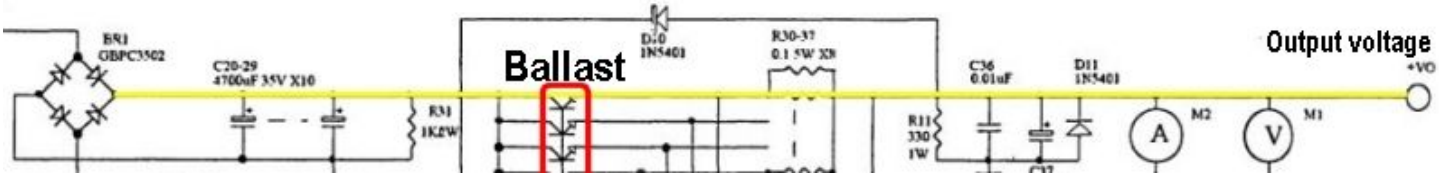
Diamond GSV3000 : Overvoltage protection

The supply GSV3000 has a protection against overvoltage :
It consists of blocking the ballast transistors…

But what's happening when one ballast burns :

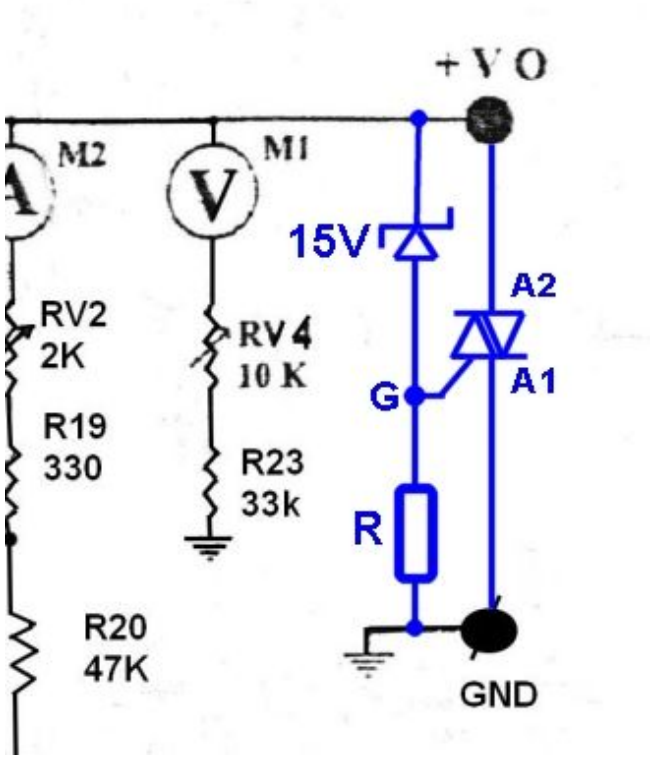


The output voltage is the voltage of the diodes bridge : 25 V !

So the original protection is ineffective…

The problem is the same on Yaesu supply FP757 and others…

Here a real protection for the GSV3000 supply :

