

Solar Panel Installation

RV's & Caravans

Installation Instructions



Carefully read all assembly instructions before commencing the installation

Mounting the panels

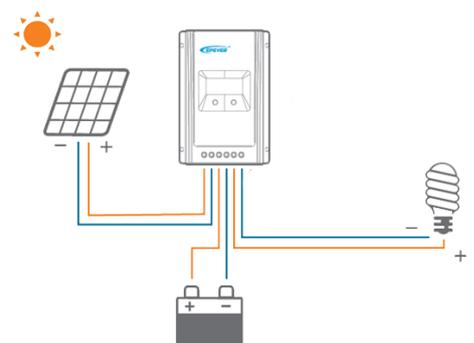
1. Attach the aluminium 'Z' brackets to the panels using the SS bolts & nuts and the pre-drilled holes in the panel frame. *(If unable to use the pre-drilled holes, take precautions when drilling the panel frame to avoid damaging the panel.)* Position the brackets at least 75 mm from the panel corners, and in the middle of larger panels, 190 Watts and above. Mark the bracket positions on the paper pattern.
2. Tape the paper pattern to the roof and drill a clearance hole for the cable entry into the motorhome. Remove any sharp edges.
3. Position the panels on the roof, mark and drill two pilot holes (3.5mm) for each of the mounting bracket SS screws. Thoroughly clean the surface area where the brackets will attach using the IPA cleaning pads supplied.
4. Cut the supplied 15m cable in half, identify and mark positive (+ve) and negative (-ve) lengths, fit the cut ends through the cable glands and feed down through the entry hole into the vehicle. Connect the MC4 plugs to the PV panel output leads making sure that the plugs make good contact with a firm 'click'
5. Apply a liberal amount of sealant in and around the bracket positions, carefully place the panels in position and install a screw in each part way to hold in place. Do not tighten just yet. Fit the remaining screws but avoid overtightening so that some sealant remains under the mounting bracket. Some sealant should remain between the bracket and the roof to provide water tightness. Clean and tidy excess sealant with mineral turps.
6. Tighten the gland nuts around the cables, and thoroughly clean the base of the cable entry box and the roof surface. Apply a generous amount of Sika Adhesive Sealant around the base of the box and carefully position the fitting on the roof. If the fitting is positioned where it may be subject to physical damage, SS self-tapping screws may be used to provide additional strength and will also hold the box in place while the adhesive sets.

BEFORE STARTING INSTALLATION

1. Decide on the best position on the roof for the panels, clear of shading from TV antennas, hatches, A/C units etc.
2. Select the position for the cable entry fitting through the roof, ideally inside a cabinet or wardrobe, and select the position for mounting the solar controller/regulator & the route for the DC cables
3. Attend to any outstanding paint or maintenance issues on roof.
4. Make up a paper or cardboard pattern of the panel(s) footprint 30mm larger than panels to local panels.
5. Thoroughly read and understand the instructions for the Solar Controller model you have purchased.
6. Remove all fuses (*supplied separately*) from the fuse-holders until wiring connections are all completed.
7. **Installation of the electrical components should not be attempted by anyone unfamiliar with good electrical trade practice. Refer to AA Solar for assistance.**

Mounting the Solar Controller/Regulator

7. Locate the Solar Controller in the position previously selected. Choose the best route for the cable from the roof panels, and allowing for bends etc., cut to length. Now take the remaining cable and run to the house battery position.
8. At the battery, use the connector supplied to connect the RED lead to the (red) in-line fuse holder (**F1**) (*temporarily remove the fuse*) and connect this to the battery positive terminal (+ve) using the yellow ring terminal supplied. Connect the BLACK lead to the battery negative (-ve) terminal using the other yellow ring terminal) supplied.



