Genus
energizing lives

MAXILIFE PRO
Lithium-ion Battery

User Manual

Product Name: Maxi Life Pro Battery

Model No: LFP512100 60P0 and LFP512200 60P0

Version No: V1.0

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1.Safety Precautions

It is very important and necessary to read the user manual carefully before installing or using the battery. Failure to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, or may damage the battery and the whole system.

The battery needs to be recharged within 12 hours after fully discharging.

Do not expose cable outside.

All battery terminals must be disconnected before maintenance.

Do not use cleaning solvents to clean the battery.

Do not expose the battery to flammable or harsh chemicals or vapors.

Do not connect battery with PV solar wiring directly.

Any foreign object is prohibited to be inserted into any part of the battery.

Any warranty claims are excluded for direct or indirect damage due to items above.

If the battery is stored for a prolonged time, it is requirement that they are charged every three months, and the SOC should be no less than 30%.

Symbol	Description
	Caution, risk of electric shock
	Heavy enough may cause severe injure
	Keep the battery away from open flame or ignition sources
	Keep the battery away from children
	Do not dispose of the product with household waste
	Recycling
	Read this manual before installation and operation

1.1 Note Before Installation

When receiving, please check the battery and packing list first, if the battery is damaged or spare parts are missing, please contact the dealer.

Before installation, be sure to cut off the grid power and make sure the battery is in the turned-off mode.

Wiring must be correct, do not mix-connect the positive and negative cables, and ensure no short circuit with the external device.

It is prohibited to connect the battery with AC power directly.

The embedded BMS in the battery is designed for 51.2 VDC, please do not connect

battery in series.

It is prohibited to connect the battery with different type of battery.

Please ensure the electrical parameters of battery system are compatible to inverter.

Keep the battery away from fire or water.

1.2 During Operation

If the battery system needs to be moved or repaired, the power must be cut off first and the battery is completely shut down.

It is prohibited to connect the battery with different type of battery.

It is prohibited to put the batteries working with faulty or incompatible inverter.

In case of fire, only dry powder fire extinguisher can be used, liquid fire extinguishers are prohibited.

Please do not open, repair, or disassemble the battery. We do not undertake any consequences or related responsibility due to violation of safety operation or violating of design, production, and equipment safety standards.

2.System Application Introduction

This product is a household energy storage battery pack. The system is matched with a 2.7/5.1/8.0/8.8/10.2/14.3/15.4kwh lithium iron phosphate battery pack. This product can be used in conjunction with electricity, so that electricity consumption can be adjusted. This product supports a variety of application modes, such as PV self-use surplus power to grid, peak shaving and valley filling, standby power supply, etc. The specific operation logic is as follows.

3.Product Specification

No	Item	General Parameter	
1	Nominal Voltage	51.2V	
2	Rated Capacity (Ah)	100 Ah	200Ah
3	Cell Model（LFP-3.2V）	100 Ah	100Ah
4	Pack configuration	16S1P	16S2P
5	Rate power (Wh)	5120	10240
6	Charging Voltage	55V	
7	Float charge Voltage	54.5V	
8	Discharge Cut-off Voltage	47V	
9	Recommended Charge Current	50A	100A
10	Recommended Discharge Current	50A	100A
11	Charge over Current protect	110A	210A
12	Discharge over Current protect	120A	220A

13	Pack Weight	53kg	95kg
14	Internal Impedance	≤100mΩ	
15	Communication protocol	CAN (500Kb/s)/RS485(9600b/S)	
16	BMS software	RS232	
17	Storage Conditions	20%-40% SOC, 0°C~35°C, humidity≤60%	

3.1Suggested number of batteries to match inverters of different specifications.

