

PWRcheck+



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Introduction

What is PWRcheck+?

PWRcheck+ is an integrated DC power analyzer, watt meter and electricity monitor, measuring 0V to 60V DC at up to 40A. The backlit graphics LCD features seven display modes including voltage, amperage, wattage, amp-hours and voltage quality. Alarms can be set to flash the display for programmable limits for over/under voltage and over current, wattage and amp-hours. High side monitoring simplifies installation making it suitable for vehicle use. Source and load connections utilize 45A Powerpole® connectors. Non-volatile memory stores over 750000 sample points for data logging (Nearly 18 months worth of data @ 1 point per minute). Included PC software supports real-time monitoring, data download and charting.

Who is PWRcheck+ for?

PWRcheck+ enables amateur radio enthusiasts, emergency service providers and site operators to assess load requirements and monitor the status and health of their DC power supply systems.

Device Overview



User Interface

The user interface for the PWRcheck+ is simple. It consists of a touch LCD screen. Depending on the screen being displayed, touching different parts of the screen causes it to navigate the interface. See the next four images for information about the user interface.

LCD Layouts

Press to cycle to next screen

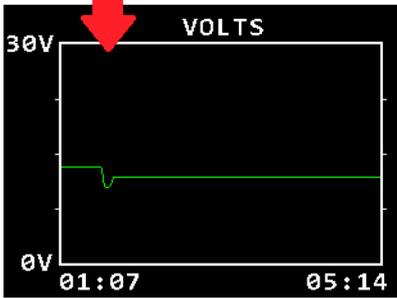
Press to go to Settings screen

Press to go to large screen for this reading

Press to go to large screen for this reading

Press to toggle backlight ON/OFF

Press anywhere on the screen to cycle next screen



Press to toggle backlight ON/OFF

Press anywhere on the screen except CLEAR LOG button to go to next screen

Log Information

Entries: 79

Time: 01:19:00

CLEAR LOG

Press and hold CLEAR LOG button for 5 seconds to clear log from memory

Press one of the buttons in this row to set the backlight timeout

Backlight Timeout: 5s

10s 30s 60s Off

Log Interval: 60s

1s 30s 60s Off

Exit

Press one of the buttons in this row to set the logging interval

Press this button to exit settings screen

The PWRcheck+ LCD can be configured to display its readings in a number of different ways. All configurations contain a current direction indicator in the lower right. The following configurations are available:

1. Large digital voltage with smaller digital voltage quality, current and power.
2. Large digital current with smaller digital voltage and power.
3. Large digital power with smaller digital voltage and current.
4. Large digital amp-hours with smaller digital voltage and current.
5. Large graph of amp-hours remaining with smaller digital voltage and current.*
6. Voltage graph
7. Current graph
8. Log information screen.**

* Only shows up when maximum amp-hours is set

** Only shows up when logging is enabled

Power Connections

PWRcheck+ has two sets of Powerpole® connections. The Source connection should be attached to the power source. The Load connection will then attach to the load. The voltage and current readings reflect the voltage across and current through the Load connection when current is flowing from the source to the Load. If current is flowing in the opposite direction, the voltage and current readings reflect the voltage across and current through the Source connection.

PWRcheck+ itself is also powered by the power source so it will consume a small amount of current to operate. When current is flowing from Source to Load, this current is not reflected in the readings. If current is flowing from Load to Source, the current consumed by the PWRcheck+ will be included in the reading. See the Electrical Specification section for power consumption of the PWRcheck+.

PC Interface (USB)

PWRcheck+ is equipped with a USB interface which allows for configuration of the device as well as enhanced viewing. There are two interfaces available for use via the USB connection. The first interface is accessed via the Windows software. The second is an ASCII interface which can be accessed with any terminal program.

PC Software/Driver Installation

The following instructions should be followed to install the PC software and drivers for the PWRcheck+:

1. Run the software installation and proceed through the dialogs. Near the end of the installation you will be asked to plug in your PWRcheck+.

2. Plug in the PWRcheck+ by connecting the PWRcheck+ to the PC using the supplied USB cable.
3. Windows should either install the driver automatically or present a dialog showing where to find the drivers. If the driver installs automatically continue to step 5.
4. Select the option to automatically search for the driver and Windows should find and install the driver.
5. The driver should now be installed and Windows will confirm you that your device is ready. The PWRcheck+ will be assigned a COM port. This COM port can be used for accessing the ASCII interface.