Connecting the Solar Controller/Regulator

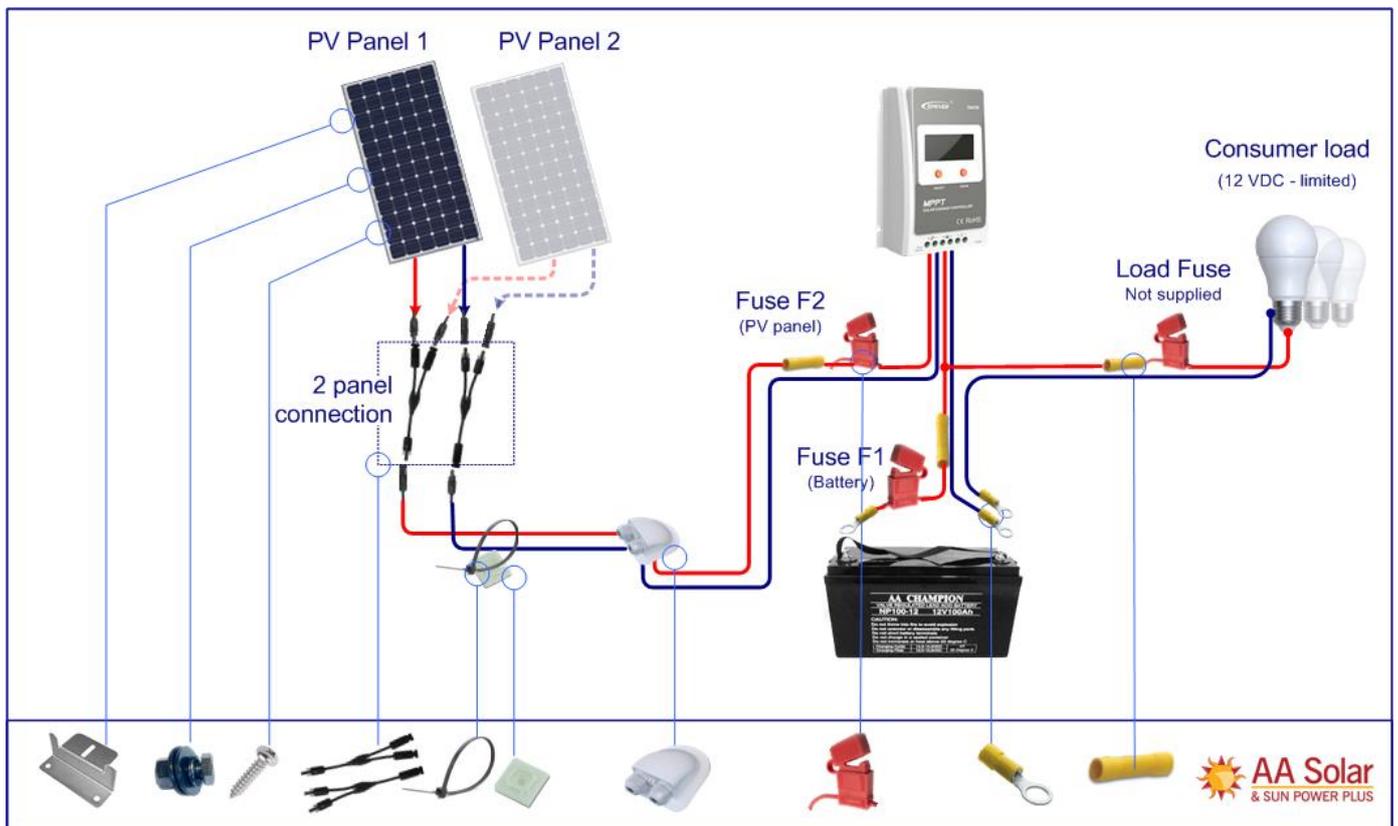
9. Install the Controller in the motorhome in an accessible location and connect to the solar battery. (See Note below)
10. Connect the RED and BLACK lead from the battery to the controller taking care to observe the correct polarity (Red to +ve & Black to -ve). Once properly connected, replace the fuse in the in-line battery fuse holder (**F1**) installed close to the battery.
11. Only after connecting the battery leads, remove the fuse and attach the remaining in-line PV panel fuse holder (**F2**) to the RED lead from the solar panels with the yellow insulated connector, and connect the other fuse holder lead to the PV +ve panel terminal on the controller. Connect the Black lead from the panels to the controller -ve terminal and re-install the fuse in the in-line PV panel fuse holder. (**F2**)
12. Refer to the Controller instruction manual to check the correct functioning of the controller and indicating lights. and understand the meaning of the indicator lights. **Note that the solar light will not be on until the voltage from the PV panels exceeds the battery voltage.**

Connection to the RV consumer load can now be made if desired, taking care to observe the correct polarity.

Note: The electrical connection between the batteries and the controller must be made before connecting the PV Solar panels

AFTER INSTALLATION

- Check the security of all components, including the cables that should be tied and secured neatly to prevent accidental damage.
- Maintain the performance of the panels by cleaning regularly to remove road tar and dust. Use warm water, household detergent and a soft brush. Tar and tree gum may require cleaning with turps, followed by a detergent wash.
- Check flooded batteries regularly. Top up as necessary. Sealed or maintenance-free batteries require little regular attention.



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