

**HV Power hints and tips:  
PQ-Box 100 Power Quality Recorder**

Issue 2b

Nov 12<sup>th</sup> 2008

Battery & Missing data section updated 24/3/09  
General update 5/8/2010

**“Missing” Files**

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We have had two isolated reports of “missing” files when downloading data and one instance of “corrupt” data. The cause of these is unknown, and circumstances could not be duplicated to determine the cause. These problems have occurred with contractors “new” to the PQ-Box 100, therefore we suggest the following practices to reduce the chance of problems.

- 1) When stopping and disconnecting the PQ-Box 100, it is recommended to stop the recording by front panel button, then wait 5 seconds for the recording to be “closed”, before disconnecting power to the PQ-Box 100.
- 2) Do not delete the file from the PQ-Box 100, till after the file has been downloaded and then opened using the PQ-Box 100 software. Thus if the file is “missing” or “corrupt” when opening, it can be downloaded again. Only once the file has been opened and verified, then reconnect to the PQ-Box 100 and delete the file.
- 3) During download from PQ-Box 100, the PQ-Box 100 software shows a percentage bar graph. This bar graph goes to 100 % several times as components of the data are downloaded and checked. Wait till the software reports downloading is completed before exiting dialog box or disconnecting USB cable.
- 4) Due to buffering, USB communications can continue after dialog boxes are closed. Wait several seconds before disconnecting USB cables.

**“Missing” files**

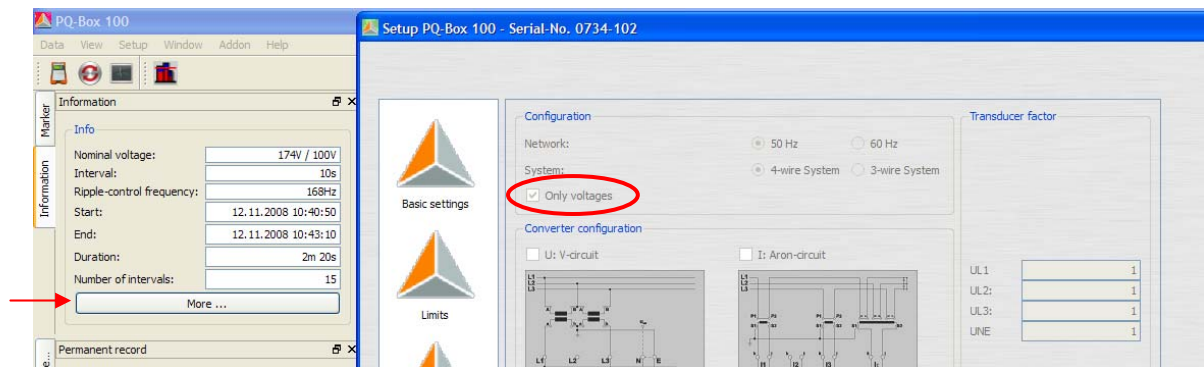
Files that cannot be found using the data import function, may be as a result of:

- a) The “File Load Dialog” directory selection pointing to the recording directory (i.e. 20081015\_1315\_000), rather than the directory this directory is located within.
- b) Expecting the most recent downloaded file to be at the top of the “File Load Dialog” list. Files by default are ordered by date/time, where the date/time is that of the start of the recording period, not the downloaded date/time.
- c) If using Windows Explorer (or similar) to search for files, search for “\*.pqf” files with file dates/times corresponding to when the file download was completed. Note that the “comments.pqf” file for all records listed in the “File Load Dialog” box are automatically updated to the date/time this dialog box was last closed, so all will have the same time/date.

**“Missing” data**

- a) When the file opens, but no data is visible in the permanent recording graphs, check the “Information” window. If the recording duration is less than 2 intervals, insufficient data exists to graph data points. In future make sure the measuring interval/recording duration is such that several intervals are recorded during the recording period.

*This sometimes occurs when making a quick recording to check connections prior to leaving the instrument for a long recording period. The “quick” recording duration may not be long enough to capture at least two full intervals. Also note that first interval does not actually start till multiple of recording interval from the hour – refer Hints and Tips issue #1. It is recommended to either use a shorter measuring interval for the “quick” check, or use the PQ-Box 100 manual trigger button and then inspect RMS and Oscilloscope events to determine data validity.*



- b) Check the “More” information screen. If the unit was set for “Only voltages”, the current data and power and other derived measurements will be zero.

**Other Issues:**

- a) Make sure you are using compatible versions of PQ-Box 100 firmware and PC software, to download data (Refer Hints and Tips V4). For example, data may not be able to be downloaded or opened if the PQ-Box 100 firmware is more current than the connected PC software. The latest PC software supports opening stored PC files from all previous software/firmware versions.
- b) If the downloaded file will not open in the PQ-Box 100 software, check the file size. If the file is larger than the free PC memory, the PQ-Box 100 software will not be able to open the file. Use a computer with larger memory.