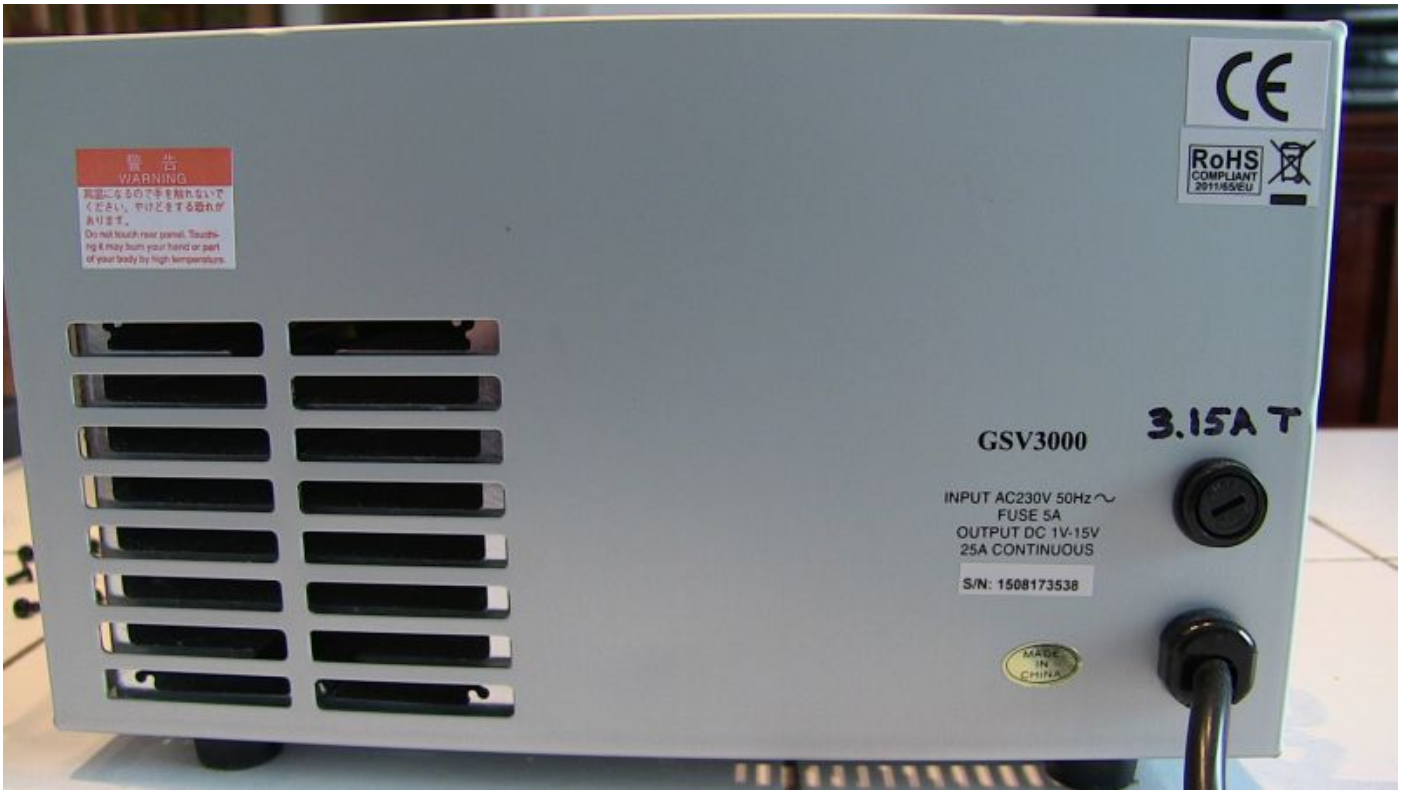


Zener 1N4744A : 15V +/- 5% - 1Watt : Verify the value because 14.25V <Vz< 15.75V
The protection is activated at (Vz + 0.6V)
I prefer have a real zener voltage of 15V or up to avoid activation before 15.6V.
I bought 50 zener diodes 1N4744A on ebay for 1.59€…

Resistor R : No critical value : 100 Ω to 10 kΩ …
The aim is not to have the G terminal in the air when the zener is blocked
to avoid nuisance tripping.

