Batterlution

User Manual

PowerGo 2500/5000

Plug in and play

Notice

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Forwards

Purpose

This user manual introduces the PowerGo device in terms of its installation, electrical connections, operation, and troubleshooting. Please read through the manual carefully before installing , and keep the manual well for future reference.

Intended Audience

This document is intended for:

*Sales engineers

*System engineers

*Technical support engineers

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
DANGER	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates warning information about device or environment security which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.

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2.1 General Safety

Declaration

Before installing, operating, and maintaining the device, please read this document carefully and strictly comply with all safety specifications in the device and the document.

Explanation of Safety Signs

The "Attention", "Warning", and "Danger" prompts in the document are only supplementary explanations of the safety specifications and do not cover all safety requirements. Batterlution shall not be liable for any consequences caused by violations of the basic safety requirements or the safety standards for design, production, or use.

Requirements for the Usage Environment

It is essential to ensure that the device is used in an environment meeting the design specifications. Otherwise, it may cause device failures. Device damage, personal injury or property loss arising therefrom will not be covered by the warranty.

Regulatory Compliance

When installing, operating and maintaining the device, local laws and regulations must be complied with. The safety instructions in this document are only supplementary to local regulations.

Device failures or damages caused by the following situations are not within the scope of Batterlution's warranty or liability:

- Operating the device beyond the conditions specified in this document.
- Installing or using the device in an environment not specified by relevant international/national standards.
- Unauthorized operation of the device.
- Unauthorized modification of the product's hardware or software code.
- Unauthorized disassembly of the product.
- Failure to execute according to the operation instructions and safety specifications in the product and relevant documents.

General Requirements

DANGER

Do not work with power on during installation.

- It is strictly prohibited to scribble on, damage, or obstruct any safety warning markings on the device.
- All screws must be tightened using specialized tools.
- It is forbidden to open the main panel of the device without authorization.
- Do not modify the internal structure of the device without the permission of the manufacturer.

- Surface damages caused during transportation or installation must be repaired promptly.
- A damaged device is prohibited from being used outdoors for an extended period.
- Specialized tools must be used to tighten the screws of the device.
- It is strictly prohibited to open the main panel of the device without permission.
- Without the written permission of the manufacturer, any modification to the internal structure of the device or the installation process is strictly prohibited.
- All maintenance work must be carried out by professional technicians.
- Unauthorized operation will render the warranty invalid and may pose potential safety hazards.

Personal Safety

- Appropriate Personal Protective Equipment (PPE) must be worn during operation.
- If there is a risk of personal injury or device damage, the operation should be stopped immediately, the supervisor should be reported, and protective measures should be taken.
- Use tools correctly to avoid injuring people or damaging the device.
- Do not touch live equipment (the outer shell may be hot).
- The device must be reliably grounded before use to ensure personal safety and normal operation.
- Do not open the host panel of the equipment.
- Do not disassemble or damage the battery. The released electrolyte is harmful to your skin and eyes. Avoid contact with the electrolyte.
- Do not place irrelevant objects on the top of the equipment or insert them into any position of the equipment.
- To prevent explosions and body injury, do not place batteries in a fire.
- Do not use water to clean electrical components inside or outside of a cabinet.
- Do not stand on, lean on, or sit on the top of the equipment.
- Do not damage the modules of the equipment.

2.2 Personnel Requirements

- Personnel responsible for the installation and maintenance of the device must fully master the relevant safety specifications and possess the ability to operate correctly.
- The replacement of the device or its components (including software) must be carried out by professional or authorized personnel.
- In case of device damage or personal injury caused by unauthorized operation, the party conducting the operation shall bear the liability.

NOTICE

Professionals: personnel who are trained - - on experience in equipment operations. They can clearly identify safety hazards and their risk levels during equipment installation, operation, and maintenance.

2.3 Electrical Safety

Grounding Requirements

- When installing equipment, the protective grounding wire (PE wire) must be connected first.
- When dismantling equipment, the protective grounding wire (PE wire) must be disconnected last.
- It is strictly prohibited to damage the grounding conductor.
- It is strictly prohibited to operate the equipment when the grounding is incomplete or substandard.
- It is necessary to ensure that the equipment is permanently and reliably grounded.
- Before putting the equipment into use, it must be checked and confirmed that the grounding connection is firm and reliable.

General Requirements

⚠ DANGER

Before connecting cables, ensure that the equipment is intact. Otherwise, electric shocks or fire may occur.

- All electrical connections must comply with local electrical safety standards.
- Before using the equipment in grid - connected mode, permission from the local power company must be obtained.
- The cables used must meet local regulatory requirements.
- Special insulated tools must be used for high - voltage operations.

2.4 Transportation Requirements

1. Safety Certification

This product has passed the UN38.3 (certification of the United Nations Manual of Tests and Criteria for the Transport of Dangerous Goods) and SN/T 0370.2 - 2009 (China's inspection standard for the performance of packaging for exported dangerous goods). It complies with international and domestic regulations for the transport of dangerous goods and belongs to Class 9 dangerous goods, ensuring safe and reliable transportation.

2. Transportation and Packaging

- Supports direct delivery to the project site by land and water transportation, which is convenient and efficient.
- The packaging box is strictly reinforced in accordance with Chinese standards and marked with safety signs such as anti - collision and moisture - proof to ensure the integrity of the product during transportation.
- Product specifications may be affected by environmental factors (such as temperature and transportation conditions), and the actual state at the time of delivery shall prevail.

