5KWH & 10KWH Wall Power Box

LiFePO4 Lithium Iron Phosphate Battery

User Manual

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.

Certifications

CE RoHS MSDS UN38.3

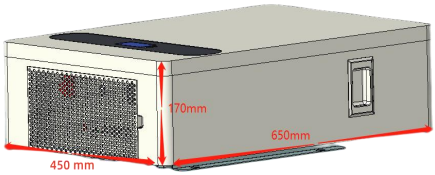
Product Specifications

Technical Specifications		
Battery Model	5.12Kwh Wall Power Box	10.24Kwh Wall Power Box
Battery Type	LiFePO4(LFP)	LiFePO4(LFP)
Norminal Voltage(V)	51.2V	51.2V
Norminal Energy(KWH)	5.12KWH	10.24kWH
Design Capacity	100AH	200AH
Design Years	15 Years	15 Years
Product Size		
Size	650*450*170mm	750*500*200mm
Weight	51kg	98KG
Technical Parameters		
Cycle Life	6000 80% DOD	6000 80% DOD
Operating Voltage Range	40V-58.4V	40V-58.4V
Charging Voltage	DC 58.4V	DC 58.4V
Charge/Discharge Current(A)	Same Port 100A	Same Port 100A
Intermal Resistance	<50mΩ	<50mΩ
Charge current	Standard charge:0.5CApprox 5Hour	Standard charge:0.5CApprox 5Hour
Standard Charging	0.2C	0.2C
Max.charge current	50A	100A
Max.discharge current	100A	200A
Cell&Method	(3.2V105Ah)16S1P	(3.2V105Ah)16S2P
Battery outgoing voltage	51.2~54.4V	51.2~54.4V
BMS Parameters		
Self-Consumption	<2W	<2W
Rated Voltage	51.2V	51.2V
Balance Current	30-65(mA)	30-65(mA)
Communication Method	CAN/RS485/RS232	CAN/RS485/RS232
Ambient Temperature		
Operating Temperature	Charging: 0°C ~ 45°C Discharging: -20°C ~55°C	Charging: 0°C ~ 45°C Discharging: -20°C ~55°C
Storage Temperature	-10°C ~ + 45°C	-10°C ~ + 45°C
Humidity	15%-75%	15%-75%
Warranty		
Warranty	5 Years	5 Years

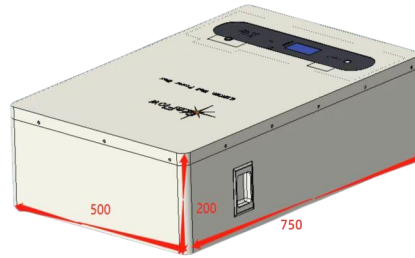
Compatible with Various Inverters Brands

We can match various inverter brands and usually ship out with Growatt protocol in advance.

Structural dimension

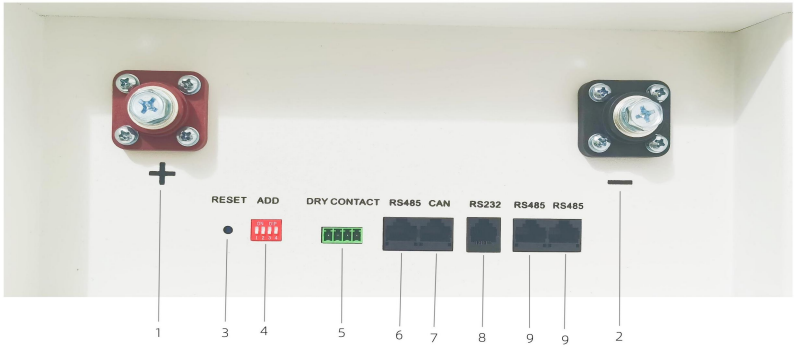


51.2V 100Ah



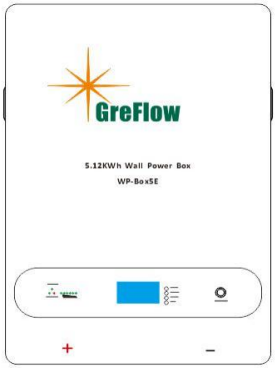
51.2V 200Ah

Product Interface



1&2 Battery + Battery - 3 Reset 4 ADS 5 Dry contact 6 RS485 7 CAN 8 RS232 9 RS485 Parallell

