

Solargear SG12-B30LIM-AC220V 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 AC220V pure sine wave (inverter outlet), DC5V (USB, USB Type-C), DC9V (USB, USB Type-C), DC10V (USB), DC12V (USB, USB Type-C, 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 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 AC220V outlets, a USB port and a USB Type-C port supports PD3.0 PPS/QC3.0/FCP/SCP/MTK PE+ quick charging with up to 30W output at DC5V - DC12V. Equipped with a LCD monitor for input and output voltage.
- 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 (AC220V 50Hz)
3A (DC5V USB)
2A (DC9V USB)
2A (DC10V USB)
2.5A (DC12V USB)
3A (DC5V USB Type-C)
2.77A (DC9V USB Type-C)
2.5A (DC12V USB Type-C)
8.5A (DC12V charge controller terminals)
17A (DC12V dust and water proof connectors)
- Operating temperature (charge)**: 0 - 55°C
- Operating temperature (discharge)**: -20 - 55°C
- Dimensions (WXDXH): 270X175X246mm
- Weight: approx. 6.0kg (excl. battery charger)
- Input/output terminals: IP68 dust and water proof connector X 2
- Output terminals: AC220V inverter outlet X 2
USB X 1
USB Type-C X 1
DC12V charge controller terminals X 1
8.5A charge controller
10A fuse X 1 & 20A fuse X 1 for short circuit prevention
- Safety features:
- Accessories: 300W pure sine wave DC-AC inverter
AC 100 - 240V 60W battery charger

*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 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 To power appliances with AC220V input, open the lid, connect the yellow output plug to the provided DC-AC inverter, turn on the inverter and connect the plug of the appliances to the outlet of the inverter.
 - 2 To power appliances with USB or USB Type-C input, connect the input cable of the appliance to the port without turning on the inverter.
 - 3 To power appliances with DC12V input indoors at night, connect the input cables of the appliance to the load terminals of the controller.
 - 4 To power appliances with DC12V input outdoors, connect the DC12V Output Cables to either dust and water proof connectors and the processed end to the appliances.
- ⚙️ **Note:** To power appliances with the 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.



- 5 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.

- 6 After you have finished powering appliances with AC220V input, disconnect the appliances from the inverter, turn off the inverter and disconnect the yellow output plug from the inverter.
- 7 After you have finished powering appliances with USB or USB Type-C input, disconnect the input cable of the appliance from the port.
- 8 After you have finished powering appliances with DC12V input, disconnect the appliances from DC12V load terminals of the charge controller or from dust and water proof connectors.
- 9 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.
- 10 You can connect another battery compartment with DC Power Cables to double the output capacity to power appliances.

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

- 1 year from the date of purchase

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Design and specifications are subject to change without notice.

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