**Instructions for installing code on Power Panel board**

 Here are the steps to install the Arduino IDE environment and to down load the PP board code and load the micro module in 12 easy steps!

**Arduino Installation and sketch uploading (Windows 7, 8 or 10)**

 Follow these instructions step by step, let me know if you have any problems.

You will need a microUSB cable to connect to the micro module on the Power Panel board and one spare USB port on your PC.

1. Download and install on your windows PC the Arduino IDE from https://www.arduino.cc/en/Main/Software
2. Open Arduino IDE (green icon) from desktop

                You should see an open minimal Arduino sketch (program in Arduino speak)

                Close sketch window (x)

1. Open your default Documents window, look for the Arduino folder

                Open Arduino folder, look for libraries folder

                If libraries folder does not exist, create new folder with the name "libraries" (all lower case) in the Arduino folder

1. Download code using an internet browser from: https://github.com/flinthillsradio/PowerPanel

                Click Branch:master button, and select SLA from drop down menu (master is for LiFePO4 version)

                Click the green button "Clone or download", select Download ZIP

1. Unzip the PowerPanel-SLA folder, copy PowerPanel-SLA folder into Documents\Arduino folder

                Open Documents\Arduino\PowerPanel-SLA folder, copy folder TimerOne-r11 into the Documents\Arduino\libraries folder created above.

1. Connect miniUSB cable to micro on Power Panel, flat side up on cable, use care, as it is easy to damage usb connector on micro module if too much force is used!  If USB connector lifts or comes off the board, the module will need to be replaced.
2. Connect other end of USB cable into a USB port on computer, do not use a USB hub port.

                PC should respond by installing drivers for new device, it should be recognized by Windows as an Arduino Leonardo

1. Now open Arduino IDE, in the Tools menu hover cursor over board menu, a list of known boards will be shown in drop down

                Select Arduino Leonardo

                In Tools/Port menu, select COMxx  where COM is the virtual COM port for the Leonardo (usually the highest numbered COM port shown)

                If you’re unsure which com port is the Leonardo, unplug the USB cable, note which COM ports remain listed in Tools/Port menu,

                then plug in the USB cable, and see what new COM port shows up in the Tools/Port menu, select that COM port.

                Close Sketch window

1. Open Documents\Arduino\PowerPanel-SLA folder

                Rename LLPP.ino file to LLPP-SLA.ino

                Double click LLPP-SLA.ino file (green icon) to open sketch

                If you get a dialog box saying the sketch needs its own folder, click OK!

1. Verify in the sketch window Tools/Board: is set to Arduino Leonardo, and Tools/Port: is the same COM port as above.
2. Do a test compile by clicking the "checkmark" icon just below the file menu.

                If all goes well you will see white text in the bottom portion of sketch window that indicates build completed without errors

                If errors occur, the text will be RED and will not upload!

1. If sketch compiles ok above, now upload code to Leonardo by clicking the "->" (arrow)icon just to right of the checkmark icon

                You will see LEDs on the micro module blink, if this worked, you will see "Done uploading" with white text in the black pane.

Congratulations!  That's it.

To reload the LiFePO4 version,

repeat step 4, downloading the master version,

step 5, copy PP-master folder into Arduino folder,

step 9, open PP-master and open LLPP.ino sketch, click OK for needing its own folder,

steps 10, 11, 12, test compile and upload to the micro module!

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