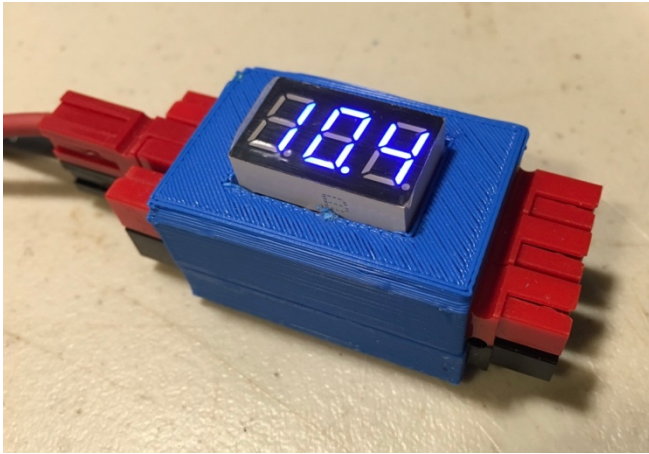

NR4C LAB TIPS #20-001

DATE: February 2020

SUBJECT/PROJECT: Power-Pole Splitter w/meter



This is a re-do of a project from 2016. I've built many different styles of splitters for Anderson Power-Poles and this is my all-time favorite. This version provides simple construction, low loss, and a voltmeter to monitor the power supply.

Of course, the real hero of this model is the use of a new 3D printer to make the plastic clam shell housing to contain it all.

Now that your appetite is whetted, let's get started.

You will need:

- 6 pair of 30 Amp Power Poles
- ~3 feet of #14, PVC jacketed stranded wire (THHN works well here)
- Small voltmeter
- Plastic shells
- 2 pcs 1/16 in copper circuit board 1/2 X 1 1/4 in
- Popsicle stick

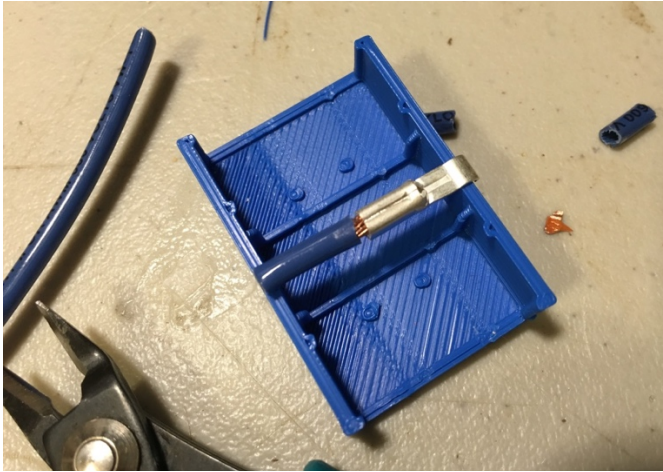
Tools:

- Soldering station with 1/8 in chisel tip
- PP Crimpers
- Vise or clamp to hold it still while soldering
- Flush cutting wire cutter
- Good wire stripper

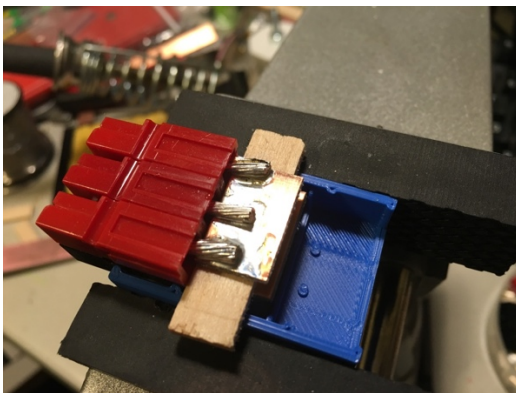
Let us begin:

1. Now, strip 1/4 in insulation from each end of the wire.

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2. Insert prepared end of the wire into a 30 Amp PP terminal and crimp. Repeat this step with the other end of the wire.

