

PowerPole Conversion for the Gamma HPS-1a Power Supply

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The Gamma HPS-1a power supply is a nifty unit, especially for powering portable equipment due to its tiny size. The only problem I have with it is that it uses a Molex 20-amp connector for the DC output. All of my equipment has been modified for the much more popular (and semi-standard) Anderson PowerPole connector. Therefore I decided to replace the Molex connector with PowerPole connectors.

You will need the Anderson PowerPole red housing (Mouser 879-1327-BK), black housing (Mouser 879-1327G6-BK), two terminals (Mouser 879-1331), and a pair of mounting clamps (Mouser 879-1462G1). And if you don't have a nibbling tool, you should also pick up the Mouser 524-1806.

First remove the existing Molex connector from the rear of the HPS-1a power supply. To do this, cut off the red and black wires flush with the rear of the connector. Then cut the nylon tabs and pull the connector out. Now strip $\frac{1}{4}$ " of insulation from the red and black wires and crimp (if you have the correct tool) or solder the wires into the PowerPole terminals.

The PowerPole clamps are too wide, so use the nibbling tool to remove 0.1" from each side of the clamps (this is one nibble). Use a small file to clean up the clamp if necessary. See Figure 1.



Figure 1: Upper clamp is unmodified. Lower clamp has had 0.1" nibbled from each side.

Next you must widen the connector hole in the HPS-1a. The height of the hole will remain unchanged. Using the nibbling tool, nibble 0.25" from the left of the hole and 0.1" from the right

of the hole. Use the dimensions shown in Figure 2 below. As you can see in Figure 3, I nibbled out just the necessary dimensions for the PowerPole connector. But it will be easier to make the hole rectangular.

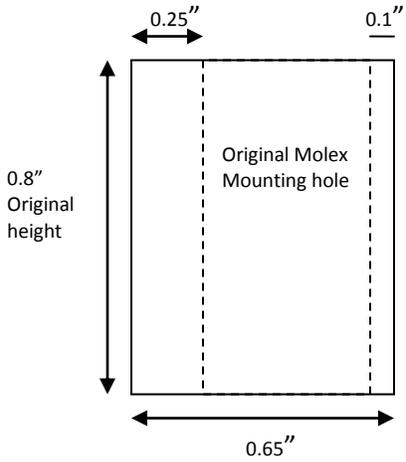


Figure 2: PowerPole hole dimensions

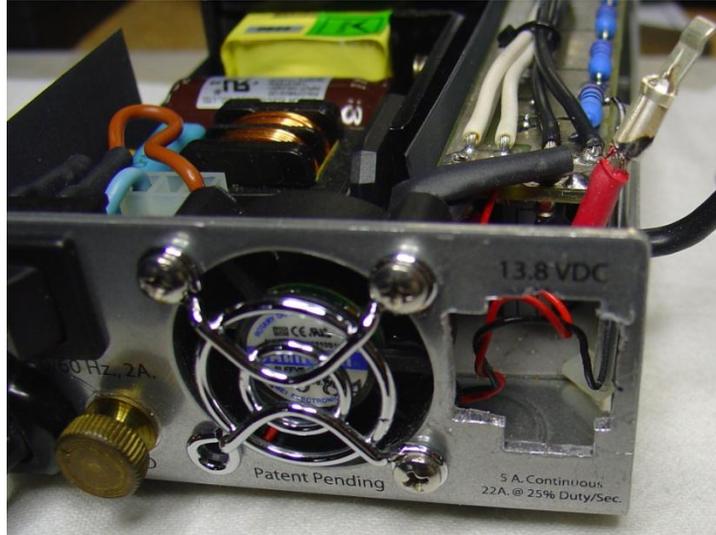


Figure 3: Author's power supply chassis opening

Now we need to mount the clamps and PowerPole connectors. The clamp #6 mounting holes will exactly overlap the bottom and top edges of the chassis mounting hole cut-out, and so flatwashers must be used to provide mounting surface area. Therefore prepare the lower bracket as shown in Figure 4. Use a 6-32x1/2" screw, flatwasher, split-ring lockwasher and nut.

