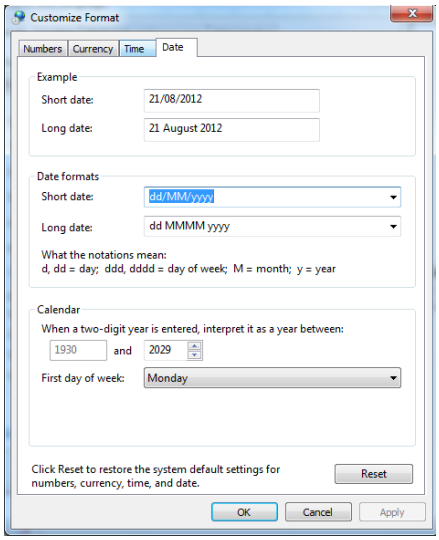
Select "Currency". Ensure that the Decimal symbol is a full stop (.) this can simply be overwritten in the box below. Secondly, ensure that the list separator is a comma (,). At the present time PowerPackPro displays in £ only.



Next, select "Time". Ensure time format is HH:mm:ss



Finally, select "Date". Ensure that date settings are dd/MM/yyyy



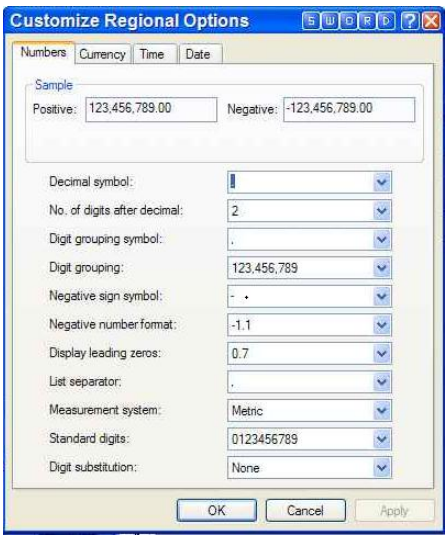
WINDOWS XP

Select Control Panel and "Regional & Language Options"

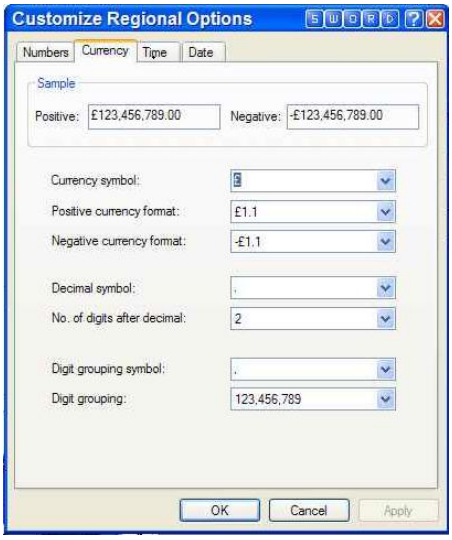
Regional Options Format should be English (United Kingdom)

Select “Customize”/Numbers

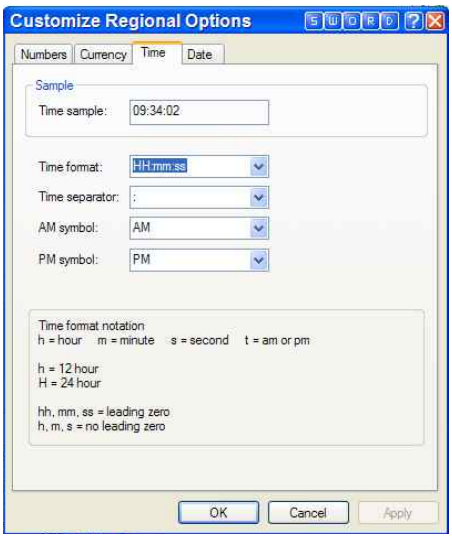
Ensure that the Decimal symbol is a full stop (.) this can simply be overwritten in the box below. Secondly, ensure that the list separator is a comma (,).