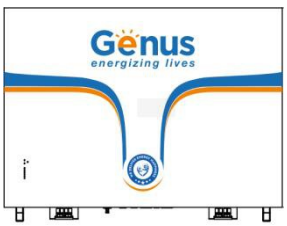
5.12kWh(100Ah)

Inverter size	Recommended N.O. batteries	Minimum N.O. of batteries
15kVA	4	3
10kVA	3	2
8kVA	2	2
5kVA	1	1
3kVA	1	1

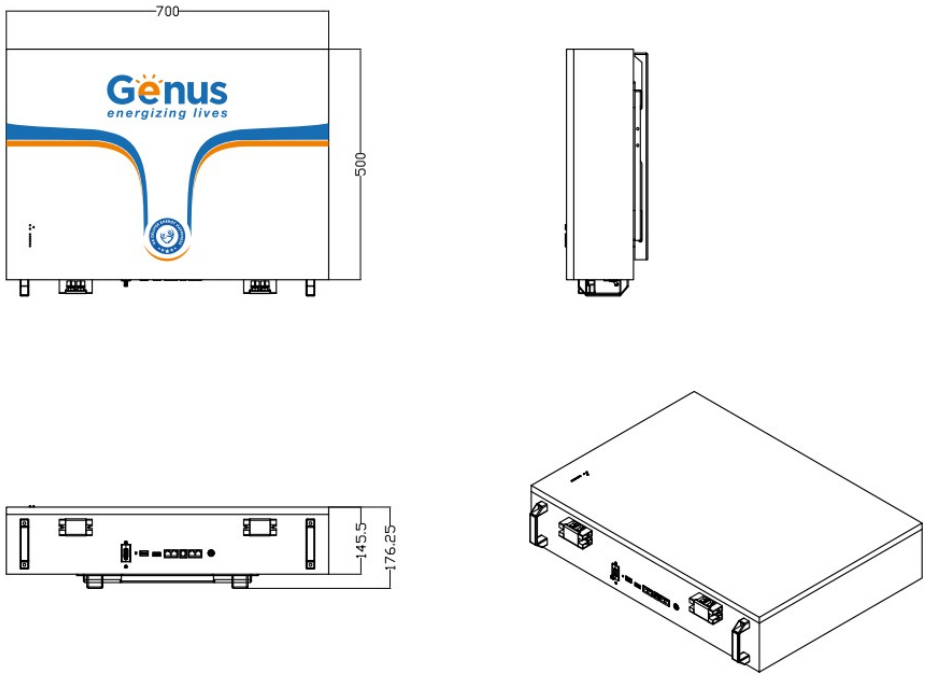
10.24kWh(200Ah)

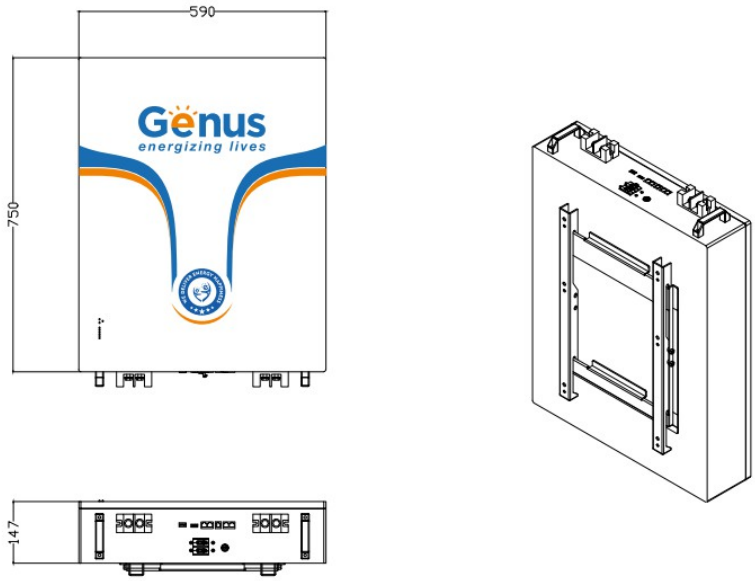
Inverter size	Recommended N.O. batteries	Minimum N.O. of batteries
15kVA	4	3
10kVA	3	2
8kVA	2	2
5kVA	1	1
3kVA	1	1

