Connecting the Battery before Solar Panels to a Renogy Charge Controller

When connecting to a Renogy charge controller it is likely you have seen a warning like the following:

WARNING! Connect the battery terminal wires to the charge controller FIRST, then connect the solar panel(s) to the charge controller. NEVER connect solar panel to charge controller before the battery.

You might be asking yourself why? Or if there are any exceptions? The purpose of this article is to answer those questions and shed light on connecting solar order of operations.

Why is this the rule?

Renogy charge controllers may turn on if they detect solar power (PV) or battery power. However, the battery source defines the system voltage (for auto recognition), is a stable supply that allows programming of the charge controller, and most importantly, is how the controller receives its operating power to regulate solar power. Though a controller may turn on with PV input, the power source is unstable, and in some cases can damage the charge controllers if they lack certain protections.

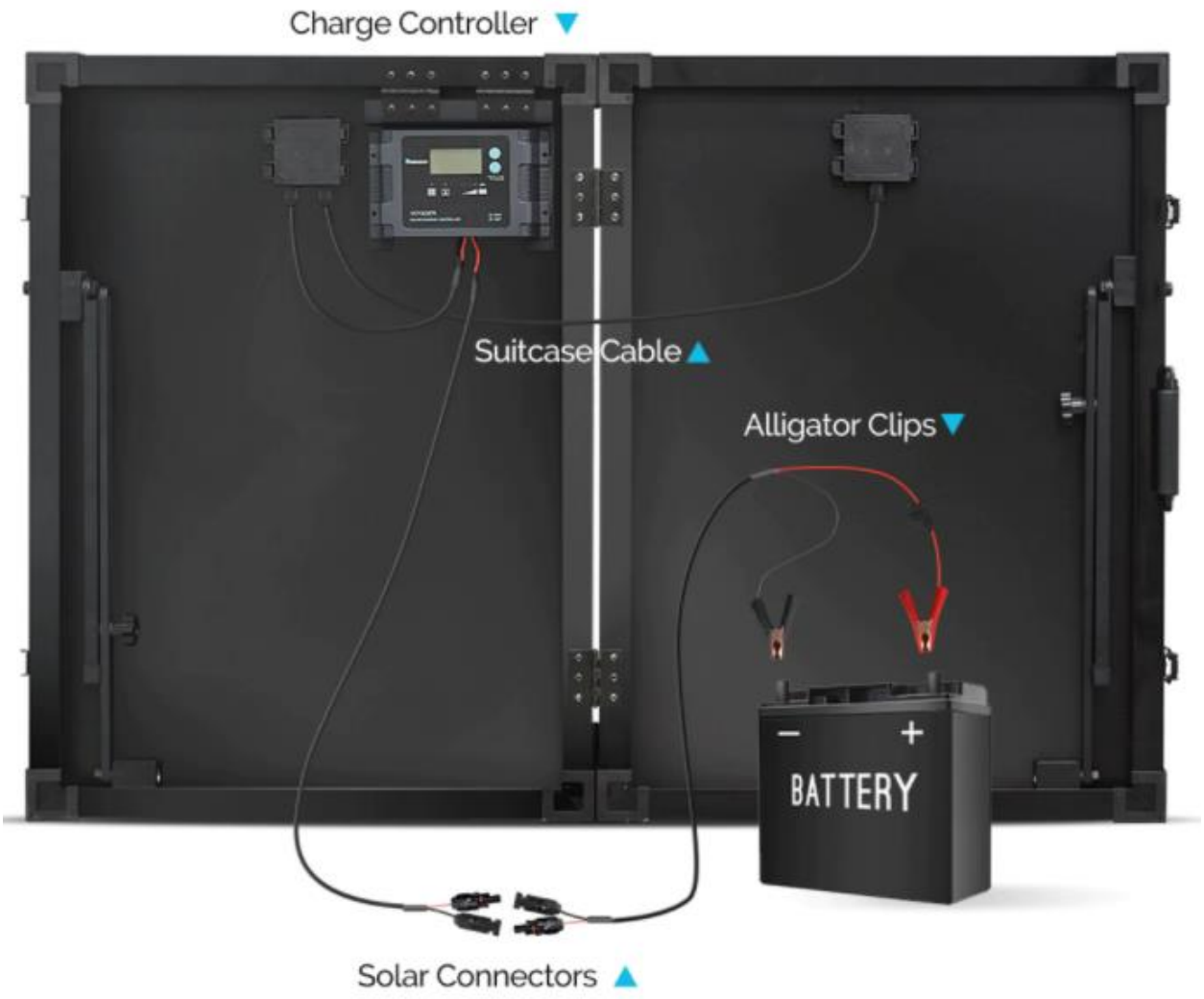


Wanderer 30 LI (Model: RNG-CTRL-WND30-LI)

In previous years, the protections did not apply to all charge controllers. Over the years, Renogy controllers have improved on their electronic protections to the point where the controller would be fine if PV is connected before battery power. If you find that you connected it in this fashion and the controller is operating fine, then there is nothing to worry about. However, each controller may have a different threshold for this protection so above all else, it is always good practice to connect the battery first and then the solar panels to ensure system success and ability to program your controller.

Exceptions

As mentioned above, it is always good practice to connect the battery first to ensure system success. The unique exception to the rule is the Renogy Solar Suitcase with Controller. This product is uniquely designed to have the PV panels prewired to the charge controller and have it readymade for battery connections for plug and play. The controllers used in the suitcase, whether it be the Adventurer or Voyager are equipped with electronic protections to avoid damage. **However,** to navigate the controller, the rule is the same in that it needs a battery source. Ultimately, the suitcase is the exception to the rule because the panels are prewired and the controller has electronic protections in place, but the convention is the same in that in order to use or navigate the controller, it needs a battery connection.



100W Solar Suitcase (Model: RNG-KIT-STCS100D-VOY20)

We hope to have addressed concerns regarding the order of operations when connecting to solar charge controller.