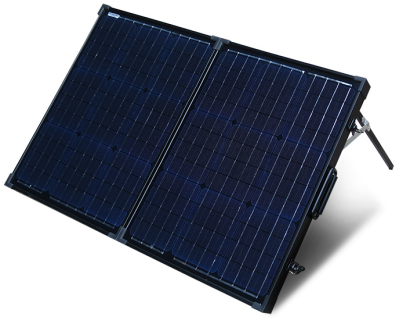
Briefcase Solar Panel
User Manual

40W

Item 55701

80W



Item 55704

120W

Item 55702

WARNING: Read and understand all instructions, warnings, and cautions before using this product. Failure to follow the instructions, warnings, and cautions may result in serious personal injury and/or property damage.

SAVE THESE INSTRUCTIONS

GENERAL SAFETY RULES

CAUTION: Do not allow persons to operate or assemble this Solar Panel until they have read this manual and have developed a thorough understanding of how the Solar Panel works.

WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

FEATURES

- Lightweight, rugged and portable
- Made with high powered Crystalline Solar Technology
- Weather resistant

Part List

40 W Briefcase

Part#	Description	Qty.
1	2x20 Watt Folding Solar Panel Briefcase	1
2	Battery Clamps	1
3	Mounting Poles	2
4	Bare Wire	1
5	Polarity Adapter	1
6	Charge Controller (attached to the panel)	1

80 W Briefcase

Part#	Description	Qty.
1	2x40 Watt Folding Solar Panel Briefcase (self support included)	1
2	Battery Clamps	1
3	Bare Wire	1
4	Polarity Adapter	1
5	Charge Controller (attached to the panel)	1

120 W Briefcase

Part#	Description	Qty.
1	2x60 Watt Folding Solar Panel Briefcase (self support included)	1
2	Battery Clamps	1
3	Bare Wire	1
4	Polarity Adapter	1
5	Charge Controller (attached to the panel)	1

USE AND CARE

- Do not modify the Solar Panel in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment. There are specific applications for which the Solar Panel designed.
- Always check of damaged or worn out parts before using the Solar Panel. Broken parts will affect the Panel operation. Replace or repair damaged or worn parts immediately.
- Store idle Solar Panel. When Solar panel is not in use, store it in a secure place out of the reach of children. Inspect it for good working condition prior to storage and before re-use.
- Solar Panel is water resistant, yet the quick connect wiring and adapter plugs must be kept dry.
- Solar Panel will not charge non-rechargeable batteries. This product is designed to charge standard 12V batteries and laptops. product is to be used on 12V configurations in parallel only. Positive(+) to Positive (+), Negative (-) to Negative (-).

OPERATION

CONNECTING TO A RECHARGEABLE 12V BATTERY:

1. Connect the quick connect cable to the lead coming from the Solar Panel and then into Solar Panel port of Charge Controller.
2. Attach the quick connect end of battery clamps into Output port of Charge Controller.
3. Connect the Red -Positive (+) clamp/wire to the Positive (+) battery terminal.
4. Connect the Black -Negative (-) clamp/wire to the negative (-) battery terminal.
5. Confirm that both connections are tight and secure.

WARNING: Ensure that the positive matches the positive and the negative matches the negative. (Connections are in Parallel) Wrong connection may cause sparks and void the warranty.

TESTING

You may use a voltage meter or a digital multi-meter to measure the voltage of your solar panel before connecting to the battery. Voltage can range between 15-22 volts. Testing will ensure correct charging operation.

(Testing equipment not included)

LOCATION OF SOLAR PANEL

For best results, please locate your Solar Panel in a position where it can absorb direct sunlight and generally free from cover and shade.

