

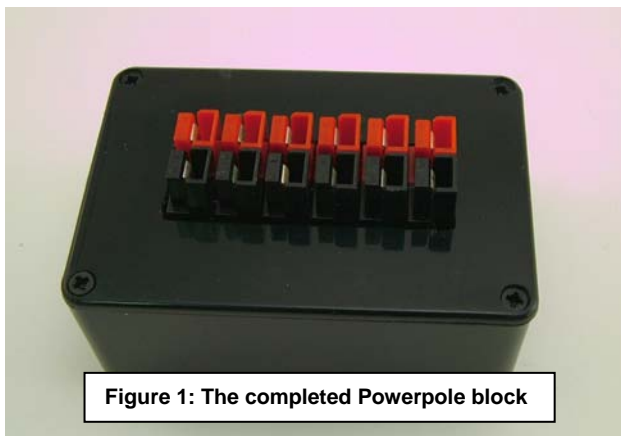
POWERPOLE DISTRIBUTION BLOCK

Don Dorward, VA3DDN

I use the Anderson Powerpole connectors almost exclusively in my shack (and in my car!) to connect all my 12 volt equipment, including LED lighting as well as radios.

My home system started with an MFJ-1118 switched-outlet power-bar with 8 pairs of binding-post terminals and includes fusing.

In hindsight, I should have gone with the all Powerpole version (MFJ-1129) as I ended up putting Powerpole "pigtails" on most of the binding-posts anyway.



The 12 v DC for the system is provided by a solar charged battery bank, or it can be switched to an Alinco 30 amp DC power supply if needed.

It seems like I always need yet another Powerpole DC outlet, to connect to a panel lamp, a scanner or something else.

I thought about purchasing a Power Pole distribution block -- which is available from PowerWerx and other suppliers -- but it seemed like a good opportunity for a simple home-brew project that can be done in an afternoon or so.

One of the nice things about the Powerpoles, is that the plastic shells can lock together, on any of the 4 sides, which really simplifies the assembly.

PARTS LIST	
Quantity	Description
6	Red Powerpole shells
6	Black Powerpole shells
12	30-amp Powerpole contacts
12	Bare copper wire, #12 or #14, 1" long
1	.062" stripboard, 1.5" x 2.75", 0.1" grid
1	Suitable plastic enclosure with lid (* optional)
4	6/32" x 1/2" machine screws*, washers and nuts
4	3/8" spacers*

***Note:** for use if mounting in an enclosure or a project box

Figure 1 shows my completed Powerpole block, with 6 pairs of connectors.

The table at left lists all of the basic parts you will need to make a six-outlet distribution block.

You can easily increase or decrease the number of contact pairs to suit your own needs.

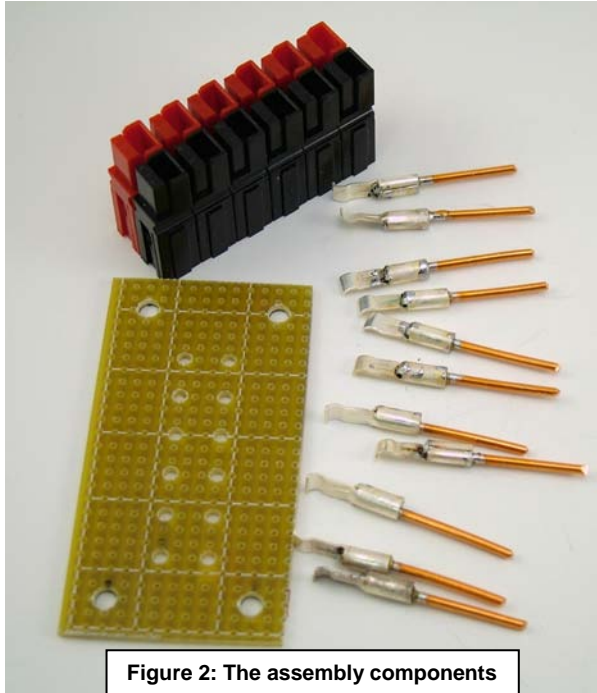


Figure 2: The assembly components

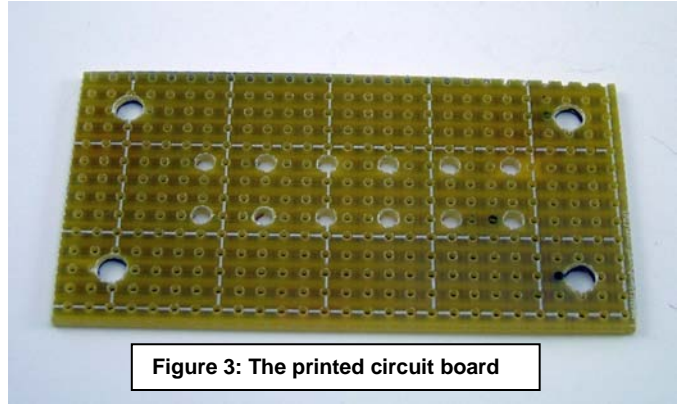


Figure 3: The printed circuit board

This is such a simple project that no schematic or mechanical drawing is really necessary.

I found that the if you assemble the Powerpole block as shown, the pcb connection foot print needed is basically 0.3" x 0.3", as you can see in figures 2 and 3.

The assembly steps are:

- 1.) Assemble the Powerpole shells into a rectangular block as shown in Figures 2 and 3, paying attention to polarity. The accepted convention is (viewing from the front or contact side) tongue down, hood up, Red on LEFT, BLACK on the right. (Red positive, Black negative)
- 2.) Cut 1" long bare copper wires #12 or #14, and solder into the 12 Powerpole contacts. Keep solder and/or flux from flowing onto the contact mating surfaces.
- 3.) Insert the Powerpole contacts into each connector shell using needle-nose pliers, ensuring that each snaps in place.