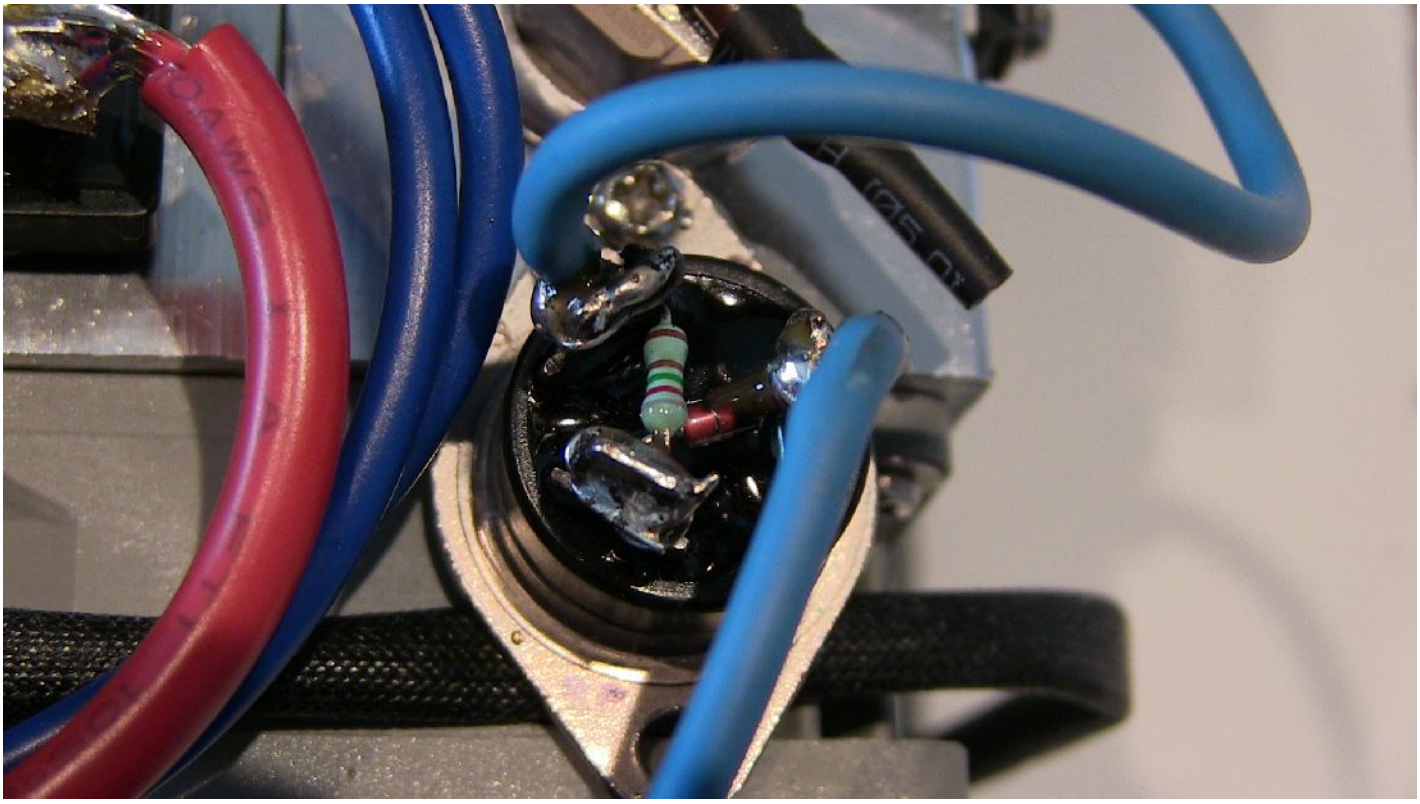
We can use a triac or a thyristor (prefer the cheaper model) of 40A or more.
In this example : BTA40-600B (2 € on eBay)

No need to have a fuse before these components
but change the fuse of the supply by a 3.15AT :