3. Protection Requirements

The packaging of this product has the following protection features to ensure the quality of the delivered goods:

- Waterproof and moisture - proof: Sealed design to prevent rain, snow, or water immersion.
- Shock - resistant and drop - resistant: Protected by cushioning materials to avoid damage from mechanical impact.
- Directional storage: The packaging is marked with the orientation to prevent inversion or tilting.

4. Quality Assurance

We promise that the product leaves the factory in line with the highest safety standards. However, please transport and store it in accordance with the specifications to ensure

2.5 Mechanical Safety

- Wear safety glasses and gloves when drilling.
- Take measures to cover the equipment effectively, so as to keep metal chips generated during drilling from intruding into the equipment.
- After the installation work is finished, make sure to clean up the drilling debris without delay.
- Do not drill while the equipment is powered on.

Moving Heavy Objects

- Be cautious to avoid injury when moving heavy objects.
- When moving the equipment by hand, wear protective gloves to prevent injuries.

2.6 Maintenance and Replacement

DANGER

The high - voltage electricity generated during the operation of the equipment may cause electric shock death, serious injury, or property damage. Before maintenance, the power must be completely cut off and discharged. It is necessary to strictly abide by this manual and relevant safety regulations. All consequences caused by illegal operation shall be borne by the operating party.

- Maintenance personnel must carefully read this manual and use professional tools and testing equipment.
- The power must be completely cut off, and it should be confirmed that the equipment has completed discharging (refer to the instructions on the time - delay discharge label).

• Set up temporary warning signs/fences to prohibit unauthorized personnel from entering the work area.
• It is strictly prohibited to open the equipment cover without authorization (this may cause electric shock and result in the loss of the warranty qualification).
• Faulty equipment must be repaired by the dealer, and power can be restored only after all faults are eliminated.
• Battery maintenance must be carried out by professionals, and when replacing, the battery pack of the same model must be used.
• Before moving or reconnecting the equipment, power - off should be carried out as follows:1. Disconnect the AC cable. 2. Turn off the circuit breaker.
• After maintenance, count the tools/parts to ensure nothing is left behind.
• When the equipment is out of use for a long time, store it as required in the manual and charge it regularly.

Product Introduction

3.1 Product Information

Function

PowerGO series is an AC coupled energy storage system including power control module and battery module, which can store and release electric energy according to customized requirements. PowerGO series are certified grid-connected energy storage machine with Schedule mode, Smart meter mode and HEMS mode. It discharges at peak electricity prices and charges at valley electricity prices, providing a more favorable electricity consumption method for dynamic electricity price areas. Additionally, excess PV generation can be stored in PowerGo through AC coupling, eliminating complex installation procedures.

Model

Table 2-1 Model description

1	PowerGo 2500	Battery capacity 2.56kWh
2	PowerGo 5000	Battery capacity 5.12kWh
3	PowerGo 5000 BK	Battery capacity 5.12kWh

3.2 Application Features

- **Grid-connected Function**

  Support connection to the power grid, enabling bidirectional flow of electrical energy to meet different power consumption needs.

- **Intelligence and Convenience**

  Support remote settings of the operation mode, charging and discharging periods, and power through a mobile APP, with convenient operation.

- **Reliable Product Design**

  Battery low-voltage wake-up function to ensure the continuous operation of the device in a low-voltage state.

- **Multi-Operation mode Collaboration**

  The Schedule mode, Smart meter mode, and HEMS mode can be flexibly switched according to requirements to adapt to different usage scenarios.

1) Schedule Mode

Support manual settings of the power and time periods for charging and discharging, with simple and intuitive operation.

2) Smart Meter Mode

The Smart Meter Mode intelligently optimizes the battery charging and discharging strategies by detecting the load power in real time, and it supports two operation modes:

Self-Consumption

Specifically designed for Solar power system with excess generation capacity. When the power generation capacity of the photovoltaic system is greater than the power consumption of the load, the excess electrical energy is automatically stored in the battery, maximizing the utilization of clean energy.

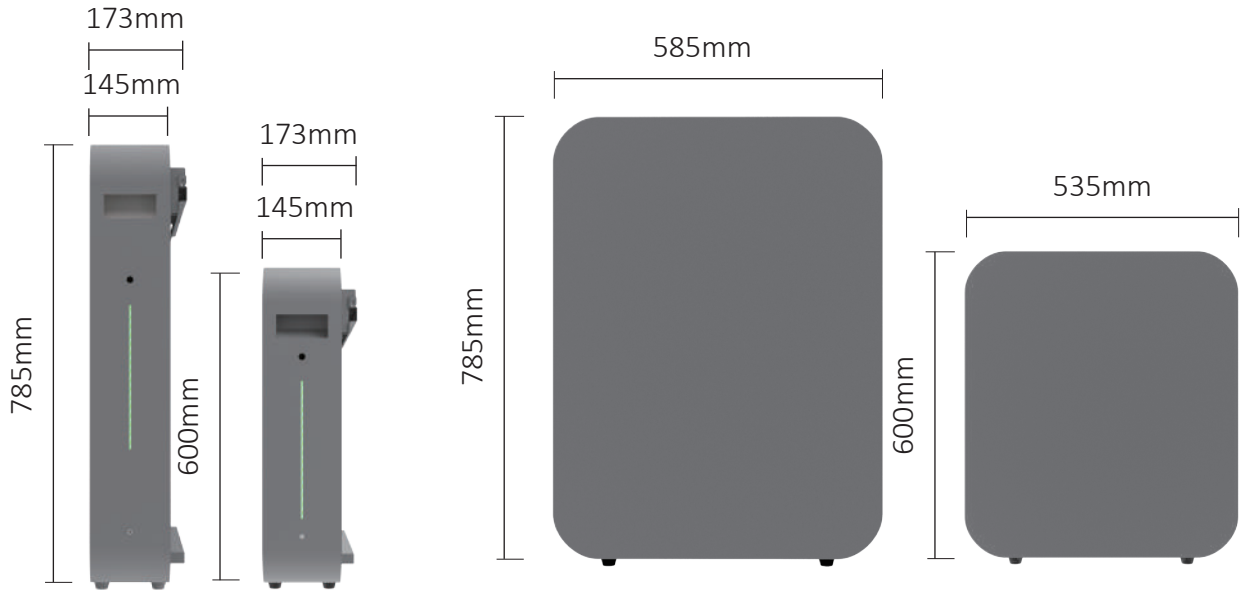
Auto Feed

The battery is preferentially used to supply power to the load, reducing the consumption from the grid and achieving high energy usage ratio.

