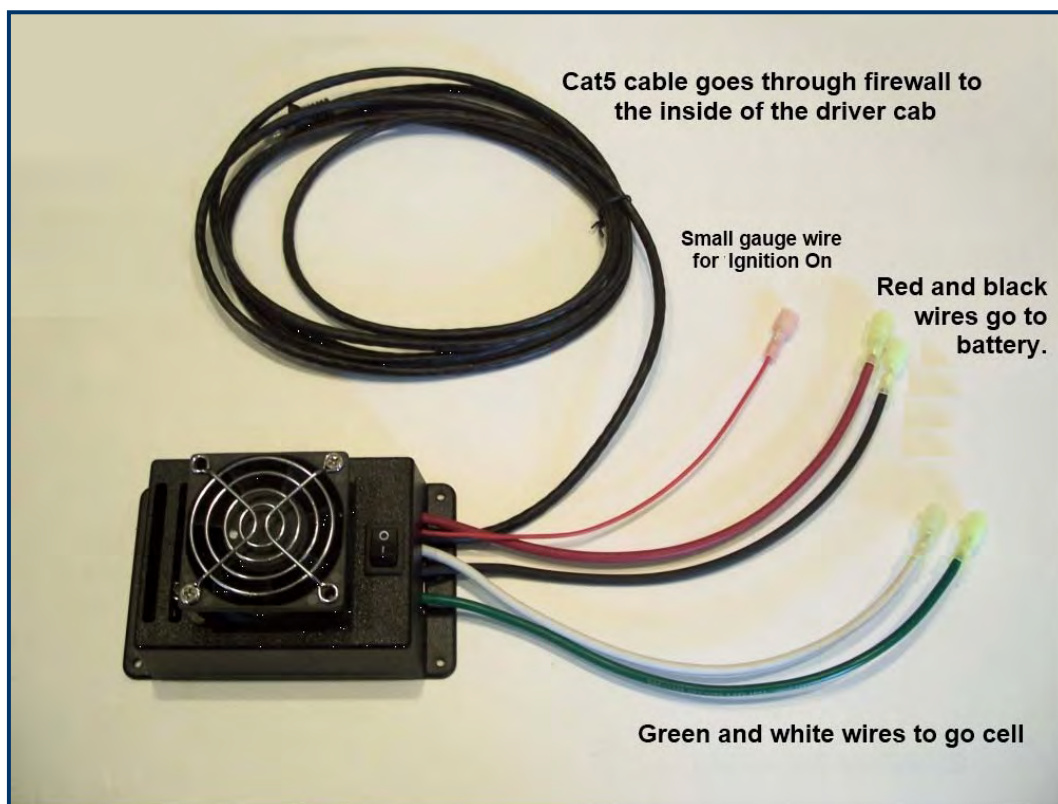


Installation Notes For 24 Volt Systems

There are 2 modifications to the PWM installation instructions when working with 24 volt systems. They are quite simple, but quite important:

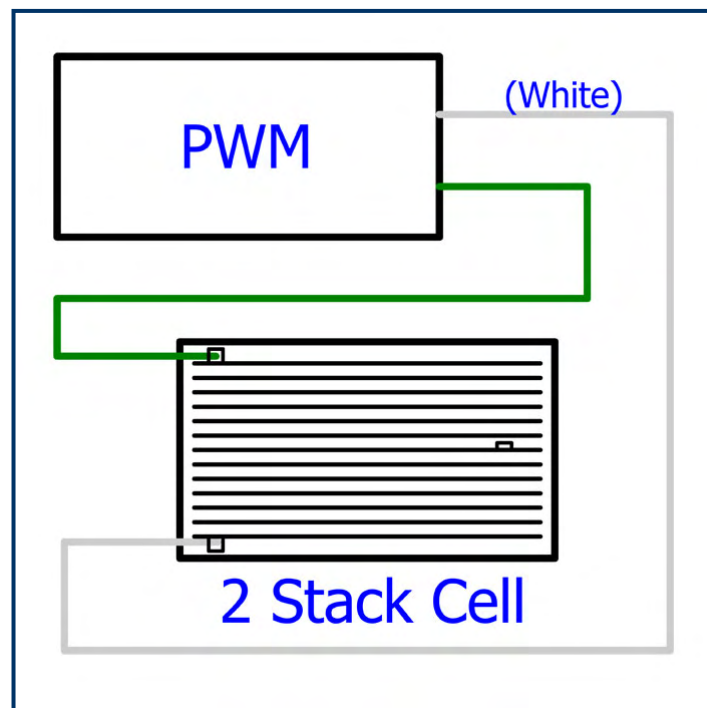
1. The PWM control wire must receive 12 volts. The control wire is the one labeled "Small gauge wire for Ignition On" in the image below. It is an 18 gauge red wire. Power must be supplied to this wire for the system to be able to turn on. We use this as a safety switch for the entire HHO system. By supplying voltage at this wire from the fuel pump relay, we can ensure that the system will only run when the engine is running.



In order to provide 12 volts to the control wire, we use a dc to dc converter. Take a wire from your fuel pump relay to the "24 Volts + In" on the voltage converter. Also provide a ground wire to the converter. Then connect the "12 Volts + Out" terminal to the small gauge red wire on your PWM. As EFIEs also need 12 volts, you can power your EFIE or Frequency MAP/MAF Enhancer from this same 12 volt wire. Note: The large red wire (10 gauge) from the PWM gets 24 volts. This is the voltage that will drive your cell.

2. Use 11 neutral plates. On 12 volt systems we use 5 neutral plates. With 24 volt systems we use 11 neutral plates. A neutral plate is a plate that has no power connected to it. The other type of plate is called a "hot" plate, and this has a tab on it for connecting power to the cell.

Your cell may be set up for 24 volt systems only, in which case there will be 11 neutral plates between each hot plate. However, even if your cell is set up for 12 volt operation, you could just treat the center Hot plate as a neutral plate and not connect a cable to it. By not connecting a cable to the center hot plate, you have made it into a neutral plate. See the following diagram of a PWM connected to a double stack cell. Notice that we are not connecting anything to the center hot plate. If you count the neutral plates you will see that there are 11 of them. This arrangement ensures that we get the proper voltage between adjacent plates for efficient HHO production.



Summary

There are only 2 changes that you must observe when connecting to a 24 volt system:

- 1) Provide 12 volts to the control wire for the PWM
- 2) Use 11 neutral plates between each set of hot plates.