



## User Manual for the PowerPanel LCD Display Expander

Document Version 1.9

Thank you for your purchase of the PowerPanel - a tiny, lightweight Watt Meter for your model! This instruction manual will guide you through the installation and operation of your PowerPanel LCD Display. ***Please read the entire manual carefully before proceeding.*** If, after you read the manual (including the Troubleshooting sections!) you have further questions or problems, see the Support page on <http://www.eagletreesystems.com> for additional information, or email us at [support@eagletreesystems.com](mailto:support@eagletreesystems.com).

### Key Features

***Here are a few of the features of the PowerPanel:***

- Ultra-thin LCD display connects to the eLogger with the included 11" (28cm) data cable.
- Live Display of Amps, Volts, mAH, Temperatures, Wattage, RPM and some GPS parameters (more coming soon, by simply download our latest Windows program).
- Cumulative mAH display serves as a “gas gauge” for your battery pack. By knowing how much has been used, you can know approximately how much is left!
- Up to 4 parameters can be displayed per “virtual page” on the PowerPanel. Each parameter has a programmable label.
- Multiple “virtual pages” of data are supported, with programmable ways of switching between the pages.
- Supports display of both Live data and Max values, with programmable ways of switching between Live and Max.
- Supports “hot plugging” into the eLogger after your session.
- So light, it can easily be attached to the side of your model for live/max display all the time!
- System supports both Metric and English units.

### Supported Products

The PowerPanel is presently supported with our eLogger and EagleEyes products. This document is primarily focused on using the PowerPanel with our eLoggers. **For information about using the PowerPanel with the EagleEyes, please refer to the EagleEyes manual.**

### Steps to Follow

Installation and use of your PowerPanel will be quite easy and enjoyable if you follow these few steps:

1. Read through the manual to understand the warnings, determine the installation and setup sequence, etc.
2. Connect the PowerPanel to the eLogger. You should now see live data on the PowerPanel!
3. If desired, reconfigure the parameters displayed on the PowerPanel as described in the “Configuring the PowerPanel with the Software” section below.
4. Have fun!

### Intended Uses

The PowerPanel is designed for use in Unmanned Radio Controlled models. Using the PowerPanel for other purposes is not supported. Further, using the PowerPanel in situations where its use or failure could result in loss of life, bodily injury or property damage is expressly prohibited.

### Packing List

Your package should include the following: the PowerPanel LCD Expander, and a printed version of this manual. Please check the support page of our website for the latest version of this manual, in case changes have been made since it was printed.

**NOTE: the PowerPanel is covered with protective clear shrinkwrap. Do not remove the shrinkwrap!**

#### Connecting the PowerPanel to the eLogger V3/V4

The PowerPanel plugs into the “LCD/TX” port of your eLogger V3, as shown in Figure 1A.

#### Connecting the PowerPanel to Your eLogger V1/V2

Connect the PowerPanel to the eLogger V1 or V2 AUX (or LCD) connector, as shown in Figure 1. Note that the top row of pins is the correct row, and note that the red wire of the PowerPanel should face outwardly.

## Configuring the PowerPanel with the Software

After you have completed the connection step above, the PowerPanel should be preconfigured to show Amps, Volts, mA, and Temperature. No further configuration is required if these are the only parameters you care about!

NOTE: The PowerPanel can be “hot plugged and unplugged” to the eLogger even when the eLogger is powered by your battery pack.

Once the PowerPanel is installed, you can change what is displayed on the PowerPanel, change when the PowerPanel shows Live vs Max data, and change when the PowerPanel switches between multiple display pages.

### Launching the PowerPanel Display Setup Utility

To configure the PowerPanel, connect the eLogger to USB, and choose “Hardware, Configure PowerPanel Display” in the Eagle Tree Data Recorder Software. The software can be installed from our website at <http://www.eagletreesystems.com/Support/apps.htm>. The PowerPanel Setup Utility should then appear.

### Using the PowerPanel Display Setup Utility

Figure 2 shows the main page of the Utility. The Utility main page is divided into the following sections:

#### Select Data Parameter to Configure on the PowerPanel:

This section contains the tools to select what, how and where parameters are displayed on the LCD pages.