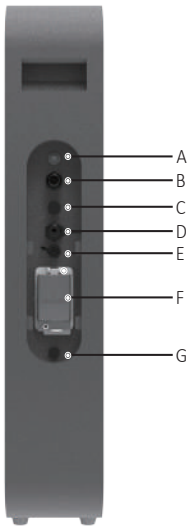
3) Efficient HEMS(Home Energy Management System) Mode

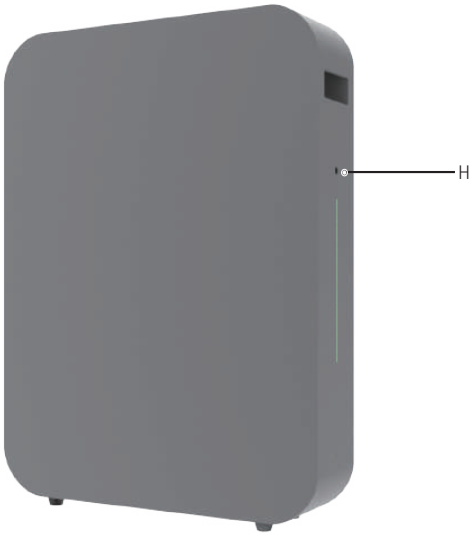
Support seamless connection with third part Home Energy Management Systems (HEMS) to achieve centralized control and optimization.

3.3 Appearance and Size



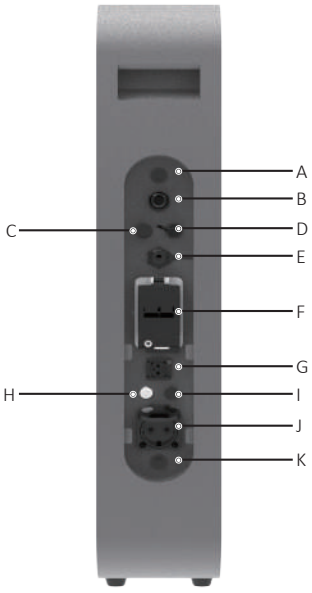
3.4 Appearance Description

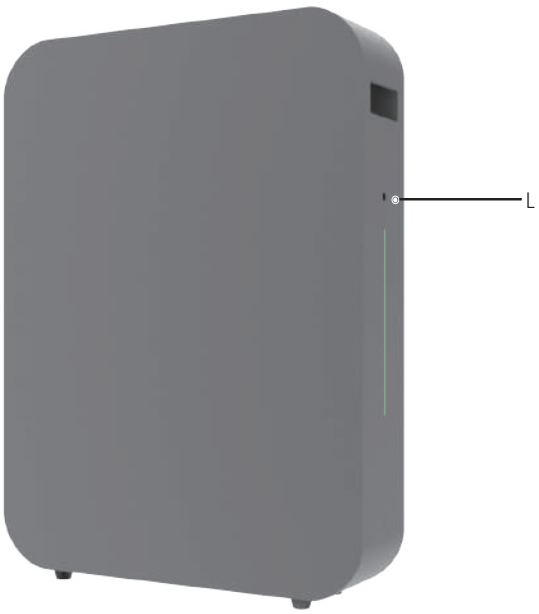




A	AC Protect	AC Overcurrent Protection Reset Switch (10A)
B	AC Plug	Connect to the power outlet via the Schuko plug.
C	WLAN	User-replaceable dual-band antenna (2.4GHz & 5GHz, 3dB gain).
D	Ethernet	Ethernet port for third-party box connectivity.
E	CT&DBG	For external CT connection and debugging purposes.
F	BAT Main	Battery circuit breaker with protective functions.
G	Pressure relief valve	Battery pressure relief valve.
H	Bluetooch set	Long press to activate Bluetooth pairing.

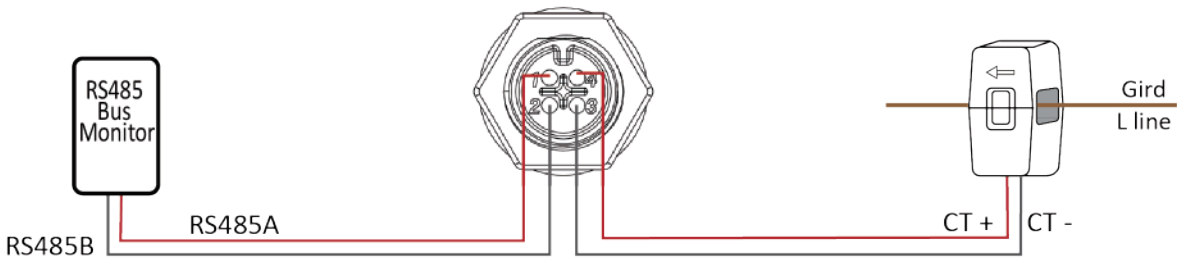
3.4.1 Power Go 5000 BK





A	AC Protect	AC Overcurrent Protection Reset Switch (10A)
B	AC Plug	Connect to the power outlet via the Schuko plug.
C	WLAN	User-replaceable dual-band antenna (2.4GHz & 5GHz, 3dB gain).
D	CT&DBG	For external CT connection and debugging purposes.
E	Ethernet	Ethernet port for third-party box connectivity.
F	BAT Main	Circuit breaker with protective functions.
G	BAT Extend	Battery Parallel Port
H	Backup On/Off	Off-Grid Output Switch
I	Pressure relief valve	Battery pressure relief valve.
J	Backup	Off-Grid Output Connector
K	Backup Protect	Off-Grid Output Overcurrent Protection Reset Switch (10A)
L	Bluetooch set	Long press to activate Bluetooth pairing.

