

PowerPole 4-Way Kit Assembly Instructions

Revision History

29 April 2021 Rewrite

Packing List

It's a good idea to check that you have all the parts before you get started:

Item	Quantity	Comments
PCB	1	Printed Circuit Board
PowerPole shells (Red)	4	
PowerPole shells (Black)	4	
PowerPole Contacts	8	PCB type

Enclosure

Item	Quantity	Comments
Front panel	1	Acrylic with transit protective film
Black ABS box	1	Self tapping screws inside box (4 off black)
Nylon spacer 10mm	6	
Metal screw M3 x 6mm	6	
Nylon nuts M3	6	

If anything is missing, just get in touch for help.

Spotted a mistake or need help?

Please let us know if you need help! Email support@sotabeams.co.uk

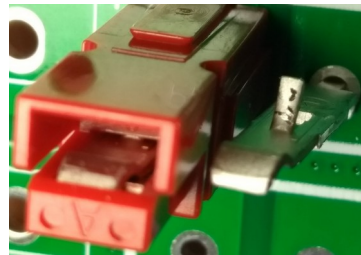
Tools needed

- 1 Soldering iron (50 Watts with medium/large bit) and solder
- 2 Small screwdriver (cross head)
- 3 Long nosed pliers
- 4 Wire cutters

Assembling the PCB

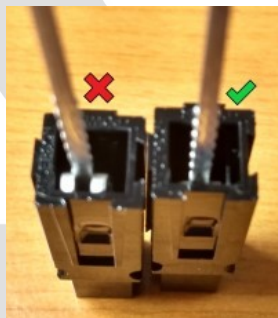
Install the Powerpole connectors

1. Slide the pins into the plug shells. This is best done with long nose pliers. They **click** into place when seated correctly. **Important Note** that they only go in one way – see photos.

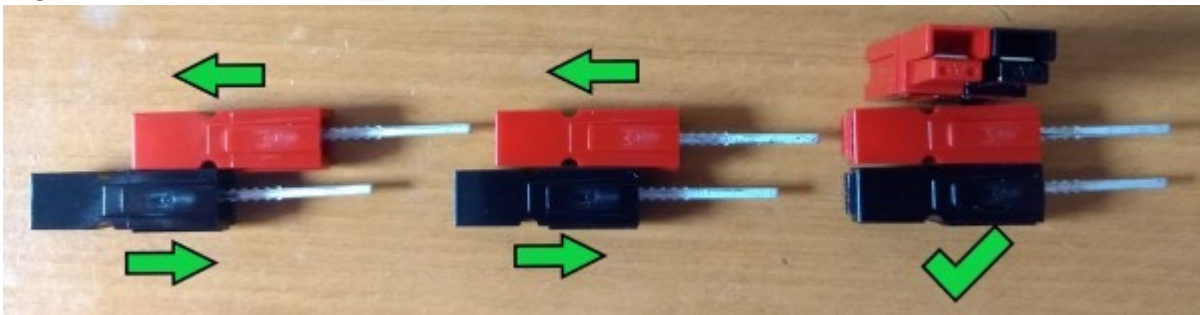


Ensure the pin is fully engaged. This can be felt as two clicks if pushing gently. Note that you may need to move the pliers back a bit to get the second click.

Visually check that the pin is fully inserted. The shoulder of the pin should be a few mm below the end of the shell.



