

ProPSU – Advanced Power Supply for the Prophet-5

Installation instructions - Rev 3.1 - 3.3 models (Aug 26, 2022)

Kit Contents

Toroid Transformer.

Power Supply PCB.

Plastic bag with 1 M5x50 hex screw with locking nut and washer, 3 black M3x12 Phillips screws with locking washers, 1 toroid mounting disc and 2 rubber pads, 0.5 g thermal paste, WAGO connector actuation tool.

Mechanical assembly

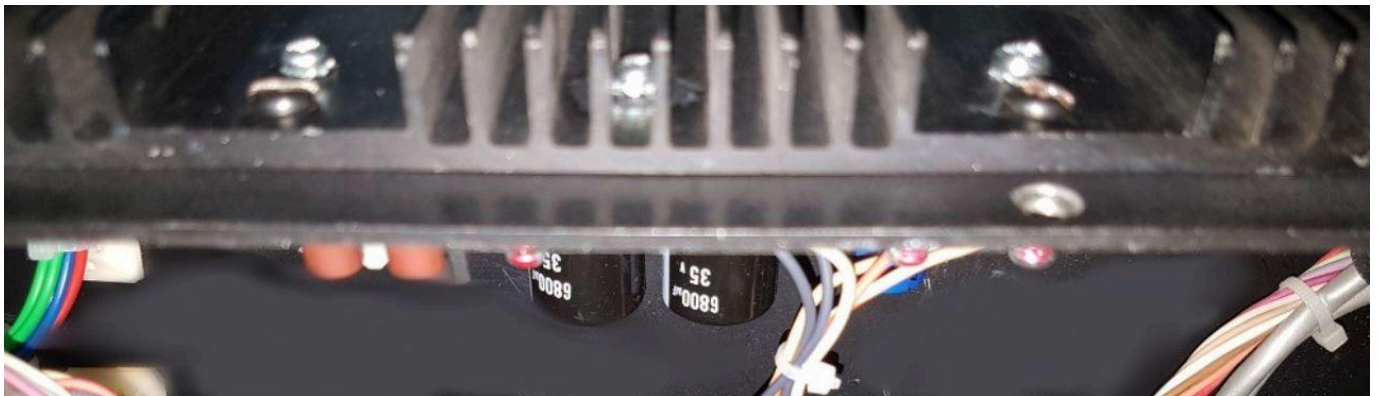
Open up the Prophet-5 and pull all the wiring harnesses between the main board and metal base plate. Keep track of what goes where (take photos just in case). The goal is to separate the wooden frame from the base plate.

Cut the old transformer wires (cut close to the transformer). Remove the old transformer, power supply board and heat sink.

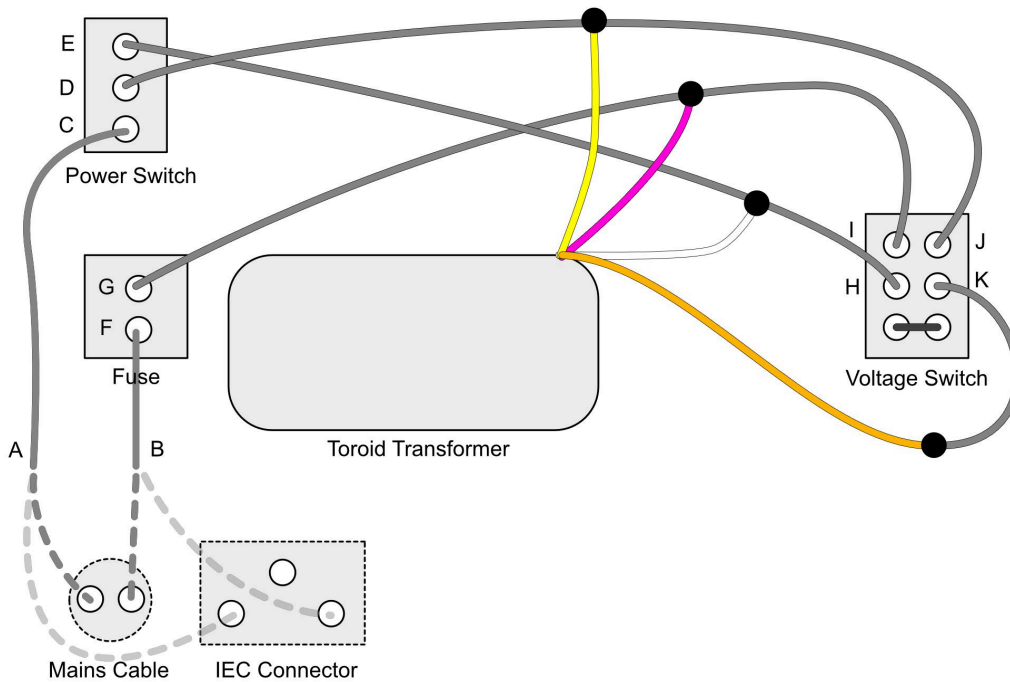
Drill a 5 mm (3/16") hole into the base plate so that the new toroid transformer can be mounted in roughly the same position as the old one.

