36/48 to 12 volt - Voltage Reducer Wiring Instructions

In a golf cart the batteries will be connected in a "battery chain". This means the positive post (+) of one battery will be connected to the negative post (-) of the next battery thus forming a chain like this"

(+) Battery 1 (-) <=> (+) Battery 2 (-) <=> (+) Battery 3 (-) <= > (+) Battery 4 (-) <=> (+) Battery 5 (-) <=> (+) Battery 6 (-)

This leaves the positive (+) post on Battery 1 and the negative (-) post on battery 6 open, not connected. This in effect converts the six batteries into one big higher voltage battery. The individual batteries may be 6 volt batteries thus making it a 36 volt system. Or they may be 8 volt batteries making it a 48 volt system. A 48 volt system can also be composed of only four 12 volt batteries. In a golf cart the positive (+) post of Battery 1 will be connected to the motor/controller. The negative (-) post of Battery 6 will also be cabled to the motor/controller.

The following wires are present on the voltage reducer box:

BLACK – This is the ground connection and goes to the negative (-) post of the last battery in the battery chain usually Battery 6

RED – Should be fused and goes to the positive (+) post of Battery 1.

YELLOW – This is the control wire, it turns the voltage reducer on & off. To turn the unit on it needs to be connected to the positive (+) post of Battery 1. This can be done in several ways:

- It can be connected directly just like the RED wire. This means the unit will be on creating 12 volts all of the time. In most applications this will probably not be an issue as the voltage reducer only, draws current proportionally to the current draw / demand on the 12 volt lead/wire. Also a consideration is if you are using the voltage reducer to power a radio, it may require 12 volts to maintain information like station presets, etc.,

- It can be connected to the golf cart's key on/off switch. Just find the side of the switch that has 36/48 volts available when the key is turned on. This way the voltage reducer will only operate when the cart is turned on and ready to run.

- It could also be connected to the positive (+) post of Battery 1 via an added single pole single throw (SPST) switch dedicated to turning the voltage reducer on & off.

GREEN – This is the lead that has 12 volts positive (+) available when the voltage reducer is operational. It would be a good idea to include a fuse in this line close to the voltage reducer just in case there is a short circuit. It could be any value up to 25 amps as that is the maximum the voltage reducer id capable of producing. The negative (-) for 12 volts is provided by connecting to the negative (-) post of Battery 6, same as the BLACK wire from the voltage reducer. A 12 volt negative or ground wire must be run to each location where 12 volts will be needed because in a golf cart the frame is usually not grounded as in a car or truck.