ECO-WORTHY

SOLAR COMBINER BOX

(User Manual)

SUPPORT

If you are experiencing technical problems and cannot find a solution in this manual,please contact ECO-WORTHY for further assistance.

·Call: 1-866 939 8222(US) +44 20 7570 0328(UK) +49 693 1090 113(DE)
·Email: customer.service@eco-worthy.com

Introduction

ECO-WORTHY PV combiner box is wildly used to combine multiple solar panels in off-grid / grid-tie solar power systems. It helps optimize the system wirings when connecting multiple solar panels in parallel and it makes monitoring and future troubleshooting much easier. Moreover, it has multiple protective functions that protect your system such as overcurrent protection, overvoltage protection and lightning protection. With unique case design, our combiner box is rainproof and flame retardant. It can be installed outdoors worry-free.

Features

● Made of ABS & PC & flame retardant material, the combiner box is stronger, shock-proof and high temperature resistant.

● Concise internal wiring, lighter, safer and more efficient.

● 25A fuse for each solar array string in 4-string combiner box and 25A fuse for each solar array string in 6-string combiner box.

● 100A circuit breaker for 4-string combiner box and 125A circuit breaker for 6-string combiner box, more tolerable for high combined current.

● Larger space for manual wirings.

● Equipped with a metal bracket plate for on-wall installation and a MC4 connector tool for easy disconnecting solar cables.

Installation

1. Loosen the screw at the bottom of the combiner box and remove the bracket plate.

2. Attach the bracket plate to a plain surface using the screws that comes with the box (expansion tube is needed if you are planning on installing the combiner box on a concrete wall).

3. Put on the combiner box.

4. Tighten the screw at the bottom to prevent it from falling off.

Wirings

Before any wirings, make sure the circuit breaker is at OFF position to prevent electric shock.

1. Connect solar array to the MC4 connectors.

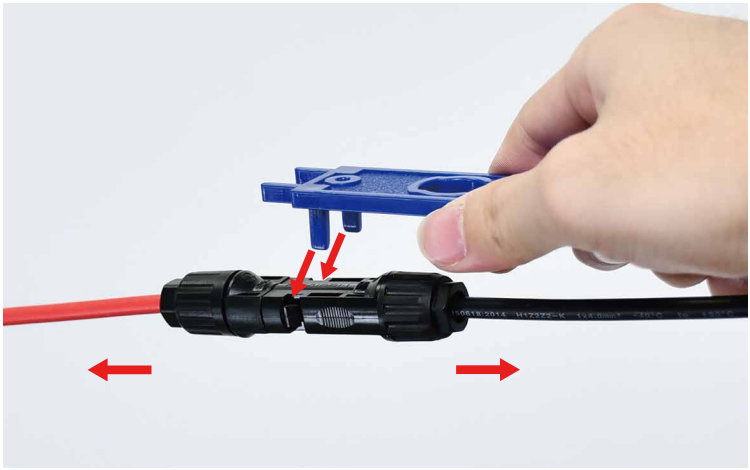
2. Connect ground cable to the surge protectie device. The size of the ground cable should be 4-8mm² (8-11 AWG).

3. Connect output solar cable to the circuit breaker. Be sure not to connect them in reverse. The size of the ground cable should be 5-11mm² (5-10 AWG).

MC4 Connector Tool

The combiner box is equipped with a multi-function MC4 connector tool to disconnect the MC4 cables easily. The tool can also be used to disassemble the MC4 connectors if necessary.

Simply align the tool with the connections in the middle, press down, and pull the MC4 connectors away from each other.



Circuit Breaker

Circuit Breaker OFF

Circuit Breaker ON

Notice !!!

When the circuit breaker is **OFF**, the lever is down and the indicator shows **green.**

When the circuit breaker is **ON**, the lever is up and the indicator shouw **red.**

Cautions & Maintenance

1. Before installing the combiner box, please check carefully to see if there's any damage or loose connection in the box.

2. Check all the fuses regularly. If the fuse has blown, please replace it with an identical one.

3. Do not connect the positive and negative output poles in reverse. Reversing the polarities may damage the system and the equipments.

4. Do not input excessive current and power that exceed the maximum values in the parameter chart. Otherwise, there would be risk of damaging the equipments.

5. Before maintaining the combiner box, please disconnect all the input strings. Otherwise the output ports may be electrified and there would be risk of electric shock.

6. After thunderstorm weather, please check the surge protective device to see if it's malfunctioning. If the indicators show red, please replace the device with an identical one.

7. To better prevent the combiner box and the system from being damaged by thunder, please ground the box before launching your system.

8. Please install the combiner box at a dry and well ventilated place. Avoid direct sunlight and humid environment.

9. After putting the combiner box onto the bracket plate, be sure to tighten the lock screw at the bottom of the combiner box to prevent it from falling off.

Parameter

Model	4 string combiner box	6 string combiner box
Number of Max. connection solar array	4	6
Max input current of single solar array	20A	15A
Fuse for single solar array*	25A	25A
Max total input current of solar array	80A	90A
Max input solar system wattage (12V)	1440W	1620W
Max input solar system wattage (24V)	2880W	3240W
Max input solar system wattage (48V)	5760W	6480W
Max Input Voltage of single soalr array	500V	
Max Output Voltage	500V	
Number of circut breaker poles	2	
Circut breaker rated current	100A	125A
Recommended output cable size**	20-95mm² (4-3/0 AWG)	
Recommended ground cable size**	12-50mm² (6-1/0 AWG)	
Product Weight	2.45kg	2.67kg
Product Size	295*230*117mm	

* The reason why the sizing of the fuse is larger than the maximum allowable current of single solar array is to prevent the fuse from being blown within the normal fluctuation range of the PV input current. Please DO NOT input excessive current and power that exceed the maximum values in the parameter chart for safty precaution.

* Select the appropriate size of cable according to the system power and the length of the output line. Using a cable that's thinner than the recommended size may cause serious heating, which may cause the cable to fuse or cause the circuit breaker to trip. Using thinner cable will also affect waterproof performance.