

Rack Battery Pack

User Manual



Product Name: 48V52/100/104/134/156/174/200/280/300Ah Battery

Model No: B-LFP48-52/100/104/134/156/174/200/280/300E

Version No: V2.7

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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 2.7/5.1/5.3/6.9/8.0/8.9/10.2/14.3/15.3kwh 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.

2.1. PV Self-use Surplus Power to Grid

Under the condition of good illumination in the daytime, the DC power from PV panel is changed into AC through inverter to supply power for household load. If the household load cannot run out of photovoltaic power, the remaining power will be stored in the battery. If the battery is full, photovoltaic power will be supplied to the grid. In the night or rainy days, photovoltaic cannot generate electricity. The battery supplies power to the home load through an inverter. If the battery SOC is low, the household load will take power from the grid.

2.2. Peak Shaving and Valley Filling

In some countries and regions where peak valley time of use price is implemented, if the difference between peak price and low price is large, the application mode of peak shaving and valley filling can be adopted in energy storage system. In the low electricity price period, the energy storage system is charged; in the peak period of electricity price, the energy storage system supplies power to the household load. It can avoid users using too much power grid when the electricity price is high and save energy expenditure.

2.3. Standby Power Supply

In some extreme weather (such as tornadoes, typhoons, hail), or substation operation failure, power supply will be interrupted. If the energy storage system is installed, the user can still enjoy sufficient power guarantee under this situation.