To configure a parameter to display, click “Choose the next Parameter to Configure.” This dropdown menu lets you choose a parameter to display on the LCD screen. The available parameters depend on your Recorder type, and the sensors you have installed.

To change the location on the page for displaying the parameter, just click the location with your mouse, and drag the parameter to the desired location.

To change the name of the parameter on the LCD screen, click on the parameter on the simulated display, and edit the name with “Enter LCD Screen Name for Parameter.”

If there is a parameter that you would like to display on ALL your pages, click on the parameter on the simulated display, and click the “Display on all pages” button.

NOTE: If the data for each parameter grows large, such as a large RPM, the middle character in the 3 digit label will be eliminated to show all the numeric digits in the parameter. For example, “RPM 0” would become “RM 40342” in this case.

#### Switching Between Multiple Display Pages:

This section lets you indicate to the PowerPanel how you want it to switch between multiple display pages, when you have parameters on more than one page (meaning more than 4 parameters total, since each page will hold up to 4 parameters).

If you want the PowerPanel to scroll between the pages automatically, select the “Switch Between Pages Every Two Seconds” option. Then, the PowerPanel will automatically switch between page 1, page 2, etc., for each page you have programmed with parameters.

If you want to switch between the pages manually, select the “Switch Between Pages when Temperature 1 Sensor is disconnected and reconnected” option. When this option is selected, the PowerPanel will stay on the currently displayed page (starting with Page 1 when power is applied) until the Temperature 1 Sensor is disconnected from the eLogger, and then reconnected. NOTE: only choose this setting if you are using the optional temperature sensor!

#### Displaying Max vs Live Values on the PowerPanel:

This section lets you indicate to the PowerPanel how you want it to switch between displaying “live” data (real time data) for each parameter, and the maximum value detected for each parameter (minimum value for pack voltage). Max values are indicated by an “up arrow” triangle next to the parameter (“down arrow” triangle for pack voltage). Live values do not have this arrow.

If you want the PowerPanel to show Max values detected automatically when the motor is not running (current draw is near zero) and show live values when the motor is running, select the “Show Max when current draw is zero, and switch to Live when current draw is greater than one amp” option. Then, whenever the motor is not running, max values detected are displayed. But, when the motor is running, the PowerPanel switches to live display mode. This setting is useful for bench testing.

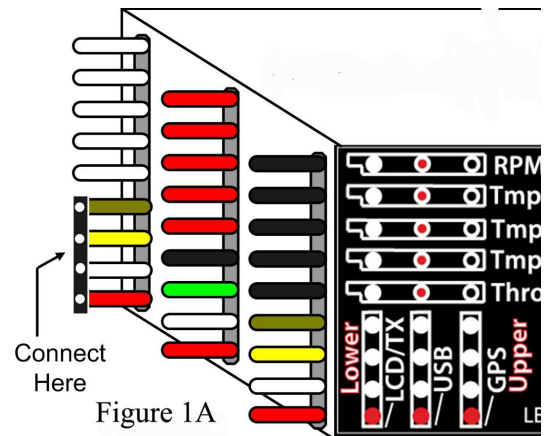


Figure 1A

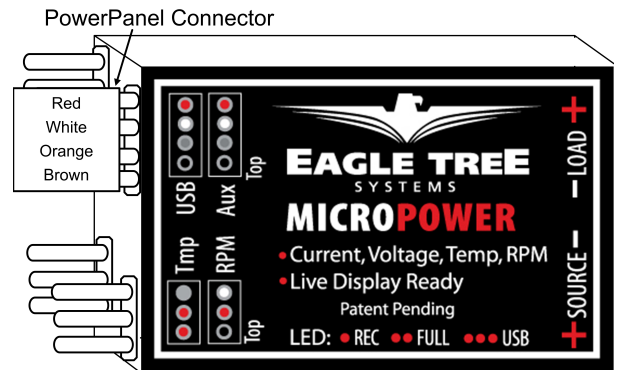


Figure 1

If you want the PowerPanel to be manually switched between showing Max and Live values, select the **“Show Max when Temperature 1 sensor is disconnected”** option. Then, whenever the Temperature 1 Sensor is disconnected, max values detected are displayed. But, when the Temperature 1 Sensor is connected, the PowerPanel switches to live display mode. NOTE: only choose this setting if you are using the optional temperature sensor!