3.4.2 External Terminal Connection



Pin Definition (Board Side)

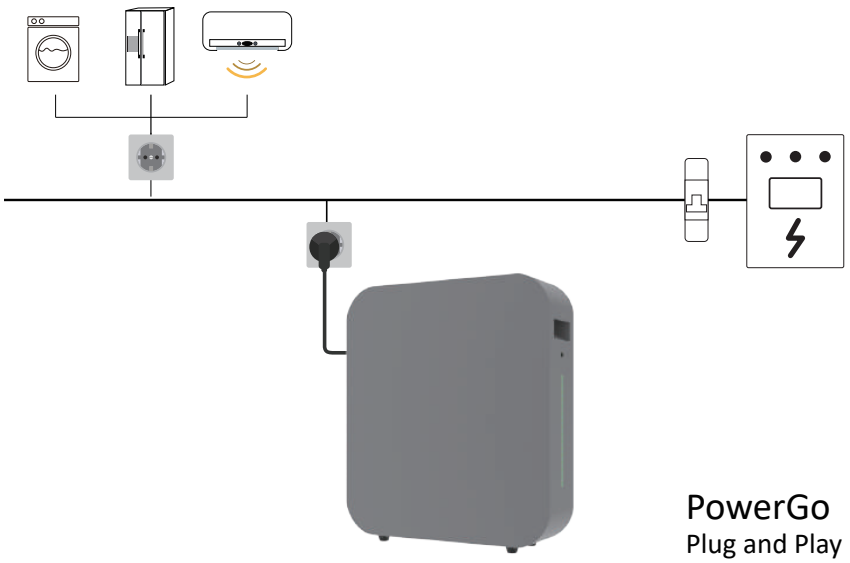
- Pin 1-2 (RS485):
  Pin 1: RS485 B (-)
  Pin 1: RS485 A (+)
- Pin 3-4 (CT):
  Pin 3: CT Negative (-)
  Pin 4: CT Positive (+)

CT Input: The CT must be installed on the live wire (L line) with its arrow pointing.
toward the device side (grid→device flow direction) to ensure accurate current measurement.

3.5 Operating Mode

①Schedule Mode

PowerGo is designed to connect to the grid in a plug-and-play manner. Through the APP, users can set the charging and discharging periods along with the corresponding power levels, enabling it to supply power to household loads even in the absence of internet connectivity