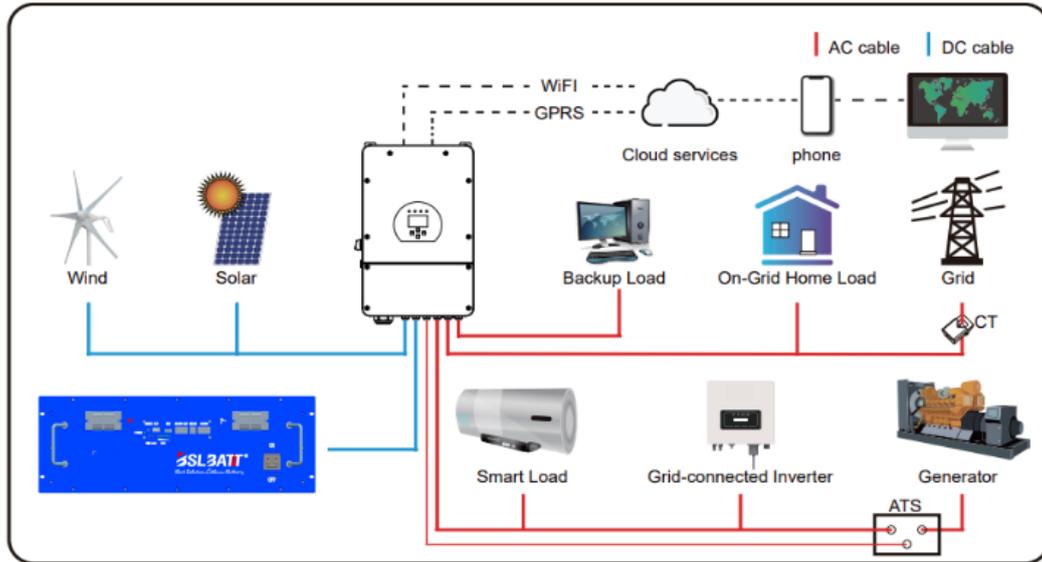


Figure 1. System Connection Diagram

3. Product Specification

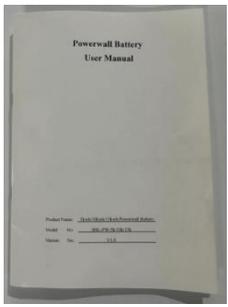
N	Item	General Parameter								
1	Nominal Voltage	51.2V								
2	Rated Capacity (Ah)	52	100	104	134	156	174	200	280	300
3	Cell Model (LFP-3.2V)	52Ah	100Ah	52Ah	67Ah	52Ah	87Ah	100Ah	280Ah	300Ah
4	Pack configuration	16S1P	16S1P	16S2P	16S2P	16S3P	16S2P	16S2P	16S1P	16S1P
5	Rate power (Wh)	2662	5120	5325	6861	7987	8909	10240	14336	15360
6	Charging Voltage	55V								
7	Float charge Voltage	54.5V								
8	Discharge Cut-off Voltage	47V								
9	Recommended Charge Current	26A	50A	52A	67A	78A	87A	100A	140A	150A
10	Recommended Discharge Current	26A	50A	52A	67A	78A	87A	100A	140A	150A
11	Max Continuous Charge Current	40A	80A		130A			160A		
12	Max Continuous Discharge Current	50A	100A		150A			200A		
13	Pack Weight (Kg)	30	53	55	62	71	78	95	110	130
14	Internal Impedance	$\leq 100\text{m}\Omega$								
15	Communication protocol	CAN (500Kb/s)/RS485(9600b/S)								
16	Host software and Communication	RS232								
17	Operation Temperature Range	Charge: 0~55°C								
		Discharge: -20~55°C								
18	Storage Temperature	0°C~35°C								

Note: Parameters can be adjusted according to customer requirements

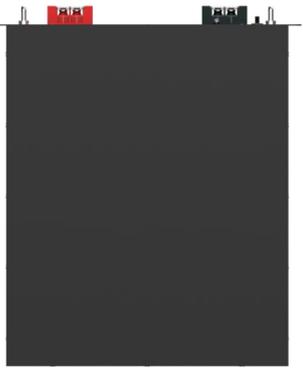
3.1. Suggested number of batteries to match inverters of different specifications.

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

3.2. Packing List

Battery pack	Output cable	Parallel communication line	user's manual
			

3.3. Battery Drawing

51.2V 52Ah	51.2V 100Ah	51.2V 100Ah (UL)
		
		

Product size :348*442*136 mm	Product size :538*442*136mm	Product size :495*442*177mm
51.2V 134Ah	51.2V 156Ah	51.2V 174Ah
		
		
Product size :560*442*136 mm	Product size :700*442*136 mm	Product size :780*442*136 mm
51.2V 200Ah	51.2V 280Ah	51.2V 300Ah
		
		
Product size :590*483*225mm	Product size :700*442*267mm	Product size :780*442*222mm

3.4. Interface Description

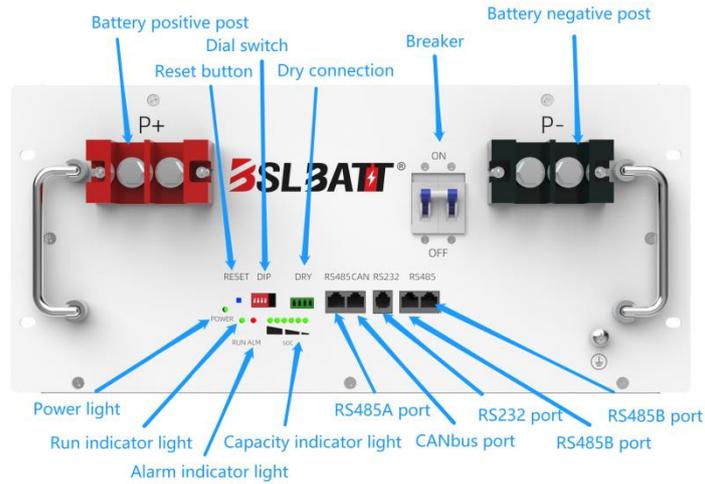
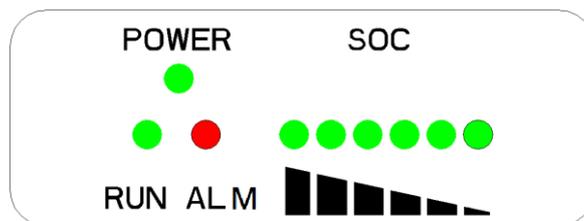


