

If you are reading this, most probably, you are about to build Erica Synths DIY eurorack PSU module. Erica Synths DIY eurorack PSU module is high quality linear PSU with resettable fuses on each rail to protect the PSU from overloads. It comes in two versions:

- 1) 1,25A on each +12V and -12V rail. This version uses highly popular LM317 and LM337 voltage regulators
- 2) 2,5A on each +12V and -12V rail. This version uses more contemporary and powerful voltage regulators and it can be used in really large modular setups.

Both versions can be built on the same PCB, just check the schematics on components that need to be used for each configuration.

The PSU kits comes in two versions:

- 1) Hardware kit – 188x89x2,4mm PCB + fuse holder and fuse + lugs + heat sinks
- 2) Full kit - contains all parts needed to complete the PSU.

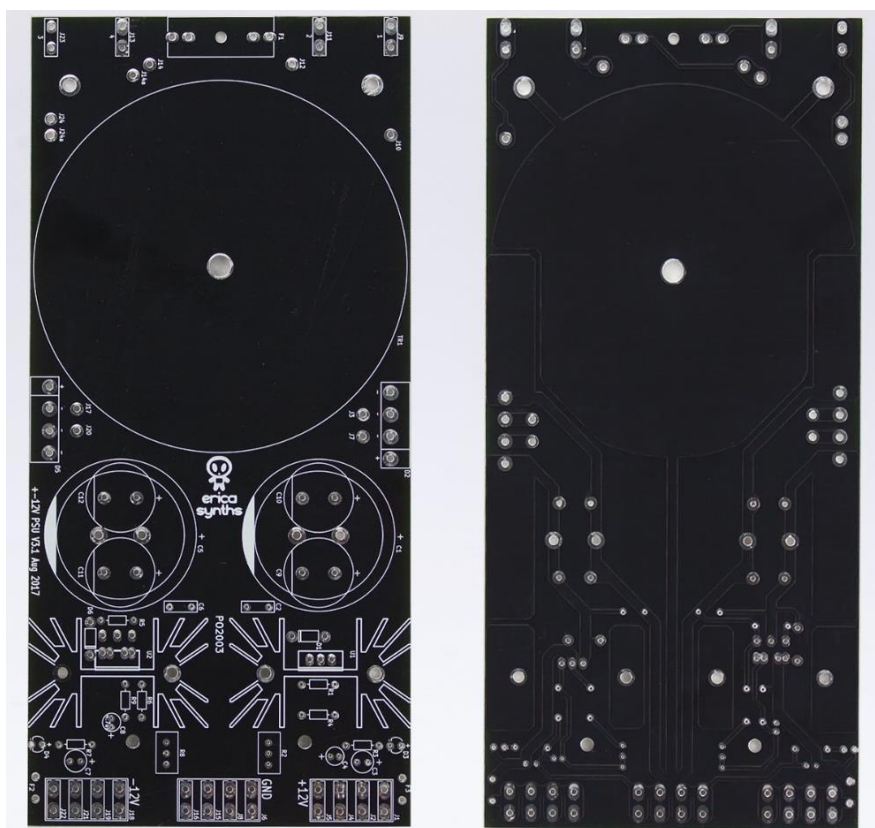
Also check Erica Synths webshop to order toroidal transformers at great price and save on shipping!

NB! Installation of this module require skills to work with high voltages! It's at your own risk!

ASSEMBLY

Take precautions with regard to electrostatic discharge (ESD) safety. Handling components should be done in electrostatically safe environment. Use personal and workplace grounding. Any discharge (even a minor one) from body to a component may permanently damage it.

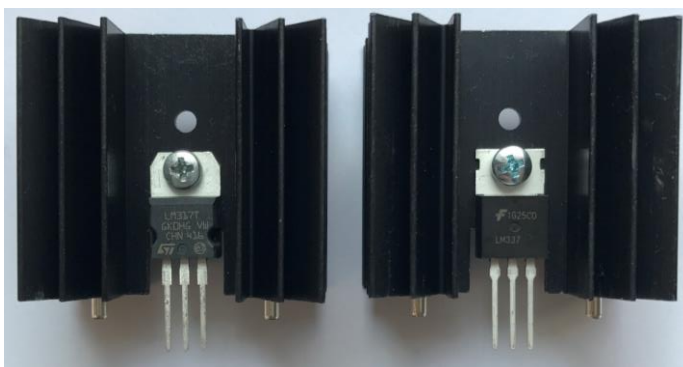
Both PSU versions can be assembled on the same PCB. Silkscreen shows the component designators; please, check the schematics for components used in each PSU configuration!