Package List

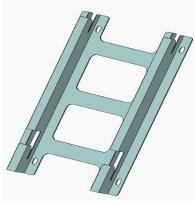


Powercord*2

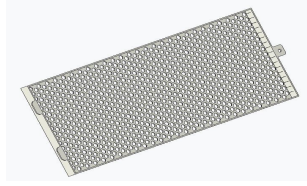
COMCable*1

User Manual*1

Mounting accessories



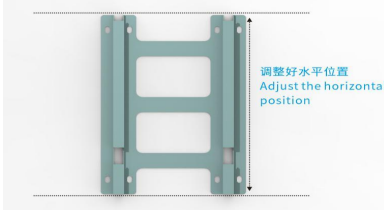
Pylons*1



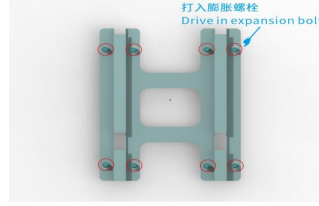
Protective net cover*1

Installation steps

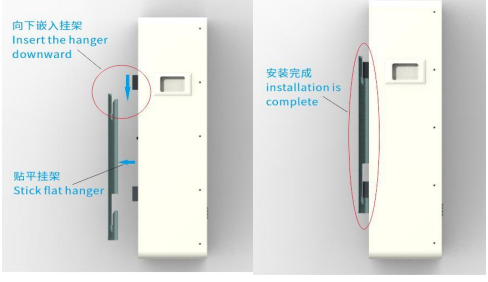
1. Adjust the horizontal position



2. Drive in expansion bolt

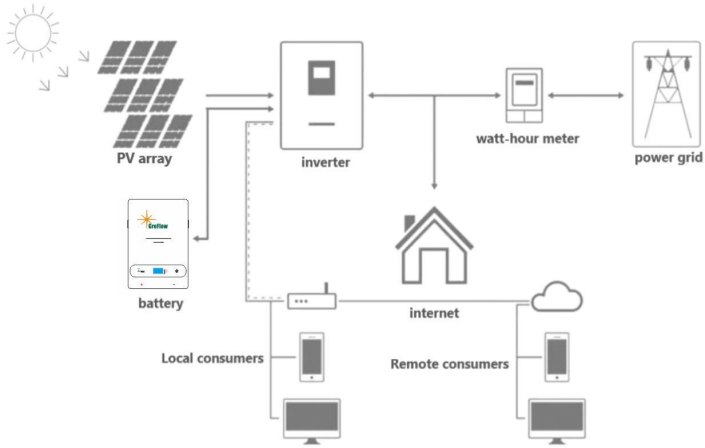


3. Insert the hanger downward and Stick flat hanger



4. Installation Completion

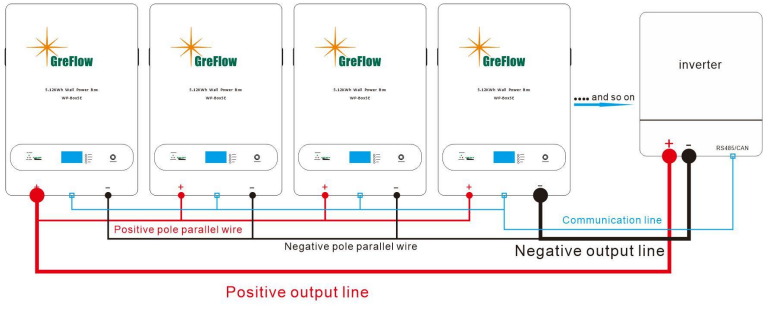
Solution Diagram



This product is mainly combined with inverter, photovoltaic (PV) and related accessories to build residential energy storage system. The system is used to store the power generated by photovoltaic power generation into the connected battery, convert the DC generated by photovoltaic power generation, connect the battery to the transaction current (AC), and provide it to the home grid.