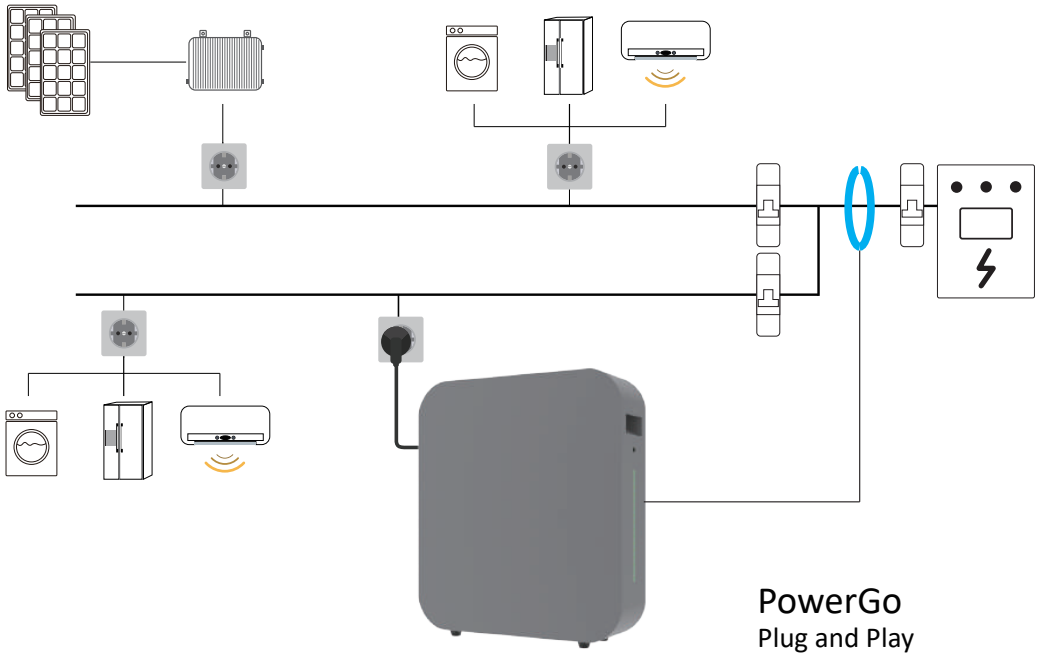


PowerGo
Plug and Play

②Smart Meter Mode

Self-Consumption

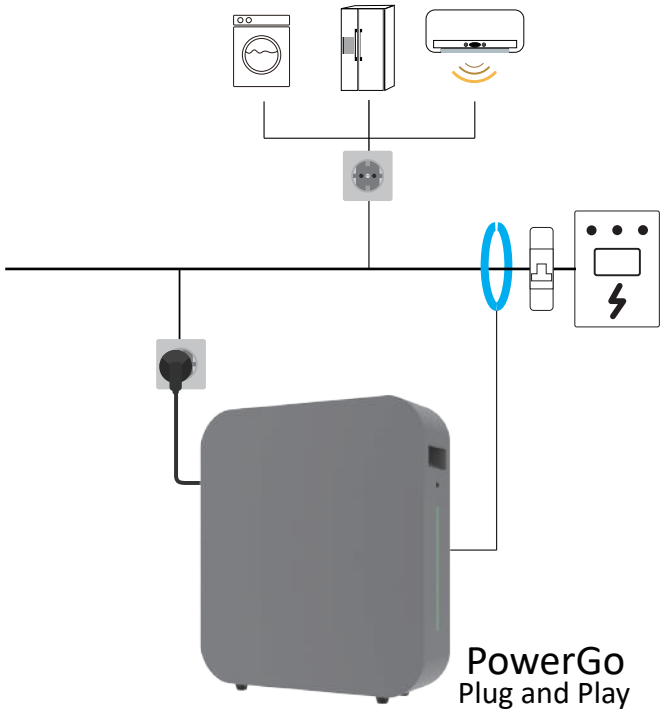
PowerGo is designed for energy systems with existing solar plants. It intelligently manages charging and discharging based on real-time surplus solar generation and home electricity consumption.



PowerGo
Plug and Play

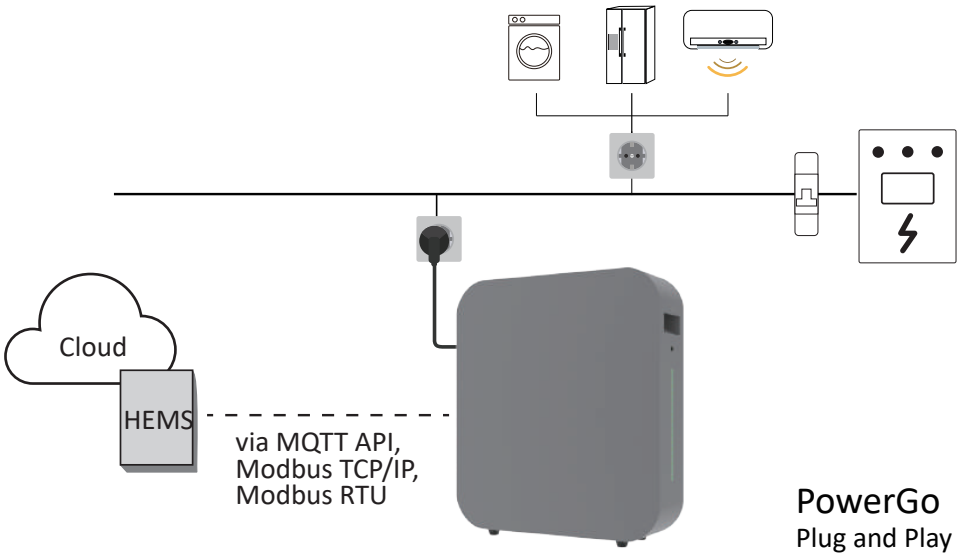
Auto Feed

This mode is designed for energy systems without a solar PV system. PowerGo charges the battery at the user-defined power level and scheduled time, then intelligently discharges based on real-time home electricity demand during the designated discharge periods.



③HEMS Mode

PowerGO supports cooperation with third-party smart boxes and can be controlled through ModbusTCP/IP, MQTT Api; Modbus RS485; Blueteeth and other communication methods. Open source equipment, to achieve integration with other home intelligence in various families.



4.1 Pre-installation inspection

Checking the Outer Packing

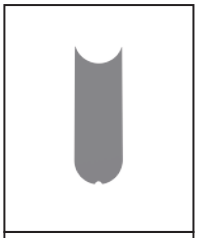
Before unpacking the product, check the outer packing for damage, such as holes and cracks, and check the battery model. If any damage is found or the battery model is not what you requested, do not unpack the product and contact your dealer as soon as possible.

Checking Deliverables

After unpacking the product, check that the deliverables are intact and complete, and free from any obvious damage. If any item is missing or damaged, contact your dealer.

