GENIXGREEN®

Technology Luster Life

POWERWALL

LiFePO4 Lithium Iron Phosphate Battery

Product Description

51.2V100AH

Technical Specifications	
Model	ES-BOX2
Battery Type	LiFePO4(LFP)
Norminal Voltage(V)	51.2V
Norminal Energy(KWH)	5.12KWH
Design Capacity	100AH
Design Years	15 Years
Product Size	
Size	600*510*173mm
Weight	51kg
Technical Parameter	
Cycle Life	≥6000 80% DOD
Operating Voltage Range	40V-58.4V
Charging Voltage	DC 58.4V
Rated Capacity	100AH
Charge/Discharge Current(A)	Same Port 100A
Intermal Resistance	≤30m Ω
BMS Parameters	
Self-Consumption	≤2W
Size	350*100*45mm
Rated Voltage	51.2V
Balance Current	30-65(MA)
Communication Method	CAN/RS485/RS232
Information Storage	500 Strip
Limiting	10/20A(Optional)
Ambient Temperature	
Operating Temperature	-10℃-50℃
Storage Temperature	10℃-50℃
Humidity	15%-75%
Warranty	
Warranty	5 Years

Smart
Each module is equipped with an independent BMS system.

Easy Installation
Just Plug & Play.

Safe
Safe lithium iron phosphate battery cell.

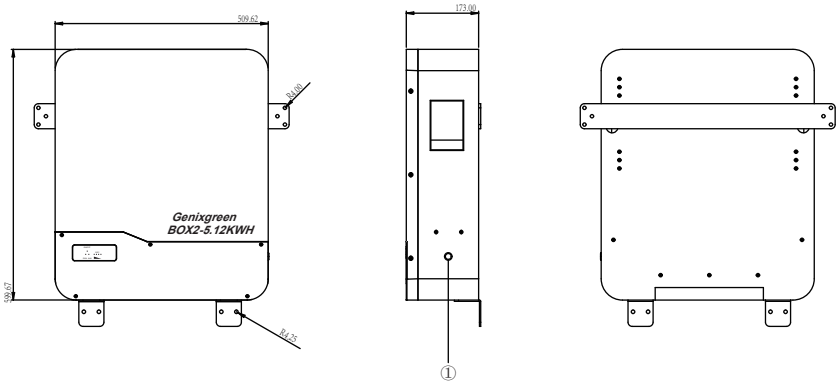
Certifications
CE IEC
UN38.3 MSDS.

Modular
Modular expansion.

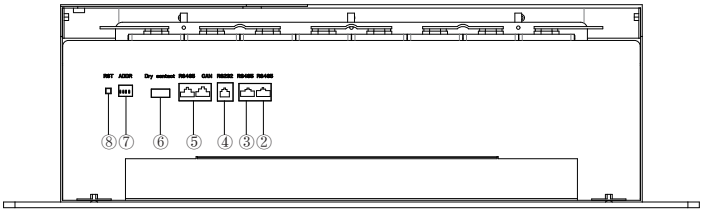
Longer Lifetime
6000 cycles,15 years design life.

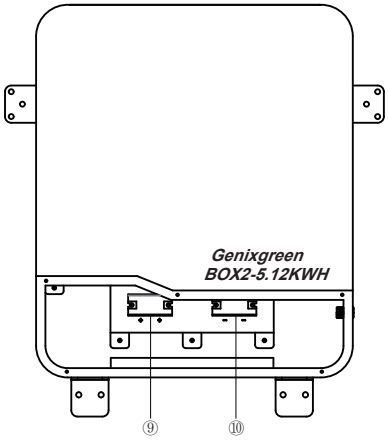
Lithium battery systems are widely used in residential energy storage systems, such as solar energy storage systems and UPS. The power wall LiFePO4 battery pack adopts the international advanced lithium iron phosphate battery application technology and BMS control technology.

