

Dynapower Rack Mounted Power Supply Auxiliary Contacts Replacement Procedure

Introduction

If you must replace the auxiliary set of contacts on a rack mounted dynapower p.s. please follow this procedure. Don Bruno shall be consulted before following this procedure. You can watch this **MOVIE**, to help you replace the auxiliary contacts, by clicking on this link but you must read through this procedure as well.

<http://www.c-ad.bnl.gov/ceps/files/Movies/DynAuxContactReplacementMovie.MPG>

Warnings:

1. You must lock out the 208VAC to this rack.
2. Make sure the blue link is down if you are working on a blue p.s.
3. Make sure the yellow link is down if you are working on a yellow p.s.
4. If you are asked to bring the links down then ask MCR to first ramp all of the p.s.'s to zero current.
5. You can bring the links down by putting the p.s. in the OFF state you are working on. Go from ON to STANDBY and then to OFF. If there is a blue and yellow p.s. in the same rack then both the blue and yellow links must come down.
6. If you are working on a 200A p.s. the SCR bridge is on the top left had side of the p.s. and the isolation amplifier board is on the right hand side. You will be swapping out the aux contacts in the front of the p.s. See Figure 1 below:

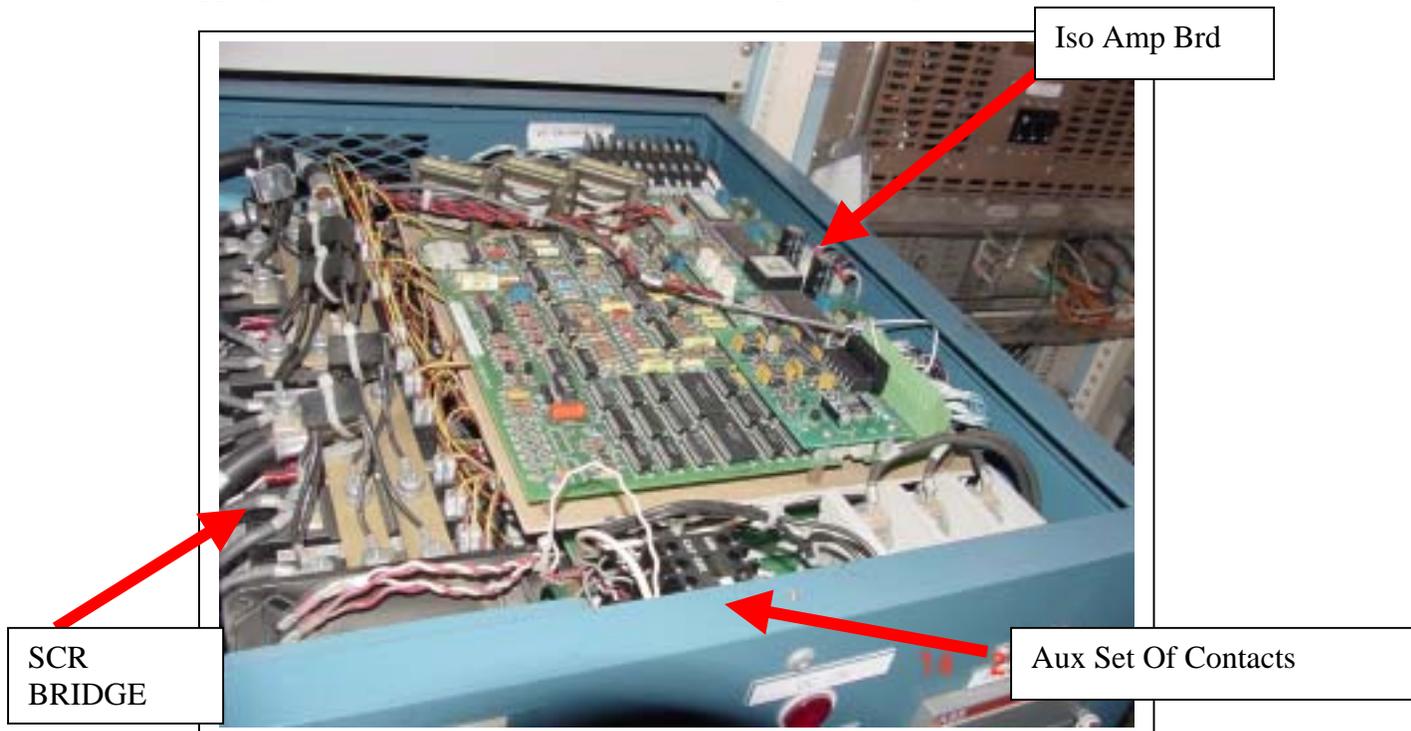


Figure 1

7. In this 200A p.s., in Figure 1, you must stay at least 6 inches away from the SCR bridge and the isolation amplifier board when swapping out the auxiliary set of contacts. If you feel you cannot then you must lockout the blue or yellow or both main quadrupole p.s.'s. To do this for a blue p.s. , follow this procedure: <http://www.rhichome.bnl.gov/AGS/Accel/SND/DerivProcs/CPS/CPS005.PDF> and follow this procedure for a yellow p.s. <http://www.rhichome.bnl.gov/AGS/Accel/SND/DerivProcs/CPS/CPS006.PDF>
