

This is an upgrade to the Wars Powerpole Power Distribution Kit +VM

It includes:

- 3D Printed box to accommodate the 3xUSB module. Material is PETG.
- DC to USB down converter voltage module, constant voltage, adjusting screw on board.
- 2 screws
- Wire
- Instructions

PLEASE READ THESE INSTRUCTIONS ALL THE WAY TO THE END BEFORE STARTING TO ASSEMBLE.

Note 1) we refer to the board that is the main Powerpole distribution box kit as the “Main Board” and the 3 x USB circuit board as the “USB Board”.

Note 2): You can adjust the regulated voltage using a small screw on the USB board. By default, it is set at about 5.00 volts. You may wish to increase that slightly to 5.16 volts to take into account any voltage drop in your USB cable. To do this you will need to be able to feed 12 volt DC to the USB board before you remove the power socket (centre is positive). You will also need to either use a USB voltmeter, or make a USB A to 2 wire flying lead. Usual colour of wires for power is red(+) and black(-). The other two coloured wires are for data and unused here.

Note 3) The USB socket marked “NOIC” can supply about 2 amps, and the other two USB sockets can each supply up to 3.5 amps, but the board cannot supply more than 3.5 amps for the total of three sockets. The unmarked USB sockets have the IC necessary to communicate with smart USB devices such as Apple phones or Android fast charge devices.

INSTRUCTIONS

Tools:

Wire stripper

Small Phillips screwdriver

Needle nose pliers

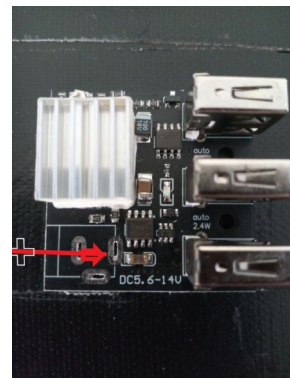
High temperature soldering iron, both thick and thin tips.

Side cutters

Desoldering tool or copper braid.

PROCEDURE

1. If you haven't already done so, construct the WARS Powerpole DC Distribution Box kit as per instructions, up to but not including fitting of the voltmeter.
2. Desolder and remove the power socket on the USB board. Ensure that that no metal is protruding from the USB board board rear.
3. Take care not to damage the rest of the USB Board. You may need to file the tabs at the rear of the board because It is important to have a flat rear of the board so it fits properly over the USB cutouts in the box.
4. Strip one end of the supplied red & black wire and using a fine soldering tip, solder the red wire to the positive tab on the USB board as per photo. This is the solder pad



originally connected to the centre pin of the plastic power socket which was removed in 2, above. Be careful not to heat up the adjacent components too much as they might be damaged.

5. Solder the stripped end of the BLACK wire to the Negative solder pad on the USB board. This is the solder pad furthest from, but parallel to, the positive pad in 4. Above.

6. If you previously constructed it, unscrew the bottom of the Wars Powerpole Kit, and remove the main circuit board from the box. Keep the 4 bottom screws. The old box can be discarded.

7. Remove the Voltmeter from it's socket in the old box. If the connecting wires are too short, you may need to desolder the wires from the kit (not from the voltmeter circuit board)

8. Fit the USB circuit board to the supplied case as shown.

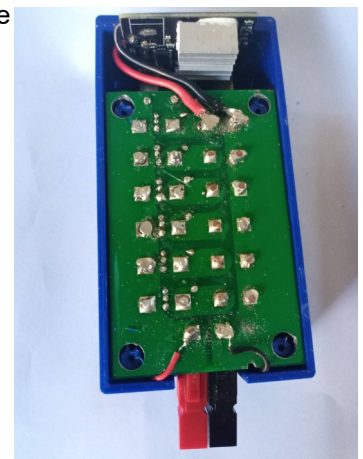
9. Screw the two small screws into the case to hold the USB board in place. It may be useful to use a magnetized screwdriver to hold the screws at the tip of the screwdriver to fit them in the tight space.



10. Fit the voltmeter into it's socket. If you want the display to be read such that the input Powerpole socket is facing away from you, fit the voltmeter with the wires on the left hand side. The cutout is quite tight so you may need to file or sand the cutout a bit if it doesn't want to go in easily. If the wire has no easy path, consider filing a notch or drilling a hole in the side of the main board to provide a path.

11. Solder the voltmeter red wire and black wires either to the main input connector, or to the pads connected to the nearest red and black Powerpole connectors.

12. Solder the USB board's red wire to the nearest positive (red Powerpole connector) pad on the reverse of the Main board. Similarly, solder the black wire to the negative (black Powerpole connector) pad on the reverse of the Main Board.



13. Fit the two parts of the box together, and reuse the screws from the original box to screw the USB box together.

If you need to disable the 3 x USB, you can just remove the fuse that serves the USB board.

The photos below show the finished unit.