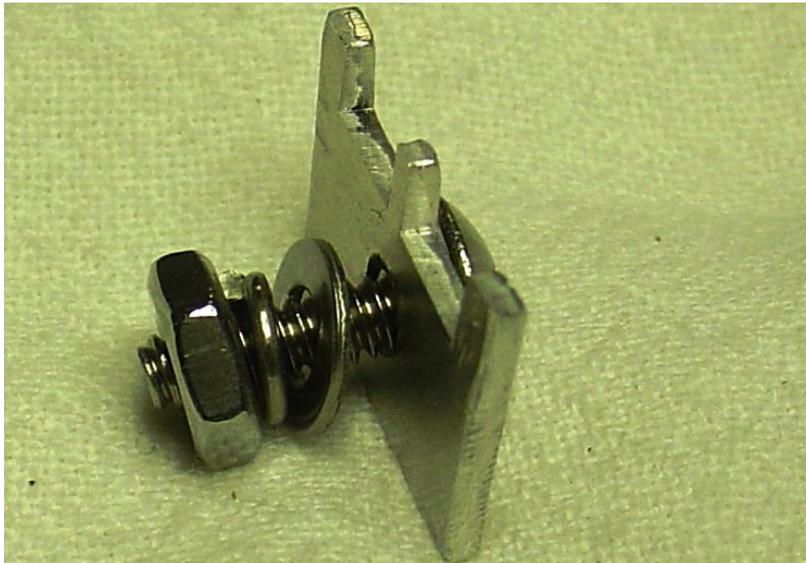


Figure 4: Bottom clamp and hardware.

Mount the clamp to the bottom of the hole, ensuring that the flatwasher clears the inside lip of the box. Snug down the screw, but final tightening will be done later. Now extend the black and red wires through the PowerPole mounting hole and insert them into the PowerPole red and black housings (make sure the terminals click into place). Push the housing into the rear chassis

hole and seat it on the lower clamp. Install the upper clamp using a 6-32x1/2" screw, flatwasher, split-ring lockwasher and nut as you did with the lower clamp. Fully tighten both upper and lower mounting screws. Figure 5 shows the internal view of the PowerPole mount. You can see the flat-washer overlap of the chassis.