1,25A PSU ASSEMBLY

1

Start with the voltage regulators! Use M3 screws to fix them to the heatsinks. You may use heat conducting paste to improve contact with the heatsinks. The heatsinks on the PCB are insulated, so don't worry if the voltage regulators are in electrical contact with the heatsink.



2

Solder all THT components except large electrolytic capacitors! Refer to the schematics for the component values! Note that R5 is not used! Mind polarity of electrolytic capacitors, diodes and LEDs! Solder as many lugs, as you intend to have busboards.



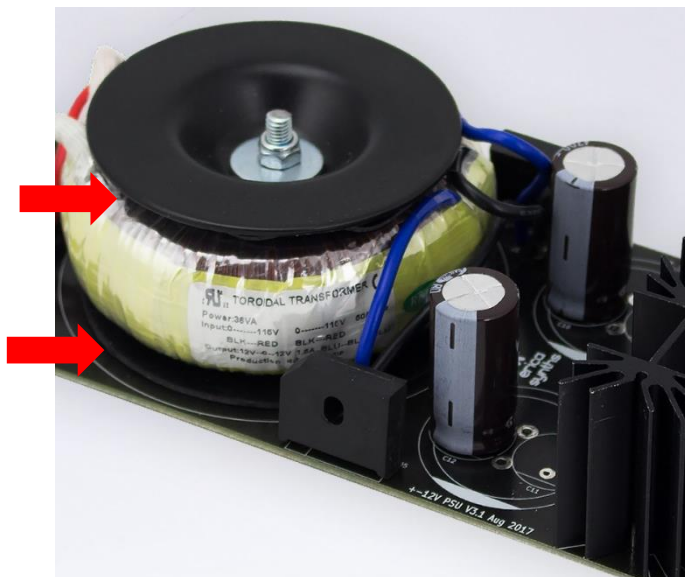
3

Insert both heatsinks and solder the voltage regulators! The negative voltage regulator (LM337) should be installed like on the picture below.