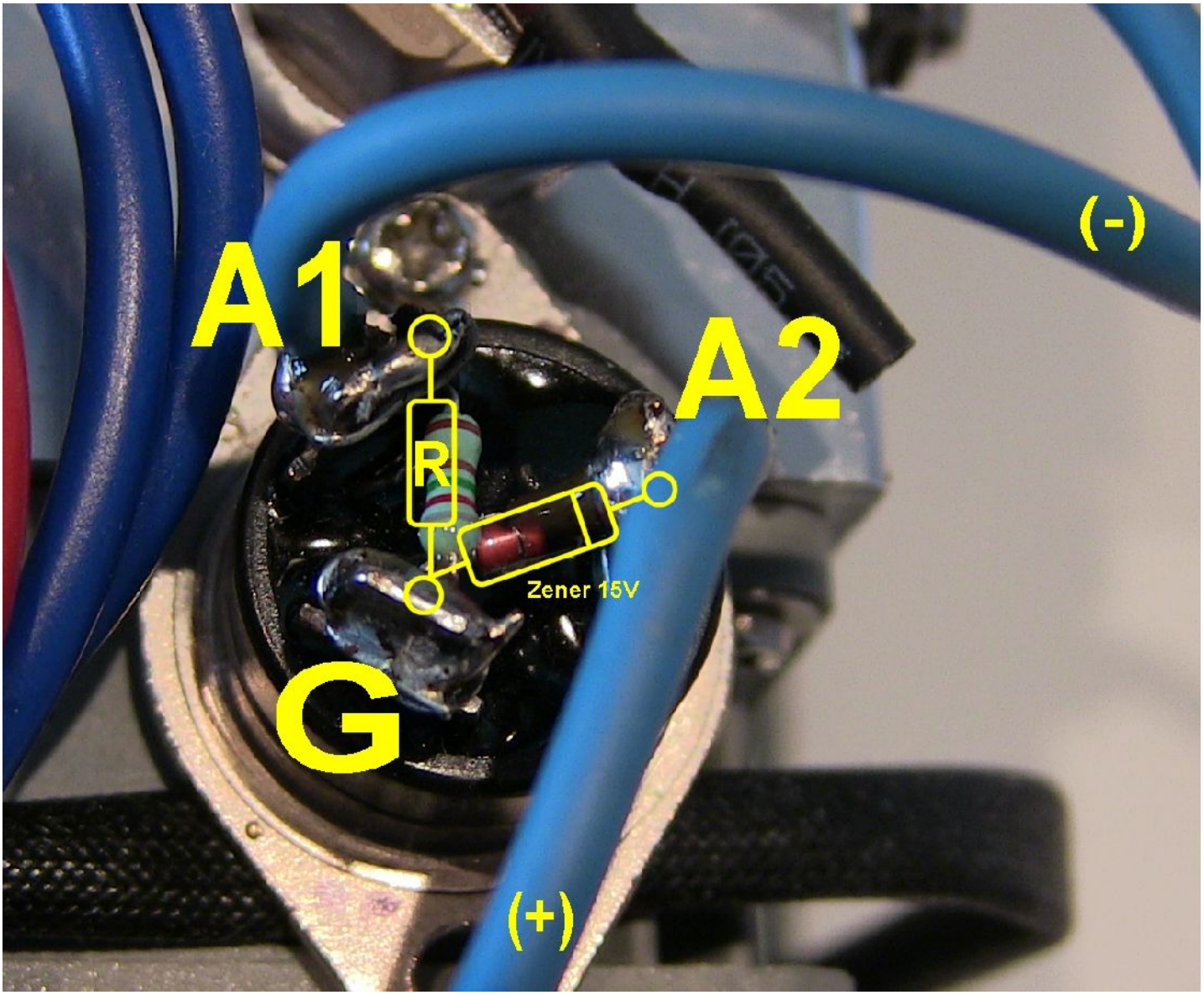
The fuse of 5A is oversized in all cases...