MAINTENANCE

Maintain your Solar Panel. It is recommended that the general condition of any Solar Panel be examined before it is used. Clean the solar module with a damp towel to insure optimum performance of the Solar Panel. Do not use any type of solvent for cleaning and be careful not to put too much pressure on the module while cleaning

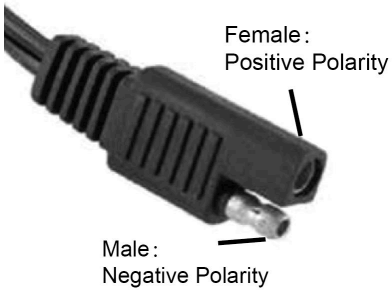
Specification

	55701	55704	55702
Maximum Power(Pmax)	40W	80W	120W
Open-circuit Voltage(Voc)	21.2V	21.2V	21.2V
Short-Circuit Current(Isc)	2.44A	4.61A	7.33A
Voltage at Pmax(Vmp)	18.0V	18.0V	18.0V
Current at Pmax(Imp)	2.22A	4.28A	6.67A
Power Tolerance	±3%	±3%	±3%
Maximum System Voltage	600V	600V	600V
Dimensions(closed)	15.6*16.7*2.32 in	20.7*21.6*2.6 in	21.0*32.8*3.07 in
Certify	ROHS CE		
Test Standard	Test condition:AM=1.5; E=1000W/m2; Tc=25		

Reverse Polarity Adapter

Use with the Zamp Solar connector on RV's .

Your solar panel output terminals, either directly from the solar panel, or via the Charge Controller, are always Female Positive Polarity:



In case you need to have a Female Negative Polarity output, you may use the Reverse Polarity Adapter provided:

CAUTION: Reversing the polarity may damage the electrical appliances! Please check carefully the correct polarity before using.

Intelligent Solar Charge Controller

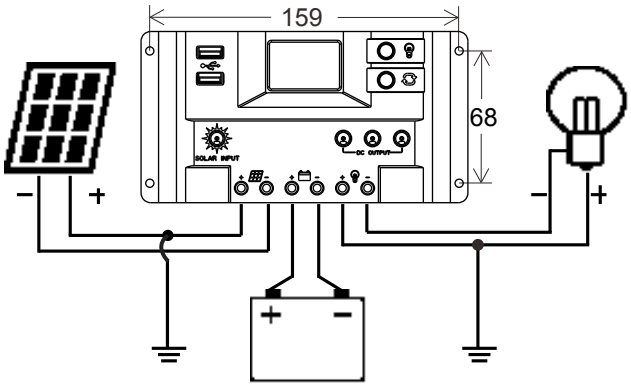
WARNING: CHARGE CONTROLLER ONLY WORKS WHEN A 12V BATTERY IS PROPERLY CONNECTED.

Product Introduction

This intelligent, multi-purpose solar charge and discharge controller has a friendly interface, featuring an LCD display. Various control parameters can be adjust to meet various application requirements. It has following features:

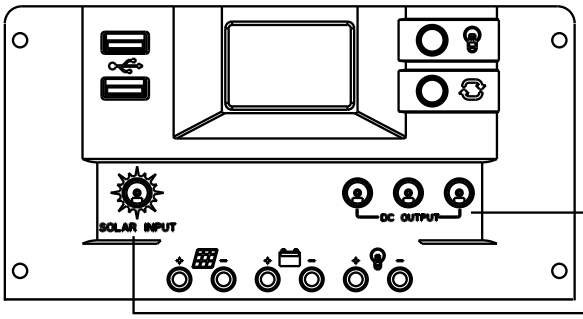
- Graphic symbols
- Adjustable operating mode of load
- Battery low voltage disconnection (LVD)
- Over current protection
- Automatic Identification of System Voltage Level
- Simple button operation
- Intelligent PWM charging mode
- Adjustable charge-discharge controller parameters
- Battery reverse-discharge protection
- Battery reverse connection protection
- USB output charger