Select “Currency”. Ensure that the Decimal symbol is a full stop (.) this can simply be overwritten in the box below. Secondly, ensure that the list separator is a comma (,). At the present time PowerPackPro displays in £ only.



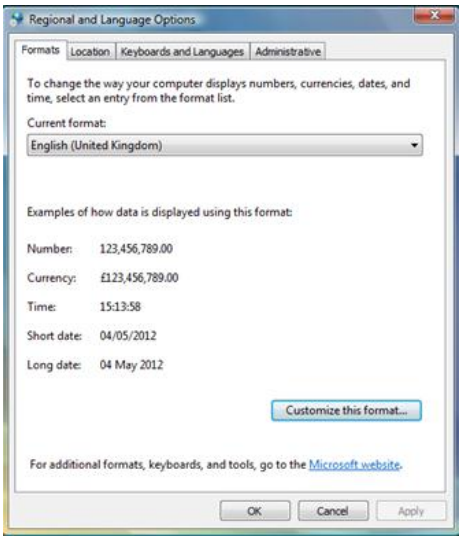
Next, select "Time". Ensure time format is HH:mm:ss



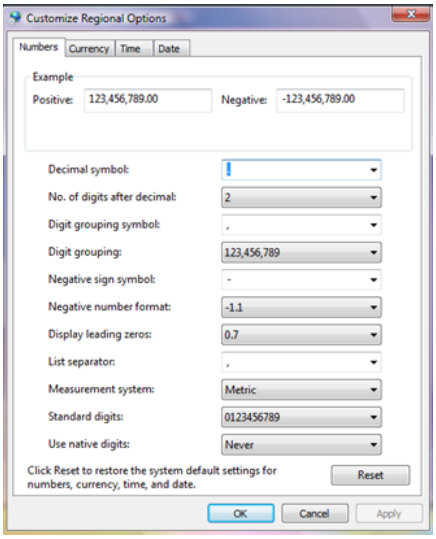
Finally, select "Date". Ensure that date settings are dd/MM/yyyy

WINDOWS VISTA

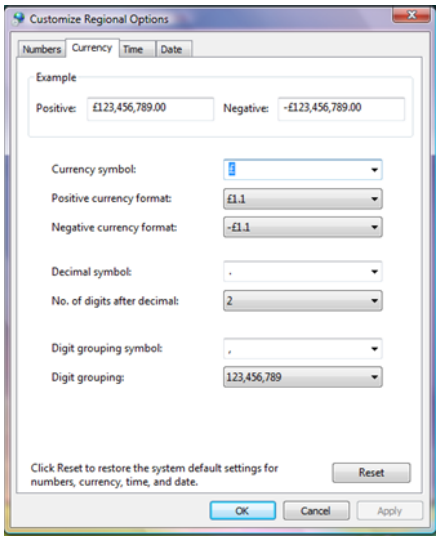
Select Control Panel and "Region & Language". Under "Formats" tab select English (United Kingdom)



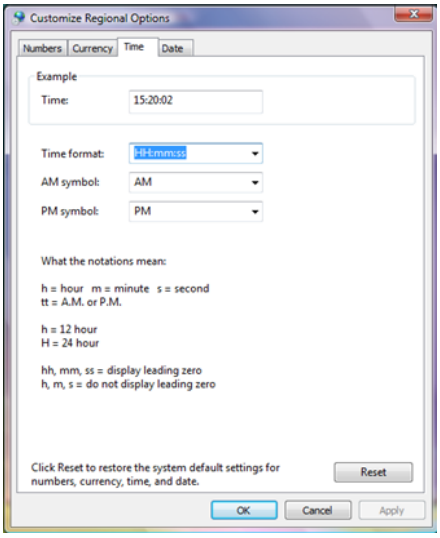
Select "Customize this format" / Numbers. *Ensure that the Decimal symbol is a full stop (.) Secondly, ensure that the list separator is a comma (,).*



Next, select “Currency”. *Ensure that the Decimal symbol is a full stop (.) Secondly, ensure that the list separator is a comma (,).*



Next, select “Time”. Ensure time format is HH:mm:ss



Finally, select “Date”. Ensure that date settings are dd/MM/yyyy