3.2Packing List

Battery pack	Output cable	Parallel communication line	user's manual
			

4.Battery Drawing

51.2V 100Ah

Product size :700*500*145.5mm

51.2V 200Ah

Product size :590*750*147mm

4.1.Interface Description

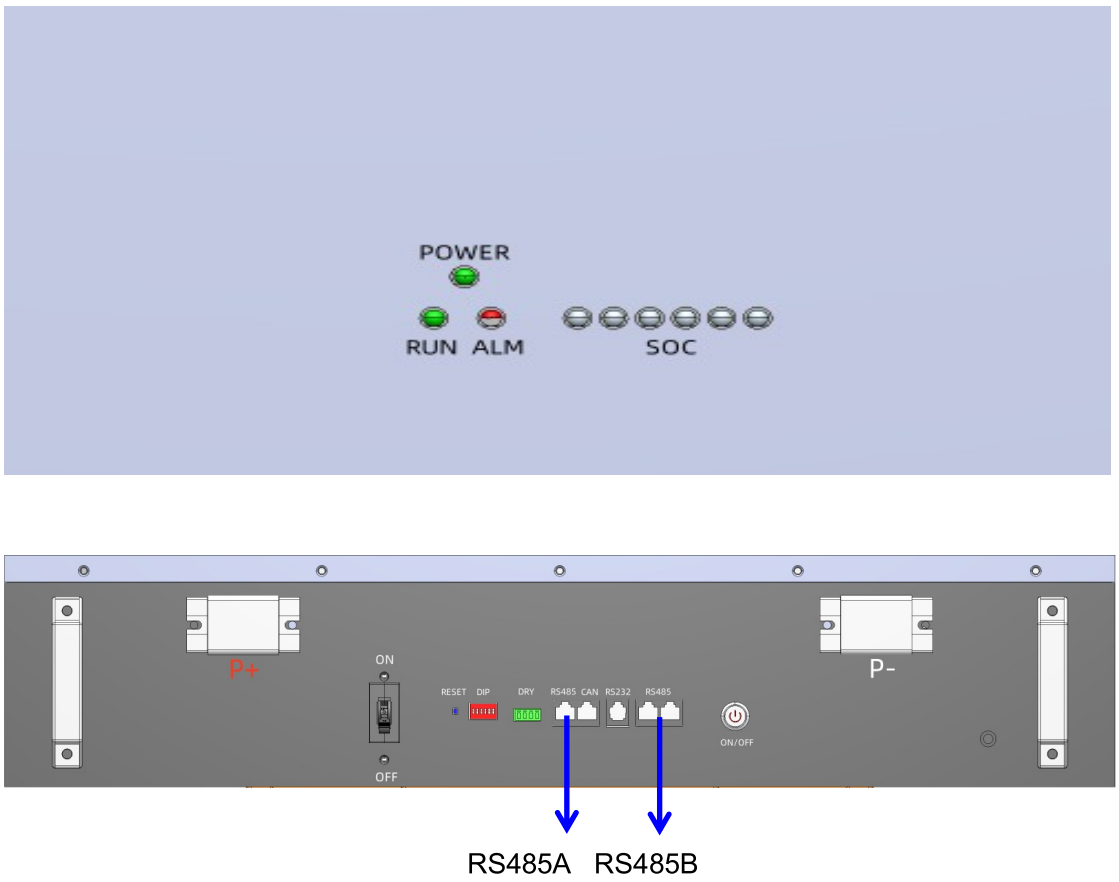
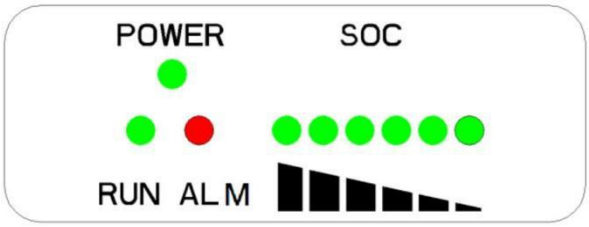


Figure2 . Interface Definition Description

Table1.Battery Pack Front Panel Port Definition

No.	Illustration	Silk-screen	Remark
1	Battery positive post	P+	Positive output
2	Battery negative post	P-	Negative output
3	Reset button	RESET	Reset battery
4	Dial switch	DIP	Address setting, range 1~63
5	Dry connection	DRY	Default: Pin1 to pin2 usually open, closed when SOC≤10%.pin3 to pin4 usually open, closed when SOC≥100%.
6	RS485A Port	RS485	Communication with monitoring equipment or inverters
7	CAN bus port	CAN	Communication with inverters
8	RS232 port	RS232	Communication with BMS software
9	RS485B port	RS485	Paralleling communication port
10	Power light	POWER	After startup, the LED is steady green
11	Running indicator light	RUN	After startup, the LED blinks green
12	Alarm indicator light	ALM	The fault is displayed in red
13	Capacity indicator light	SOC	Refer to Table 2
14	Breaker	ON/OFF	Battery string output is enabled