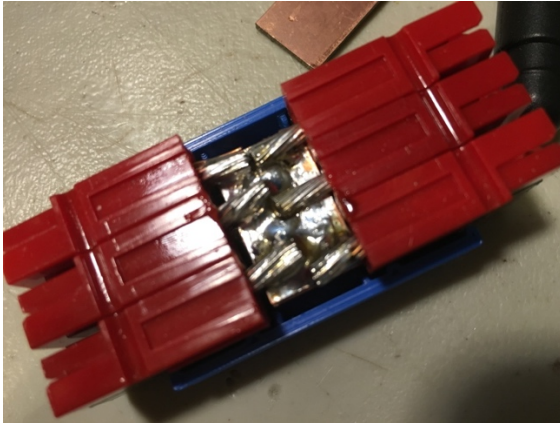


- 3.
4. Lay the PP terminal over the edge of the plastic shell-half and cut wire flush on the other side as in photo above.
5. Repeat steps 1 – 4 until you have 12 pcs of wire with PP Terminals on one end.
6. Now make 2 stacks of three PP sets.
7. Insert a PP Terminal/ wire into each of the 12 PPs.
8. With a clockwise twisting motion, remove the insulation from each wire in one PP stack.
9. Place the stack into the plastic shell (without meter cutout).
10. Place a length of popsicle stick across the plastic shell and place a clean copper PCB strip under the Upper 3 wires and on top of the popsicle stick. See photo below.

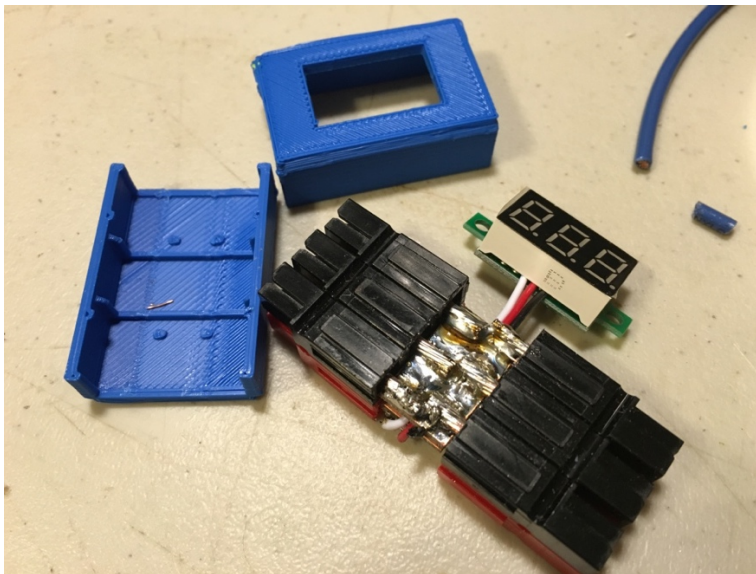


- 11.
12. Now apply heat and solder to the contact area of wire and copper strip. Be sure wire strands get tinned with solder. A little extra flux is a good idea here.
13. When all 3 wires are well soldered, let cool and turn the stack over and repeat this procedure. Use the second copper strip for this side of the splitter. Note, you may have to flip the stack into the other end of the clam shell for this step. Power Poles are not symmetrical.

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14. Now prepare the other stack of PPs and wires and solder to the other half of the copper strips. When done, you should have 6 red PP on one copper strip, and 6 black PP on the other strip. See the red side in photo below.



- 15.
16. Now look at the little voltmeter, note the two tabs. They will rest on the plastic PP housings when assembled. There is a cal pot on the rear of the meter if you wish to touch up the accuracy.
17. I run the meter wire between the two copper strips and solder the black wire at the far end of the black strip. The red and white wire solder to the red strip. Don't cut the wire too short, you can stuff excess wire into gap between strips. You cannot stretch it!



- 18.
19. Now it's time to place the meter in the cutout and assemble the plastic housing around your nifty Power Pole Splitter. A small piece of Scotch Magic tape will hold it together nicely. Or a small bead of CA adhesive (Thin Superglue) will be a bit more permanent. NOTE: Try seating PP stack into one shell, if it doesn't snap into place, rotate the shell 180 and try again.
20. Enjoy!