OPERATING THE REGULATOR

1、Battery capacity Indicator (No charging)

Battery capacity	LED Indicator
<0%	All off（no connect to battery or in safe mode）
20%	LED1on
40%	LED1,2on
60%	LED1,2,3 on
80%	LED1,2,3,4 on
100%	All on

2、System Status (PV working)

Battery capacity	Led Indicator
<25%	LED1 always on~Led2~LED5 flash
<50%	LED1,2 always on~Led3~LED5 flash
<75%	LED1,2,3 always on~Led4~LED5 flash
>75%	LED1,2,3,4 always on~LED5 flash

3、Trouble shooting

Indicator	Faults	Possible reasons	Trouble shooting
LED1 flash	Battery in low voltage	Battery voltage is lower than 11.1V	Stop discharging the battery and charge the battery，After the battery voltage reaches over 12.6V , it will recover
LED4,5 flash	Battery over voltage	Battery voltage is over 16V	Stop charging the battery and discharge the battery. After the battery voltage drops below 15V, it recover auto

4、Battery capacity and voltage table (just for reference)

Battery voltage	<11.0	11.22	11.44	11.66	11.88	12.1	12.32	12.54	12.76	12.98	>13.2
Capacity	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

SUNYO®

INSTRUCTIONS MANUAL

SAFETY PRECAUTIONS

√ Do not connect the solar panel output line directly to the battery. The controller or regulator must be used in series. Otherwise it may cause permanent damage to the battery or battery explosion and cause injury.
√ Do not use this product if it is in bad condition or damaged.
√ Do not short circuit.
√ Do not place any items on the solar folding panel.
√ Do not bend the solar folding panel.
√ This product is designed for portable short-term use. It is not suitable for long-term permanent installation.

PACKAGE CONTENTS

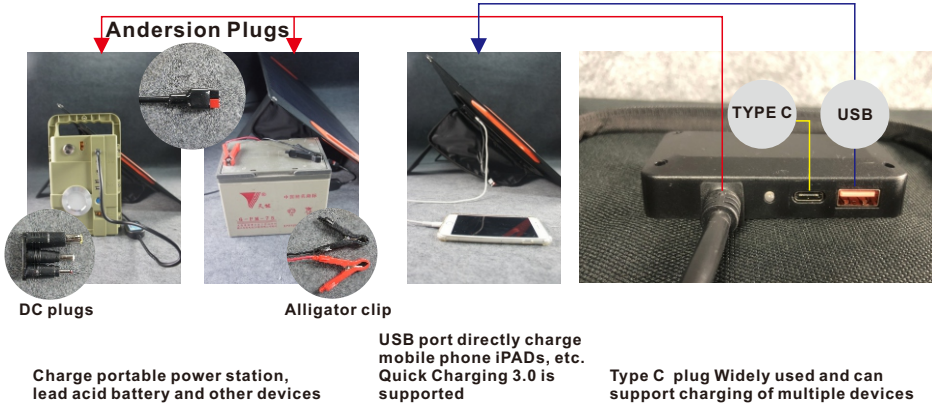
60watt foldable solar charger
1*User's Manual
1*mini Anderson plug (with controller)
1*DC 5.5*2.5mm adapter
1*DC 3.5*1.35mm adapter
1*DC 8mm adapter
Alligator clip adapter is optional (can be purchased separately)

TECHNICAL SPECIFICATIONS

Solar panel power	60watt mono-crystalline
USB-A Output	5V/3.4A,9V/2.5A,12V/2A Max (QC3.0 24W)
USB-C Output	5V/3A,9V/2A,12V/1.5A Max (PD18W)
DC Output	18V / 3.3A Max
Unfold size	850*520*25mm
Folding size	520*423*45mm
Weight	2.8 kg

OPERATING THE FOLDING SOLAR PANEL

1. Connect the solar panel to your devices.
2. Unfold the solar panel and place it under direct sunlight.
3. Keep your device cool while charging. Place it under the solar panel, in the pocket of the solar panel, or in the shade to avoid overheating.



DC plugs

Charge portable power station, lead acid battery and other devices

Alligator clip

USB port directly charge mobile phone iPADs, etc. Quick Charging 3.0 is supported

Type C plug Widely used and can support charging of multiple devices

★Alligator clips (with controller) needs to be bough separately

Panel Location

→ Identify the best location allowing for maximum sun exposure.
→ The location should be well ventilated.
→ It can be placed on the front windshield to generate electricity.
→ Keep away from dangerous areas such as campfires, flammable materials, high traffic areas, etc.
→ The cable from the solar panel to the battery should not cross walkways, vehicle or roads.

FREQUENTLY ASKED QUESTIONS

Q: How to operate the solar folding panel?
A: The solar panels convert sunlight energy into DC electric power, which charges a rechargeable battery that can be used to operate device loads. Charging during the day can store electrical energy in the battery for day and night use.

Q: I just opened the box and found the controller light flashing. Is there anything wrong with it?
A: No this does not indicate the panel is faulty. The kit will include the SMART regulator connection that is always looking for battery type. Just connect it to the battery to start charging.

Q: I tested the output with a voltmeter/multimeter.Output voltage and amps are either zero or fluctuating?
A: If you suspect a fault, please contact technical support for further assistance. Do not use a voltmeter/multimeter for testing. The smart regulator is looking for a battery connection. If it is connected only to the tested device, it will not be able to provide the correct output.

Q: I have connected the panel to the battery, but the battery is still not charging?
A: When the solar panel suite is first connected to the battery and placed in the sun, the charging controller must perform a self-check procedure to ensure that it works properly. The procedure will take up to three minutes to complete. During this time the LED indicator on the charging controller will show the change .After the self-check procedure is completed, the system will start also the charging processing.

Q: Will I always get-full output of solar panels?
A: No, the output you get from solar panels depends mostly on the UV index during the day and geographically position.

Q: How much battery capacity is needed?
A: It depends on how many amperes your devices consume and how many hours they have to run. As a result, your battery requirements can vary considerably, so you should seek further advice before making a decision. The typical battery purchased for camping is 100 ampere-hours.

Q: If my device needs an input current of 1A, will the 2A output of the solar charger damage it?
A: No. The solar panel has intelligent charging, detecting the needs of your device and delivering exactly what it needs. If your phone accepts 1A, the charger will deliver 1A .

Q: What if the foldable solar panel is not charging my devices?
A: A. Check the manual of your device to ensure the input voltage is 5V or 18V
B. Cloudy weather and indirect sunlight may cause fluctuations in the current. This in turn may hinder or prevent charging. Place the solar charger in direct sunlight or wait for the weather to clear.
C. Wipe the panels clean with a damp cloth between usage to prevent scratching.
D. Avoid exposure to fire, water and chemical liquid.

Q: If it is partially cloudy or shady will the solar panel still work?
A: Yes, although the charging efficiency will be low causing prolonged charging time.

Q: Can this solar panel charge laptop?
A: Yes. But please check the power should be 12V-18V.