Product Size:



Product interface:



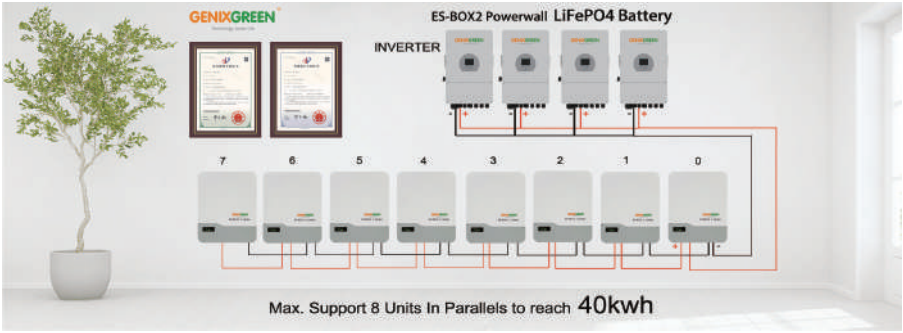


①Switch ②RS485 ③RS485 ④RS232 ⑤CAN/RS485(External Communication)

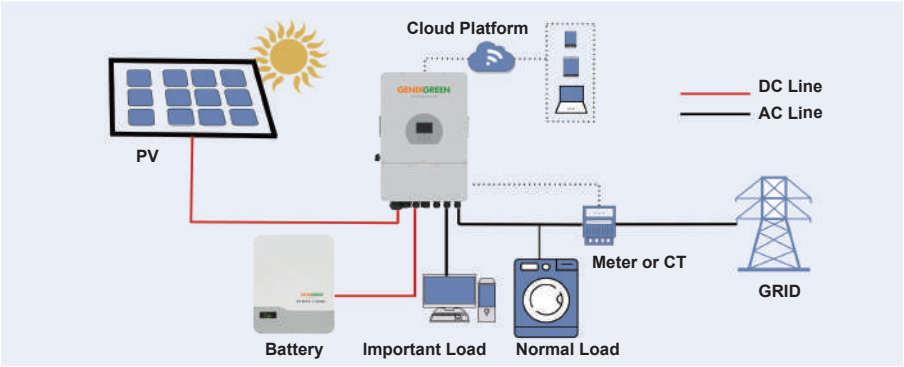
⑥Dry contact ⑦ADD ⑧RST ⑨Power + ⑩Power -

Parallel connection of batteries

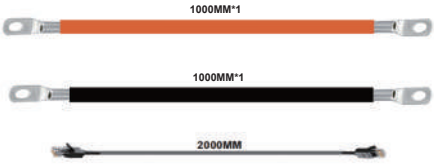
Connect the positive pole and positive pole in parallel, and the negative pole and negative pole in parallel, as shown in the figure below

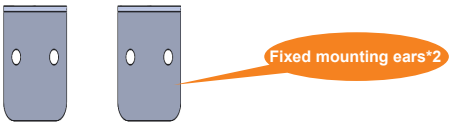


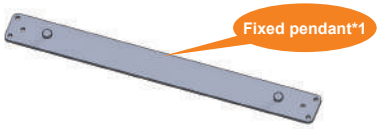
Solution diagram



Accessories:(Optional)

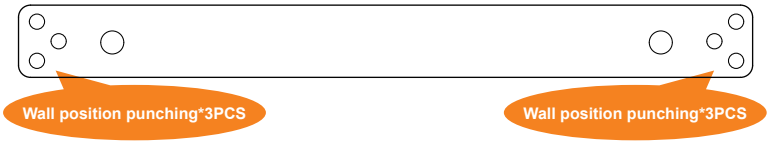




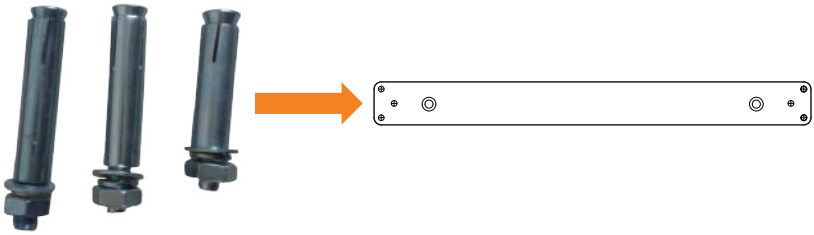


Installation Notes:

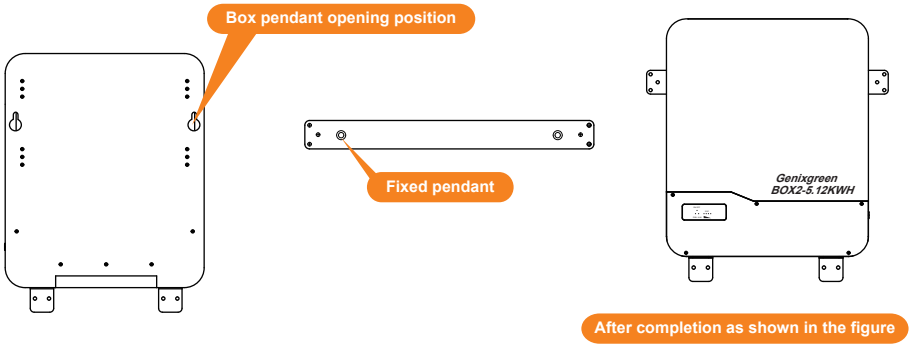
1. As shown in the figure below, press the fixed pendant on the wall surface with one hand, use a marker to draw the installation positioning hole of the fixed pendant, and use a tool to drill.



2. As shown in the figure below, fix the attached six M8 expansion bolts in the opening of the pendant, and tighten the nuts on the bolts.

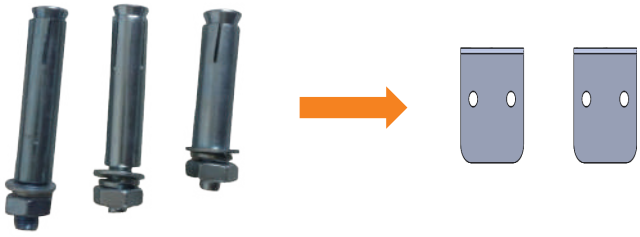


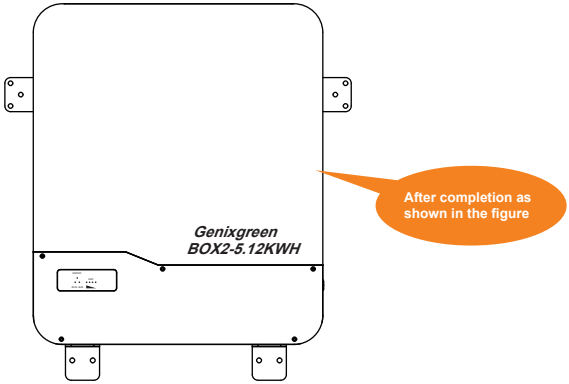
3. Lift up the 51.2V100AH battery box, adjust the opening of the pendant on the back of the box to align with the pendant on the wall as shown in the figure below, and then use a marker to mark the mounting ears of the box, and use tools to drill holes for the mounting ears.



After completion as shown in the figure

4. As shown in the figure below, fix the supplied 4 M8 expansion bolts in the holes of the mounting ears and fasten the nuts on the bolts.





Warning

To ensure proper use of the battery please read the manual carefully before using it.

Handling

- Do not expose to, dispose of the battery in fire.
- Do not put the battery in a charger or equipment with wrong terminals connected.
- Avoid shorting the battery
- Avoid excessive physical shock or vibration.
- Do not disassemble or deform the battery.
- Do not immerse in water.
- Do not use the battery mixed with other different make, type, or model batteries.
- Keep out of the reach of children.

charge and discharge

- Battery must be charged in appropriate charger only.
- Never use a modified or damaged charger.
- Do not leave battery in charger over 24 hours.

storage

- Store the battery in a cool, dry and well-ventilated area.

disposal

- Regulations vary for different countries. Dispose of in accordance with local regulations.

LED instructions

State	Normal / alarm / protection	RUN	ALM	The power level indicates the LED				Explain
		●	●	●	●	●	●	
Shut down	Dormancy	off	off	off	off	off	off	All off
Await the opportune moment	Normal	Flash 1	off	According to the electricity instruction				Stand by
	Report an emergency	Flash 1	Flash 3					Module low pressure
Charge	Normal	Lighting	off	According to the electricity instruction (Power level indicates maximum LED flash 2)				Alarm when overvoltage light off
	Report an emergency	Lighting	Flash 3					
	Overcharge protection	Lighting	off	Lighting	Lighting	Lighting	Lighting	If there is no charging, the indicator light is in standby state
	Temperature, overcurrent, and failure protection protect	off	Lighting	off	off	off	off	Stop charging
Discharge	Normal	Flash 3	off	According to the electricity instruction				
	Report an emergency	Flash 3	Flash 3					
	Undervoltage protection	off	off	off	off	off	off	Stop discharge
	Temperature, over-current, short-circuit, Reverse connection and failure protection	off	Lighting	off	off	off	off	Stop discharge
Lose efficacy		off	Lighting	off	off	off	off	Stop charging and discharging