Installation



- Have all required tools ready and nearby. Ensure properly sized copper wiring is used, improper sized wiring can cause power loss due to heat, or failure of the device. The wire size required will be determined by the distance of the wire run between the solar panel and the batteries. The 40 Watt Briefcase Solar Panel has a maximum output of 2.22A, and the 120 Watt Briefcase Solar Panel has a maximum output of 6.67A. Please consult a DC voltage wire size guide to determine the appropriate size wire for your installation.
- Avoid installing or placing the solar panel and charge controller in areas with flammable, explosive or corrosive gases.
- Allow for good ventilation and heat dissipation by keeping a clear area of 12 inches around the solar panel and charge controller.
- Open the Briefcase Solar Panel and place in an area where it will receive maximum sunlight.
- Cover the solar panel with an opaque fabric to obscure from sunlight while making connections.
- Use included battery clamps to connect the charge controller to the battery. Maintain proper polarity, positive (+,red) to positive (+, red), and negative (-, black) to negative (-, black). The battery indicator light on the controller will light up to indicate a successful connection.
- If desired, connect a DC load using the supplied cable. Ensure a battery is always connected when using the load port.
- To disconnect, first disconnect the solar panel from the charge controller, only once solar panel is disconnected, is it safe to disconnect the battery and load.
- Take caution to ensure polarity is maintained, reverse polarity can damage the battery and any load connected.

Fast Connect



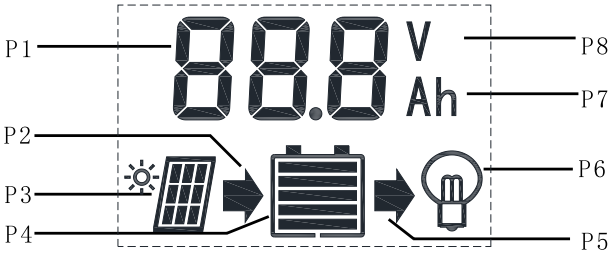
This solar charge controller equip with fast connector for the solar input port and DC output port, the socket plug are required.

Fast DC output connect port x3

Fast solar power input connect port x1

Operation

Description of LCD graphic symbol

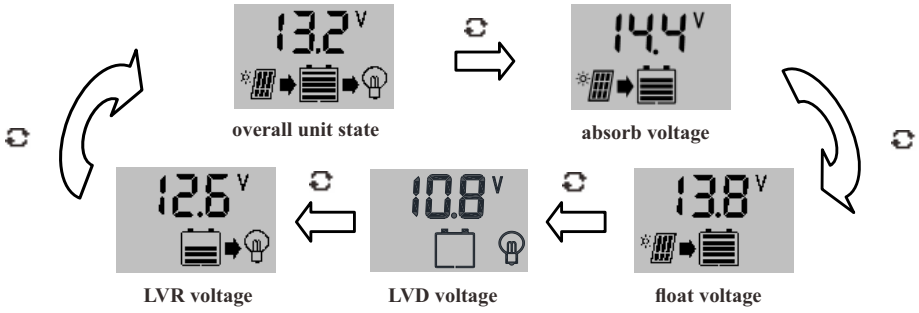


P1: Digital parameters
P2: Charging indication. This symbol indicates that the solar panel is charging the battery: if this symbol is not present, it means the solar panel can not charge the battery because of low voltage. if the symbol is flickering , means the battery is fully charged and has entered float charging state.
P3: Indicate for solar panel. this symbol indicates that the connection of solar panel is detected by controller; if this symbol is not present this means the connection of solar panel can not be detected, or there is no sunshine on the solar panel.
P4: Five bars indicate the level of charge of the battery.
P5: Discharging indication. this symbol indicates that controller is in output state, if this symbol is not seen, there is no load connected or the controller is not delivery power to the load. the flickering of this symbol indicates the damage of internal control devices.
P6: Load indication. this symbol indicates that the controller is in output state, the flickering of this symbol indicates overload or the damage of the load.
P7: A stands for the unit of current; H stands for hour.
P8: V stands for the unit of voltage.