8. The 300A and 450A p.s.'s only have isolation amplifier boards on the top so you must stay at least 6 inches away from these to replace the aux set of contacts.
9. The 200A p.s.'s have the following in their sitewide names: qf8, qf9, qf1, or qd1.
10. The 300A p.s.'s have the following in their sitewide names: qd3 or qf3
11. The 450A p.s.'s have the following in their sitewide names: qd6, qf6 or q6.

Procedure:

1. First make sure the blue or yellow links are down.
2. Second lock out the main quad p.s.'s if required.
3. Make sure the p.s.'s in the rack are in the OFF state.
4. Turn off the circuit breakers on the front of the p.s.'s in the rack.
5. Lock out the 208VAC disconnect for the rack you are working in.
6. Unscrew the back door and someone should stay there to watch the cables as you slide out the p.s. from the front.
7. In the front of the p.s., take off the plastic cover, disconnect the fibers noting how they were connected so you can re-connect them properly. TX-IN 1 goes in the top. RX -IN 1 is the second one down and RX-IN 2 (if you have one) is the last one down.
8. Remove the blank panel on the bottom of the p.s. if it stops the p.s. from sliding out. There may also be a screw or two holding the p.s. in the rack, remove them.
9. Slide out the p.s. while the person in the back is watching the cables. **Pay close attention to the AC cable and make sure it does not catch on sliders.**
10. Take the cover off of the top of the p.s.