Table 1 LED working status indication

The state		Charge				Discharge			
Capacity indicator light		L4	L3	L2	L1	L4	L3	L2	L1
Quantity of electricity (%)	0～25%	off	off	off	Flash 2	off	off	off	Lighting
	25～50%	off	off	Flash 2	Lighting	off	off	Lighting	Lighting
	50～75%	off	Flash 2	Lighting	Lighting	off	Lighting	Lighting	Lighting
	75～100%	Flash 2	Lighting	Lighting	Lighting	Lighting	Lighting	Lighting	Lighting

Table 2 Capacity indication instructions

Flash mode	Bright	off
Flash, 1	0.25S	3.75S
Flash, 2	0.5S	0.5S
Flash, 3	0.5S	1.5S

Tabl 3 LED flash instructions

Note: can enable or prohibit LED indicator light alarm through the upper machine, the factory default is enabled.

Buzzer action description

Power on, buzzer ringing;

Shutoff sleep, buzzer short;

When short circuit protection, the buzzer calls every 2S, short circuit protection 3 lock, the buzzer no longer calls; the buzzer function can be enabled or prohibited through the upper machine, the factory is prohibited by default;

When the buzzer function is prohibited, the buzzer does not work during the protection board alarm and protection (except for short circuit and reverse connection protection);

Key instructions

When the BMS is dormant, the key press is greater than 1S and the protection board is activated.

When the BMS is working, pressing the key pressed for more than 3S and less than 6S, the BMS goes dormant.

When the BMS is working and the key press lasts longer than 6S, the protection plate is reset.

Sleep and wake up

1. Dormancy

To reduce the power consumption of the entire system, the system is dormant and enters hibernation mode when the following conditions are met:

1) The single overrelease protection is still not lifted for 5 minutes (the time can be set).
2) The standby state duration reaches 24 hours (no communication, no charge and discharge, no charger access).
3) Open the composite button switch according to the operating rules.
4) By using the "forced hibernation" button of the upper computer computer, the protection board can be forcibly shut down to enter the hibernation mode.

2. Wake-up function description

Combined with the actual situation, for the convenience of use, the system provides a variety of different ways of waking up:

1) Charging wake-up, access to the charger, the charger voltage is greater than 36V;
2) Keys wake up;
3) Communication wake up can be awakened through RS485-1, RS232 serial port and CAN communication; please note that the battery is monomer or overall overput into dormant mode, not serial port;

Communication instructions

1. RS232 communication

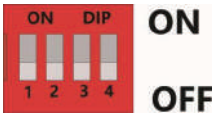
The BMS can communicate with the upper computer computer through the RS232 interface to monitor various battery information at the upper computer end, including battery voltage, current, temperature, status, SOC, SOH and battery production information, with a default port rate of 9600bps.

2. RS485 communication

With a dual RS485 interface, you can view the information about the PACK, and the port rate defaults to 9,600 bps.If you need to communicate with the monitoring equipment through RS485, the monitoring equipment as the host, poll the data according to the address, the address setting range is 1~16.

3. Dial-up switch settings

When PACK is used in parallel, different PACK can be distinguished by setting the dialing switch on BMS to avoid setting the same address. The definition of BMS dial switch refers to the following table.