4.2 LED Display Definition



No.	Definition	Specification	Criteria
1	POWER Light	System no abnormal, always bright	
	RUN Light	See Table 2, Table 4	
	ALM Light	See Table 2, Table 4	
	SOC Light	See Table 3, Table 4	

Table 2 LED Working Status Indicators

Status	Normal/alarm /protection	RUN	ALM	Electricity indicator LED						Remark
Power off	Dormancy	off	off	off	off	off	off	off	off	All off
Stand by	Normal	Flash 1	off	According to the electricity indicator						Standby status
	Alarm	Flash 1	Flash 3							Module low voltage
Charge	Normal	Bright	off	According to the electricity indicator (power indicator maximum LED flash 2)						Maximum power LED flash(flash 2), overcharge alarmALM no flash
	Alarm	Bright	Flash 3							
	Overcharge protection	Bright	off	Bright	Bright	Bright	Bright	Bright	Bright	If there is no electricity, the indicator is in standby status
	Temperature, overcurrent, failure protection	off	Bright	off	off	off	off	off	off	Stop charging
Discharge	Normal	Flash 3	off	According to the electricity indicator						
	Alarm	Flash 3	Flash 3							
	Undervoltage protection	off	off	off	off	off	off	off	off	Stop discharging
	Temperature, overcurrent, short circuit, reverse connection, failure protection	off	off	off	off	off	off	off	off	top discharging
Invalid	Normal	off	off	off	off	off	off	off	off	Stop charge/discharging

Table 3 Description of capacity indicators

Status		Charge						Discharge					
Capacity indicator		L6	L5	L4	L3	L2	L1	L6	L5	L4	L3	L2	L1
	0～16.6%	off	off	off	off	off	Flash 2	off	off	off	off	off	Bright

SOC (%)	16.6～33.2%	off	off	off	off	Flash 2	Bright	off	off	off	off	Bright	Bright
	33.2～49.8%	off	off	off	Flash 2	Bright	Bright	off	off	off	Bright	Bright	Bright
	49.8～66.4%	off	off	Flash 2	Bright	Bright	Bright	off	off	Bright	Bright	Bright	Bright
	66.4～83%	off	Flash 2	Bright	Bright	Bright	Bright	off	Bright	Bright	Bright	Bright	Bright
	83～100%	Flash 2	Bright	Bright	Bright	Bright	Bright	Bright	Bright	Bright	Bright	Bright	Bright
Operating indicator		Bright								Flash (flash 3)			

Table 4 LED Flash Notes

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

Remark:

LED indicator light alarm can be enabled or prohibited through the upper computer, factory default is enable.

4.3 Battery Connection and Communication Instructions

RS485A : With dual isolation CAN communication, default communication rate 9600bps, active communication portal between battery and inverter.

CAN: With dual isolation CAN communication, default communication rate 500 Kbps, active communication portal between battery and inverter.

RS232 : BMS can communicate with the upper computer through the RS232 Port to monitor all kinds of information of the battery at the upper computer end, including battery voltage, current, temperature, state, SOC, SOH, and battery production information, etc., the default baud rate is 9600bps.

RS485B : With a dual RS485 interface to check PACK information, with a

default baud rate of 9600bps. To communicate with the monitoring equipment through the RS485, the monitoring equipment as the host, according to the address polling data, address setting range of 1~63.

