Solargear SG12-B30LIM Battery Compartment
Operating Instructions

Thank you very much for purchasing our product. Please read this manual thoroughly before using this product, and retain it for future reference in order to use the product safely, and to make the most of its features. If you use other products together with this product, please read the operating instructions of those products thoroughly before use as well.

Applications

Charging the built-in LiFePO4 battery by sunlight, and powering a broad range of appliances through AC100V pure sine wave (inverter outlet), DC5V (USB) or DC12V (cigar lighter receptacle, charge controller terminals, dust and water proof connectors) output. A built-in nightlight function can control DC12V load such as LED light at night and is widely programmable.

Features

● An IP67 dust and water proof Pelican Case with a fail-safe automatic pressure equalization valve as the battery compartment.
● A built-in state-of-the-art LiFePO4 battery with a lifespan of 3000 cycles.
● A built-in Denryo SA-MN05-8 charge controller with only 1mA of self-consumption current to protect the uncharged battery from over-discharging, and with a programmable nightlight function.
● A 300W pure sine wave DC-AC inverter with 2 AC100V outlets, a DC12V cigar lighter receptacle and 2 DC5V USB receptacles.
● Various solar panels for DC12V systems with up to 100W output can be connected with MC4 Conversion Cables (sold separately).
● Dust and water proof power supply to appliances with DC12V input with DC12V Output Cables (sold separately).
● DC Power Cables (sold separately) to double the output capacity of the batteries.

Important Safety Instructions

⚠**Caution** Please follow the instructions below. Failure to comply may damage this device, cause the built-in battery to burst or result in leakage, fire and injury.

● Charge only the specified batteries.
● Do not allow metal objects to touch the input/output connectors.
● Do not block the automatic pressure equalization valve on the battery compartment.
● Do not short circuit, or disassemble this device.
● Do not put this device into water.
● Do not use or leave this device near fire.
● Do not use or leave this device in enclosed spaces.
● Do not use or leave this device in unstable high places.
● Stop charging in case of leakage from the battery.
● Stop charging in case the battery becomes unusually hot.

Important Note

We are not responsible for any physical damage to appliances, any loss of memorized data, any interruption of business, and any loss of business opportunities caused by this product.

Specifications

● Built-in battery: LiFePO4 battery
● Nominal capacity*: 384Wh（12.8V 30Ah）
● Cycle life*: 3000 cycles
● Max input: 100W
● Max output: 300W (AC100V inverter outlet)
  2.4A (DC5V USB)
  17A (DC12V dust and water proof connectors)
  10A (DC12V cigar lighter receptacle)
  8.5A (DC12V charge controller terminals)
● Operating temperature (charge)**: 0 - 55℃
● Operating temperature (discharge)**: 0 - 40℃ (AC100V inverter outlet, DC5V USB and DC12V cigar lighter receptacle)
  -20 - 55℃ (DC12V charge controller terminals)
  -20 - 55℃ (DC12V dust and water proof connectors)
● Dimensions (WXDXH): 270X175X246mm
● Weight: approx. 6.0kg (excl. battery charger)
● Input/output terminals: IP68 dust and water proof connector X 2
● Output terminals: AC100V inverter outlet X 2
  DC5V USB receptacle X 2
  DC12V cigar lighter receptacle X 1
  DC12V charge controller terminals X 1
● Safety features: 8.5A charge controller
  10A fuse X 1 & 20A fuse X 1 for short circuit prevention
● Accessories: 300W pure sine wave DC-AC inverter
  AC 100 - 240V 60W battery charger

*0.2C rate at 25℃ 80% DOD
**No freezing

Feature Diagram

Dust and water proof connectors
Charge controller
DC-AC inverter
LiFePO4 battery

How to Use

Connecting the solar panel/AC battery charger

1 Connect the output cables of the solar panel or AC battery charger to this product. Screw anticlockwise the cover off either dust and water proof connector. Align the ▲ marks of both connectors and screw the ring clockwise tightly by hand.