11. In Figure 2 below you see a top view of the auxiliary set of contacts in a 450A p.s.

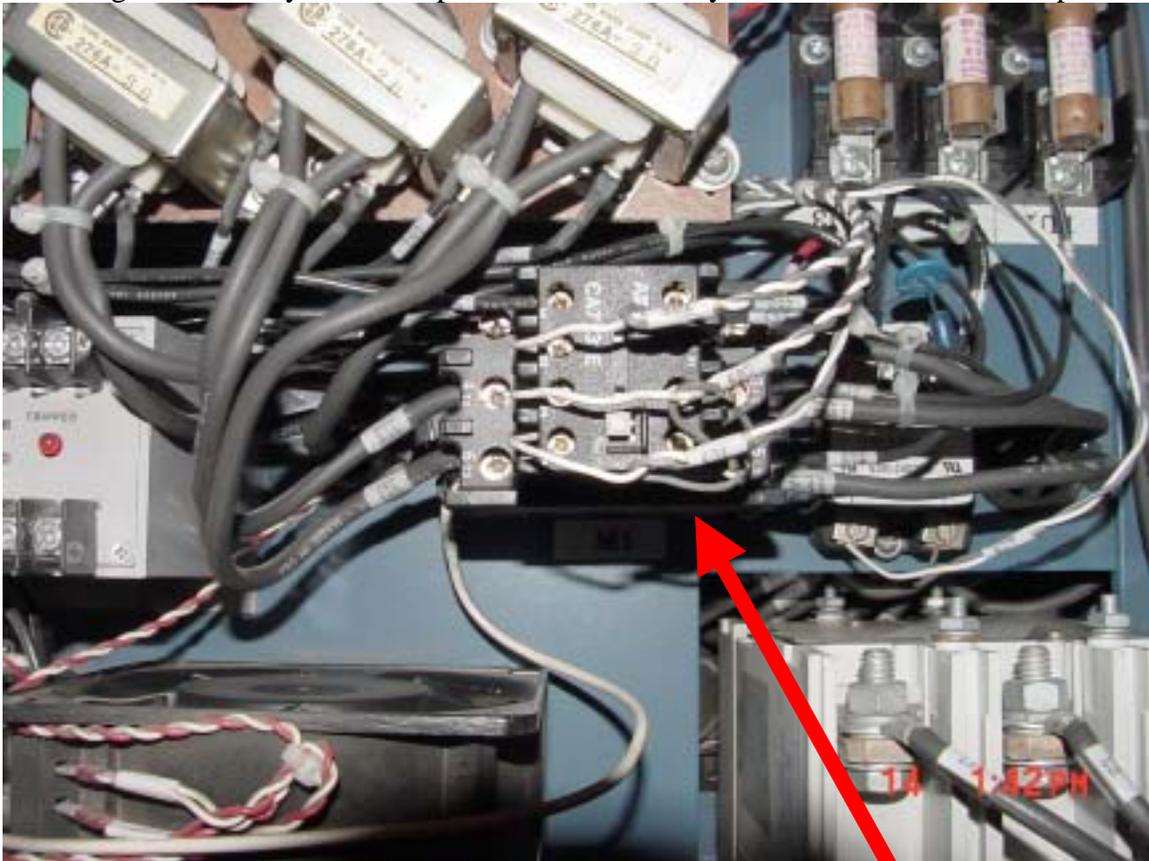


Figure 2

Auxiliary set of contacts

12. The model number on the auxiliary set of contacts for a 450 amp p.s. is CA7-31E but a CA5-31E can also be used. You can find these spares in cabinet number 9 in building 1007W in the second to last drawer. A 300A p.s. or a 200A p.s. have auxiliary set of contacts with the same model number, that being CA7-22E but a CA5-22E can also be used.
13. If this is a 300A or 450A p.s. make sure you stay at least 6 inches away from the isolation amplifier board when replacing this set of auxiliary contacts. If you cannot stay at least 6 inches away then lock out the main p.s.'s in 1004B. In the 200A p.s. you must ALSO stay away from the SCR bridge (see Figure 1).
14. Write down how the wires are connected to the auxiliary set of contacts before proceeding any further.

15. In Figure 3 see the white TAB pointed out by the RED arrow. To remove this set of auxiliary contacts you push up on the white tab and slide out the auxiliary set of contacts towards you hand that is pushing the tab up.

