



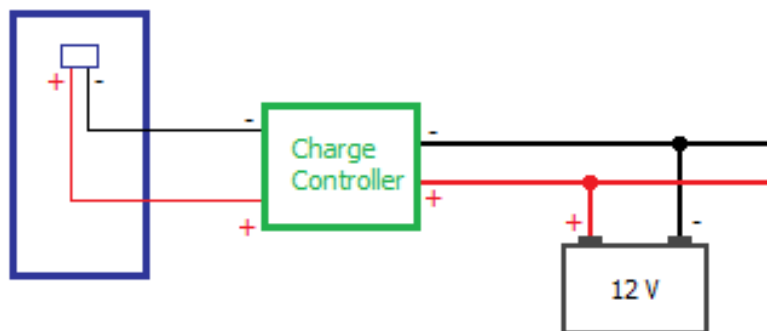
**Grape Solar 100 Watt Off Grid Kit
(GS-100-KIT)
Installation Guide**

IMPORTANT: Please read the GS-PWM-COMET-40 Owner's Manual and the Panel User Guide (included with panels) before assembling this kit.

Required tools: Philips-head screwdriver

Recommended tools: insulated wrench or other insulated tool for battery connections, digital multimeter or voltmeter

Basic Wiring Diagram



For additional information about this kit visit grapesolar.com/manuals.html, or email support@grapesolar.com

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Installation Guide

Step 1: Check your order to make sure that all parts are included. For the 100 watt kit, this is a GS-STAR-100 solar panel, one 10 amp inline fuse, a 15-foot MC4 cable (cut this in half, the two halves connect the panel leads to the charge controller's solar inputs), a red/black 5-foot bare-wire-to-ring-lug cable pair (charge controller to battery), and a GS-PWM-COMET-40 charge controller.



Step 2: If you are connecting the system during daylight, cover the panel with cardboard, cloth, or a similar option so that it does not output power. Place the panel so it is facing due south at approximately the same angle as your latitude, in full sun.



Step 3: Mount controller if desired (note that it must be in a NEMA-4 rated enclosure if it is outdoors).

Step 4: Use the 5-foot red & black cable pair to connect your positive and negative battery terminals to the “Battery Positive” (use red cable from the positive battery terminal) and “Battery Negative” (use black cable from the negative battery terminal) inputs of the charge controller (the center set of terminals).



If your battery has sufficient charge (11.5 volts or more), you should now see the controller’s LCD display activate. This means the controller has power (controllers are powered by the battery, not the panels).



Step 5: Cut the 15-foot MC4 cable in half using wire cutters, stripping back the bare ends around 1/4”. Label the positive lead with tape to avoid polarity mismatch.



Step 6: Connect the positive MC4 output of the panel to the 10 amp inline fuse, as shown below:



Then connect the fused positive output and the negative panel cable output to the previously cut MC4-to-bare wire pair.

Step 7: Connect the bare wire end of the (previously marked) positive cable to the “PV Positive” input of the controller, and the negative cable end to the “PV Negative” input (the left set of terminals).



Step 8: Uncover the panel — you should see the icon on the upper left of the controller display change from a moon to a sun after this is done. As time passes, you should the battery charge increase, until the controller is in “Float” mode (NOTE: time to reach Float will vary depending on many factors including weather, location, time of year, and battery capacity). Once in Float mode, the battery can be used to provide power. It is best practice to ensure that the battery bank reaches Float at least once per week.

Exclusion for Documentation

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Important: Installations of this kind must be certified/approved as “code-compliant” to the national and local building and electrical codes. Installers should have adequate knowledge of national and local code to ensure the installation passes inspection by the local electric authority.

Important: Proper fuses or breakers should be used to comply with all local and national codes. Contact Grape Solar for specific recommendations.

Important: All batteries used for this system should be identical. Do not mix battery types or sizes. Do not mix old batteries with new batteries. Performance and charging anomalies can occur if types, sizes, or age of batteries are not identical.