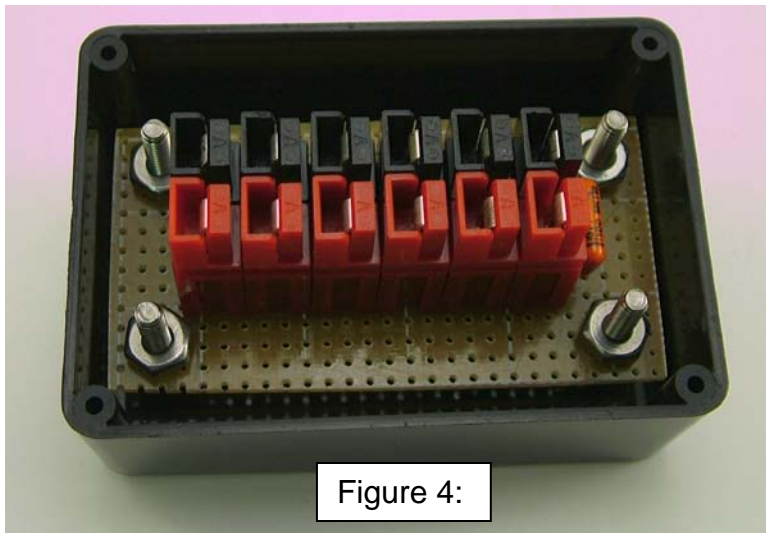


Figure 4:

- 4.) Cut the strip board to size and drill 7/64" clearance holes for the copper wires on a 0.3" x 0.3" grid. If mounting in a box, also drill 4 1/8 inch corner holes for mounting screws. Fig 3.
- 5.) Insert the 2 rows of copper contact wires into the drilled holes. You may want to tack some of them to the copper strips on the stripboard to keep the block of contacts snug to

the pcb.

- 6.) Cut 2 lengths of the #12 or 14 bare copper wire to act as bus-bars, one for positive, and one for negative.
- 7.) Bend the projecting contact copper wires over each respective buss wire and clip off un-needed lengths. Solder securely ensuring good wetting. I used a 40 watt controlled temperature soldering iron with a 3/16" tip and rosin-core wire solder. See Fig 5.

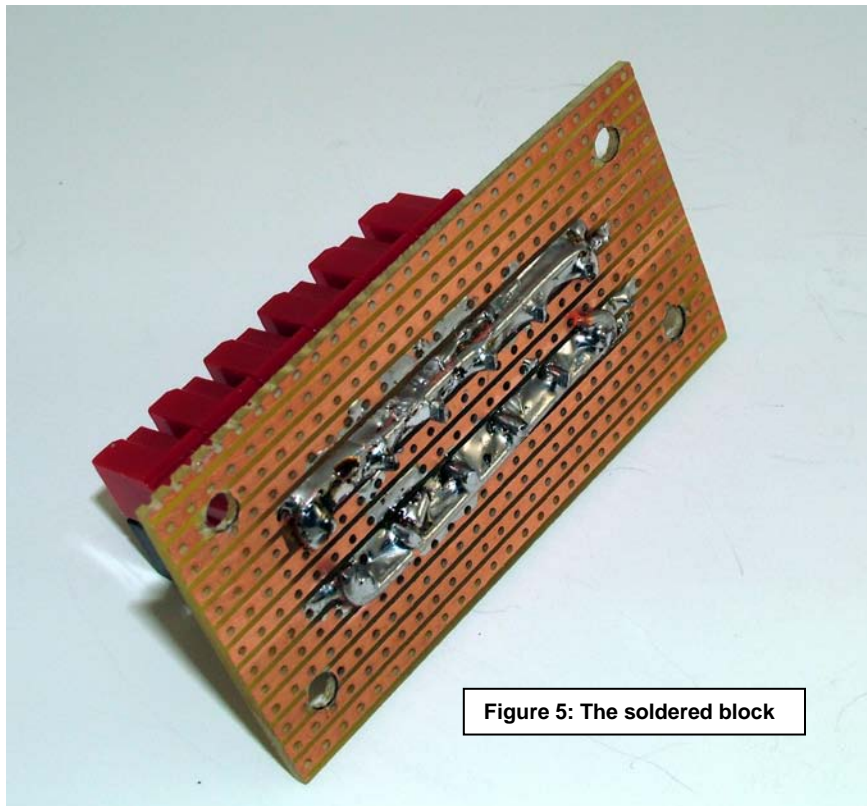


Figure 5: The soldered block

Notes:

- 1) A kit of Powerpoles (20 connector shells, and 30 amp contacts) are available from ham radio dealers (ie: Durham Radio, P/N: AND-13PACK20)
- 2) Epoxy Stripboards with 0.1" pitch holes are available from Veroboard in Vancouver, at www.veroboard.com

Don Dorward, VA3DDN, has more than 40 years of experience in the electronics industry in Canada. Management of R&D, Quality Systems & Regulatory Affairs. Developed programs for accelerated life testing methods such as HALT and HASS, in-house training for Quality Systems, ESD prevention, IPC Workmanship Standards for the Acceptability of electronic equipment. He holds Basic and Advanced certification and is a Life Member of the Institute of Electrical and Electronics Engineers and is a member of the American Radio Relay League, Radio Amateurs of Canada and Ten-Ten International.