Packing list

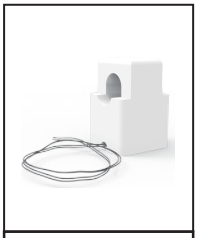
PowerGo



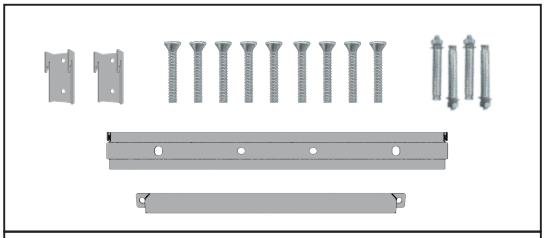
Magnetic cover plate

Screw*2

Optional accessory



CT



Wall Mounting Accessories

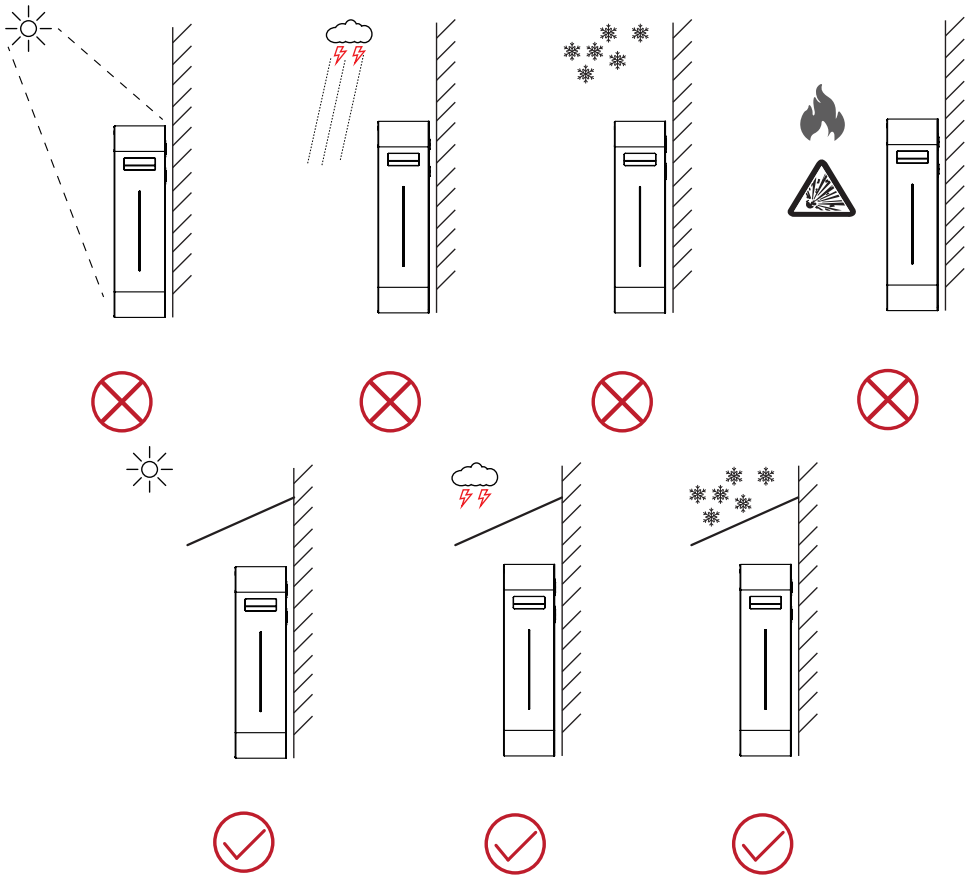
NOTICE

All CT accessories come with pre-installed terminals for direct equipment connection.

- Standard configuration: 5-meter cable.
- Customization: Cable lengths available.

4.2 Installation location requirements

- Ensure that the equipment is installed in a dry and well-ventilated environment.
- The installation position must be away from direct sunlight and rain.
- The installation position must be far away from fire sources.
- The installation position must be far away from water sources such as taps, sewer pipes, and sprinklers to prevent water seepage.
- The support surface must be solid and flat.
- Children are not allowed to enter the installation position.
- To prevent fire due to high temperature, ensure that the ventilation vents or heat dissipation system are not blocked when the equipment is running.
- Do not expose the equipment to flammable or explosive gas or smoke. Do not perform any operation on the equipment in such environments.



CAUTION

The operation and service life of the battery depend on the operating temperature. Operate the battery at a temperature equal to or better than the ambient temperature. The recommended operating temperature ranges from 15°C to 30°C.

4.3 Installing Tools

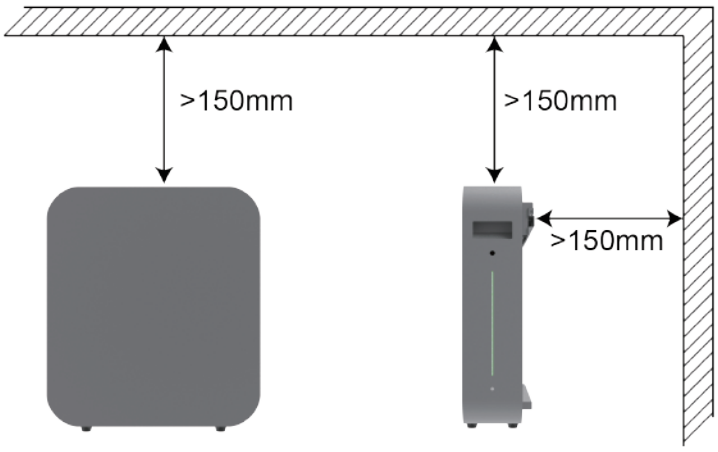
The installation tools are not limited to the recommended options in the following table. Other auxiliary tools can also be selected according to the needs during on-site construction.

	Wrench		goggles
	electric drill		Screwdrivers
	Multimeter		Diagonal pliers
	Insulating gloves		Marker pen

4.4 Product Installation

Step 1: Dimensions

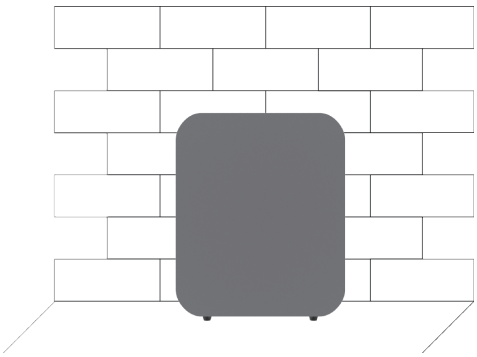
At least 150 millimeters of space should be reserved at the top and rear of the device. Ensure that there are no other devices or obstructions around it to meet the requirements of heat dissipation and safety isolation.