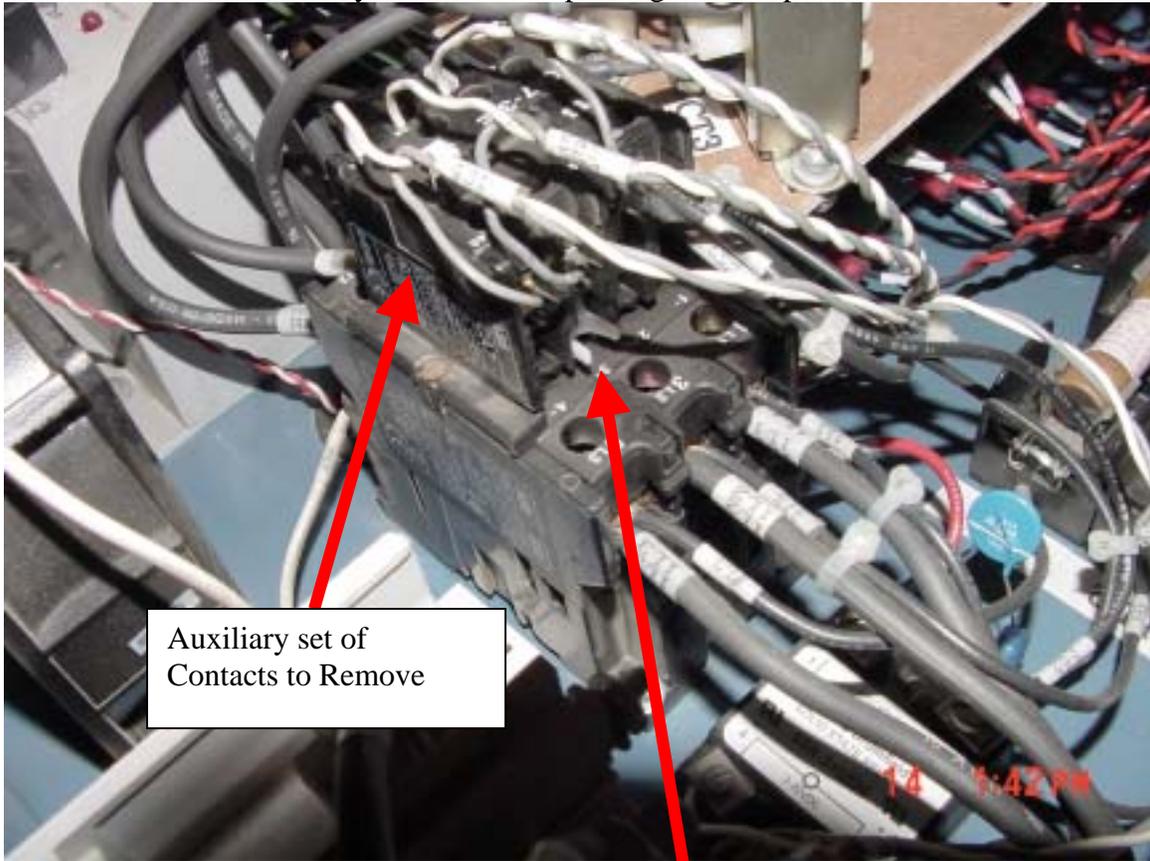


Figure 3

White Tab, push up

16. Once you have removed the auxiliary set of contacts write down how the wires are connected and re-connect them the same way on the new set of auxiliary set of contacts you got from 1007W cabinet number 9.

17. In case you need to know how to hook up the wires because you did not write it down you can either open up another p.s. of the same type and check or you can use these drawings below (Figures 4 and 5). It is possible the wire numbers may be different although they should not be. If the wire numbers are different you may want to open up another p.s.