Mount the toroid with the supplied mounting hardware: M5 hex screw with M5 washer from underneath through the new 5 mm hole, then rubber pad, transformer, rubber pad, metal mounting disc, locking nut. Make sure the cables point towards the PSU location.

Clean the heat sink and re-attach it to the back panel without the washers in between (pic)



Mains (primary side) wiring

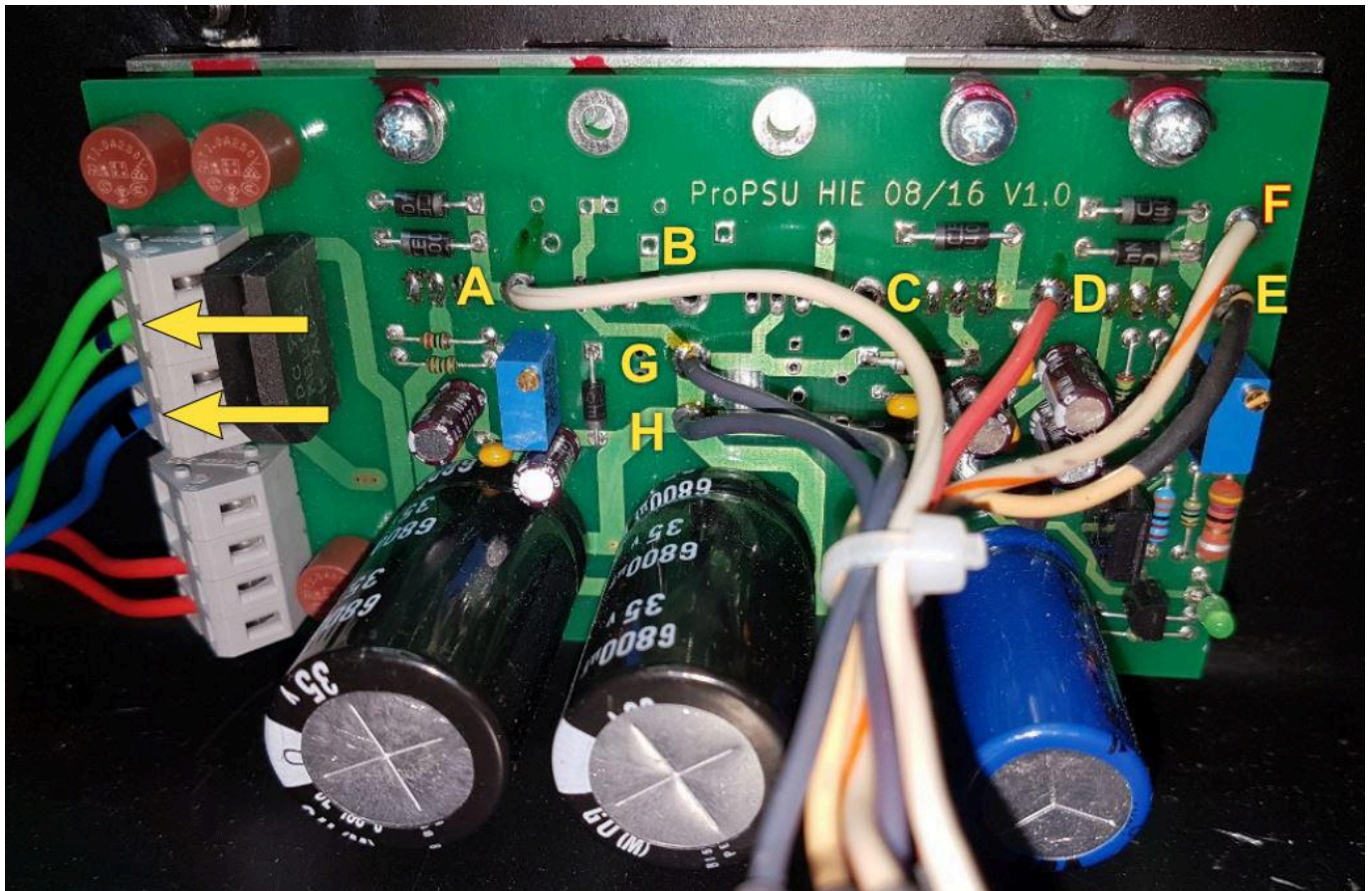


NOTE: The original wires in your Prophet are colored, but in this picture they are all gray. You may have a fixed power cable or an IEC mains connector, both are shown above and this does not affect wiring. The power and voltage switches may be mounted upside down compared to the image - no problem, just follow the instructions wire by wire below!

1. There is a wire (A) going from the mains cable/IEC connector to one end of the power switch (C). Leave it as it is. (The switch may be mounted upside down, but follow the wire)
2. The wire going from the opposite end of the power switch (E) should be joined with the toroid white wire and the wire coming from 'H' on the voltage switch. (Voltage switch may be mounted upside down, just note which end has the "short" across the 2 pins. It can also be mirrored: I<->J and H<->K)
3. The wire going from the middle pin of the power switch (D) should be joined with the toroid yellow wire and the wire coming from 'J' on the voltage switch.
4. There is a wire (B) going from the mains cable/IEC connector to one end of fuse holder (F). Leave it as it is.
5. The wire going from the other end of the fuse holder (G) should be joined with the toroid violet wire and the wire coming from 'I' on the voltage switch.
6. The wire going from 'K' on the voltage switch should be joined with the toroid orange wire.

All the new "joints" should be properly insulated (according to your local electrical codes - an insulating sleeve is highly recommended).

Secondary side wiring



Carefully desolder the old wiring harness from the old power supply board.

If present, isolate blue and orange cables separately with heat shrink tubing, they are not needed.