If you want the PowerPanel to never show Max values, and only show Live values, select the **“Don’t Show Max Values”** option.

NOTE: The PowerPanel remembers the Max values only during a single session. Once the eLogger is disconnected from power, the Max values are cleared. But, disconnecting the PowerPanel from the eLogger does NOT clear the max values.

### Completing the PowerPanel Display Setup

Once the parameters are configured to your satisfaction, click OK, which will download the settings to the PowerPanel. Note that you can change the parameters at any time by following the above steps.

Note: If you wish to clear **all** previously configured parameters, hit the “Reset Parameters” button on the bottom of the utility.

### Using the PowerPanel at the Field

Once the parameters are configured to your satisfaction, it’s time to use it! You can either connect the PowerPanel to the eLogger for bench testing, or for checking your power system’s status before and after flying. You can even permanently mount it on the side of your model, with either Velcro or double-sided tape.

NOTE: The first time the PowerPanel is plugged into the eLogger after the eLogger is turned on, the Max values are cleared. So, if you want to see, say, cumulative mAH, be sure to plug in the PowerPanel briefly before your session, but after you have turned on power to your model.

**NOTE: IF YOU DECIDE TO LEAVE THE POWERPANEL PERMANENTLY MOUNTED ON YOUR PLANE WHEN YOU FLY, DON’T FORGET TO RANGE CHECK YOUR MODEL AFTER INSTALLATION, AS DESCRIBED IN YOUR RADIO MANUAL.** Though it is highly unlikely that the PowerPanel would cause any problems with range checking, it’s good practice to do this after changing any equipment on your model!

### Troubleshooting

Below is a list of problems that may be encountered, and steps to remedy them.

A good first step to troubleshooting, if you are able to connect your eLogger to your PC, is to download our latest software and update the eLogger’s Firmware via “Hardware, Firmware Control.” Doing this will ensure that you have the latest software and firmware available.

If your particular issue is not addressed by this update, or by the suggestions below, email [support@eagletreesystems.com](mailto:support@eagletreesystems.com) for additional assistance. Include a full description of your problem, your PC configuration, type of model, and Windows Software and eLogger firmware version if possible (from “Help, About” and “Tools, Firmware Control” in the app) and any other relevant details.

**Issue:** My PowerPanel display is blank

**Solutions:** Try to eliminate the problem in the following ways:

- Verify that you have the PowerPanel connected to the correct port on the eLogger.
- Make sure that you have the correct firmware version installed in the eLogger, as described in the Firmware Update section above.
- Verify that you have configured the PowerPanel to display something, by following the instructions in the “Configuring the PowerPanel with the Software” section above.
- Confirm that the eLogger LED is blinking. If it is not, power is not being applied to the eLogger, or something is wrong with the eLogger. If the eLogger’s LED starts to blink after the PowerPanel is removed, verify you have plugged it into the right port.
- Check to make sure the PowerPanel cable is not frayed or cut.