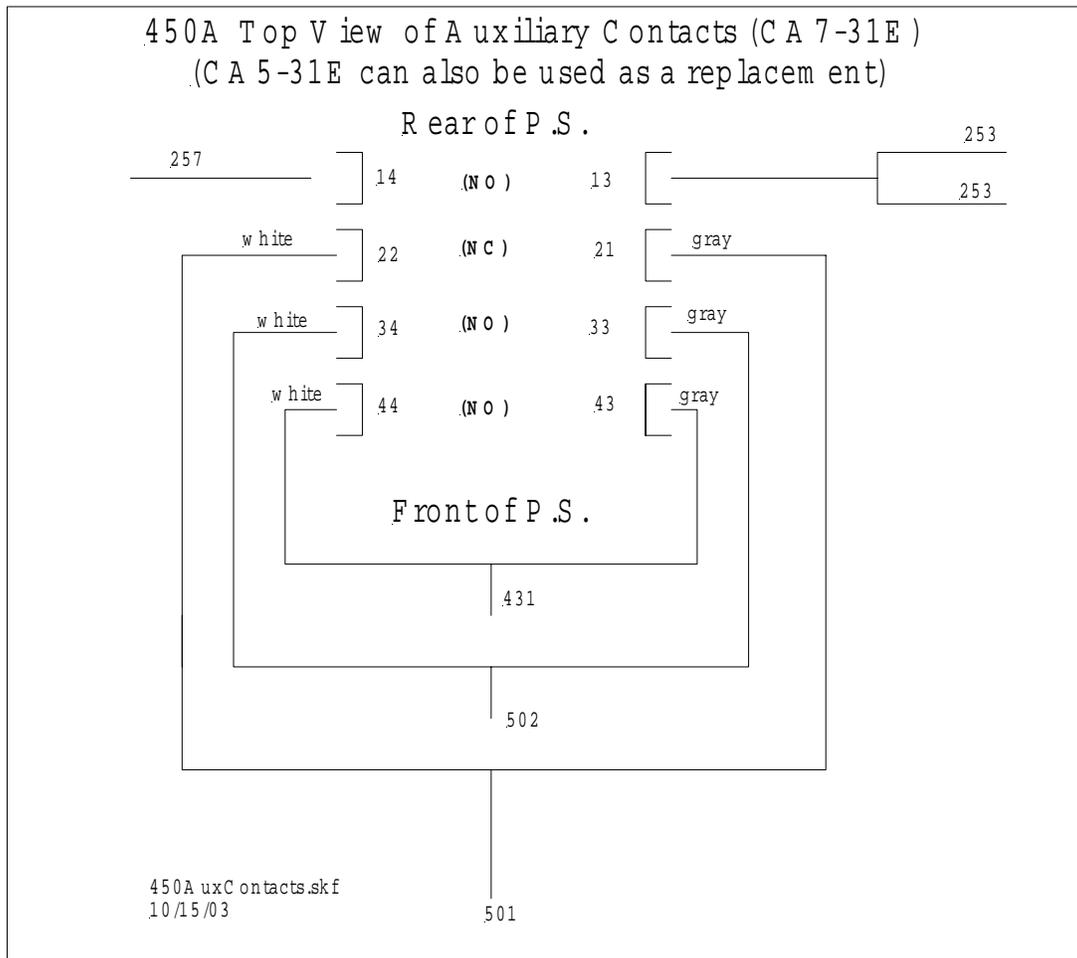


Figure 4 - 450A auxiliary set of contacts wiring diagram

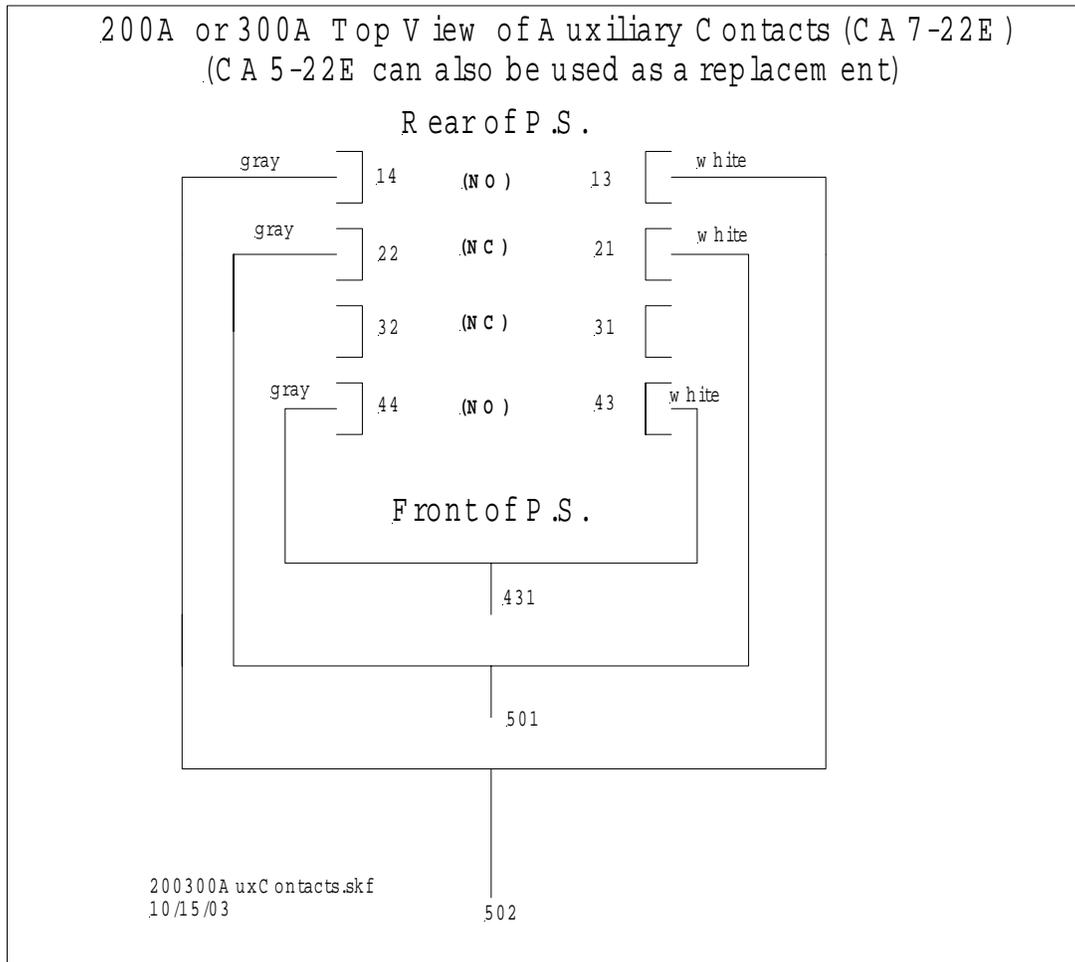


Figure 5 - 200A and 300A auxiliary set of contacts wiring diagram

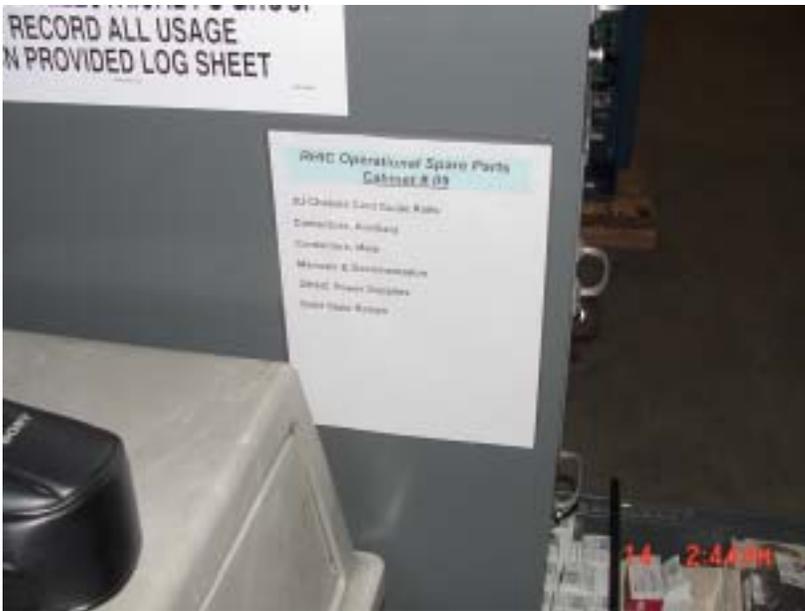
18. If you click on this link below you will see a **MOVIE** that shows you how to remove and re-install the auxiliary set of contacts.

<http://www.c-ad.bnl.gov/ceps/files/Movies/DynAuxContactReplacementMovie.MPG>

19. The figures on the next page show you what the spares cabinets look like in 1007W that contain the spare auxiliary contacts..



Spare Cabinet Number 9 that has auxiliary contacts in second to last drawer.



Number 9 Cabinet Sign



Spare auxiliary relays in second to last drawer of Number 9 cabinet.