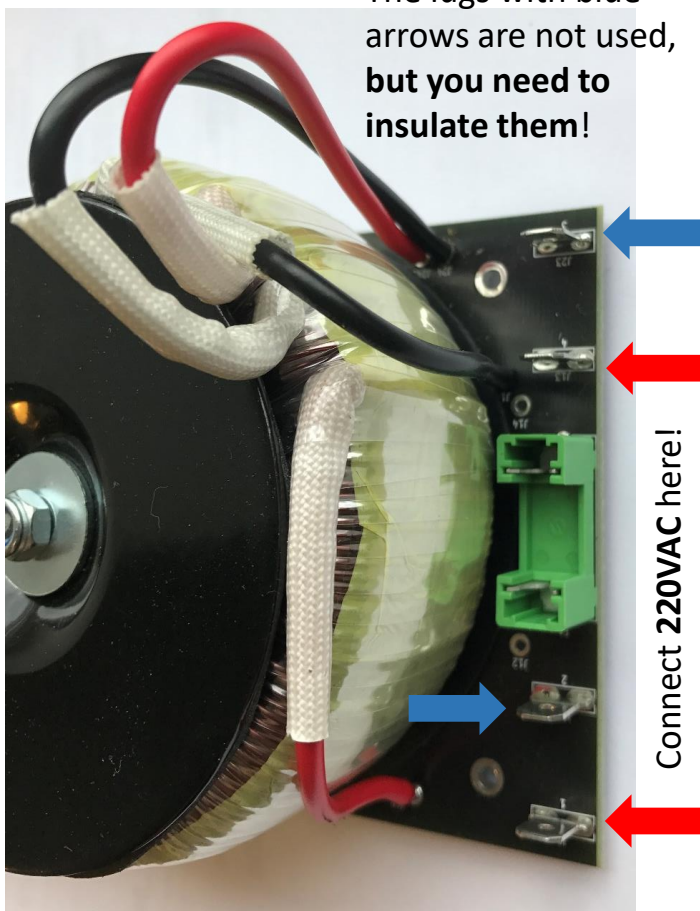
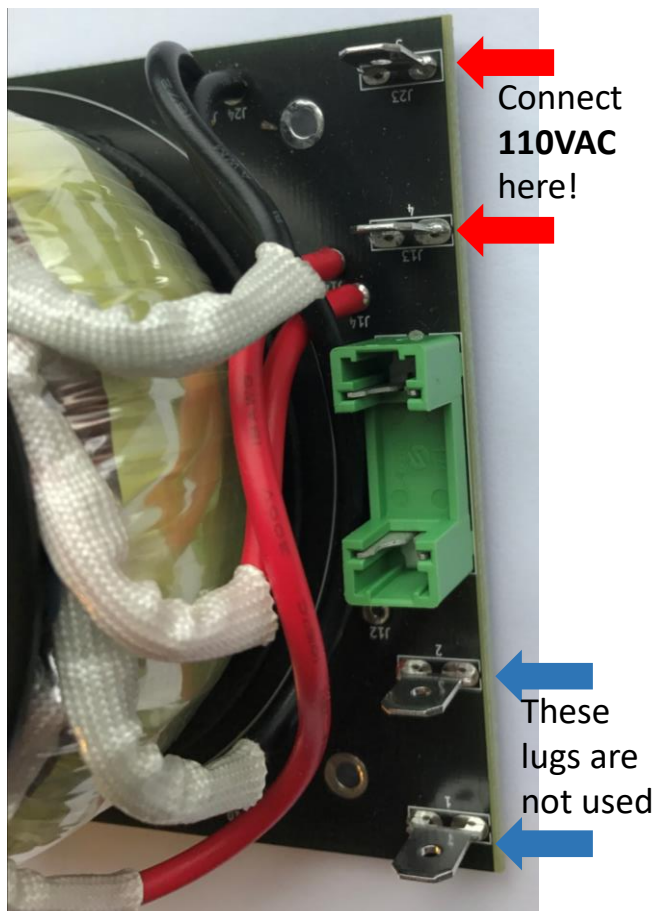
4

Solder large electrolytic capacitors! 2 of them are ok, but for better DC filtering you may want to use 4700uF capacitors – the PCB allows to allocate two capacitors on each rail. Fix the transformer to the PCB! Use two rubber pads – one goes at the bottom of the transformer, other on the top.



5

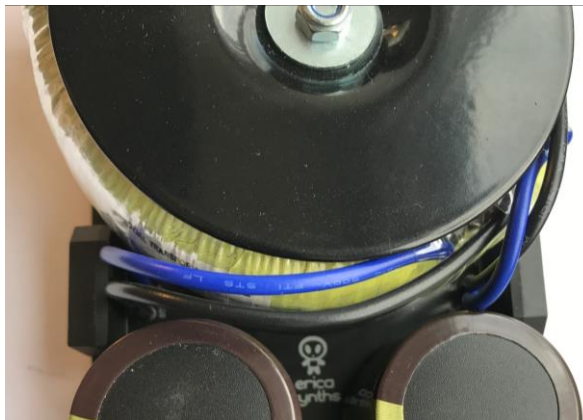
Now it's time for wiring! Let's start with primary windings! **There are two possible configurations: 110V – primary windings in parallel, 220V – primary windings in series.** Refer to the pictures below for desired configuration!



5

If you have a transformer with two secondary windings, each winding goes to the rectifier. But some transformers have secondary winding with one secondary winding with the centre point. Then you need to install the wire jumper between rectifiers. Refer to the picture below!

Two separate secondary windings



Secondary winding with a centre point



The wire jumper connects centre point to the second rectifier

6

Now install the fuse and use well insulated wire and connectors to connect your PSU to the 110/220VAC. Two LEDs should go on. Connect the voltmeter to GND and +12V lug and adjust the trimpot to get exactly +12V. Connect the voltmeter to GND and -12V lug and adjust the trimpot to get exactly -12V.

2,5A PSU ASSEMBLY

1

Assembly of this module is basically the same as 1,25A version. Just check the schematics for component values and wiring versions depending on your mains voltage. 72VA transformers typically come with two separate secondary windings, so wiring of the secondary winding is straight-forward. 2,5A version needs big electrolytic capacitors and 3A slow fuse on the primary winding. You should end up with a module like below.

