

Solargear SG12-B120LIM 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 semi-solid-state LiFePO4 battery by sunlight, and powering a broad range of appliances through AC100V pure sine wave (inverter outlet, dust and water proof connectors) and DC12V (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. Equipped with a detachable shoulder strap for easy carrying.
- A built-in semi-solid-state LiFePO4 battery which offers safety, weather resistance capable of charging and discharging at temperatures as low as -20°C, high energy density, and a long service life of 6,000 charge-discharge cycles.
- A built-in MPPT charge controller with a nightlight function accepts solar panels with up to 100V of Voc and 260W of Pm.
- Free "DC Home" App for monitoring power generation, charging/discharging current and SOC of the battery by smartphones available from "App Store" and "Google Play".
- A 300W silent and power saving pure sine wave DC-AC inverter with an AC100V outlet and AC100V connectors.
- Various solar panels with up to 100V of Voc and 260W of Pm can be connected with MC4 Conversion Cables (sold separately).
- Dust and water proof power supply to appliances with AC100V input with AC100V Output Cables.
- 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: Semi-solid-state LiFePO4 battery
- Nominal capacity*: 1.536kWh (12.8V 120Ah)
- Cycle life*: 6000 cycles
- Max input: Voc: 100V Pm: 260W
- Max output: 300W (AC100V)
20A (DC12V charge controller terminals)
17A (DC12V dust and water proof connectors)
- Operating temperature (charge)**: -20 - 55°C
- Operating temperature (discharge)**: -20 - 60°C
- Dimensions (WXDXH): 387x394x260mm
- Weight: approx. 20.1kg (excl. battery charger)
- Input/output terminals: IP68 dust and water proof connector X 1
- Output terminals: IP68 dust and water proof connector X 1
AC100V inverter outlet X 1
DC12V charge controller terminals X 1
20A MPPT charge controller
20A fuse for short circuit prevention X 2
- Safety features: 300W pure sine wave DC-AC inverter
AC 100 - 240V battery charger
5m dust and water proof jacket cable for AC100V output
Detachable shoulder strap
- Accessories:

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

Feature Diagram



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 4P 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 To power appliances with AC100V input indoors, open the lid, turn on the provided DC-AC inverter, and connect the plug of the appliances to the outlet of the inverter. To power light-load with AC100V input outdoors, connect the AC100V Output Cable to 5P dust and water proof connector, and the appliances to the outlet of the cable.



- 2 To power appliances with DC12V input indoors, connect the input cables of the appliance to the load terminals of the controller. To power appliances with DC12V input outdoors, connect the DC12V Output Cables to 5P dust and water proof connectors and the processed end to the appliances.
- 3 To power appliances with DC12V input, such as LED light, the built-in nightlight function can control the load at night and is widely programmable. Please refer to the instruction manual of the charge controller for details.



- 4 To monitor the status of the solar panel and the battery, refer to the LCD Display of the charge controller. Please refer to the instruction manual of the charge controller for details.
- 5 You can monitor the power generation, charging/discharging current and SOC of the battery by smartphones with Free "DC Home" App available from "App Store" and "Google Play".
- 6 After you have finished powering appliances with AC100V 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 input cables of the appliances from the load terminals of the controller or from dust and water proof connectors.
- 7 Once you have finished powering appliances, close the lid of the battery compartment and cover the dust and water proof connectors to keep away from dust and water, and to avoid short circuit.
- 8 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 the charge controller indicates low voltage, 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

- 1 year from the date of purchase

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Design and specifications are subject to change without notice.

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