

RANDOM*SOURCE

PSU Enclosure KIT

DISCLAIMER: This document is intended as a guide only as a reference for a certified electrician / electrical engineer. The PSU kit is not to be built or set up by anyone not suitably qualified. We take no responsibility for any damage, disfigurement or injury to persons (including but not limited to loss of life) or property that results from the use or misuse of the PSU kit or any information presented in this document. It is the readers' responsibility absolutely to assess the suitability of the kit or any part thereof for the intended purpose, and to take all necessary precautions to ensure the safety of himself/ herself and others.

Main / line power as well as primary and secondary voltages present in the power supply are potentially lethal, and builders must observe all applicable laws, statutory requirements and other restrictions or requirements that may exist depending on the country and jurisdiction you live in.

WARNING: All mains wiring should be performed by suitably qualified persons, and it may be an offence to perform such wiring unless so qualified. Severe penalties may apply.

All power supplies must be fused or protected by an approved circuit breaker, and all mains wiring must be suitably insulated and protected against accidental contact to the specifications and requirements that apply in your country.

DO NOT TRY TO BUILD / USE OR MODIFY THIS KIT UNLESS YOU ARE FULLY QUALIFIED TO DO SO.
ASSEMBLE AND USE AT YOUR OWN RISK. WE DO NOT RESUME ANY RESPONSIBILITY FOR ACCIDENTS.

*** Please do not use any force on the countersunk screws in the top - they are simply there to lock the sides.
There's no need to tighten them more than a 4 year old child could ***

BOM - Parts needed:

Power One Linear Power Supply HBB15-1.5-AG (Mouser: 784-HBB15-1.5-AG)

Schurter Power Entry Module (KM01.1105.11, Mouser: 693-KM01.1105.11)

Schurter Fuse Holder (4301.1401, Reichelt: KM 01SH-1, Mouser: 693-4301.1401)

2 Fuses (slow), depending on your region/voltage setup, as indicated on the Power One PSU - most likely 1A for 110V, 0.5A for 230V use. **PICK ACCORDING TO INFORMATION ON HBB15 PSU**

5 Neutrik XLR Connectors NC4FAV (Mouser: 568-NC4FAV)

10 Neutrik Screws for XLR Connectors (A-SCREW-1-8, Mouser: 568-A-SCREW-1-8)

1 Emerson Banana Jack for 0V connector (Mouser: 530-108-0903-1)

2 VCC LED Lenses (for +V and -V, pick your colors), e.g. CLB300GTP, CLB300RTP (Mouser: 593-3000G/R)

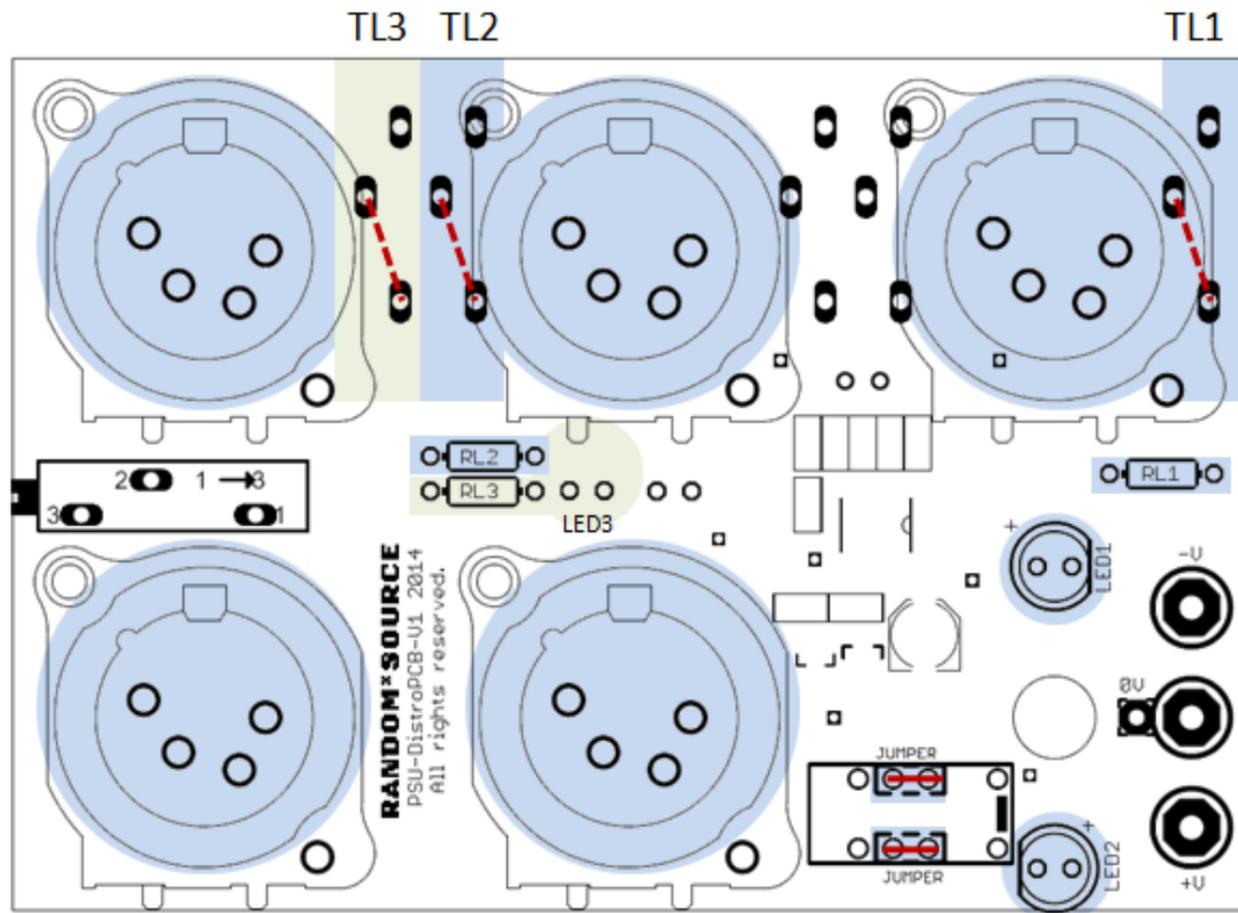
2 LEDs (5mm, pick colors to go with lenses)