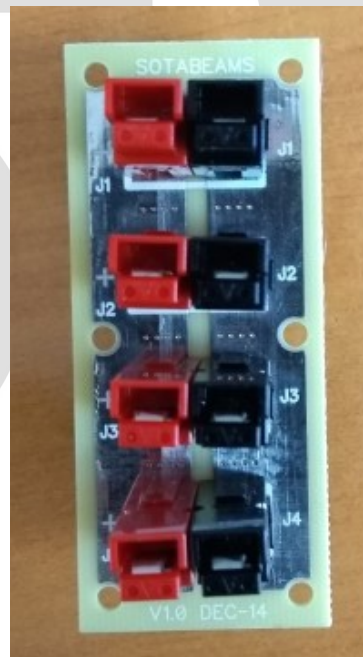
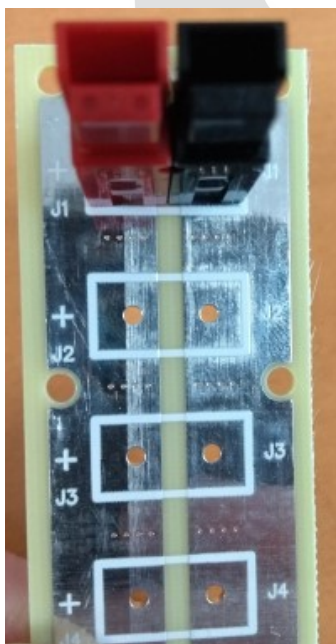
2. Pair up, the shells as shown, one black and one red. Slide the red along the black to lock the two together.



The shells will pair up in many ways so make sure that you get them right – as shown in the photograph. This is the “standard way” of using PowerPole connectors for ham radio use.



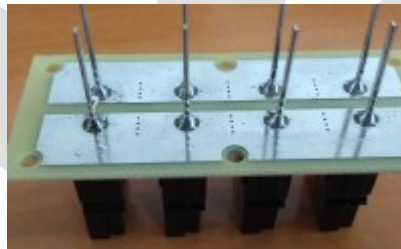
3. Insert the pairs into the PCB. Make sure that they are all the same way round and that the red shell is in the positive position as marked on the PCB.



4. Place the PCB on a flat surface making sure that the shells are sitting snug against the PCB and that all the pins are upright and parallel.



5. Solder one of the pair of pins check the shell is flush with the board. If not reheat the solder and push the shell flush with the PCB. Solder the other pin.



Bridging the track spokes is not a problem – it reduces the resistance. The spokes are there to help you get the board/pins up to temperature for soldering.



6. Cut the surplus parts of the pins off – do not close-crop them – leave the solder intact.



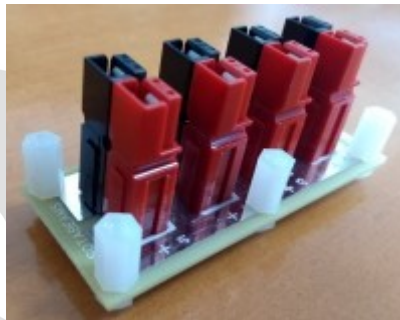
7. Perform a visual inspection of all solder joints.

8. Using an Ohmmeter, check that there is no short circuit between the positive and negative bus.

This completes the PCB assembly.

Installing the optional mounting kit and enclosure

1. Mount the 6 nylon spacers on the upper side of the PCB with the nylon nuts on the underside. Do not over-tighten the nuts – nylon threads are easy to strip.



2. Remove the protective film from the laser-cut top panel (may have film on one side or both).



3. Clean the panel with a soft cloth and plain water. Do not use any solvents.

4. Put the front panel over the PowerPoles and make sure that it sits down on the spacers. **Do not force the cover down.**

5. Once the cover is down on the spacers, check the spacers and the holes on the panel align. If not rotate the panel 180 degrees.

6. Screw the cover to the PCB spacers using the nylon screws. Do not over-tighten the screws – nylon threads are easy to strip.

If you are going to screw the box to a wall, now is a good time to do that. Drill clearance holes carefully through the box first. I would recommend using 2 mounting screws.

7. Finally attach the front panel into the box using the four black self-tapping screws.



Your PowerPole 4-way is now ready to use.

Using your PowerPole 4-Way

It's pretty straightforward to use these units. The only suggestion is that if you are connecting a high current item, such as a 100 Watt transceiver, to a power supply then use adjacent PowerPoles to reduce any resistive losses.

