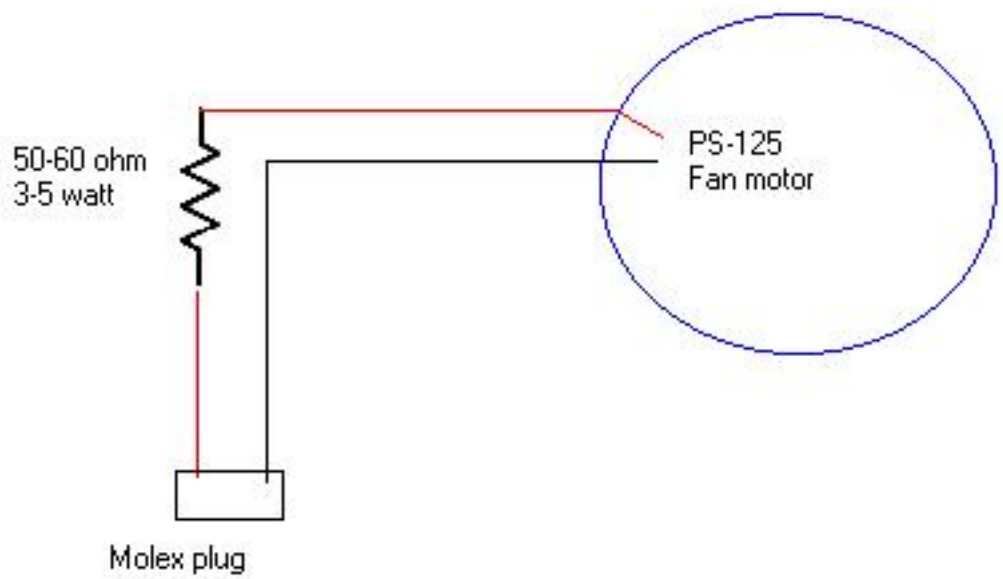
Fan modification for the ICOM PS-125, by KK5DR

This power supply is an updated version of the PS-85 which had a number of defects such as EMI, and excessive fan noise.

Some users have complained about the fan noise in the new PS-125. I have not found the fan noise to be excessive however, I developed this mod to enhance the power supply, and reduce the noise that may be present, and found to be objectionable by some.



I tested the fan using a rheostat, and found the best balance of noise and air flow to be a 50-60 ohm resistance. The current draw at this resistance is 75 ma. which reduces the voltage from 13.8vdc to about 9.5vdc, so a resistor of 3-5watts should handle the job. Carbon or wire-wound will work. Be sure to insulate the resistor, so that there will not be any shorting inside the PS. Shrink-tube and or electrical tape will work. The mod is easy and can be done by most anyone that can solder. The hardest part of the mod is getting inside the PS which is double encased

in metal, lots of screws, and most of them have to come out. Do not take out the two sets of screws that are in the middle of one side of the inner case, these screws are mounted close together, and should not be removed as they hold parts on the inside, and would be very difficult if not impossible to re-install. The inner case splits in two like a clam shell when the screws are removed.

Judging the proper air flow rate is a little tricky, care must be taken not to "go to far". The goal of the mod is to lower the fan RPM's by just enough to reduce the noise level, but not cause over-heating of the PSU. I suggest not using a resistor greater than 60 ohms. A quick and easy mod, not overly complicated.

I have been using the PS-125 with the mod installed for some time now, and it has never over-heated, and operates very quietly.

There are other ways to quiet the fan, but they are much more complicated, and require a schematic of the PSU, which may be hard to get.

Update 2003;

I got a new PS-125 when I purchased a new IC-746PRO this year. Now, I had an "A/B" comparison.

Yes, the unmodified unit has a much higher fan noise level, how much, is a relative thing, but it is noticeable. I notice that the fan cycle time is much longer with the mod, than without, likely because the full speed fan flows more air, but also makes more noise.

If your wondering if you should do this mod, you better ask yourself this

question; "Will I operate most of the time on heavy duty-cycle modes, of light?" If the answer is mostly light duty i.e. SSB, CW, then yes, it would make sense to do the mod. If, however, you're a RTTY contester, or do a great deal of FM or AM, then it might be better to leave the fan at full speed, to prevent possible PS over-heating.

Over-heating is still unlikely even on a modified PS-125. I've used one that was modified over two years ago, on all modes, at full power and lower, and have never even approached over-heating the PS-125. I would say that the mod does no harm, and gives the user what you want, a slightly lower noise level in the radio room. Heat, is not a real issue here.

One change I made in my mod, was to locate the resistor on a bare section of heat-sink/cabinet bulkhead, secured with adhesive-backed tie-wrap stays. I used wire leads to reach the fan pigtail where I spliced in using crimp connectors. All wire connections were then heat-shrink tubing insulated. I used a 50 ohm @ 10 watt cement wire-wound resistor, which should dissipate very low heat levels.

I found that taking only the side off of the PS that does not have the two screws in the center, closely spaced, allows easier access, with less screws to remove from the cabinet. The outer top & bottom covers must both be completely removed. Find the inner side cover without the recessed screws in the middle part of it, and remove that side panel, leave the front and rear panels attached to the other side panel.

Good luck…

Update, 2005; Two units operating with my fan mod in them, one is five years old, the other is two, no problems with either one. They never overheat.