

Anderson Power Pole® Distribution Block Assembly Instructions

In this experience we will be constructing an Anderson Power Pole® power distribution block. This unit is a perfect addition to your shack and takes just a few minutes to assemble.

Safety First!

- You must be wearing safety glasses during your time in the lab, even if you are not actively working. These will protect you from flying cut leads, solder splashes, and anything else that you don't want in your eyes! We have extra safety glasses if you need them.
- When you wrap up the session, be sure to thoroughly wash your hands with soap and water to wash away any material residues. Rosin flux and lead alloy are not healthy to ingest.
- Use the fume extractor to pull soldering vapors away from you while working. This device uses an activated charcoal filter to contain the byproducts of soldering.
- Treat all soldering equipment as "hot" even if you "know" it's not!

Procedure

1. Inventory all components in your kit. If you're missing (or have trouble identifying) anything, one of our facilitators will help you.

Description	Qty	Notes
PP15/45 RED Housing	6	Empty RED connector housing
PP15/45 BLK Housing	6	Empty BLACK connector housing
PP15/45 PCB Pin, 45A	12	Pins for insertion into housings
Fuse Holder, ATC PCB	1	Small black rectangular component
LED, Bi-Color (R/G)	1	Two leads, frosted clear lens. Short lead is cathode , which aligns with flat side of component and corresponding legend on pc board.
Resistor THT 1/2 W 1k	1	BROWN-BLACK-RED
Resistor THT 1/2 2.2k	2	RED-RED-RED
Fuse, ATC, 10 to 40 A	1	NOT IN KIT. We will provide your choice of fuse in the session.
PC Board, X041626	1	Printed circuit board. PLEASE HANDLE ONLY BY THE EDGES TO KEEP IT CLEAN FOR SOLDERING.

2. Install and solder resistor *R1*, 2.2 kΩ, **RED-RED-RED** onto the PC board.

TIP: Use the needle-nose pliers to "clinch" each lead to help it stay in place while soldering. You may also wish to use the PanaVise to hold the board. After soldering, clip each lead flush. To prevent flying debris, hold the free end of each lead with needle-nose pliers while cutting it.

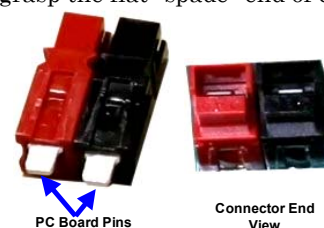
3. Install and solder resistor *R2*, 1 kΩ, **BROWN-BLACK-RED** onto the board.

4. Install and solder resistor *R3*, 2.2 kΩ, **RED-RED-RED** onto the PC board.

TIP: Pause to carefully inspect your work every so often. All solder joints should be smooth and shiny, and all leads should be flush with the board. *If you have any questions, we will assist you.*

5. Install and solder the rectangular ATC fuse holder. You can gently bend two of the corner leads using a flat-blade screwdriver to help it stay in place while soldering. Use care not to overheat this part, as it's plastic.
6. Install and solder the LED. **This part is polarized and MUST be soldered in the correct direction!** There is a flat marked on the circuit board silkscreen - - the SHORTER lead goes into this hole. You may also be able to see or feel the flat side of the part. Be gentle when clinching the leads to prevent damaging this part.
7. Prepare the six Power Pole housing pairs for soldering to the circuit board:

- a) Install the pins into all individual housings. Use needle-nose pliers to firmly grasp the flat "spade" end of each pin to push it in. The pin should snap into place.
- b) Assemble black and red housing pairs according to ARRL/ARES orientation. This orientation is shown at right and is VERY important to observe!



8. Double-check your Power Pole housings to make sure that they are assembled correctly. Once they're soldered onto the board, it's nearly impossible to remove them!
9. Press all housings into the PC board at positions P1 through P6. This will require a moderate amount of force as we've designed the PC board to provide an interference fit. The bottom of each housing should be nearly flush with the top of the board.
10. Inspect your board by comparing it with the picture below before soldering the Power Pole housings into place.



11. Solder all Power Pole connectors onto the board. Remember that you are soldering two heavy copper layers, plus the connector pins. This will require more heat input (and patience) to complete successfully. If the solder does not flow freely, continue to heat the joint until it does - and then add solder to complete the joint. If you see the molten solder "burp" that is a good sign that solder has flowed into all parts of the joint.

TIP: We recommend increasing the soldering tip temperature to 425 C during this step to aid heat transfer.

12. CONGRATULATIONS! You've finished the project. Let's test it.

Test Procedure

We will begin the test procedure without a fuse installed to verify that the STATUS LED works correctly.

1. Apply +13.8 V to the INPUT socket. You should observe the LED glowing **RED** as the fuse is missing. This confirms that the circuitry for detecting a blown fuse works properly.
2. Insert an ATC fuse of your choice into the F1 fuse socket. The LED should turn **GREEN** to show that power is now flowing to each of the Power Pole output connectors.
3. Connect a suitable test load to any of the output connectors to verify that power is reaching them.

Wrapping Up

1. Turn off and disconnect the soldering iron from AC power. Return the fume extractor to its original position on the bench as well.
2. If you used a PanaVise, please close the jaws. This makes it easier for us to store them.
3. Return all hand tools to the provided tool case.
4. Clean up any debris (clipped leads, etc.) from your workstation. Also, please pick up any materials that may have fallen onto the floor.