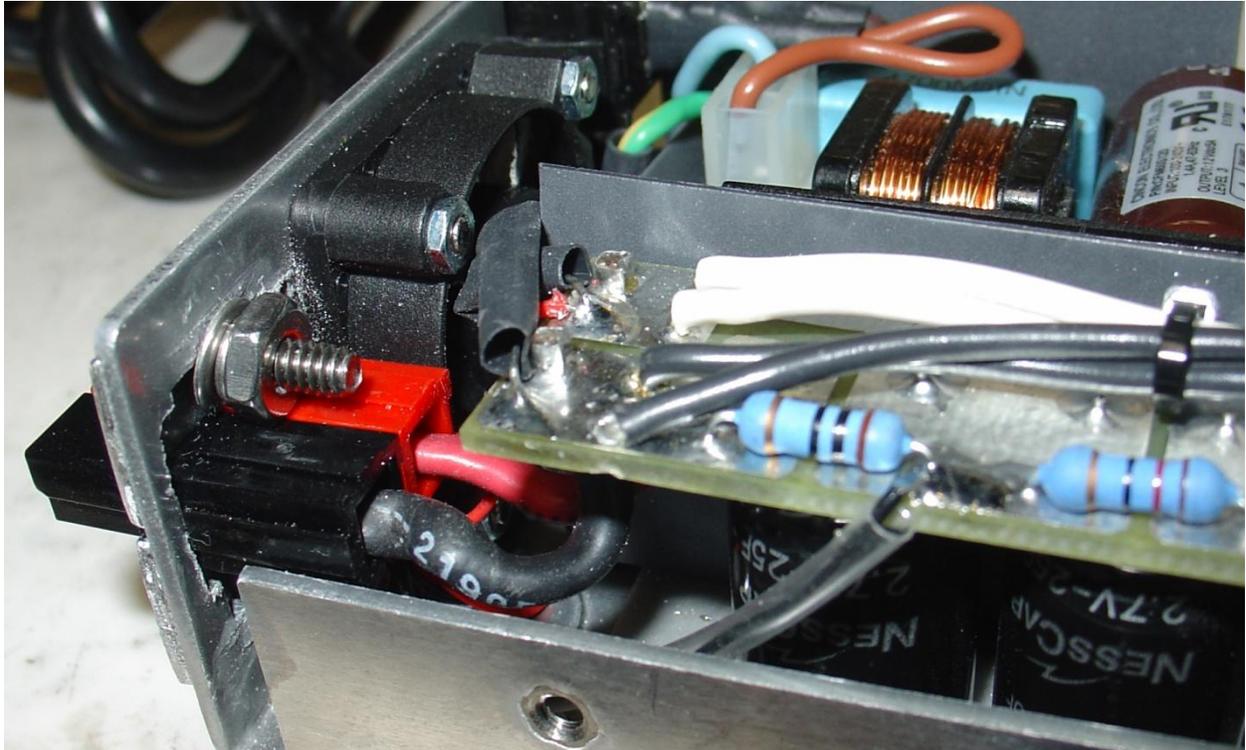


Figure 5: PowerPole assembly is installed. Note the flat-washer that ensures sufficient mounting area.

That's it! Install the cover on the HPS-1a and enjoy!! The final result is shown in Figure 6.

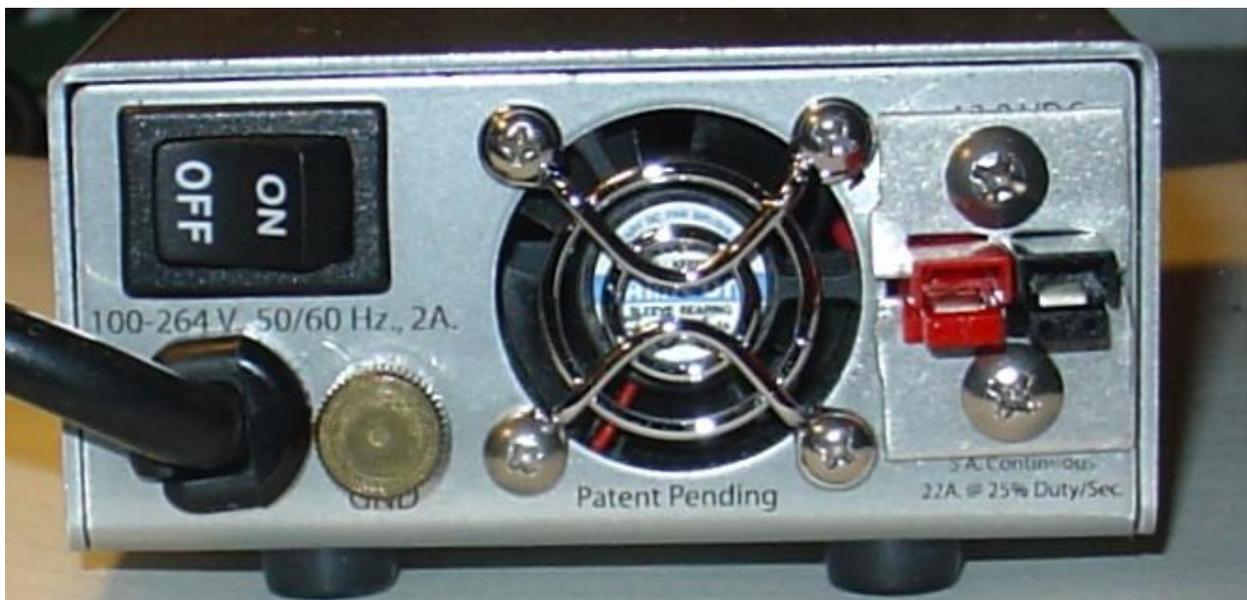


Figure 6: Completed PowerPole modification to the HPS-1a.