

## Marine Semi-flexible Solar Panel Kit Instructions



Thank you for purchasing our Marine Semi-flexible Solar Panel Kit. The following instructions are intended to be a guide for installing your new solar system.

### Attaching Solar Panels to a Canvas Bimini or Dodger Using the “bolt-on” Method

The bolt on kit contains a reinforcing vinyl disk, fender washers, washers, nuts and bolts. Refer to diagram below to see how the components of the kit are used.

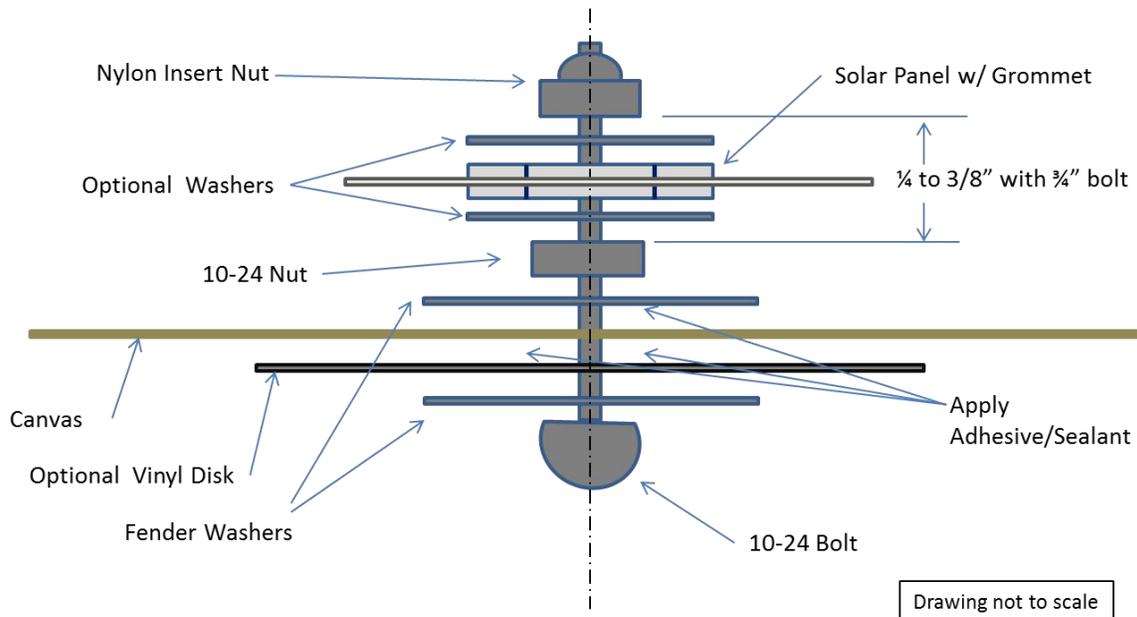
1. Place the solar panel on the canvas where it is to be mounted. Give it time to be warmed by the sun and nestle into the canvas.
2. Mark each of the grommet holes on the canvas.
3. Puncture the canvas at one of the grommet locations with a hole punch or sharp object.
4. Optional – using fabric cement or silicone, adhere the reinforcing disk to the bottom side of the canvas aligning the canvas hole and the disk hole.
5. Place a fender washer onto the 3/4" 10-24 bolt and apply a small amount of adhesive or silicone around the bolt.
6. Insert the bolt through the disk and the canvas.
7. Apply a small amount of adhesive or silicone around the bolt sticking through the canvas and place a fender washer on the bolt.
8. Tighten a 10-24 nut on the bolt securing the bolt assembly squeezing the canvas between the fender washers.
9. Place a small washer onto the bolt (optional)
10. Slide the panel grommet over the bolt, place a second small washer onto the bolt and secure the assembly with a Nylock nut.
11. With one grommet in place inspect the hole positions for the other grommets to be sure they are in the correct position.
12. Repeat steps 3 through 11 for each solar panel grommet.

Note: Some customers have installed insulation between the solar panel and the canvas to reduce heat on the canvas. Foil insulation available from hardware stores like Home Depot is

an excellent product for this. It comes in a roll, is about 5/16" thick and is composed of a layer of foil a layer of bubble wrap and a layer of foil. Simply cut to size and tuck it under the solar panel.

Note: Excess wire can be tucked under the solar panel.

### Flexible Solar Panel Canvas Mounting Kit Assembly



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## Wiring Your Solar System

The solar wire comes in a coil with a male and a female MC4 connector preinstalled on each end. Cut the wire in half or to whatever length needed. The ends with the MC4 connectors attach to the panels and the other end attaches to the controller.

Refer to wiring diagrams on the following pages.

1. Determine the location of the solar controller and the remote display meter and mount them as appropriate. The meter should be mounted where it is readily visible.
2. Determine the length of wire needed to run from the solar panels to the controller. Cut the coil of wire to length.