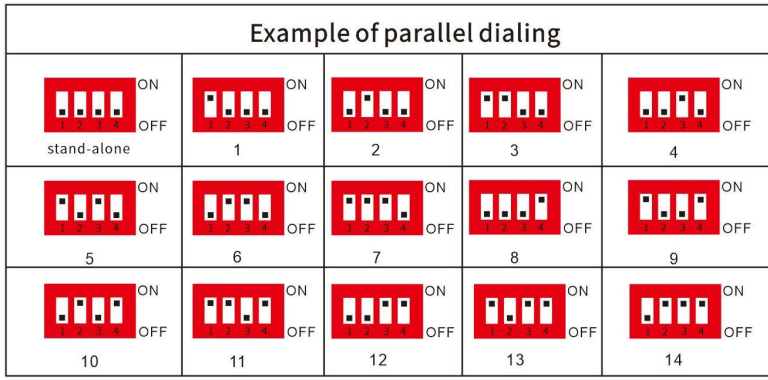
Parallel Connection Of Batteries

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



Max. Support 15 Units In Parallels

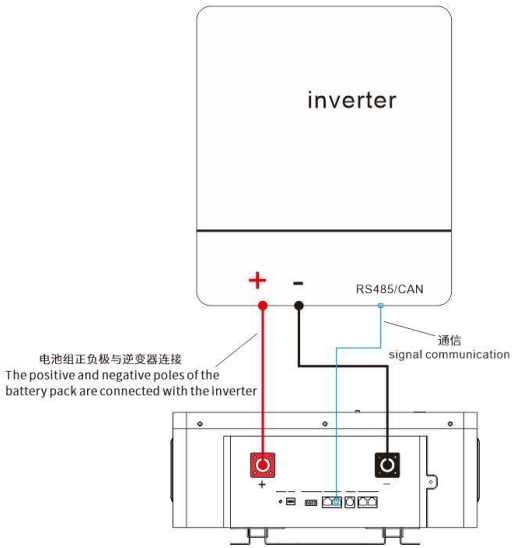
Example of parallel operation



When the battery packs are used in parallel,the addresses of different battery packs can be distinguished by setting the dialer switch on the BMS.It is necessary to avoid setting the addresses to the same.Refer to the following table for the definition of the BMS dialer switch.

Connection between battery pack and inverter：

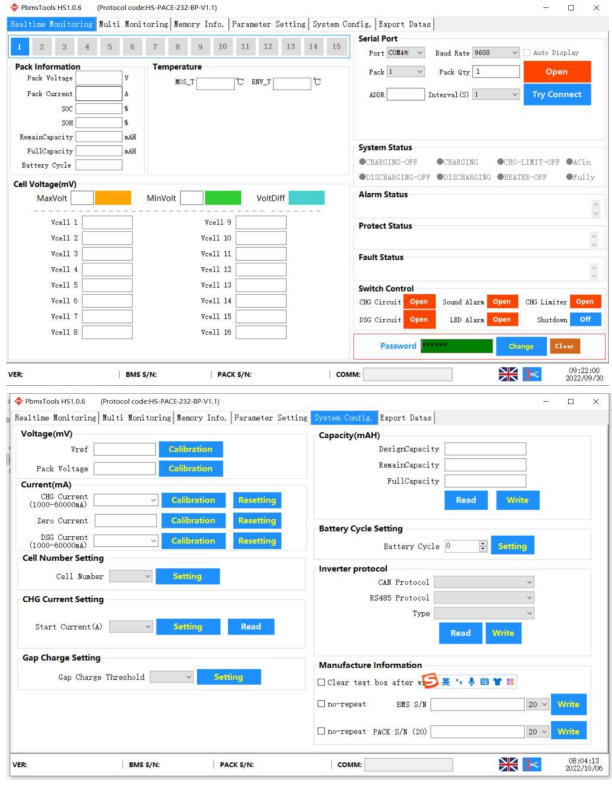
Simple connection schematic diagram：



The battery pack cable is connected to the inverter through a ring terminal, and the installer can directly connect to the positive and negative poles of the product when wearing protective gloves.

BMS monitoring system of lithium battery pack

With this application, you can monitor system operations from your mobile device, including the following.Real time current, voltage and capacity usage.Obtain energy consumption data and alarm status record of lithium battery pack.Modify the functional parameters of lithium battery pack.



BMS monitoring system

Download the mobile APP of this product and operate it through thmonitoring system on the mobile device, including the following:
Real time current, voltage and capacity usage.
Obtain energy consumption data and alarm status record of lithium battery pack.
Modify the functional parameters of lithium battery pack.
(Please contact our company or local distributors for the above applications and APPs)

Scription of reset switch

When the BMS is in the sleep state,press the key(3~6S) and release it,the battery pack is activated,and the LED indicator lights up for 0.5 seconds from"RUN".
When the BMS is active,press the key(3-6S) and release it.The battery pack is dormant.The LED indicator lights up for 0.5 seconds from the lowest battery level.
When the BMS is in the active state,press the key(6~10S) and release it,the battery pack is reset,and all LED lights are on for 1.5 seconds at the same time.