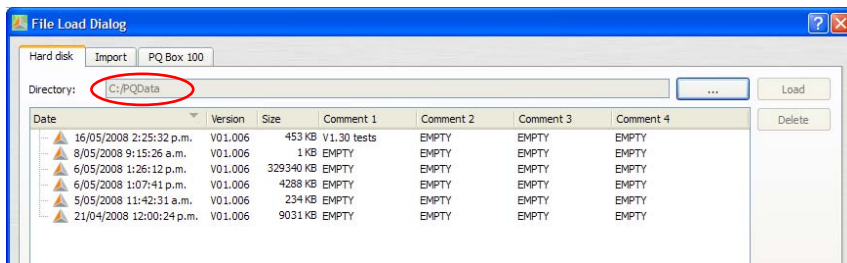
## Data File & Directory Structure

When data is saved from PQ-Box 100 to computer, a directory is created to contain the various data files. The directory is automatically created and named using a date, time and a sequential number. The date/time is that of the first measuring interval (not the actual time that recording was started). Every download creates a separate directory.

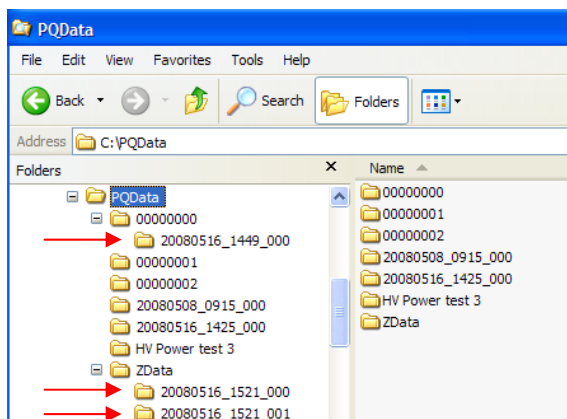
For example directory 20081024\_1315\_000 would be a created where the first complete measuring interval of recorded data occurred on 13:15 hrs of 24/10/2008. The sequential number 0000 indicates that this was the first download to be saved with first measuring interval of this time. Sequential number 001 would indicate that either the same recording was downloaded again, or data from a second PQ-Box 100 was downloaded that also had its first measuring interval occur at 13:15 hrs of 24/10/2008.

The directory name is not used within the PQ-Box 100 software for display purposes, and the software allows the user to freely rename data directories if desired. It is recommend to use the “Comments” facility to record useful information about recording location etc.

Note that PQ-Box 100 software will only display recordings in the File Load Dialog box for recordings that have their directory immediately within the selected directory. Occasionally users “loose” their data, by pointing the File Load Dialog box directly to the directory of the recording, rather than to the directory that the recording directory is within.



Above. File Load dialog box example for Directory “C:\PQData”, 6 recordings found



Windows Explorer view of directory structure. Indicated data recordings will not be “seen” by current PQ-Box directory setting of C:\PQData.

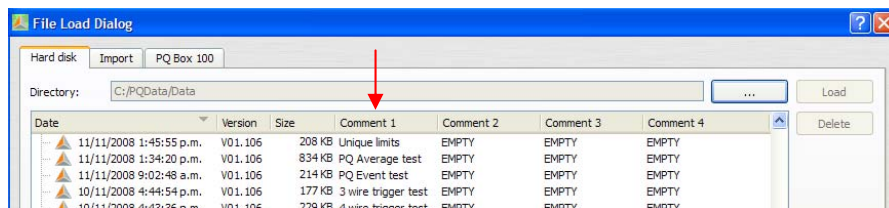
Unlike earlier versions of PQ-Box 100 software, the data directories no longer have to be located as sub-directories of a directory called “data”.

## Deleting Specific Data Types

As the PQ-Box 100 recording data is assembled from multiple data files, it is possible to delete a specific data event type. For example, it is possible to delete the “PQ events” data from the recordings, by deleting the file “event.pqf”. This may be useful to reduce file size of data being sent to another user, or simply where PQ Event data is not required. It is not currently possible to delete a specific event.