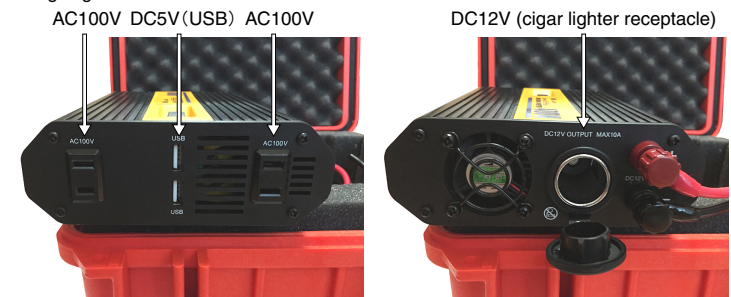☼ **Note:** Pull the connectors lightly to make sure they are locked.

Charging the built-in Battery

1 Face the solar panel towards the sunlight, and charge the built-in battery. To mount the solar panel on the fence or on the ground, s-hooks, fixing ties or fixing pegs can be used. For the most efficient charging, adjust the direction and angle of the solar panel 90 degrees in opposition to the sun rays. Use the AC battery charger in the night and in bad weather.

Powering Appliances

1 After charging the built-in battery, open the lid of the battery compartment.

☼ **Note:** You do not need to fully charge the built-in battery before powering appliances, but the operating time varies widely depending on the battery status and the power consumption of appliances.

2 To power appliances with AC100V or DC5V input, turn on the provided DC-AC inverter, and connect the appliances to the inverter. To power appliances with DC12V input, connect the cigar lighter plug of the appliance to the cigar lighter receptacle of the inverter, or connect the input cables of the appliances to DC12V load terminals of the built-in charge controller. You can also control the load output at night by a programmable nightlight function. Please refer to the instruction manual of the controller for details.

AC100V DC5V（USB） AC100V   DC12V (cigar lighter receptacle)

3 To power appliances with DC12V input outdoors, connect the DC12V Output Cables to dust and water proof connectors and the processed end to the appliances.

☼ **Note:** To power appliances with the programmable nightlight function and over-discharging protection of the charge controller effective, disconnect cables from the battery terminals, and connect them to the DC12V load terminals of the built-in charge controller.

4 To monitor the status of the solar panel and the battery, press "SELECT SW" (red button) of the built-in charge controller. "STATUS LED" blinks 3 times when battery level is full. It blinks twice when battery level is middle. It blinks once when battery level is low. "ERROR LED" blinks 3 or 4 times when the solar panel has no output. Please refer to the instruction manual of the controller for details.

☼ **Note:** When you press "MODE SW" (white button), it stops charging. To restart charging, press 1-2 times again until all the LEDs blink twice.

5 After you have finished powering appliances with AC100V or DC5V input, turn off the provided DC-AC inverter, and disconnect the appliances from the inverter. After you have finished powering appliances with DC12V input, disconnect the appliances from the cigar lighter receptacle of the inverter, from DC12V load terminals of the charge controller or from dust and water proof connectors.

6 To keep away from dust and water, and to avoid short circuit, close the lid of this product and cover the dust and water proof connectors, once you have finished powering appliances.

7 You can connect another battery compartment with DC Power Cables to double the output capacity to power appliances with power consumption up to 200W.

Maintenance

● To protect the built-in battery from over-discharging, charge it immediately when "STATUS LED" blinks once (Battery Level Low), or "ERROR LED" of the charge controller blinks once or 4 times (LVD = Load Off), or charge it at least every month.
● The life of the built-in battery varies widely depending on the operating environment. Replace the battery when the operating time becomes notably short.
● Clean this product with a dried or dampened cloth. Do not use oil, solvents, petrol or paint thinners for cleaning.

Warranty

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Design and specifications are subject to change without notice.

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