Solder the old wiring harness to the appropriate solder points on the new ProPSU Power Supply Board according to the picture above:

1. First from the left (A): white (-15V)
2. Next two solder points (B & C) remain unconnected
3. Fourth (D): red (+5.7V)
4. Fifth (rightmost), lower solder point (E): yellow (+15V)
5. Solder point above the previous one (F): white/orange (+22V switched by reset circuit)
6. Lower solder points above filter capacitor (G & H): black (GND)

Connect the transformer wires to the ProPSU Power Supply Board (see pic) using the supplied WAGO actuation tool to operate the cage clamp connectors. **Pay attention to the black markings on the green and blue wire pairs, see the yellow arrows in the pic!**

Mounting the ProPSU into the heat sink

Apply a thin layer of the included heat sink compound on the three protruding parts of the aluminum heat spreader on the ProPSU.

Mount the ProPSU module to the heat sink using the three supplied black M3x12 hex screws with locking washers. The three protruding parts of the aluminum heat spreader should fit exactly into the rectangular holes in the back panel.

Testing & finishing up

Do not connect the multi-pin connector from the PSU to the main board until measurements are completed!

Check the wiring. Conduct isolation, earth resistance and leakage current tests according to your local regulations.

Connect mains and switch on the unit. Check all voltages on the multi-pin connector for correct values. Use one of the black wires as ground. You should measure:

- Red: +5.7V (min 5.6V, max 5.8V)
- Yellow: +15V – pre-adjust with the right multi-turn trimpot
- White: -15V – pre-adjust with the left multi-turn trimpot
- White/Orange: +22V +/- 5V (not critical)

If all voltages are correct: turn off, let the capacitors discharge, connect the harness to the main board and test thoroughly.

Re-adjust the +15V and -15V trimpots after a few minutes if needed.

DONE!

If you have questions or if any part of this manual was unclear, get in touch:

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