

Solar Made Easy

Adding a Solar Panel to Your Recreational Vehicle

This inexpensive and easy to connect portable solar unit can add easy battery charging without the issues of having a gas powered generator. Credit for this design goes to Mike Magee through a posting he created on www.fiberglassrv.com. Costs for this unit will run approximately \$155, pending the particular solar panel you choose. Of note in the design used by Mike Magee, are the quick connects using an extension cord and a Bargman 7 pin vehicle connector. Setting up the panel requires removal from storage, placing it in a secure location facing the sun, connecting the extension cord to the panel and plugging the camper pigtail into the extension cord. I would estimate less than five minutes. The combination is weather proof; it can be in the rain. However the connectors should be off the ground in case they were to end up in a puddle of water.



The correct size solar panel is dependent on a number of factors but a general rule is the panel should generate at least 60 watts of power. Other factors may influence charge times such as time of year, shade, and battery usage. The 60 watt panel seems to provide a full charge in about 4 hours of full sunlight. Storage of the panel may influence the size you



select; the more wattage means a larger panel. Consider two smaller panels, such as 45 watt, that can be hinged into a folding arrangement if space is a consideration. I have chosen a 75 watt monocrystalline 12 volt panel from www.solarblvd.com. From the same location I choose a Morningstar Sunguard SG-4 4.5A, 12V Pwm Charge Controller. The company offers excellent phone support and some purchasers have experienced savings by ordering over the telephone.

List of Materials

- Solar Panel(s) =>60 watts
- Solar Controller (battery charger)
- 10 ft Extension Cord – 2 or 3 wire at least 16 gauge (I had difficulty finding a 16 gauge ten foot extension cord, so I made my own by purchasing a 10 foot length of paired 16 gauge cable and two replacement plugs (male and female) as shown below.
- Bargman or Pollack style 7 pin connector, vehicle side (AutoZone sells this for >\$11, probably available at many different auto stores)

- Crimp on connectors, sometimes called butt end splices or butt splice connector – in blue
- Electrical Tape

Tools Needed

- Wire Cutters and Wire Strippers
- Crimp Tool

The wiring is very simple.

1. Cut your extension cord, on a ten foot cord cut it about 12 inches from one end. This short end will connect to the solar panel.
2. There are two wires from the solar panel, a red and black. Use the crimp on connectors to join the short end of your extension cord to the panel. Make note what color wire is joining what color as you will want to match colors on the other end.
3. From the controller you will now connect the yellow wire to the same lead your red was attached at the solar panel. You can connect black to black using either black wire off the solar controller.
4. The 7 pin Bargman can be disassembled; this will show the screw on connectors and the accompanying pin out numbers. You will be using Pin #1 and 4. It is critical that you connect the proper wire to each or the controller will fry up. **The proper connection is black or ground wire to Pin 1 and the red wire to Pin 4.**
5. Performing the “smoke test” is next; connect up everything with the solar panel facing the sun. Watch and feel the controller for about two minutes, if you feel heat or see smoke disconnect immediately and recheck your work. Chances are if you catch things quickly the controller will remain undamaged.
6. Finalize your connections by wrapping tightly in electrical tape.



The finished unit is water proof but not wind proof, be sure it is securely anchored when collecting sun. There are many enhancements that can be done to this project such as using a Western Union splice; and sealing connections with heat shrink tubes. However, with the limited use of this panel the interests of simplicity won out. If the 10 feet of extension cord is not enough you may insert any length of another extension cord to increase the chances of finding the sun.

Inside of Bargman 7 pin - vehicle side