

INSTRUCTIONS FOR USE OF
SOLAR PHOTOVOLTAIC PANELS
GENERAL INFORMATION

These high power ARRAYS are the newest models to join our solar panel line. They are available in many sizes & outputs. Solar Made's™ high efficiency panels are designed for portable, intermittent use where power, strength and lightweight are important – perfect for sportspeople, hikers, campers and backpackers. Due to an extremely durable encapsulated aluminum substrate, the panels are both shockproof and weatherproof. You may use these panels for charging lead acid batteries, gel cell batteries, Nickel Cadmium Ni-Cd batteries,

Nickel-Metal Hydride Ni-mH batteries, or charge battery packs for DVR's, portable TV's, radios, lights, alarm systems, fence chargers, 2-way radios, etc. The larger models may also be used to add to battery life by trickle charging vehicles that sit for extended periods: RV's, autos, boats, airplanes, motorcycles and all types of construction and farm equipment. Whatever use you put them to, you'll find that our new panels incorporate the same quality, versatility and reliability as our larger panels.

MOUNTING & USING YOUR SOLAR PANEL

- **For permanent outdoor installation, APPLY CLEAR SILICONE SEALANT to the two screw connections on the front and rear of the panel. This is all that is required to prevent weathering.**
- Use your panel in open areas. Position your panel where it will get the maximum amount of sun for the longest period of time. For maximum output, it should point directly at the sun, being as perpendicular to the noon sun as possible. This means, in winter months with a southern sun, your panel needs to stand more upright, facing south, and in summer it should be positioned at an angle closer to the horizon.
- When running output wires over long distance, use as heavy gauge wire as possible without getting too cumbersome to work with, never use less than 18 gauge (similar to an AC cord). This will prevent line loss.
- Ventilate by leaving at least 1" of space between panel and surface to be mounted. This allows the panel to cool itself by moving air currents and convection.
- To clean panel face, wash with soap and water, then wax the lens with any auto wax.
- Solar panels are inherently safe because the current is limited due to the physical size of the solar cell. This means (a) you cannot get a shock due to low voltage, (b) you can leave them continuously connected to a vehicle battery without harm from overcharging, and (c) the output of the panel can be shorted out without damage to the panel.
- Our "add-on" feature is just what it implies! Our panels are so small in size you can add more panels in parallel or series for additional power, Current or Voltage, in a very small space comparatively.

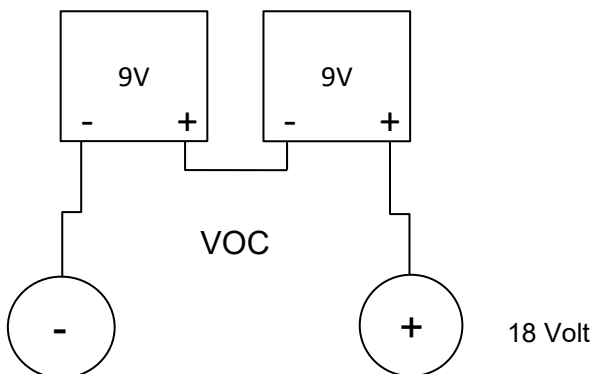
You may mount your solar panels permanently by using 2-sided tape or hardware such as screws or nut and bolt assembly. We suggest you **DO NOT** pull the hardware down **TOO TIGHT** on the

face of the panel as it may lift the encapsulation from the aluminum substrate.

Series Connection

For more VOLTAGE connect multiple panels in SERIES (positive to negative).

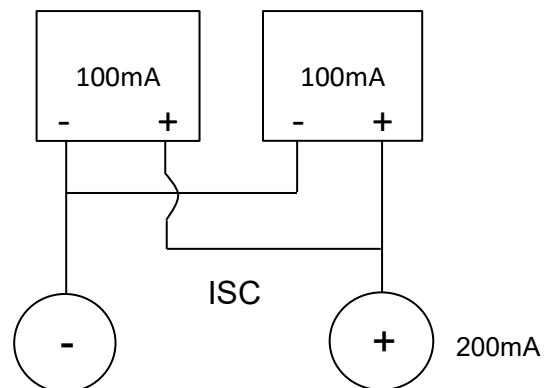
- Voltage is added 9V + 9V now at 18V
- Current remains the same, as high as the lowest panel.



Parallel Connection

For more CURRENT connect multiple panels in PARALLEL (positive to positive / negative to negative).

- Current is added 100mA + 100mA now at 200mA.
- Voltage remains the same 9 volts



Our panels have outputs that meet or exceed the rated specifications. Panels are tested using VOC: Voltage Open Circuit, ISC: Current Short Circuit. Test simulation, using 1 Colorado sun at high noon at 28°C.