BMV-602 Data Link Manual

1 Contents of the kit

- 1 x BMV-602 data link cable.
- 1 x Installation CD

2 System Requirements

2.1 Hardware requirements

- A BMV-602 with software version 2.03 or higher.

- A spare RS-232 COM port. If there are no available RS-232 COM ports, a USB to serial converter may be used. These can be purchased from Victron Energy (part number ASS030200000). Please note that Victron Energy cannot guarantee compatibility with other models of USB to serial converter.

2.2 Software requirements

- Microsoft Windows XP or Vista.
- Microsoft .NET framework V3.5. Most computers should already have the latest .Net framework installed. However, the installer can be found on this CD ("\Third party\dotNetFx35Setup.exe"), or downloaded from www.microsoft.com.

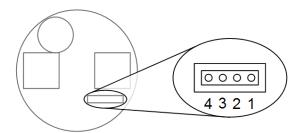## 3 Installation

1.1 Hardware installation

For details of the installation and use of the BMV-602 refer to the BMV-602 manual. Once the BMV-602 has been installed, and is working correctly, connect the serial cable as shown in the diagram.
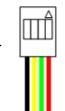
Pin 1 on the BMV-602 is the pin closest to the edge of the housing. Pin 1 on the cable is indicated by an arrow on the connector.
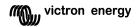
Connect the other end of the cable to a COM port on your PC. Make a note of the port number to which the cable has been connected. This will be required later.

1.2 Software installation

1. Insert the installation CD into your CD drive. The installer should start automatically.
2. Follow the prompts to install the software.

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4 Using the software

To launch the software, click on the start menu, then "All Programs", then BMV-602 Battery Monitor.

When the application starts, you will be asked to specify the COM port to which the BMV-602 is connected. Select the correct port from the list, then click "OK".

A screen will now be displayed that shows all of the statistics reported by the BMV-602. For more information on these statistics, refer to the BMV-602 manual.

4.1 Logging

The data received can be saved to a file which can be imported into other applications, such as Microsoft Excel, for further processing.

1. Select "Save to CSV" from the "File" menu.
2. Select the desired logging interval, and choose a location for the file.
3. Select the maximum size for the log file.
4. Click "OK".

If an option other than "Device space limited" was selected, then logging will automatically stop once the log file reaches the specified size. If "Device space limited" was selected, or you wish to stop logging before the specified size is reached, do the following:

1. Select "Save to CSV" from the "File" menu.
2. Un-check the box labelled "Logging enabled".
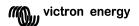3. Click "OK".

Warning: It is not advisable to select "Device space limited" when saving to the same drive that holds the computer's operating system. If the log file is allowed to consume all free space on the system drive, the operating system may become unstable. With the logging interval set to continuous, the log file will grow by approximately 58 MB/week.

Appendix 1   File format

The data saved using the "Save to CSV" option is saved using the CSV (Comma Separated Values) file format which is supported by many applications, such as Microsoft Excel, and Open Office.org Calc.

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The data is arranged in a table format. Each line in the file represents a row in the table. Columns are separated by a separator character.[1]

Appendix 2   Troubleshooting

Problem:

The installer does not start when the CD is inserted.

Suggested solution:

1. Open "My Computer" and right-click on the CD/DVD drive.
2. Select "Open"
3. Double-click on "Setup.exe"

Problem:

The application will not install, or the application installs, but will not run.

Suggested solution:

The BMV-602 Battery Monitor application requires the Microsoft .Net framework. Make sure you have this installed. The installer for version 3.5 can be found on this CD "\Third party\dotNetFx35setup.exe", or the latest version can be downloaded from www.microsoft.com.

Problem:

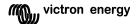The COM port selection dialogue does not list any COM ports.

Suggested solution:

You are probably using a USB-to-serial converter, but have not installed the drivers. Install the drivers that came with the USB-to-serial converter, making sure to reboot the computer if prompted.

Problem:

The connection status reads "DISCONNECTED", and no values are updated.

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1 The actual character used as the separator depends on your regional settings. Refer to Appendix 3 for more information.

Suggested solutions:

- Check that the BMV-602 is connected to the PC, and has power.
- Make sure that the correct COM port has been selected. You can change the selected COM port by selecting "Change COM port" from the "Tools" menu.
- If you are using a USB-to-serial converter, make sure that the drivers are correctly installed; otherwise the correct COM port will not be listed.

Appendix 3   Regional settings

The way that information is displayed on the screen, and saved to file depends on the regional settings of your computer. Usually, this is not important. However if you send a log file to somebody who uses a computer with different regional settings, it may not display correctly when they open it.

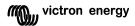# Appendix 4   Creating a VI graph in Microsoft Excel

Once a log file has been created, there are many things for which it can be used. A common use for this type of data is to plot a graph of the battery voltage and current over time. This tutorial describes how to create such a graph using the Microsoft Excel spreadsheet software.

The following instructions are for Microsoft Excel 2003, and may need to be adapted for other versions of Excel.

1. Create a log file using the procedure described above.

2. Open Microsoft Excel.

3. Click on the "File" menu, then select "Open...".

4. In the "Files of type" box, select "Text Files".

5. Browse to the log file created in step 1.

6. Select the file and click "Open".

7. Highlight the timestamp column, by clicking on the column heading.
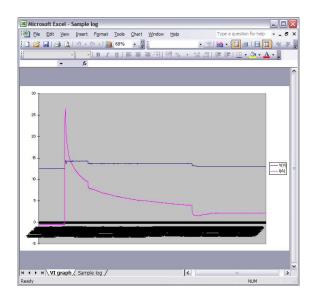
8. From the "Format" menu, select "Cells...".

9. In the "Category" list, select "Time", and then click "OK".

10. Whilst holding the control key, click on the column headings for the main battery voltage (column B), and main battery current (column D).

11. From the "Insert" menu, select "Chart...".

12. On the "Custom Types" tab, select "Smooth Lines" from "Chart type" list.

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13. Click "Next".

14. Click "Next" again.

15. Click "Next" one more time.

16. Select "As new sheet".

17. Replace the text "Chart1", with "VI graph".

18. Click "Finish"

You now have a chart of the voltage and current readings for the main battery. However, with the default formatting, it will probably be difficult to read, so some additional steps are required.

If the log file contains a lot of samples, the x-axis values will be too close together.

1. Right-click on the text, and select "Format axis...".

2. Click on the "Scale" tab.

3. Enter a larger value in the "Number of categories between tick-mark labels" box. The required value depends on the number of samples captured. The more samples, the higher this value needs to be.

4. Click "OK".

By default, the voltage and current curves will be plotted using the same y-axis scale. However, the measured values will lie in different ranges, so this is not practical.

1. Right-click on the current curve, and select "Format data series...".

2. Click on the "Axis" tab.

3. Select "Secondary axis".

4. Click "OK".

5. This causes some of the formatting options to be lost, so right-click on the current curve, and select "Format data series..." again.

6. Click on the "Patterns" tab.

7. In the "Line" area, select "Smoothed line".

8. In the "Marker" area, select "None".

9. Click "OK".

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