Dial switch settings: when the PACK is used in parallel, different PACK can be distinguished by setting the address on the BMS dial switch, avoid setting the same address. The definition of the dial switch refers to the following table5（A maximum of 63 groups can be configured）

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Table 5 SettheAddressof Pack

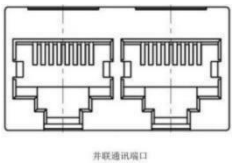
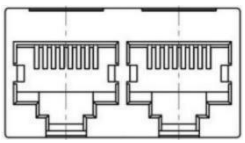
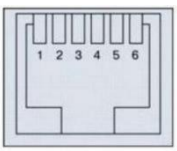
Address	Dial switch position						Remark
	#1	#2	#3	#4	#5	#6	
1	ON	OFF	OFF	OFF	OFF	OFF	Set as main Pack1
2	OFF	ON	OFF	OFF	OFF	OFF	Set as subordinate Pack2
3	ON	ON	OFF	OFF	OFF	OFF	Set as subordinate Pack3
4	OFF	OFF	ON	OFF	OFF	OFF	Set as subordinate Pack4
5	ON	OFF	ON	OFF	OFF	OFF	Set as subordinate Pack5
6	OFF	ON	ON	OFF	OFF	OFF	Set as subordinate Pack6
7	ON	ON	ON	OFF	OFF	OFF	Set as subordinate Pack7
8	OFF	OFF	OFF	ON	OFF	OFF	Set as subordinate Pack8
9	ON	OFF	OFF	ON	OFF	OFF	Set as subordinate Pack9
10	OFF	ON	OFF	ON	OFF	OFF	Set as subordinate Pack10
11	ON	ON	OFF	ON	OFF	OFF	Set as subordinate Pack11
12	OFF	OFF	ON	ON	OFF	OFF	Set as subordinate Pack12
13	ON	OFF	ON	ON	OFF	OFF	Set as subordinate Pack13
14	OFF	ON	ON	ON	OFF	OFF	Set as subordinate Pack14
15	ON	ON	ON	ON	OFF	OFF	Set as subordinate Pack15
16	OFF	OFF	OFF	OFF	ON	OFF	Set as subordinate Pack16
17	ON	OFF	OFF	OFF	ON	OFF	Set as subordinate Pack17
18	OFF	ON	OFF	OFF	ON	OFF	Set as subordinate Pack18
19	ON	ON	OFF	OFF	ON	OFF	Set as subordinate Pack19
20	OFF	OFF	ON	OFF	ON	OFF	Set as subordinate Pack20
21	ON	OFF	ON	OFF	ON	OFF	Set as subordinate Pack21
22	OFF	ON	ON	OFF	ON	OFF	Set as subordinate Pack22
23	ON	ON	ON	OFF	ON	OFF	Set as subordinate Pack23
24	OFF	OFF	OFF	ON	ON	OFF	Set as subordinate Pack24
25	ON	OFF	OFF	ON	ON	OFF	Set as subordinate Pack25
26	OFF	ON	OFF	ON	ON	OFF	Set as subordinate Pack26
27	ON	ON	OFF	ON	ON	OFF	Set as subordinate Pack27
28	OFF	OFF	ON	ON	ON	OFF	Set as subordinate Pack28
29	ON	OFF	ON	ON	ON	OFF	Set as subordinate Pack29
30	OFF	ON	ON	ON	ON	OFF	Set as subordinate Pack30
31	ON	ON	ON	ON	ON	OFF	Set as subordinate Pack31
32	OFF	OFF	OFF	OFF	OFF	ON	Set as subordinate Pack32
33	ON	OFF	OFF	OFF	OFF	ON	Set as subordinate Pack33
34	OFF	ON	OFF	OFF	OFF	ON	Set as subordinate Pack34
35	ON	ON	OFF	OFF	OFF	ON	Set as subordinate Pack35