File name	File purpose
comments.pqf	Text file holding Comment1,2,3,4 data <sup>(1)</sup>
info.pqf	File containing PQ-Box 100 setup (settings) <sup>(1)(2)</sup>
cyc.pqf	Permanent recording data
cycP.pqf	Power (15 minute interval) permanent recording <sup>(3)</sup>
event.pqf	PQ Events
header.pqf	Test file holding additional comment data
recA.pqf	Oscilloscope recording
recB2.pqf	10ms rms recordings
recS.pqf	Ripple control recording <sup>(4)</sup>
Notes	
(1) Comments.pqf & info.pqf must remain as a minimum requirement	
(2) Used for “More information” display – cannot be used for uploading to other PQ-Boxes	
(3) Requires cyc.pqf to also be present if cycP.pqf is to be viewed	
(4) Ripple triggered “event” data, not “U eff R” permanent recording data	

## “Comments”



It is recommended to use the Comment 1, Comment 2, Comment 3, Comment 4 sections of the File Load Dialog box to record useful information about recording location etc. This can be done via the File Load Dialog box (at any time), or via text editor on the “Comments.pqf” file in the appropriate data directory.

Note that Comment1 & Comment2 fields appear in the header region of printed template reports /printouts.

Note that the “comments.pqf” file is created by the PQ-Box 100 software at the end of the download and file saving procedure. If downloading the data from the PQ-Box 100 to multiple computers or locations, the comments.pqf file will be freshly created for each download.

Note that the “comment.pqf” file is not created and saved to the data directory till the file dialog box is actually closed. Similarly, if changing comments of an existing recording, the changes are not written to the “comment.pqf” file till the file dialog box is closed. Therefore, if you use Windows explorer (or other

software) to copy/move data files before closing the PQ-Box 100 “File Load Dialog” box, the copied/moved data will not have the updated comment information.

### Automatic Start-up, Shut-down and Battery Operation

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The PQ-Box 100 has an internal rechargeable battery that will power the unit for approximately 60 seconds if the unit is recording and power is removed from the Power supply leads. The unit will automatically close the recording file, and when power is returned restart and automatically start recording. However, the PQ-Box 100 requires approximately 20 seconds to reboot before automatically commencing recording, therefore powering the PQ-Box 100 from “secure” supply such as station 110 Vdc supply is recommended if it is critical to avoid any blind spots..

Battery capacity is sufficient to allow for several successive power interruptions. Internal batteries should return to full charge capacity after the unit is powered for approximately 4 hours.

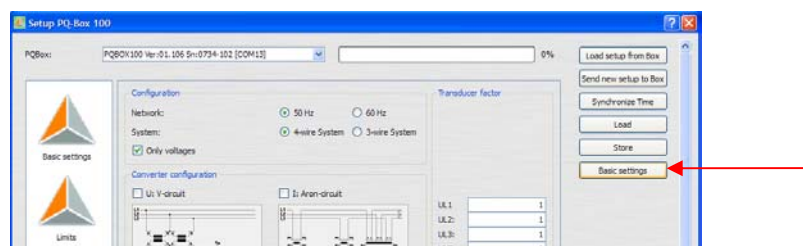
Note:

- 1) Internal batteries cannot be recharged by USB connection
- 2) The PQ-Box 100 cannot be powered via the USB to make measurements
- 3) If the unit is not recording, and power supply is removed, then the PQ-Box 100 will shut down after approximately 3 seconds

*When graphing permanent recording data, a straight line may be drawn between data points on either side of the PQ-Box 100 power interruption (s/w version dependent).*

### Basic Settings

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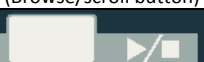
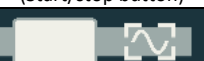
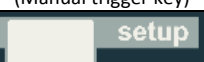
The “Basic settings” button can be used to restore default instrument settings (limits and triggers) to the PQ-Box 100. By default this includes resetting the unit to 4-wire setting, 230/400 V input and 600 second measuring interval.

However, if this default setup is not to your liking, you can overwrite this with your own setup. First in the PQ-Box 100 software root directory, make a backup copy of file “PQBox\_Param\_default.ini”. (E.g. copy and save as “Backup\_PQBox\_Param\_default.ini”). The backup file will allow you to return to the factory default if needed in the future. Within the PQ-Box 100 software create or load you new desired “default” setup and then save as (overwriting) “PQBox\_Param\_default.ini”. Now the button “Basic Settings” will load your new default settings.

**The PQ-Box 100 LCD display is in German?**

If the LCD display appears in German, from one of the measured parameters LCD displays, follow the below key sequence to return the LCD display to English.

Note if the unit appears to be in the middle of a setup menu, push the setup button several times till the LCD returns to (voltage/current) measurement display.

Key sequence	Button label	LCD display
1	 (Setup button)	
2	 (Manual trigger key)	<b>Einstellungen</b>
3	 (Browse/scroll button)	<b>blattern</b>
4	 (Start/stop button)	<b>Sprache</b>
5	 (Manual trigger key)	<b>English</b>
6	 (Setup button)	<b>back</b>

This document was originally written referencing features of PQ-Box 100 firmware DSP 1.207/1.208 and PC software 1.40. Features and functionality may differ with other versions.