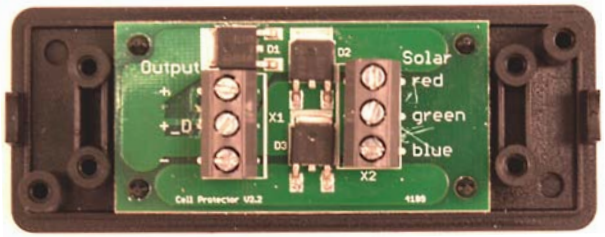
D) Connections to the Diode Box (Cell Protector)

NOTE: Panels under 35w are not supplied with and do not require a Diode Box.



The Diode Box is a vital safety component that must not be omitted from the installation. The By-Pass Diodes, or Hot-Spot Preventers, do not consume any power under normal operating conditions. They are only activated under total shading conditions such as a complete blockage of sunlight to one or more cells if canvas, clothing, etc. becomes draped on the panel. Under those conditions the diodes will prevent a cell(s) from burning and destroying the panel. Mount the Diode Box in a dry location, preferably within the scope of the 8' (approx.) cable provided. Contact Coastal Climate Control for options if extending the cable is deemed to be necessary or desirable.

1) Connect the three wires in the cable coming from the solar panel to the SOLAR terminals on the circuit board, following the color coding. The cable should be cut to the shortest possible length before connecting to the Diode Box.

2) Connect the positive and negative wires going away to the solar controller to the OUTPUT terminals following the guidance below. Use maximum AWG 12 in these terminals. If the wire or cable between the Diode Box and the controller is AWG 10 or larger, a terminal strip (not supplied) should be installed nearby to reduce the AWG 10 wires down to AWG 12 for connection to the terminals.

- For a single panel connected to a single controller, or for multiple panels connected in series to one controller, connect the negative wire to "-", and the positive wire to "+". The middle "+_D" terminal is not used.
- For multiple panels connected in parallel to one controller, connect the negative wire to "-", and the positive wire to the middle terminal marked "+_D". The bottom "+" terminal is not used in this configuration.

Maintenance:

Your Solara solar panel requires no special maintenance. If desired, it may be cleaned with a mild detergent that does not contain any scouring additives, corrosive fluid, or wax. Do not use car-cleaning detergents.

Solara and Coastal Climate Control, Inc. take no responsibility for damages to solar panels, solar controllers, or any other associated items that may be caused by incorrect installation and by not following these instructions. For further inquiries please do not hesitate to contact us.

SOLARA®

SOLARA M-Series

12w, 23w, 34w, 35w, 45w, 50w, 68w, 70w

SOLARA Power M-Series

110w, 115w, 140w

Installation Manual

Important! Please read before installing!

Please read this manual carefully. Incorrect installation can cause damage that may result in a loss of warranty!

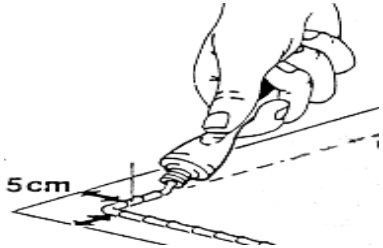
A) Flexibility

Solara Walk-On solar panels are semi flexible. The panels can be installed on up to a 3% curve; i.e. 1” chord height on a 34” span. The panel must be secured in such a fashion that it cannot vibrate. Heavy vibration can damage or even destroy the panel. Use all available attachment points to securely install the panel, and if securing with adhesive, ensure the glue makes a complete bond.

B) Installation

Solara Walk-On solar panels can be secured either with; (a) a polyurethane adhesive like Sikaflex 252 or equivalent; (b) with screws; or (c) with a combination of both (preferred). The Solara range of semi-flexible walk-on panels are designed for permanent installation on a non-flexing surface.

(a) Securing with adhesive



1. Ensure that all relevant surfaces are completely clean and dry.
2. Lay the panel in place and add masking tape to the deck around the perimeter of the panel.
3. Apply a continuous bead of adhesive to the deck, 5 c m (2”) inside the marked area where the panel will be located. (Pic. 1).
4. Make sure that the bead of adhesive is completely continuous around the perimeter, and then add a few blobs and squiggles to the interior area.
5. Screw down, and/or use weights, and then add a finishing bead of adhesive to the perimeter of the panel if desired.

(b) Securing with screws

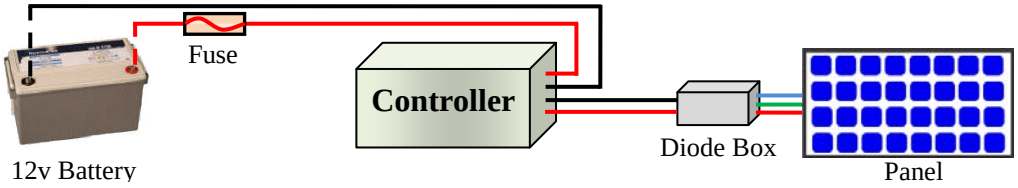
Solara Walk-On solar panels can also be screwed down, and the encapsulated backing plate is pre-drilled with holes for this purpose. Use a 3/ 16” drill to penetrate the front and r ear coating at the locations of the pre-drilled holes, then screw the panel down with stainless steel screws and finishing washers. Do not drill or attempt to drill any additional holes in the panel. Only use the pre-drilled fixing points to secure a panel with screws.

C) Electrical connections

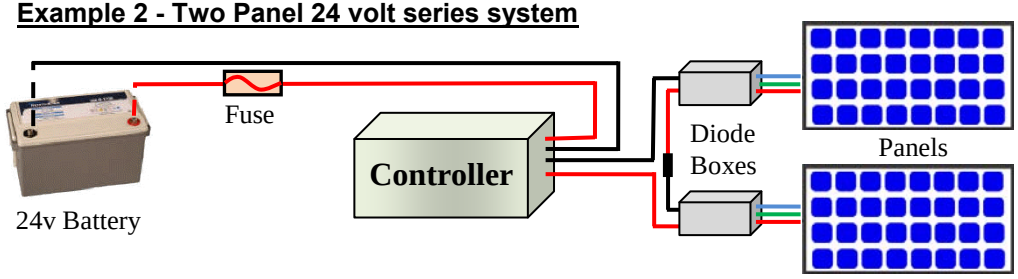
Once the panel has been secured in place, temporarily cover it with some of the cardboard from the original packing, and then run the cable to a dr y location where the Diode Box is to be mounted. (See separate instructions for wiring the Diode Box.) A Diode Box is included in the cardboard packing of all panels of 35w and over, and t his should be located and put to one side when unpacking the panel.

Mount the controller (purchased separately) in the same general location as the batteries, and r un wires or cable from the Diode Box to the controller that are appropriately sized to keep volt drop within 3%. (Consult Coastal Climate Control or NEC or ABYC tables for guidance). If this wiring run is exposed to the elements it must be made with cable of a suitable composition and construction. Mount the controller, and then run appropriately sized wire or cable to the battery, battery switch, bus bar, or whatever connection points are being used to connect to the vessel’s battery system. The wiring from the controller(s) to the battery must be of an appropriate size to safely handle the maximum expected current, and must be protected with a f use rated for 150% of the maximum current expected at the controller output. NOTE: MPPT controllers are capable of producing 30%+ more current at their output than is present at the input from the panel.

Example 1 - One Panel 12 volt system



Example 2 - Two Panel 24 volt series system



NOTE: A special boost controller can also be used to connect a single 12v (nom.) panel to a 24v battery system.

Please consult your marine solar specialist or Coastal Climate Control Inc. for other possible wiring configurations.