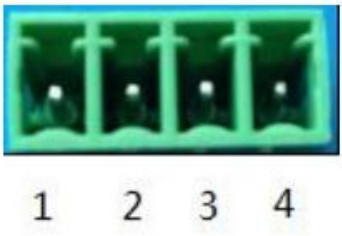
Battery Pack Sleep and Wakeup

Dormancy

When any of the following condition sismet,thesystementersthelowpowerconsumption mode:
1）Thesingleoroveralloverdischargeprotectionhasnotbeenremovedwithin30seconds.
2）Press the key(3-6S) and release it.
3）Theminimummonomervoltageislowerthanthesleepvoltage,andthedurationreaches thesleepdelaytime(nocommunication,noprotection,nobalance,nocurrent).
4）The stand by time exceeds 24hours (no communication,no charge and discharge,no mains power).
5）Forced shut down through the upper computer software.
Before entering the sleep mode,make sure that the input terminalis not connected to the external voltage, otherwise it will be unable to enter the low power consumption mode.
After the BMS is reset,it still retains the parameters and functions set by the upper computer.
Ifit need store store to the initial parameters,it can be achieved through the"restore default value"of the upper computer,but there levan to peration records and stored data remain unchanged(such as electricity,cycle times,protection records,etc.).

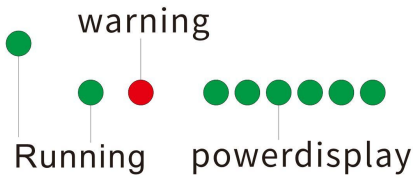
Awaken
When the system is in the low power consumption mode and any of the following conditions aremet,the system will exit the low power consumption mode and enter the normal operation mode:
1）Whenc onnected to the charger,the out put voltage of the charger shall be greater than48V.
2）Press the key(3-6S) and release it.
3）Activated via RS232 port.

Dry contact



BMS can provide one way of dry contact signals,which are all passive switches,regardless of polarity

Running indicator



LED Table I

state		charge						discharge					
Capacity indicator		L6 ●	L5 ●	L4 ●	L3 ●	L2 ●	L1 ●	L6 ●	L5 ●	L4 ●	L3 ●	L2 ●	L1 ●
Power (%)	0~16.6%	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Flash 2	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Always bright
	16.6~33.2%	Extinguish	Extinguish	Extinguish	Extinguish	Flash 2	Always bright	Extinguish	Extinguish	Extinguish	Extinguish	Always bright	Always bright
	33.2~49.8%	Extinguish	Extinguish	Extinguish	Flash 2	Always bright	Always bright	Extinguish	Extinguish	Extinguish	Always bright	Always bright	Always bright
	49.8~66.4%	Extinguish	Extinguish	Flash 2	Always bright	Always bright	Always bright	Extinguish	Extinguish	Always bright	Always bright	Always bright	Always bright

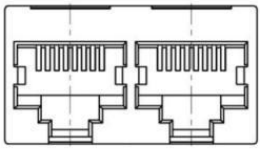
LED Table 2

state	Normal / alarm / protection	ON/OFF ●	RUN ●	ALM ●	Battery Indicator LED ●						explain
Shutdown	dormancy	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Total extinction
Standby	normal	Often bright	Flash 1	Extinguish	Indications according to electricity quantity						position in readiness
	give an alarm	Often bright	Flash 1	Flash 3							Module low voltage
charge	normal	Often bright	Often brigh	Extinguish	Indications according to electricity quantity (The maximum LED of the battery indicator flashes 2)						The maximum power LED flashes (flashes 2), and ALM does not flash in case of overcharge alarm
	give an alarm	Often bright	Often brigh	Flash 3							
	Overcharge protection	Often bright	Often brigh	Extinguish	Often brigh	Often brigh	Often brigh	Often brigh	Often brigh	Often brigh	If there is no mains power, the indicator light will turn to standby mode
	Temperature, overcurrent and failure protection	Often bright	Extinguish	Often brigh	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Stop charging
discharge	normal	Often bright	Flash 3	Extinguish	Indications according to electricity quantity						
	give an alarm	Often bright	Flash 3	Flash 3							
	Undervoltage protection	Often brigh	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Stop discharging
	Temperature, overcurrent,short circuit,reverse connection,failure protection	Often brigh	Extinguish	Often brigh	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Stop discharging
invalid		Extinguish	Extinguish	Often brigh	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Extinguish	Stop charging and discharging

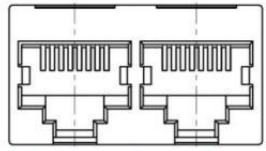
Communication Description

RS485communication
With dual RS485 interfaces,you can view the battery pack information.The default baud rate is 9600 bps.If it is necessary to communicate with the monitoring equipment through RS485,the monitoring equipment,as the host,polls data according to the address,and the addres ssetting range is 2~15.