36	OFF	OFF	ON	OFF	OFF	ON	Set as subordinate Pack36
37	ON	OFF	ON	OFF	OFF	ON	Set as subordinate Pack37
38	OFF	ON	ON	OFF	OFF	ON	Set as subordinate Pack38
39	ON	ON	ON	OFF	OFF	ON	Set as subordinate Pack39
40	OFF	OFF	OFF	ON	OFF	ON	Set as subordinate Pack40
41	ON	OFF	OFF	ON	OFF	ON	Set as subordinate Pack41
42	OFF	ON	OFF	ON	OFF	ON	Set as subordinate Pack42
43	ON	ON	OFF	ON	OFF	ON	Set as subordinate Pack43
44	OFF	OFF	ON	ON	OFF	ON	Set as subordinate Pack44
45	ON	OFF	ON	ON	OFF	ON	Set as subordinate Pack45
46	OFF	ON	ON	ON	OFF	ON	Set as subordinate Pack46
47	ON	ON	ON	ON	OFF	ON	Set as subordinate Pack47
48	OFF	OFF	OFF	OFF	ON	ON	Set as subordinate Pack48
49	ON	OFF	OFF	OFF	ON	ON	Set as subordinate Pack49
50	OFF	ON	OFF	OFF	ON	ON	Set as subordinate Pack50
51	ON	ON	OFF	OFF	ON	ON	Set as subordinate Pack51
52	OFF	OFF	ON	OFF	ON	ON	Set as subordinate Pack52
53	ON	OFF	ON	OFF	ON	ON	Set as subordinate Pack53
54	OFF	ON	ON	OFF	ON	ON	Set as subordinate Pack54
55	ON	ON	ON	OFF	ON	ON	Set as subordinate Pack55
56	OFF	OFF	OFF	ON	ON	ON	Set as subordinate Pack56
57	ON	OFF	OFF	ON	ON	ON	Set as subordinate Pack57
58	OFF	ON	OFF	ON	ON	ON	Set as subordinate Pack58
59	ON	ON	OFF	ON	ON	ON	Set as subordinate Pack59
60	OFF	OFF	ON	ON	ON	ON	Set as subordinate Pack60
61	ON	OFF	ON	ON	ON	ON	Set as subordinate Pack61
62	OFF	ON	ON	ON	ON	ON	Set as subordinate Pack62
63	ON	ON	ON	ON	ON	ON	Set as subordinate Pack63

4.4 Interface Diagram

Dry Connection Port

The default definition of dry connection port：Pin1 to pin2 usually open, closed when SOC≤10%. Pin3 to pin4 usually open, closed when SOC≥100%.

Table 6 Communication interface table					
Parallel communication		RS485B-8P8C		RS485B-8P8C	
		RJ45		RJ45	
		1,8	RS485-B	9,16	RS485-B
		2,7	RS485-A	10,15	RS485-A
		3,6	GND	11,14	GND
		4,5	NC	12,13	NC
External communication		RS485A port		CAN port	
		RJ45		RJ45	
		9,16	RS485-B1	1,2,3,6,7,8	
		10,15	RS485-A1	5	CAN-L
		11,14	GND	4	CAN-H
		12,13	NC	2	GND
Communication with host computer		RS232 RJ11			
		RJ11		RJ11	
		1	NC	4	RX
		2	NC	5	GND
		3	TX	6	NC

5.Battery Installation Instructions

5.1 Installation location

Make sure that the installation location meets the following conditions:
The building is designed to withstand earthquakes.
Far away from the sea to avoid salt water and humidity.
The floor is flat.
No flammable or explosive materials nearby.

Temperature and humidity stay at a constant level.

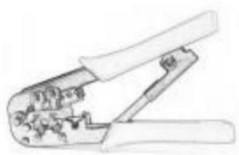
Minimal dust and dirt in the area.

No corrosive gases present, including ammonia and acid vapor.

Maxi Life batteries are IPX4 waterproof, so the battery could be installed indoor. If the ambient temperature is outside the operating range, battery will protect itself by shutting down. Frequent exposure to severe operating condition would exacerbate the performance and lifetime of the battery.

5.2 Installation Tools

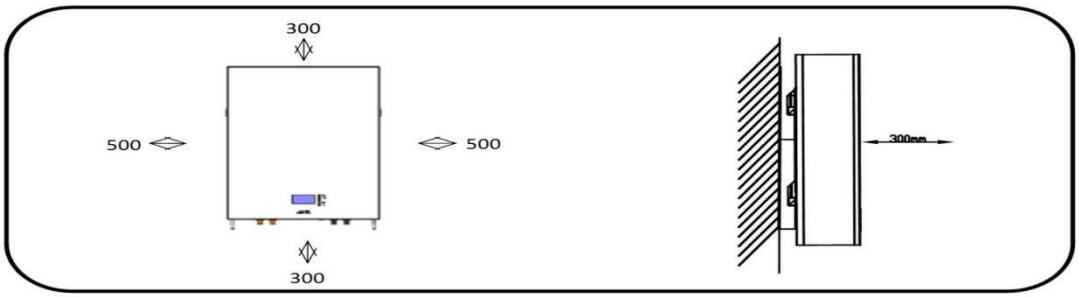
To install the battery pack, those following tools are probably required:

			
Phillips screwdriver	Torque wrench	Cable crimper	Wire clamp
			
Voltmeter	Tape measure	Drill	Flat-head screwdriver

		
Insulated glove	Safety goggles	Safety shoes

Space requirements: Observe the minimum clearance of the walls, other batteries or objects shown in the figure below to ensure adequate heat dissipation.

