CSE 40W SOLAR PV MODULE

This guide covers the major features of this product - it does not cover all of the available functions. This guide is not intended to replace the original equipment manual. Please refer to the manual for more detailed operating instructions and safety information.

EQUIPMENT SAFETY

1. Never touch the exposed wires on the panel when it is in sunlight regardless of whether the PV module is connected to the system.
2. **Do not** wire multiple panels in series to create a higher voltage network without explicit authorization to do so, and only with the necessary safety and electrical procedures and permits.

EQUIPMENT DESCRIPTION

The CSE Power Technologies 40W Solar Photovoltaic panel [1] is a 12V electrical solar panel rated for 40W under standard operating conditions (1000W / m^2, temperature of 25ºC).

- Rated Maximum Power (P_{MAX}): 40W
- Open Circuit Voltage (V_{OC}): 22.0V
- Short-Circuit Current (I_{SC}): 2.46A
- Voltage at P_{MAX}: 17.5V
- Current at P_{MAX}: 2.29A
- Output Tolerance: +/- 3%
- Size: 580mm x 550mm x 28mm (0.319m^2)

The solar photovoltaic panel converts sunlight energy into electrical energy, and is used in conjunction with the Sunforce 7A Charge Controller, the 12 Battery, and the PowerBright 200W Inverter to create an off-grid solar PV array.

Figure 1: CSE 40W Solar Photovoltaic Panel

EQUIPMENT INSTALLATION

1. The positive and negative wires leaving the solar panel originally have quickconnect terminals on them allowing them to be rapidly connected [2]. These can be cut off and about 1cm of insulation stripped back to reveal the bare wire [3] where quickconnect terminals may not be available.

Figure 2: Positive and Negative wires from Solar Panel Array with Quickconnect Terminals

Figure 3: Positive and Negative wires from Solar Panel Array without Quickconnect Terminals

2. Connect the positive and negative terminals solar panel array cords [4] from the charge controller to the positive and negative wires leaving the solar panel [3], using twist-on wire connectors [5]

Figure 4: Solar Panel Array wires from Charge Controller

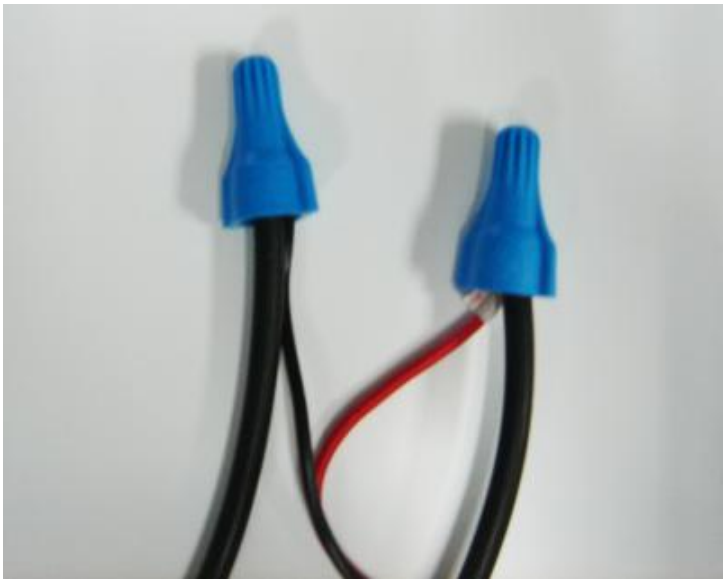

Figure 5: Connected Solar Panel and Charge Controller Wires

3. The circuit diagram should resemble Figure [6].

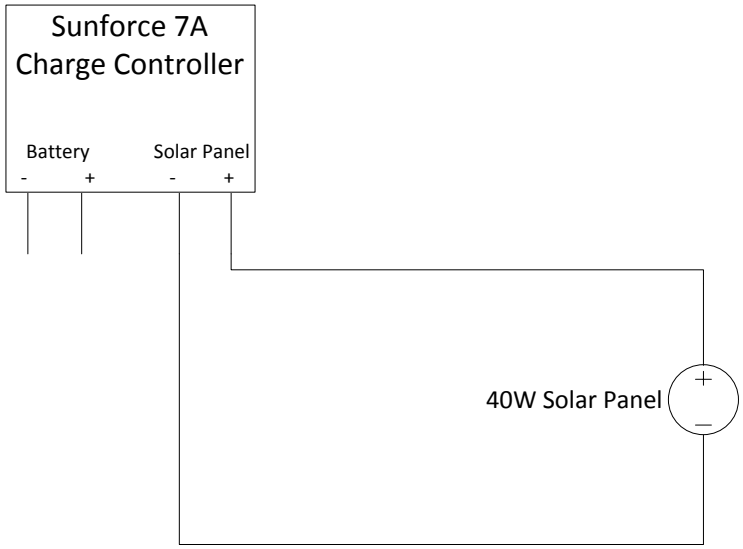

Figure 6: Circuit Diagram

4. The wire used should be of the appropriate gauge for the current being handled and the distance being travelled. Please use Table 1 for guidance in selecting an appropriate wire gauge. This table is intended only for solar panels connected to the Sunforce 7A charge controller. Do not use this table for other circuits

Wire length between PV Panel and Battery (m)	Wire AWG
1	16
2	16
3	14
4	14
5	14
6	12
7	12
8	10
9	10
10	10

Table 1: Appropriate wire gauge for any additional wire used between the solar panel, charge controller and battery bank

EQUIPMENT MAINTENANCE

1. Use a soft damp cloth to clean the surface of the solar module of any dirt