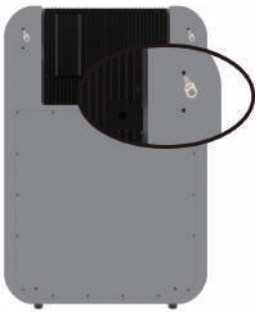
Step 2: Installation

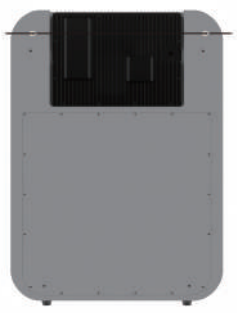
There are two installation methods: floor - mounted and wall - mounted.

1: Floor - mounted installation



Tip-Resistant Design





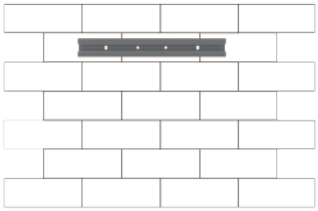
2: Wall - mounted installation

Wall Specifications

Concrete walls must have a minimum strength grade of C20 (20MPa compressive strength).

Solid brick walls must meet MU10 standard with a thickness ≥240mm.

Installation on hollow bricks, lightweight partitions, or gypsum board walls is strictly prohibited.



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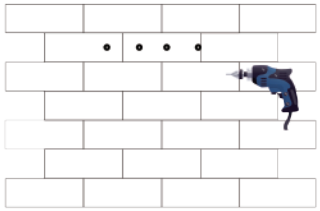

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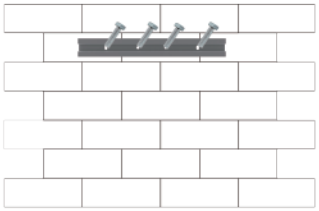

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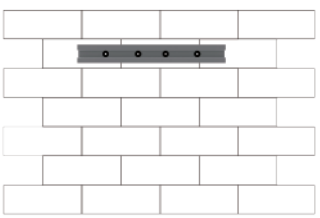
Drilling Guidelines

Drill hole diameter must match anchor specifications (e.g., 8-10mm for M8 anchors).

Depth must exceed anchor embedment length by ≥5mm to prevent dust accumulation.

Ensure clean holes for optimal fixing strength.



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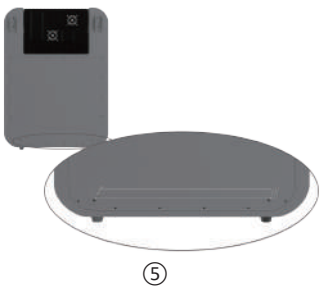


⑤

⑥

Wall - mounted installation requirements:

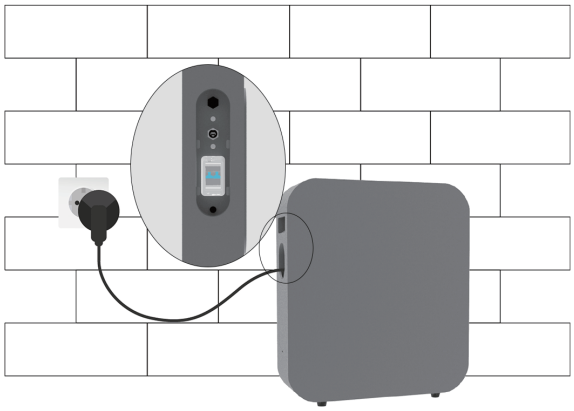
- The wall - mounted surface should be perpendicular to the ground.
- It should be installed on a solid surface.

NOTICE

1: Ensure that the installation surface can bear the weight of the battery, and use appropriate fixing devices to prevent it from tipping over.
2: Due to the heavy weight of the device, at least two people are required during the installation.
3. The ambient temperature should be between -10°C and 55°C to ensure optimal operation.

Step 3: Wiring

1. Switch the circuit breaker to the "open" position.
2. Insert the device's AC plug into a standard household power outlet.



CAUTION

The safe operation of this equipment requires proper grounding. Ensure the power outlet provides a reliable ground connection, as the device's internal grounding circuit is pre-installed.

Step 4: Confirmation of the Device Connection Status

1. After the device is successfully connected, please check the status of the indicator light on the side of the device.
2. If the indicator light remains steadily on, it indicates that the device has been successfully installed and is operating normally.

4.5 Equipment Storage

1. Pre-Storage Preparation

- Charge the battery to 100% capacity
- Pack the device in its original packaging (with shockproof foam)

2. Storage Conditions

- Temperature: 10°C ~ 25°C (no extreme heat/freeze)
- Humidity: 30%~60% RH

3. Safety Precautions

- Keep away from fire, strong magnetic fields, and corrosive gases
- Avoid direct sunlight
- Check charge level every 3 months; recharge to 50%~80% if ≤30%

Indicator Light Instructions

Device Status	Indicator Light
SOC	Blue or green, static
Charging	Green, flowing state
Discharging	Blue , flowing state
Bluetooth Pairing	Blue, flashing（3s)
Bluetooth Pairing Successful	Blue, static
Bluetooth Pairing Failed	Blue, flashing（0.5s)
Alarm Status	Steady yellow light

Specifications

Model	PowerGo 2500-1216	PowerGo 5000-1216
Rated AC Power	1200W Input, 1600W Output	
Battery Capacity	2.56kWh	5.12kWh
Weight	37kg	60kg

Grid input

Cord cables	1 phase (L+N) + PE
Input AC Power	0~1200W
Input Current range	0~6A
Input voltage range	220/230VAC
Input frequency range	48Hz-51Hz

Output (On Gird)

Output AC Power	0~1600W
Output Current range	0~7A
Output Voltage	L~N:230Vac
Output frequency	50Hz
PF	-0.9~0.9