Resistors for the LEDs or Trimmers (see PCB)

Wire

THE PCB

PCB overview (front, cabinet side):



LED1 (5mm) indicating the +12V,

RL1 (Resistor) + TL1 (Trimmer, mounted on the rear) setting the driving resistance.

LED2 (5mm) indicating the -12V,

RL2 (Resistor) + TL2 (Trimmer, mounted on the rear) setting the driving resistance.

Optional: LED3 to (slightly) illuminate the inside of the enclosure: LED3 (3mm, mounted on the rear) indicating the +12V, RL3 (Resistor) + TL3 (Trimmer, mounted on the rear) setting the driving resistance.

All resistor values depend on the LEDs used. Trimmers could be omitted when the driving resistance is known. Install jumpers instead of the trimmers (red dotted lines).

As an example, for common low current LEDs we used a resistance of 1k for green (+V) and 1.5k for red (-V). If you have a(nother) +12V source, you can simply test your LED with a resistor of your choice (1k or more) to find the resistance needed for the desired brightness.

Jumper wires left of LED2, inside the rectangles **MUST** be mounted.

The schematic shows additional circuitry. Please ignore. This circuitry is for testing purposes only, and it is not tested at all at this point.

PSU ASSEMBLY (our take, YMMV)

1. Assemble PCB (see above), don't solder LEDs 1 & 2 in yet. Don't forget the jumpers! (for me it worked well to put the Neutrik sockets into the PCB w/o soldering, then attaching it to the cabinet (all w/o screws). I would then solder them, and remove the PCB for the next steps.)
2. Solder a wire (about 1in) from the 0V pad, you will need it to connect the 0V front panel banana socket.
3. Solder heavy gauge wires from the -V, 0V, and +V pads of the pcb to the appropriate PSU terminals.
4. Mount the 0V front panel banana jack (socket) and the LED holder/lenses to the front panel (chassis) (I did not use the securing plastic rings on the rear of the LED holders/lenses. they are not needed and this will make mounting the LEDs much easier)
5. Put the LEDs into the footprints w/o soldering them. Bring the short 0V wire to the front panel side of the PCB.
6. Put the PCB into position and fix the Neutrik XLRs with screws.
7. Solder the short 0V wire to the 0V banana jack.
8. Move the LEDs into the holder/lenses and solder them onto the pcb.
9. Mount the Power One HBB15 PSU to the chassis.
10. Solder heavy gauge wires to the Schurter mains power inlet (AC, Earth/GND), take care to cut them to the correct length.
11. Mount the snap-in Schurter inlet.
12. Connect the Earth/GND of the Power One HBB15 to the PSU's chassis, as close to the transformer as possible. If you have the stainless-steel version, the 0V will automatically be connected to the Earth/GND via the Neutrik sockets. **For the anodized aluminum version, you have to add a wire connecting the GND terminal of the Schurter inlet to the Earth/GND of the Power One HBB15 (or the chassis connection), otherwise you have a floating ground.**
13. Connect the AC to the appropriate transformer pins, and install jumpers as needed (see PowerOne instructions). **By doing so you select whether the PSU is run on 230V or 110V, so make sure you select the right pins for your region.** Make a note somewhere on the PSU in case you move. The Power Supply will ONLY run with the preset voltage - it is not „switching“!!
14. Insert fuses (see PowerOne documentation for values).
15. Check all connections and wiring.
16. Make sure the Schurter power inlet is turned OFF. Connect a power cord to the PSU, power on and calibrate +V and -V as closely to +12V and -12V as possible. (Alternatively the HBB15-1.5 can be set to 15V by just using the PSU's trimmers.)

The Earth/GND will be connected to the chassis via the Schurter inlet, the 0V will be connected to the Earth/GND via the Neutrik sockets.

In general it would be good practice to position the HBBs transformer to the opposite side of the chassis than the Distribution PCB, however, you could do it either way when taking the necessary precautions.

(Version 4 Sept 2015)