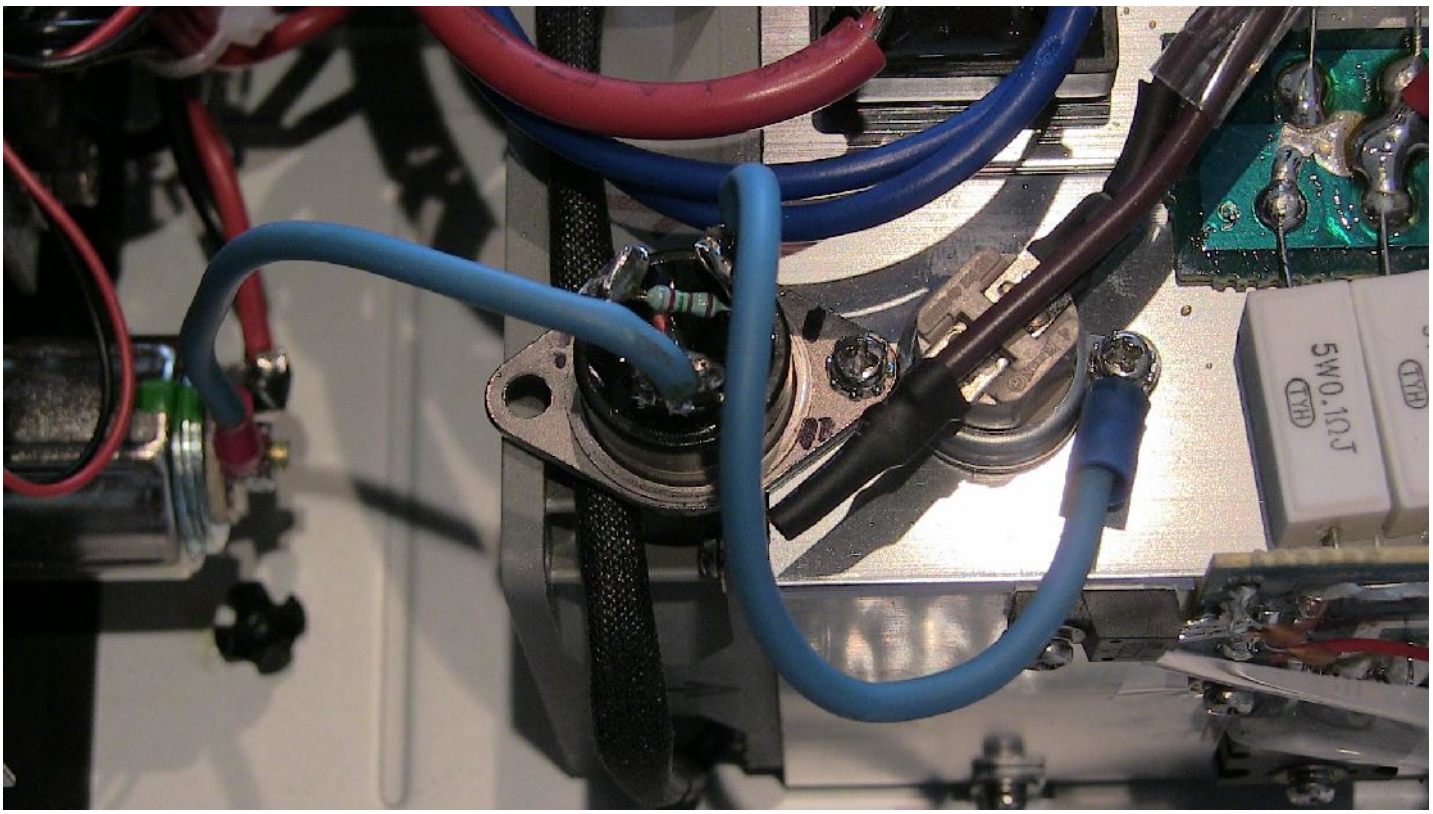
Possible to put all components on the triac like we can see :