Description of Button Function:

: Interface loop switch button, use the button to cycle between pages in each switch cycle sequence shown in (figure 1). Moreover, this button can perform the function of "add" in the parameter setting state.

:This button can open or shut off load in the main interface. It can perform the function of "minus" in the parameter setting state.

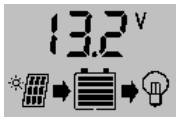


Viewing and setting the parameters:

The controller will default entry “battery voltage” interface after correct power-on. This is the main interface. Use the button could in turn visit the following parameters interface. If the parameters in that interface could be set, long press the button （＞3seconds，numbers start flashing）to enter the parameter setting interface; calling off the parameter interface after long press the button again. (The numbers stop flashing)

Overall unit state

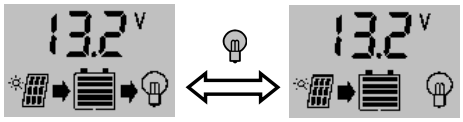
This interface shows the overall unit state (pictured at right)
It is the default interface after correct power-on, showing charging and discharging state, 5 bars battery power indication and the voltage of the battery.



Opening and shutting off the load

You can use the button on the faceplate to open or shut off the load in the default interface.

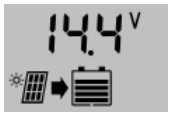
Note: There is no such function for this button in other interface.



Viewing and setting the absorb voltage

As pictured at right, the absorb charge voltage is showed. When the battery reaches the absorb voltage, the controller will maintain the voltage values by PWM charging mode to avoid overcharge.

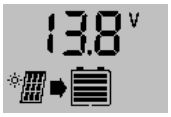
Long press the button （＞3 seconds，numbers start flashing）to finish the setting of absorb voltage values and use the 、button to adjust the parameter; calling off the parameter interface after long press the button again. (The numbers stop flashing) The absorb voltage value will be conserved by controller.



Viewing and setting the floating voltage.

As pictured at right, the floating charge voltage is showed. When the battery reaches the floating voltage, the controller will maintain the voltage values by PWM charging mode to avoid overcharge.

Long press the button （＞3 seconds，numbers start flashing）to finish the setting of floating voltage values and use the 、button to adjust the parameter; calling off the parameter interface after long press the button again. (The numbers stop flashing) The floating voltage value will be conserved by controller.



Viewing and setting of under-voltage protection

As pictured at right, the value for under-voltage protection is showed. The controller will cut off load circuit when battery voltage is lower than this value, in order to avoid over discharge of the battery.

Long press the button （＞3seconds，numbers start flashing）to enter the setting interface of under-voltage protection and use the 、button to adjust the parameter; long press the button again (The numbers stop flashing) to call off the parameter interface after finish setting. Setting value will be conserved by controller.

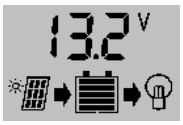
Viewing and setting of recovery after undervoltage

As pictured at right, the recovery voltage is showed. After the controller performs the function of under-voltage protection, the output of the load will be recovered as soon as the battery voltage recovers to higher than the under-voltage value.

Long press the button （>3 seconds，numbers start flashing）to enter the setting interface of recovery after under voltage; long press the button again (The numbers stop flashing) to call off the parameter interface after finish setting. Setting value will be conserved by controller.

Viewing and Setting special parameters

As picture at right , in this page long press the button (>3seconds) to enter into special parameters page. The parameters of battery type, temperature compensate ratio and load mode can be setup. Then long press the button to enter into setting mode, use the button to adjust the parameters, long press the button again (parameter stop flashing) to finish setting. Do not press any button after finish setting, interface will automatically switches to the default page as the picture at right after 10 seconds, setting completed. The special pages are shown as below.