**Issue:** The PowerPanel is displaying data, but some of the parameters do not appear to be correct

**Solutions:**

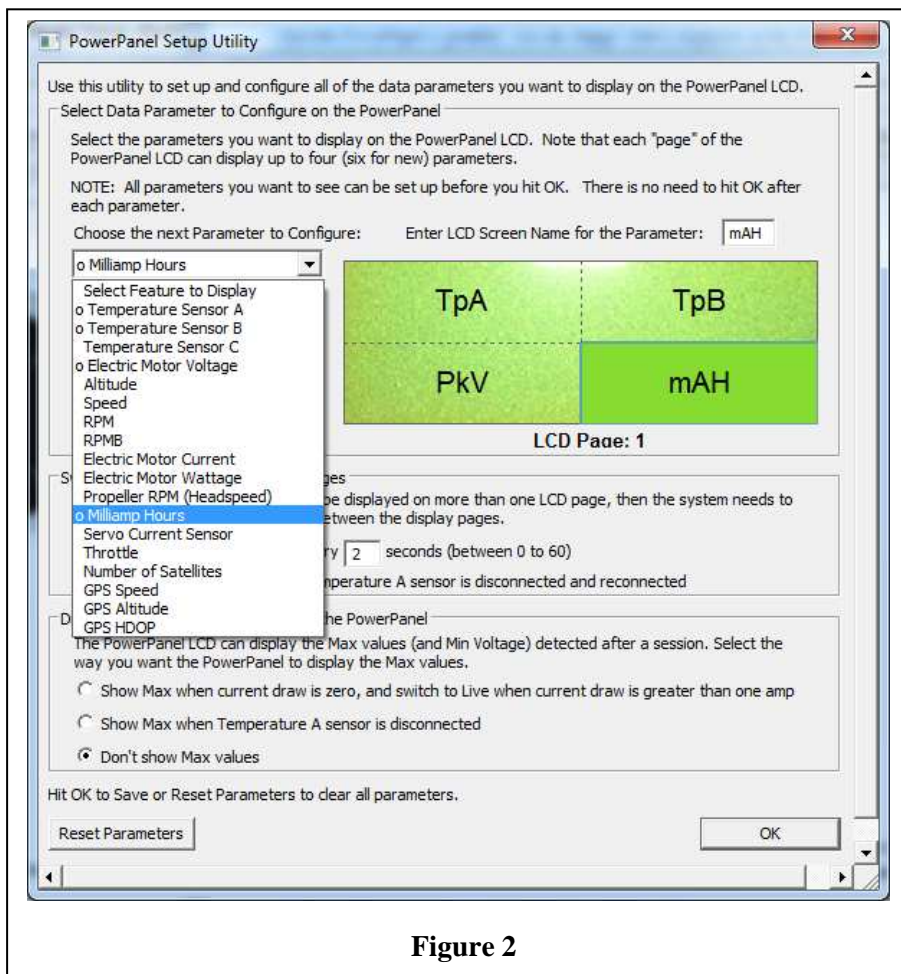


Figure 2

- Click, “Reset Parameters” in the PowerPanel configuration page, and set up the parameters again.
- Make sure the sensor for the parameter being displayed is correctly connected and installed on your model. For example, RPM will read zero if the RPM sensor is not connected. See the eLogger or sensor manuals for specific sensor information.
- Try removing power from and restoring power to the eLogger.

**Issue:** I have the eLogger connected to USB, but do not have a battery pack connected to the eLogger. The PowerPanel shows a nonzero voltage, however.

**Solution:** This is normal. Connecting a battery pack to the eLogger will result in correct display voltage.

**Issue:** I have the eLogger connected to USB, but do not have a battery pack connected to the eLogger. The PowerPanel display is very dim.

**Solution:** This is normal. Connecting a battery pack to the eLogger of 6V or greater will increase the LCD contrast.

**Issue:** The Max values and “Cumulative mAH” feature of the PowerPanel is not working correctly. I get low mAH readings after my session.

**Solution:** The PowerPanel remembers the Max values only during a single session. Once the eLogger is disconnected from power, the Max values are cleared. But, disconnecting the PowerPanel from the eLogger does NOT clear the max values.

## PowerPanel Specifications

Display: 16x2 Character LCD

Dimensions: Approximately 2.5” x 1” x 3/16” thick (6.5cm x 2.7cm x 4mm thick)

Weight: Approximately 0.5oz (14 g)

Length of Cable: Approximately 11” (28cm) - extendable with our “PowerPanel Extension Cable” on the eLogger page of our website.

## Limited Warranty

Eagle Tree Systems, LLC, warrants the PowerPanel to be free from defects in materials and workmanship for a period of one (1) year from the date of original purchase. This warranty is nontransferable. If your unit requires warranty service during this period, we will replace or repair it at our option. Shipping cost to us is your responsibility.

To obtain warranty service, contact us by phone, fax or email to request an RMA number. No returns will be accepted without this number.

This limited warranty does not cover:

- The Software included with the eLogger. See the Software license agreement for more information on Software restrictions.
- Problems that result from:
  - External causes such as accident, abuse, misuse, or problems with electrical power
  - Servicing not authorized by us
  - Usage that is not in accordance with product instructions
  - Failure to follow the product instructions

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). OUR RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN TIME TO THE TERM OF THE LIMITED WARRANTY PERIOD AS DESCRIBED ABOVE. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THIS LIMITATION MAY NOT APPLY TO YOU.

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