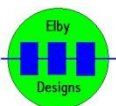




## PSU-10 Dual Power Supply Construction Guide

Revision 0.3  
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# PSU-10 Dual Power Supply

Construction of the PSU-10 requires the assembly of 1 single board:-

Main Board - PSU-10 PCB ([3D Model](#)) ([PCB Overlay](#))

Constructors should refer to the PCB Component Overlay for any specific comments regarding the board assemblies, the Bill of Materials ([PSU-10A](#) [PSU-10B](#)) for the current value of all components and [General Construction Notes](#) document for general PCB assembly guidelines.



## Assembly

1. Fit all components to the main board except for D12 and D15. Start by mounting the SMD components C2, C3 and C5. NB The components for X1, X2 J10, J11 and J12 are only required when constructing a PCB assembly for use in your own housing
2. When assembling U11 and U12 you may wish to apply a thin layer of heatsink paste between both the IC and the heatsink and also between the heatsink and the PCB
3. Cut the supplied wire in to 14 pieces as per the wire chart below and strip 5mm from both ends
4. Solder the wires on to their respective terminals on the power sockets J1, J10, J12 and J12
5. Mount J10, J11 and J12 on to the front panel
6. Carefully forming the wires, fit the free ends of the wires in to their respective pads and solder in to place. We suggest using the 4 pads that make up each of the 4-way 0.156" MTA footprints but you may also use either of the pads that make up the tab footprints.
7. Fit the wires for J1 in to the PCB. You may use either of the 2 pads that make up each footprint.
8. Install D12 and D15 ensuring that you form the legs so that they will locate in to the lens mounts on the front panel while not shorting out on any exposed parts
9. Remove the top plate from the enclosure and slide the board in to the lower slots of the enclosure starting with the power in end first. With the board in, secure the front (power out) panel using 4 screws.
10. Temporarily attach the rear (power in) panel using 2 screw
11. Carefully adjust the 2 LEDs D12 and D15 so that they are sitting cleanly in the lens mounts
12. Mount J1 on to the rear panel
13. The unit should now be calibrated
14. Once calibrated, remove the 2 screws holding the rear panel, slide in the top plate and the refit the rear panel and secure using 4 screws

## Calibration

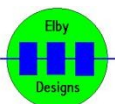
There are 2 adjustments for the PSU-10. These adjustments are best done when the unit is powering your system.

With the PSU-10 powering your system you should monitor first the +12V rail and then the -12V rail at a point nearest to where the power is connected inside your system which is usually at the input connections to the system busboards.

Use P1 to adjust the +12V rail and P2 to adjust the -12V rail.

## Options

There are 2 build options for the PSU-10:- the PSU-10A and the PSU-10B, where the only change is the choice of U1 which determines the maximum -12V loading.



**ELBY Designs - Laurie Biddulph**

3 Therese Street, Bridport, TAS 7262, Australia

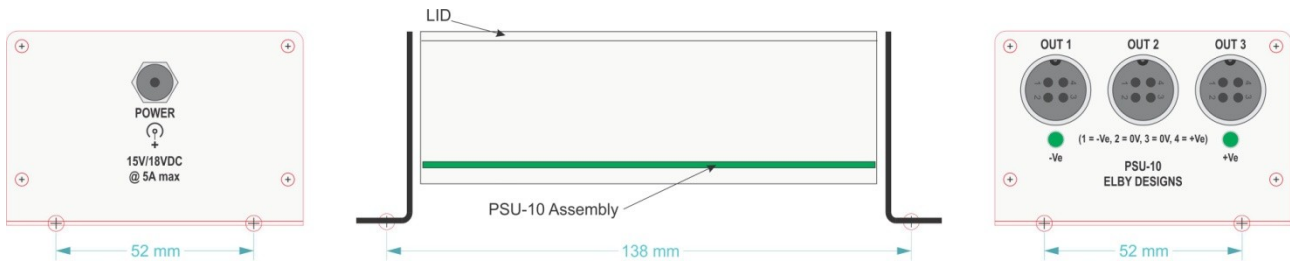
[elby-designs@bigpond.com](mailto:elby-designs@bigpond.com) <http://www.elby-designs.com>