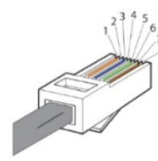
CAN communication
CAN communication,baud rate 500K



Rs485 CAN



RS485-A RS485-B
RS485 parallel communication



RS485 -- 8P8C vertical RJ45 socket		CAN -- 8P8C vertical RJ45 socket	
RJ45 Pin	Definition description	RJ45 Pin	Definition description
1、8	RS485-B1	9、10、11、14、16	NC
2、7	RS485-A1	12	CANL
3、6	GND	13	CANH
4、5	NC	15	GND

引脚定义Pin definition

RS485 -- 8P8C vertical RJ45 socket		RS485 -- 8P8C vertical RJ45 socket	
RJ45 Pin	Definition description	RJ45 Pin	Definition description
1、8	RS485-B1	1、8	RS485-B1
2、7	RS485-A1	2、7	RS485-A1
3、6	GND	3、6	GND
4、5	NC	4、5	NC

Rs485 parallel communication pin definition
RS48并机通信引脚定义

RS232 communication

The battery pack can communicate with the upper computer through the RS232i nterface, so that the upper computer can monitor various battery information,including battery voltage,current,temperature,status and battery production information.The default baud rate is 9600bps.

RS232 -- 6P6C vertical RJ11 socket	
RJ11 Pin	Definition description
2	NC
3	TX (Single board)
4	RX (Single board)
5	GND

Rs232 Communication

Weak current switch

When the switch is pressed,the battery pack has voltage output,the switch is reset,and the battery pack has no voltage output.

Power cable connection steps

1.Confirm that the inverter mains line is open and the PV line is open. Confirm that Power Box is shut down.

2.The ring terminal of the wiring cable is connected to the positive and negative poles of the inverter DC terminal.

3.The negative ring terminal at the other end is quickly connected to the negative port of the power box.

4.The positive ring terminal at the other end is quickly connected to the positive port of the power box.

Procedure for disconnecting the power cable

1.Make sure the mains line is open, and the PV line is open.

2.Turn off the inverter switch.

3.Press the power button to turn off the battery pack.

4.Remove the ring terminal of the negative power cord.

5.Remove the ring terminal of the positive power cord.

6.Remove the connecting ring terminal of the power cable.

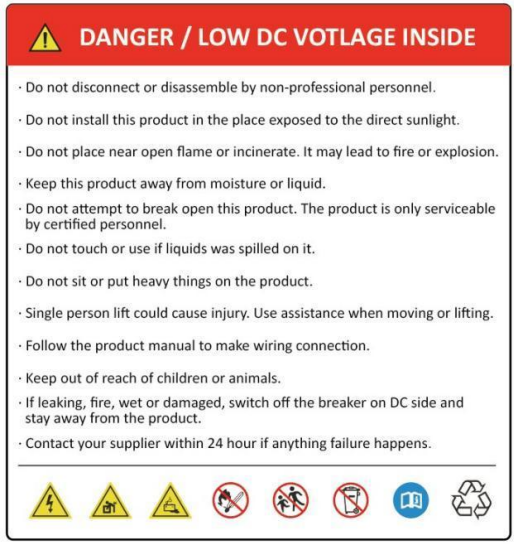
Warning

1.Follow the steps strictly.And make sure the interface is in good contact.

2.The installation and disconnection of the wiring cables should be operated by qualified installers,and the user must not operate in private.

3.The power cables may transmit large currents.Please make sure that the children can not touch the power Cable.

4.The power-on and power-off actions of the POWER button are not emergency operations for security incidents.If there is a safety problem in the home energy storage system,please disconnect the leakage switch and is olation switch(in the distribution box)in time.(Confirmation required).



System operation

1.The inverter provides control and monitoring functions through application programs.During normal operation,the battery pack is controlled by the inverter,and the power button of the battery pack shall be kept open.

2.Warning:Do not try to use third-party tools and diagnostic tools to communicate with Power Box between Power Box and the inverter.