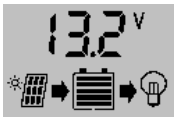


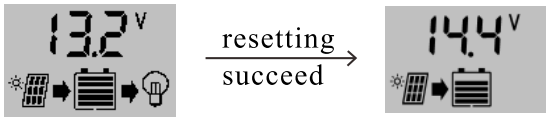
Note:

USr : User mode **SLd** : Sealed **FLd** : Flooded **GEL**: Gel	**-4** : -4mV/cell/℃	**15H** : normal mode **14H**: light control mode **0~13H**: light control with time control mode

Reset to default settings

As pictured at right, in this page long press the button (>3 seconds) to startup resetting action. When the parameters succeed resetting to default value, the display page switches to next page automatically. The correct process is shown as below.





Common Fault and Handling

Under-voltage protection and treatment:

shows up and flash on the screen means the battery voltage is lower than the under-voltage protection voltage. The controller has enter the under-voltage protection state and the output has been stopped.

Solution: Using solar panel or battery charger to charge battery, when the battery voltage reaches the recovery value, the load will be on power again and enter normal working state.

Overload protection and treatment:

shows up and flash on the screen, it means the occurrence of overcurrent or short circuit. The controller will stop output and enter overload protection state.

Solution: After solving the problem of output short circuit and reducing the load, press the button.

Input overvoltage and handling:

shows up and flash on the screen means the battery input voltage of the controller is higher than rated input voltage, controller will stop output and enter overvoltage protection state.

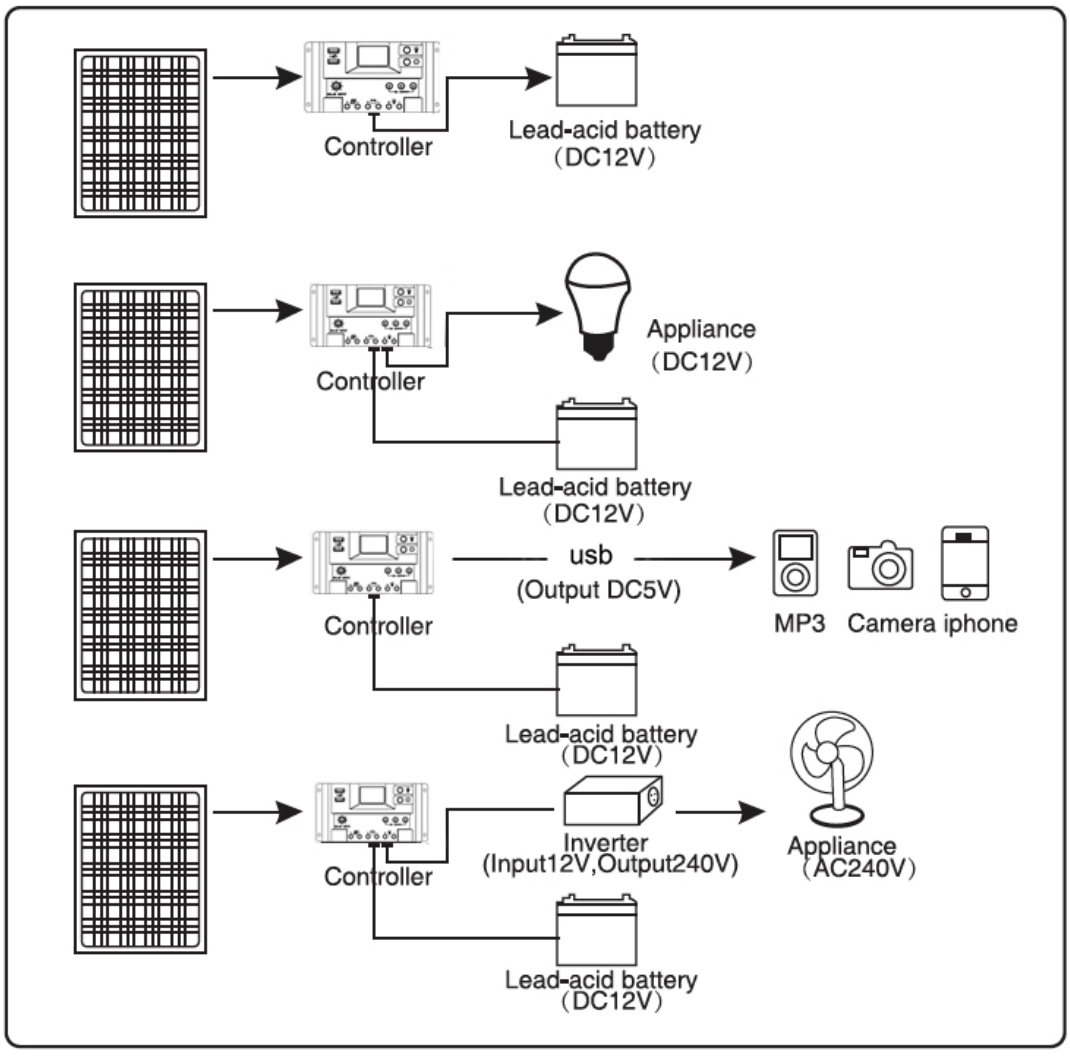
Solution: 1. please choose battery with appropriate voltage grade to connect with controller; 2. other charger for the battery to be removed.