Direction	Minimum clearance (mm)
Upper side	300
Underside	300
Side	500
Front	300



1.2 Drill holes with a hole depth above 60mm to ensure sufficient strength to support the battery pack.

1.3 Install the expansion screw in the hole and tighten it, then fix the wall mounted bracket with the expansion screw.

Step 2: Hold the handle at the bottom of the battery, hang the battery pack on the wall mounted bracket.

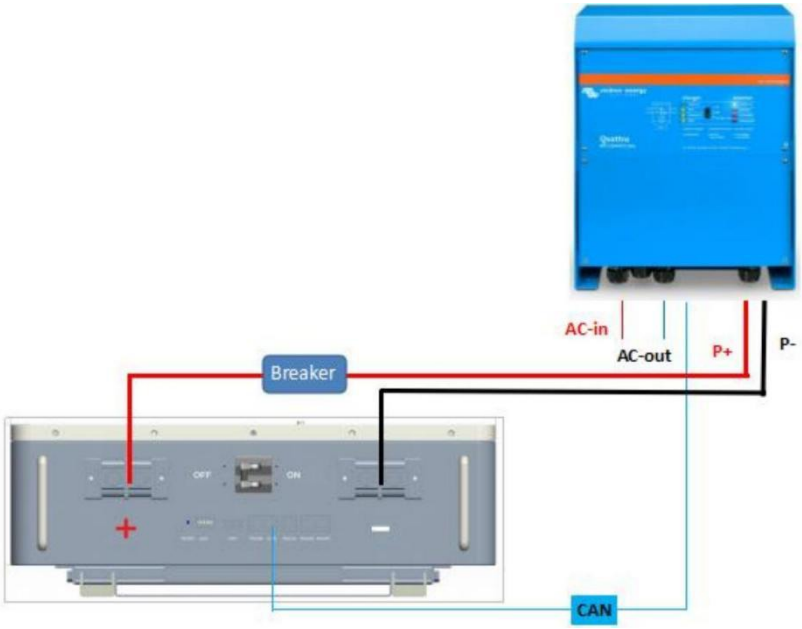
Step 3: Tighten the setscrews on left and right sides of the battery pack.

5.3 Installing battery strings in parallel.

Taking two 51.2V100Ah batteries as an example, two parallel power lines (25 square) are used to combine the positive and negative outputs of two batteries.

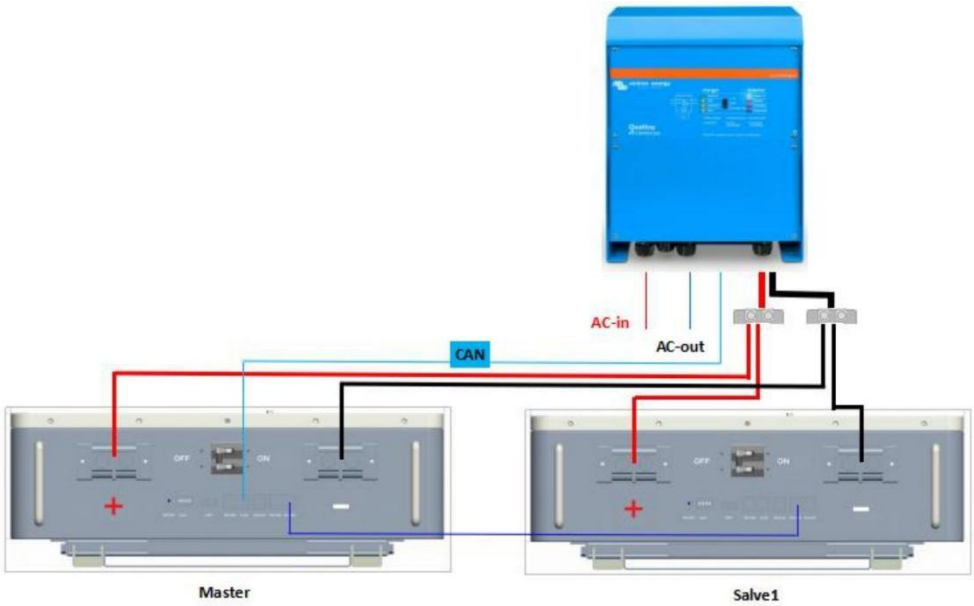
One battery pack's positive relates to another battery pack's positive; negative relates to negative. The communication between the battery packs adopts RJ45 network wire to connect through the RS485, the battery packs dial code address were set as table 5.