Figure 2

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 2~15
5	Dry connection	DRY	pin3 to pin4 often open, closed with low power alarm. Pin1 to pin2 often open, closed when
6	RS485A Port	RS485	RS485 communication with monitoring equipment
7	CAN bus port	CAN	CAN bus and inverter connection ports
8	RS232 port	RS232	RS232 communication port
9	RS485B port	RS485	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

3.5. 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	off	All off
Standby	Normal	Flash 1	off	According to the electricity indicator						Standby status	
	Alarm	Flash 1	Flash 3	According to the electricity indicator						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 alarm ALM no flash	
	Alarm	Bright	Flash 3	According to the electricity indicator						Maximum power LED flash(flash 2), overcharge alarm ALM no flash	
	Overcharge protection	Bright	off	Bright	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	off	Stop charging
Discharge	Normal	Flash 3	off	According to the electricity indicator							
	Alarm	Flash 3	Flash 3	According to the electricity indicator							
	Undervoltage protection	off	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	off	top discharging
Invalid	Normal	off	off	off	off	off	off	off	off	off	Stop

communication portal between battery and inverter.

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.

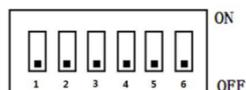


Table 5 Set the address of pack

Address	Dial switch position						Remark
	#1	#2	#3	#4	#5	#6	
0	OFF	OFF	OFF	OFF	OFF	OFF	Stepless connection, Single use
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

3.7. Interface Diagram



1 2 3 4

Dry Connection Port

The definition of dry connection port: Pin1 to pin 2 always open, close when broken and protection, Pin3 to Pin4 always open, close when low SOC alarm.



Parallel communication		RS485B-8P8C	RS485B-8P8C
		RJ45	RJ45

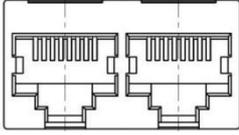
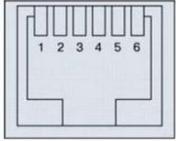
		1,8	RS485B	9,16	RS485B
		2,7	RS485A	10,15	RS485A
		3,6	GND	11,14	GND
		4,5	NC	12,13	NC
External communication		RS485A port		CAN port	
		RJ45		RJ45	
		1,8	RS485-B1	1,2,3,6,8	NC
		2,7	RS485-A1	5	CAN-L
		3,6	GND	4	CAN-H
		4,5	NC	7	GND
Communication with host computer		RS232		RJ11	
		RJ11		RJ11	
		1	NC	4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

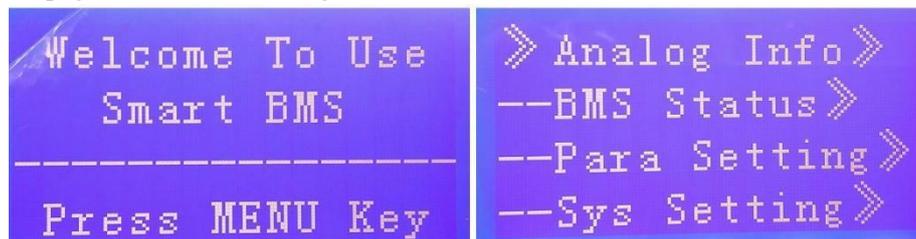
Table 6 Communication interface table

4. Display rendering.



4.1. Main menu page

After BMS is activated, will show the welcome screen, press the “MENU” button to enter the main menu page. As shown in the figure below:



4.1.1. Battery parameters page

When the cursor “>>” is point to “Battery Parameters Acquisition”, press “ENTER” key will enter the page of “Battery Parameters Acquisition”, As shown in the figure below:

```

>> PackV: 53.22 V  --T1: 26.1℃  --PCB_T: 27.4℃
--Im: 0.00 A      --T2: 26.2℃  --ENV_T: 27.4℃
--Temperature>>  --T3: 26.6℃
--Cell Voltage>> --T4: 26.2℃

--Cell01: 3333 mV >> CellCapacity>>  SOC: 0.00 %
--Cell02: 3333 mV  FCC: 50.0AH
--Cell03: 3331 mV  Rm : 0.0AH
--Cell04: 3329 mV  CC : 0