PC Software

The CD-ROM that accompanies your PWRcheck+ contains software which allows you to configure your PWRcheck+ as well as view the readings in an easy to use interface.

ASCII Interface

The ASCII interface is accessed via the COM port by using a terminal program such as Microsoft's HyperTerminal. Any baud rate is valid, but faster baud rates are recommended. The ASCII interface is a simple number based menu. Entering a ? will cause the current menu to be shown again.

Main Menu

1. Monitor Sensors – Will put unit into a mode where it outputs values to the terminal
2. View Log – Will output the currently logged values in a CSV format
3. Reset Log – Will reset the log
4. Set Log Interval – Set the interval that the unit logs values to the flash.
5. Backlight Timeout – Configure the amount of time the backlight stays on in seconds
6. Alarm Configuration – Adjust the various alarm levels.
7. Set Fast Log interval
8. Set Screen Colors - Adjust the display colors, text, background, etc.

Monitor Sensors

This shows all measured and calculated readings in a comma separated list. The measurements will be output every second.

The unit will stay in this mode until X is pressed. This is the order of the output values:

Volts, Amps, Watts, Total Amp-Hours, Forward Amp-Hours, Reverse Amp-Hours, Max Volts, Min Volts, Max Amps, Min Amps, Quality

A header row with titles will be output before the data rows are displayed.

Forward Amp-Hours will increase as current flows from Source to Load.
Reverse Amp-Hours will increase as current flows from Load to Source. Total Amp-Hours is the total of forward and reverse amp-hours.

View Log

This will display a complete dump of the data logged on the flash chip. The output will be comma separated similar to the Monitor Sensors output. X can be pressed to stop the output. This is the order of the output values:

Volts, Amps, Watts, Max Volts, Min Volts, Max Amps, Min Amps

Only the Volts and Amps are logged. The other values are calculated as the log is dumped.

A header row with titles will be output before the data rows are displayed.

Reset Log

Will clear all log data. Before the data is erased, a confirmation must be accepted.

Set Log Interval

Enter an interval for logging data to the onboard flash device. The time can be anywhere from 1 to 60 seconds. Entering 0 will disable all logging. Logging is disabled by default.

Backlight Timeout

Enter a timeout for the backlight. The time entered can be anywhere from 1 to 240 seconds. The default is 5 seconds. The backlight only times out when the unit is not attached to the PC via USB.

Alarm Configuration

1. Over-voltage Limit – Set over-voltage limit in mV
2. Under-voltage Limit – Set under-voltage limit in mV
3. Over-current Limit – Set over-current limit in mA
4. Amp Hours Limit – Set maximum amp hours in mAh
5. Alarm Notification Time – Set number of seconds to display an alarm condition.

Set Fast Log Interval

Used to set a faster log interval, less than 1 second. The time can be anywhere from 25 to 999 ms.

Set Screen Colors

Used to set the various colors display on the PWRcheck+. Can set the display foreground (text), background, alarm background, bar graph and graph colors.

Electrical Specifications

	Minimum	Maximum	Unit
Input Voltage			
Without USB	7	60	V
With USB	0	60	V
Input Current			
Without USB	0	40	A
With USB	0	40	A
Input Current Used by PWRcheck from Source Connector			
Without USB	0	0.120	A
With USB	0	0	A

PWRcheck+ Warranty

PWRcheck+ is warranted against failure due to defects in workmanship or materials for one year after the date of purchase from West Mountain Radio. Warranty does not cover damage caused by abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation, alteration, lightning, or other incidence of excessive voltage or current. If failure occurs within this period, return the **PWRcheck+** or accessory to West Mountain Radio at your shipping expense. The device or accessory will be repaired or replaced, at our option, without charge, and returned to you at our shipping expense. Repaired or replaced items are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the **PWRcheck+** or accessory made after the expiration of the warranty period.

West Mountain Radio shall have no liability or responsibility to customer or any other person or entity with respect to any liability, loss, or damage caused directly or indirectly by use or performance of the products or arising out of any breach of this warranty, including, but not limited to, any damages resulting from inconvenience, loss of time, data, property, revenue, or profit, or any indirect, special incidental, or consequential damages, even if West Mountain Radio has been advised of such damages.

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