Efficiency

Grid charging(AC->BAT)	94%
Battery discharging(BAT ->AC)	93%
Eco-mode	<20W
Shutdown leakage current	<100uA

Smart control

APP	Mobile app for managing and controlling grid-tied periods and power.
Communication	WiFi/ Bluetooth Modus TCP/IP / MQTT API / Modus RS485

Battery

Battery rated voltage	51.2V	
Energy Capacity(kWh)	2.56 (3.2V 50Ah)	5.12 (3.2V 100Ah)
Battery type	LFP	
Life Cycling(0.5℃~25℃)	6000	
Operation Temperature	Charge: -10~55℃ / Dishcharge: -20~55℃	
DOD	90%	
Fire Supression module	Supported	

Environmental parameters

Operating temperature range	-20℃~50℃
Operating humidity range	4-100%
Noise	<45dB
Ingress Protection:	IP54

Structural Appearance

Size	535mm*145mm*600mm	585mm*145mm*785mm
Weight	37kg	60kg

Protection

AC	Island protection AC input protection
DC	Over-temperature protection, low-temperature protection Over-voltage protection, under-voltage protection, Over-charge protection, over-discharge protection.

Safety standards and electromagnetic compatibility standards

Safety Standards	EN IEC 61000-6-1/-2/-3/-4 EN IEC 62109-1-2
Grid connection certification	EN 50549-1/-10 VDE-AR-N 4105
Battery	EN IEC 62619
Transport	UN 38.3
ROHS	YES
REACH	YES

Model	PowerGo 2500-1208	PowerGo 5000-1208
Rated AC Power	1200W Input, 800W Output	
Battery Capacity	2.56kWh	5.12kWh
Weight	37kg	60kg

Grid input

Cord cables	1 phase (L+N) + PE
Input AC Power	0~1200W
Input Current range	0~6A
Input voltage range	220/230VAC
Input frequency range	48Hz-51Hz

Output (On Gird)

Output AC Power	0~800W
Output Current range	0~4A
Output Voltage	L~N:230Vac
Output frequency	50Hz
PF	-0.9~0.9

Efficiency

Grid charging(AC->BAT)	94%
Battery discharging(BAT ->AC)	93%
Eco-mode	<20W
Shutdown leakage current	<100uA

Smart control

APP	Mobile app for managing and controlling grid-tied periods and power.
Communication	WiFi/ Bluetooth Modus TCP/IP / MQTT API / Modus RS485

Battery

Battery rated voltage	51.2V	
Energy Capacity(kWh)	2.56 (3.2V 50Ah)	5.12 (3.2V 100Ah)
Battery type	LFP	
Life Cycling(0.5℃~25℃)	6000	
Operation Temperature	Charge: -10~55℃ / Dishcharge: -20~55℃	
DOD	90%	
Fire Supression module	Supported	

Environmental parameters

Operating temperature range	-20℃~50℃
Operating humidity range	4-100%
Noise	<45dB
Ingress Protection:	IP54

Structural Appearance

Size	535mm*145mm*600mm	585mm*145mm*785mm
Weight	37kg	60kg

Protection

AC	Island protection AC input protection
DC	Over-temperature protection, low-temperature protection Over-voltage protection, under-voltage protection, Over-charge protection, over-discharge protection.

Safety standards and electromagnetic compatibility standards

Safety Standards	EN IEC 61000-6-1/-2/-3/-4 EN IEC 62109-1-2
Grid connection certification	EN 50549-1/-10 VDE-AR-N 4105
Battery	EN IEC 62619
Transport	UN 38.3
ROHS	YES
REACH	YES

Main	PowerGo 5000-1208-BK
Rated AC Power	800 W Output, 1200 W Input
Battery Capacity	5.12kWh
Weight	61kg

Grid input

Cord cables	1 phase (L+N) + PE
Input AC Power	0~800W
Input Current range	0~4A
Input voltage range	220/230VAC
Input frequency range	48Hz-51Hz

Output (On Gird)

Output AC Power	0~1200W
Output Current range	0~6A
Output Voltage	L~N:230Vac
Output frequency	50Hz
PF	-0.9~0.9

Backup

Output AC Power	0~1600W
Output Current range	0~7A
Output Voltage	L~N:230Vac
Max. Peak Output Power	50Hz

Efficiency

Grid charging(AC->BAT)	94%
Battery discharging(BAT ->AC)	93%
Eco-mode	<20W
Shutdown leakage current	<100uA

Smart control

APP	Mobile app for managing and controlling grid-tied periods and power.
Communication	WiFi/ Bluetooth Modus TCP/IP / MQTT API / Modus RS485

Battery

Battery rated voltage	51.2V
Energy Capacity(kWh)	5.12 (3.2V 100Ah)
Battery type	LFP
Life Cycling(0.5℃~25℃)	6000
Operation Temperature	Charge: -10~55℃ / Dishcharge: -20~55℃
DOD	90%
Fire Supression module	Supported

Environmental parameters

Operating temperature range	-20℃~50℃
Operating humidity range	4-100%
Noise	<45dB
Ingress Protection:	IP54

Structural Appearance

Size	585mm*145mm*785mm
Weight	61kg

Protection

AC	Island protection AC input protection
DC	Over-temperature protection, low-temperature protection Over-voltage protection, under-voltage protection, Over-charge protection, over-discharge protection.

Safety standards and electromagnetic compatibility standards

Safety Standards	EN IEC 61000-6-1/-2/-3/-4 EN IEC 62109-1-2
Grid connection certification	EN 50549-1/-10 VDE-AR-N 4105
Battery	EN IEC 62619
Transport	UN 38.3
ROHS	YES
REACH	YES