Technical data

Rated Current	10A		No Load Loss	10.5mA(12V)
System Voltage	12V		Charge/Discharge Voltage Drop	<0.3V/ <0.18V
Open Circuit Voltage of solar panel	<50V		USB Output	5V/ 1.5A
Float Voltage	13.8V		Specification of cable	⩽10 mm²
LVD	10.8V		Working Temperature	-20℃~50℃
LVR	12.6V		Storage temperature	-30℃~60℃
Boost Voltage	Sealed 14.4V	Duration	Humidity	10%-90%, NC
	GEL 14.2V		Dimension	3.46 x 6.61 x 1.10 in
	Flooded 14.6V	2 hours	Diameter of mounting hole	2.68 x 6.26 in -∅0.16
HVD	16.0V		Weight	0.49 lb
HVR	15.5V			

Manufacturer retains the right to modify this product at any time without notice.

Connecting Options



Quality Assurance

1. Quality assurance should be carried out according to the following rules:
- the product is guaranteed of replacement, returning and repairing within 7 days after Sale.
- the product is guaranteed of replacement and repairing within 1 month after sale.
- the product is guaranteed of repairing within 12 months after sale.

2. If it is not possible to identify the using date of the controller, we would refer to the ex-work date, and prescribe 18 months as the warranty period. We need to charge beyond the warranty period. The controller can be repaired for life no matter when and where you use it.

3. If the controller is damaged by the following causes, we need to charge even if it is in the guarantee period:
- do not operate according to the user's manual.
- use the controller under the condition which is beyond the using standard and technical requirements.
- Repair by yourself or reform by yourself.
- Any inappropriate environmental condition which can cause the breakdown and aging of the apparatus.
- Improper carrying or storage.
- Regarding to the service of replacement, returning and repairing, you need to retreat the product to our company, and we decide whether to replace or repair after we make clear who should be responsible.

LIMITED WARRANTY

Nature Power warrants our products to the original purchaser that this product is free from defects in materials and workmanship and to generate up to 80% of rated power for the period of 1 years from date of purchase. In the case of product defect, contact Nature Power customer service to receive troubleshooting. If defective part or unit should be returned, a Return Authorization Number must be issued by Nature Power and the unit should be returned to the authorized location at the purchasers' expense. A dated proof of purchase is required to receive warranty service. Once received at authorized location and defect proves to be the result of defective material and workmanship, the defective part or unit will be replaced at warrantors' option and returned to the original purchaser at warrantors' expense. No refunds will be granted by the warrantor, in the event of buyer's remorse please contact your point of purchase within and in adherence to their return policy. Refunds are granted at the retailers' discretions.

Dated Proof of Purchase is required.

Please contact Nature Power Products to acquire more information:

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