3. Run two lengths of the solar wire from the solar panels to the controller. The preinstalled MC4 connectors will be at the solar panels.
4. Connect the solar panels in parallel using the 2-1 T-branch MC4 connectors. Assuming a two panel system, plug in the two positive wires from the solar panels to the T-branch. Plug in the two negative wires from the solar panels to the other T-branch. Plug the T-branch connector into the MC4 connectors on the wires running to the controller.
5. Optional – We recommend a switch be placed in the positive wire running from solar panels to the controller. This switch is used to shut down the system if desired.
6. Attach the remote display meter to the controller using the wire included with the meter. Simply plug the meter into the controller and to the display.
7. Attach the controller to the battery bank or banks if you have the dual output controller. Solar wire or other 10-gauge wire can be used for this. A fuse on the positive line from the battery bank to the controller is recommended.
  - a. Note: If you have a battery monitor like a Xantrex Link 1000 on board, attach the negative wire from the controller to the house side of the battery monitor shunt not to battery bank.
  - b. The controller is attached to the battery bank first then the solar panels are attached. This is because the controller is powered by the battery bank not the solar panels.
8. Strip of about 3/8" from the end of the solar wires leading from the solar panels to the controller. Insert these wires directly into the terminals of the controller and secure by tightening the screws on the controller. **Do not attach the wires to the controller until the controller is attached to the battery bank(s). Be certain the positive wire from the solar panels is inserted into the positive terminal on the controller.**
9. Program the controller per the instructions that come with the controller and meter.
  - a. Note: If your controller has a LOAD feature, just ignore it. You do not need that function for the marine battery charging application.
10. Your solar system should be operational. Hope you get a charge of it!

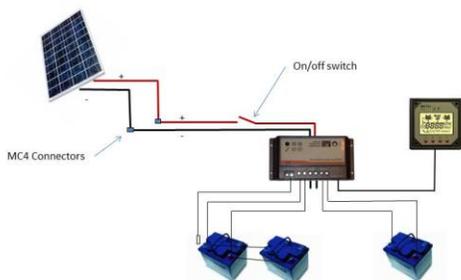
## Caring for Your Solar Panels

1. Clean panels with water and a non-abrasive cloth. Mild soap may be used.
2. Use caution when transporting the panels.
3. Do not bend beyond 30 degrees.
4. Observe proper polarity when connecting the modules into the electrical circuit. Reverse polarity will damage the module.
5. Do not carry the module by the wires.
6. Do not scratch, cut or puncture the module.
7. Do not walk on the module.

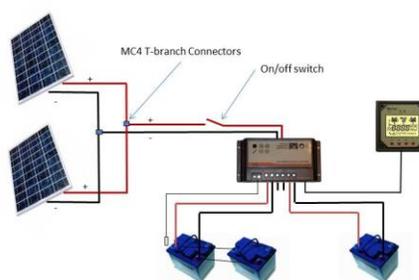
These instructions are on the web site under SUPPORT, MANUALS & INFO

# Wiring Diagram Examples

Single Solar Panel Installation with Dual Output Controller Charging Two Battery Banks



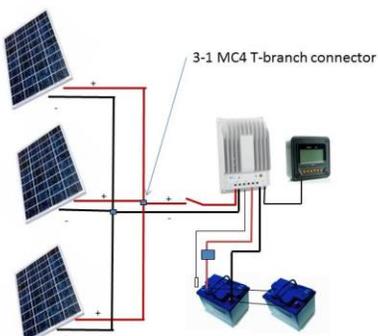
Two Solar Panels Wired in Parallel with Dual Output Controller Charging Two Battery Banks



Attach controller to battery banks first and to solar panels second. [custommarineproducts.com](http://custommarineproducts.com)

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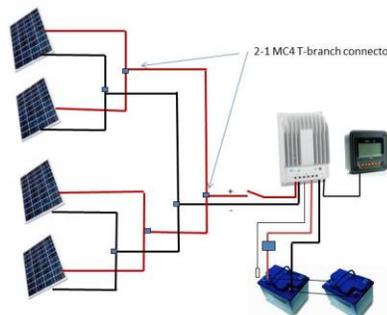
Three Solar Panels Wired in Parallel with One EP Tracer BN MPPT Controller



Note: If a battery monitor is installed, negative wire from controller should be connected to the house side of the battery monitor shunt, not the battery bank.

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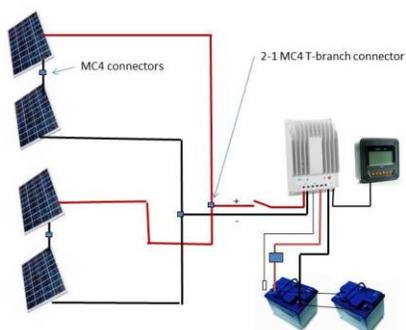
Four Solar Panels Wired in Parallel with One EP Tracer BN MPPT Controller



Note: If a battery monitor is installed, negative wire from controller should be connected to the house side of the battery monitor shunt, not the battery bank.

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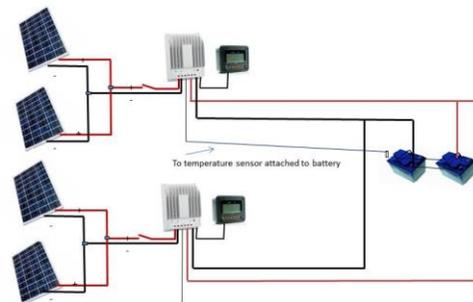
Four Solar Panels Wired Two in Series and Group in Parallel with EP Tracer BN MPPT Controller



Note: If a battery monitor is installed, negative wire from controller should be connected to the house side of the battery monitor shunt, not the battery bank.

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Four Solar Panels Wired in Parallel with Two EP Tracer BN MPPT Controllers



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