```

4.1.2. Protocol selection function.

(You can switch protocols through the display screen to quickly match inverters of different brands)

```

--Status: DSG
--Record>>
--BMS Status>>
>> Protocol>>>>

>> PACE CAN      >> SMA CAN
--PYLON CAN      --GOODWE CAN
--GROWATT CAN    --Sofar CAN
--Victron CAN    --Studer CAN

>> PACE 485      >> WOW 485
--PYLON 485
--GROWATT 485
--Victron 485

```

When the cursor “>>” is point to “Battery Status”, press “ENTER” key will enter the page of “Battery Status”, As shown in the figure below:

```

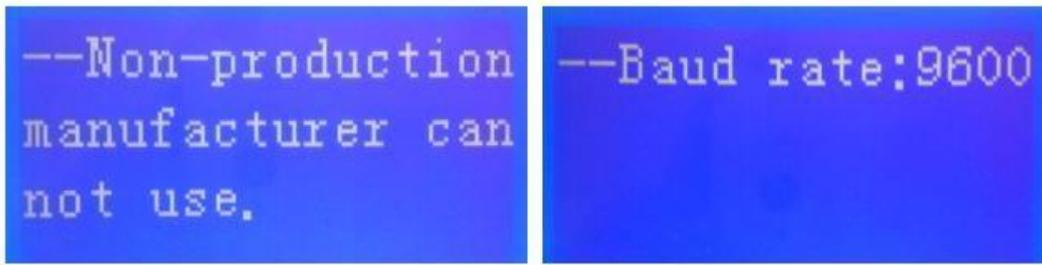
>> Status: Idle  >> OVP: 0      >> UV : N
--Record>>      --UVP: N
--BMS Status>>  --OC: N
--OCP: N

>> SCP: 0        >> SCP: N      >> OT : N
--O/UTP: 0      --Failure: N  --OTP: N
--OCP: 0        --OVP: N
--UVP: 7        --OVP: N

```

4.1.3. Parameter Settings

Screen cannot set parameters Baud Rate: 9600, Can not be set.



4.1.4. Key description

SW1----MENU, SW2----ENTER, SW3----DOWN, SW4----ESC.

Each item is “»” or “—” as a beginning, among them “»” shows the current cursor position, press “DOWN” key can move the cursor position; with “»” end of the project, the content of the said project has not shown, press “ENTER” key can enter the corresponding page.

Press “ESC” key can be returned at the next higher level directory; In any position, press “MENU” key can return to the main menu page.

When BMS inter sleep mode, press any key, can activate the screen.

Inter standby mode, with no keystrokes 1 minutes later, LCD will enter Shutdown mode press any key, screen can be activated.

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.
- Optimal ambient temperature is between 0°C and 55°C.
- Temperature and humidity stay at a constant level.
- Minimal dust and dirt in the area.
- No corrosive gases present, including ammonia and acid vapor.

BSL 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. The battery optimal operate temperature is 0°C to 55°C. Frequent exposure to severe operating condition would exacerbate the performance and lifetime of the battery.

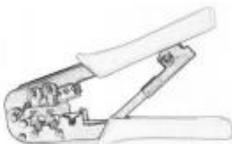
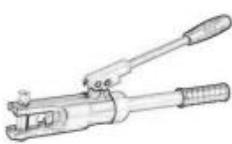
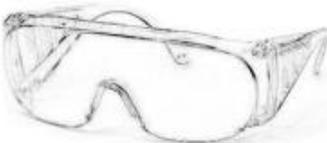
NOTICE

Make sure that the cross-sectional area of charging cables is 25 to 35 mm²

A breaker between BSL battery and inverter was recommended to install and the breakers min. current should meet twice the rated current of the system or following with local regulations.