5.3.1 1pack---1 Inverter. Single mode.



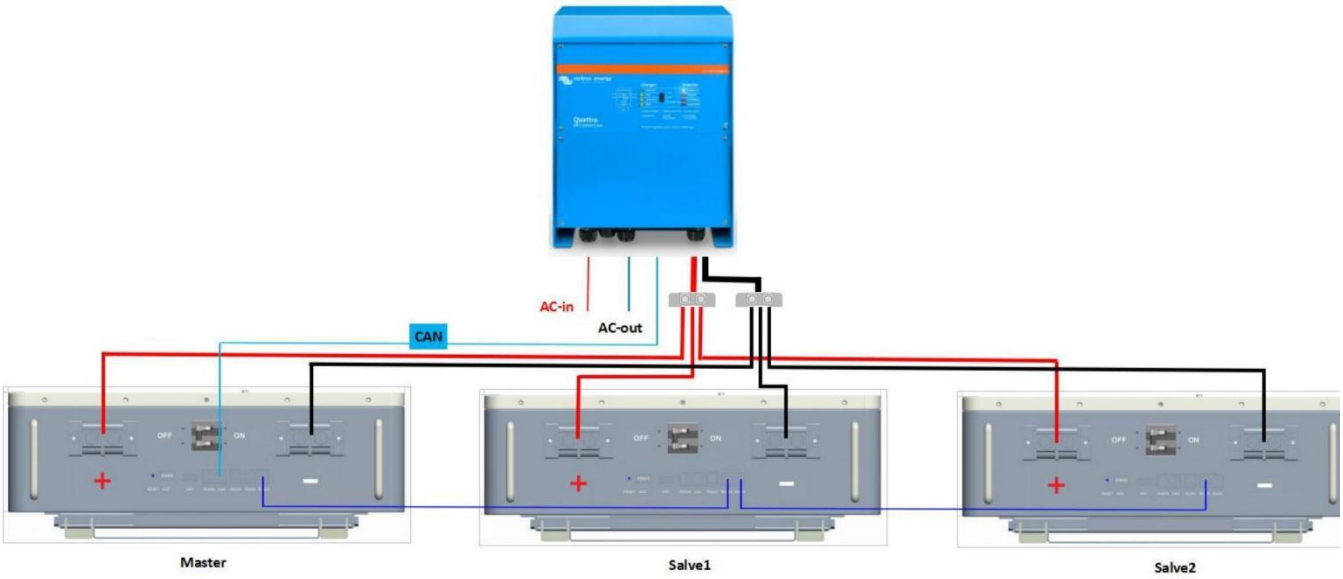
5.3.2 2pack--1 Inverter.

Pack 1 is slave; pack 2 is master; Negative and Positive power cable has the same length.



5.5.3 3pack--1 Inverter.

Pack 1 ,2 is slave; pack 3 is master. More pack are parallel, one pack is master, other are slave. Negative and Positive power cable has the same.



Note: when a single unit is used, the inverter uses the battery as the main machine to communicate; when multiple batteries are used in parallel, the batteries inside are connected in parallel through the RS485B hardware interface, RS485A/CANBUS communicates with the inverter.

Genus Innovation Limited
(A Kailash Group Company)

Corporate Office:
SPL-2B, RIICO Industrial Area, Sitapura, Tonk Road, Jaipur-302022, (Raj.), India
Tel.: +91-141-7102400/500 Email : info@genusinnovation.com