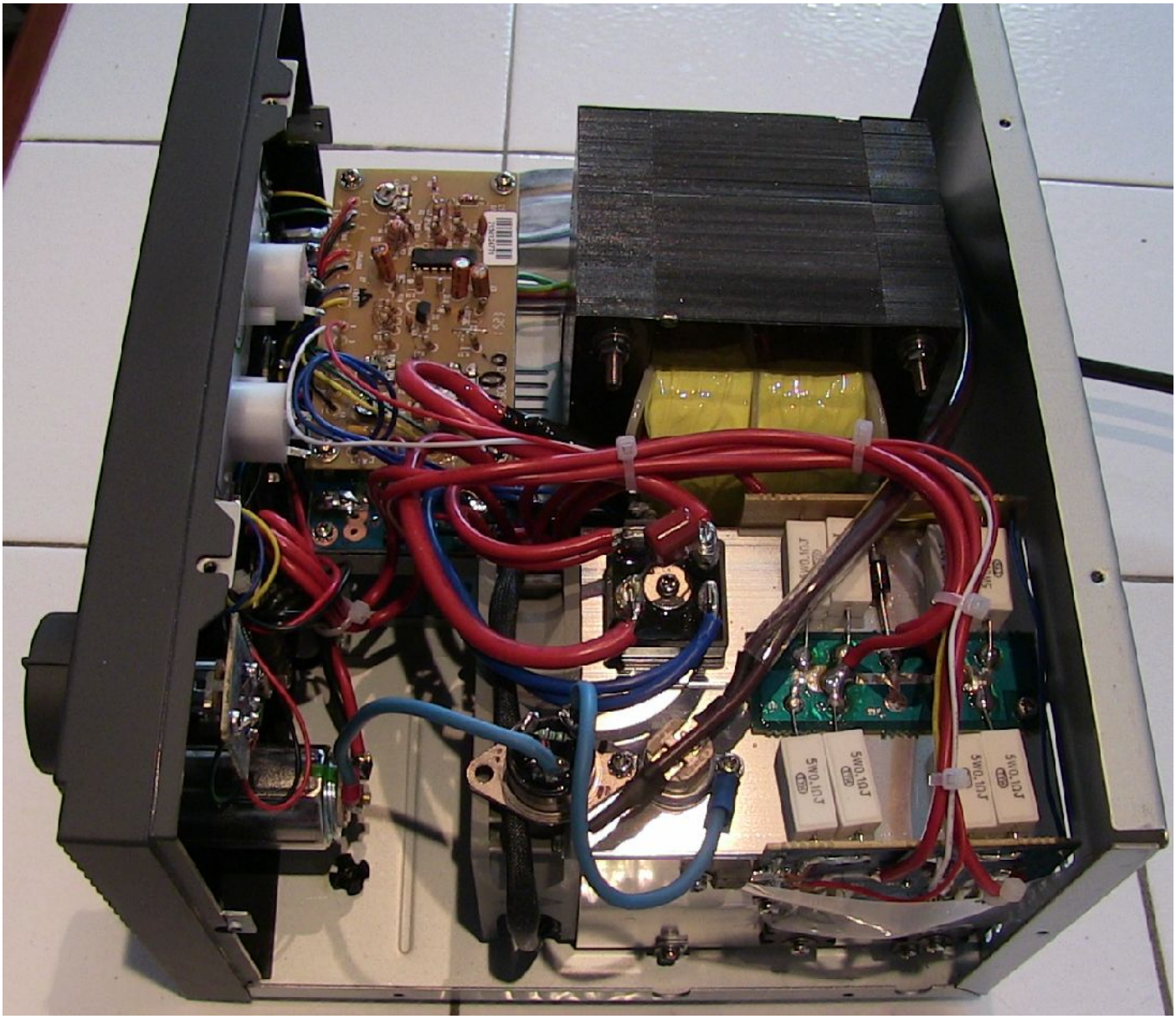


No need of cooler for the triac/thyristor. It does not heat.

Use the screws of the supply to fix the triac/thyristor (see pictures)


A1
A2
G
R
Zener 15V
(-)
(+)


5W0.1ΩJ



73’s de Ludovic – F5PBG

http://inforadio.free.fr

http://radioamateur.forumsactifs.com