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	

5.3. Installation steps

Step 1:

When receiving the product, first check whether all parts are complete, if not, please report to the Dealer.

Step 2:

Choose a suitable installation location and require the battery pack to be placed at a safe. The first load-bearing plate should be at least 15cm away from the ground. The distance between the load-bearing plates is about 205mm.

We recommend that the installation distance be 205mm.

Step 3:

Mark the position of the nut on the cabinet with the mounting bracket and clamp the nut into the cabinet. See Figure3.

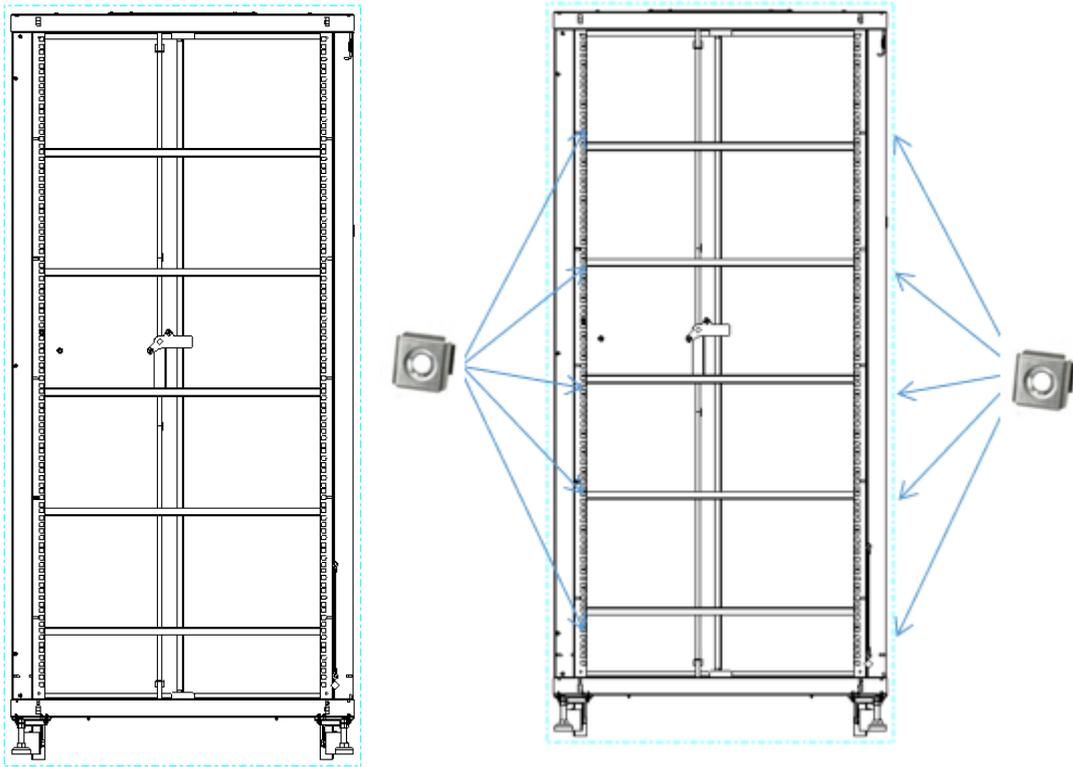


Figure 3

Step 4:

As shown in the below, install the battery pack. The pack is too heavy, please use a special lifting device to lift the pack for operation and safety protection. Put the battery module into the cabinet and screw it, as shown in Figure 4.