# PSU-10 Dual Power Supply

## Wiring Chart

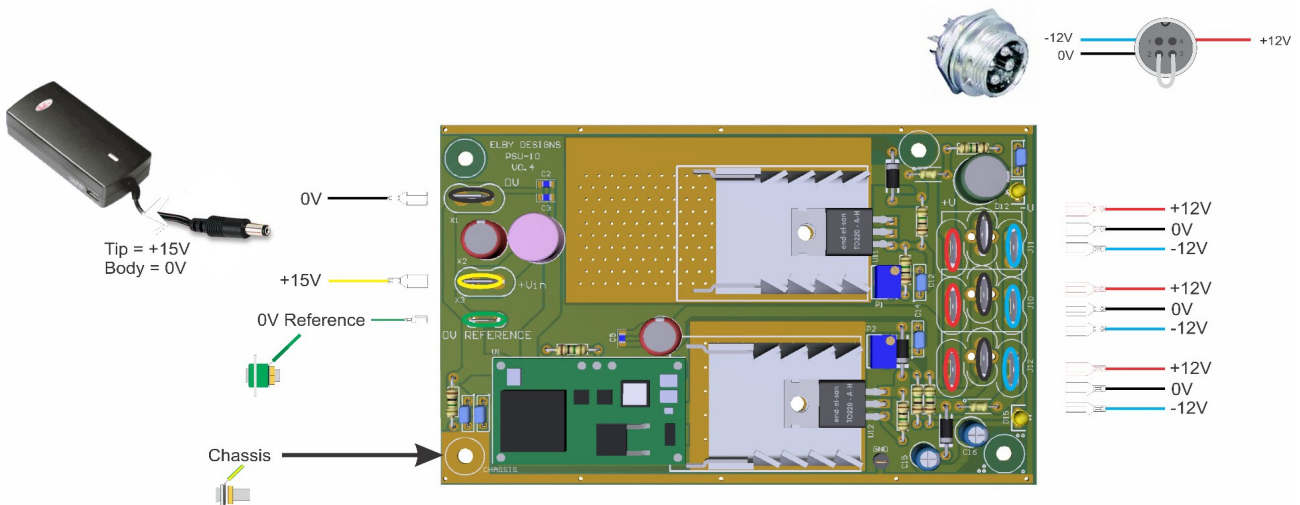
PCB Terminal	Colour	Length (cm)	Connector Terminal
X1 : 0V	Black	6 (x1)	J1 - Barrel
X2 : +Vin	Yellow	6 (x1)	J1 Tip
J10/J11/J12 : +12V	Red	6 (x3)	J10/J11/J12 Pin 4
J10/J11/J12 : 0V	Black	6 (x6)	J10/J11/J12 Pin 2 & Pin 3
J10/J11/J12 : -12V	Blue	6 (x3)	J10/J11/J12 Pin 1
X3 : 0V Reference	Green	6 (x1)	

## Example Wiring Guide



PSU-10 Mounting Details

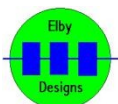
If the PSU-10 PCB assembly is being installed in your own case then refer to the following for connection details



This diagram shows a typical installation using our Power Panel. The 3 'busboard connections' (+12V, 0V, -12V) at the left are connected to their respective points on your systems (passive) busboards.

The 0V Reference terminal is used to connect to other external equipment such as a mixer/amplifier to provide a 0V Reference.

The lower left mounting pad marked 'CHASSIS' should, ideally, be connected to the metalwork of the enclosure using its mounting bolt and should be wired to a suitable EARTH terminal.



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3 Therese Street, Bridport, TAS 7262, Australia

[elby-designs@bigpond.com](mailto:elby-designs@bigpond.com)

<http://www.elby-designs.com>