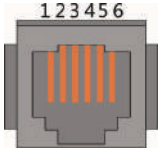
Address	Codes the switch position			
	#1	#2	#3	#4
1	OFF	OFF	OFF	OFF
2	ON	OFF	OFF	OFF
3	OFF	ON	OFF	OFF
4	ON	ON	OFF	OFF
5	OFF	OFF	ON	OFF
6	ON	OFF	ON	OFF
7	OFF	ON	ON	OFF
8	ON	ON	ON	OFF
9	OFF	OFF	OFF	ON
10	ON	OFF	OFF	ON
11	OFF	ON	OFF	ON
12	ON	ON	OFF	ON
13	OFF	OFF	ON	ON
14	ON	OFF	ON	ON
15	OFF	ON	ON	ON
16	ON	ON	ON	ON

Table 5 Dial switch position

Interface definition

Diagram diagram of the communication interface

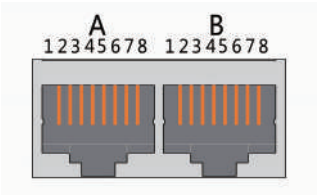
RS232 communication port definition:



Interface	Defined declaration	
X7 Communication port definition	PIN 1	NC(empty)
	PIN 2	NC(empty)
	PIN 3	TX protection board sends data (computer receiving data foot)
	PIN 4	RX protection board receives data (computer sends data)
	PIN 5	Ground signal ground
	PIN 6	NC(empty)

Table 6 The RS 232 Port Definition

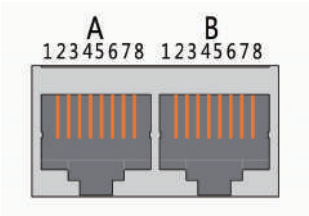
RS485-1 / CAN communication interface definition:



Interface	Defined declaration			Defined declaration		
X1 Communication port definition	A part CAN joggle	PIN 1	CANL	B part RS-485-1 Interface	PIN 1	RS485-B1
		PIN 2	CGND		PIN 2	RS485-A1
		PIN 3	NC(empty)		PIN 3	RS485-GND
		PIN 4	CANH		PIN 4	RS485-B1
		PIN 5	CANL		PIN 5	RS485-A1
		PIN 6	NC(empty)		PIN 6	RS485-GND
		PIN 7	CGND		PIN 7	NC(empty)
		PIN 8	CANH		PIN 8	NC(empty)

Table 7 The RS 485-1 / CAN port definition

RS485-2 Communication interface Definition:



Interface	Defined declaration			Defined declaration		
X2 Communication port definition	A part RS-485-2 Interface	PIN 1	RS485-B2	B part RS-485-2 Interface	PIN 1	RS485-B2
		PIN 2	RS485-A2		PIN 2	RS485-A2
		PIN 3	RS485-GND		PIN 3	RS485-GND
		PIN 4	NC(empty)		PIN 4	NC(empty)
		PIN 5	NC(empty)		PIN 5	NC(empty)
		PIN 6	RS485-GND		PIN 6	RS485-GND
		PIN 7	RS485-A2		PIN 7	RS485-A2
		PIN 8	RS485-B2		PIN 8	RS485-B2

Table 8 The RS 485-2 port definition

Battery Operation Instruction

●Charging

Charging current: Cannot surpass the biggest charging current which in this specification book stipulated.

Charging voltage: Does not have to surpass the highest amount which in this specification book stipulated to decide the voltage.

Charge temperature: The battery must carry on the charge in the ambient temperature scope which this specification book stipulated.

Uses the constant electric current and the constant voltage way charge, the prohibition reverse charges.

If the battery positive electrode and the cathode meet instead, can damage the battery.

●Discharging current

The discharging current does not have to surpass this specification book stipulation the biggest discharging current, the oversized electric current electric discharge can cause the battery capacity play to reduce and to cause the battery heat.

●Electric discharge temperature

The battery discharge must carry on in the ambient temperature scope which this specification book stipulated.

●Over-discharges

After the short time excessively discharges charges immediately cannot affect the use, but the long time excessively discharges can cause the battery the performance, battery function losing. The battery long-term has not used, has the possibility to be able to be at because of its automatic flash over characteristic certain excessively discharges the condition, for prevented excessively discharges the occurrence, the battery should maintain the certain electric quantity.

●Storing the Batteries

The battery should store in the product specification book stipulation temperature range. If has surpasses above for six months the long time storage, suggested you should carry on additional charge to the battery.

●Period of Warranty

The period of warranty is 5 years from the date of shipment. GENIXGREEN guarantees to give a replacement in case of cells with defects proven due to manufacturing process instead of the customers abuse and misuse.

●Other The Chemical Reaction

Because batteries utilize a chemical reaction, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, if the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage. If the batteries cannot maintain a charge for long periods of time, even when they are charged correctly, this may indicate it is time to change the battery.