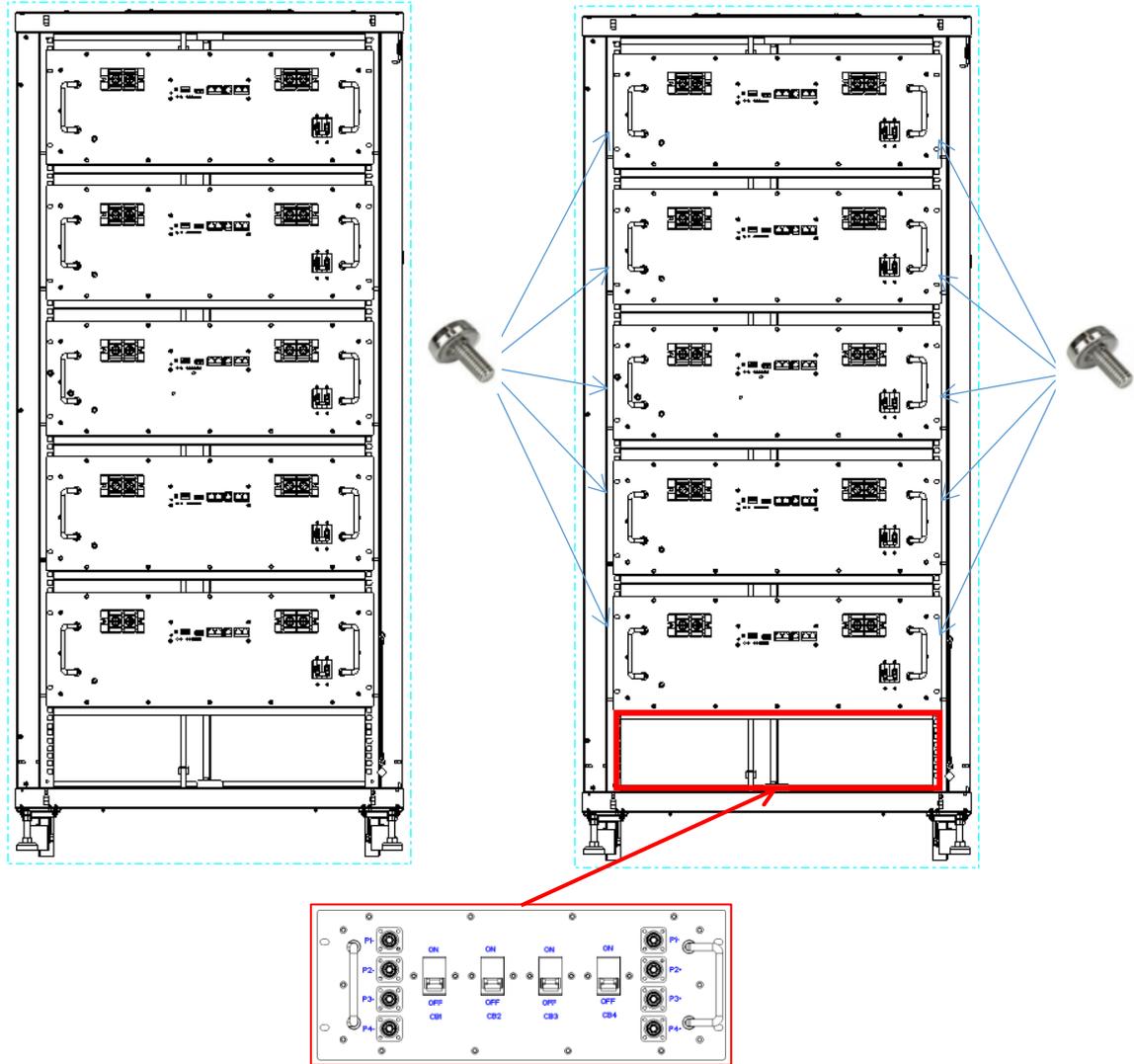


Figure 4

Step 5:

When more than 2PCS packs are connected in parallel, then we recommend you install combiner box. 4 locations we recommend you install the combiner box. First select location is Top and Bottom.

Step 6:

Connect the wiring of the Pack as shown below. See figure 11. If inverter need CAN BUS port /RS485 port. Please insert communication cable (RJ45) to CAN port or RS485A, RS485B only be used for battery packs parallel mode.

Step 7:

Set the address of pack. This a important step, you can see there is 4bit or 8bit coder in bottom of Pack. Please set as bill 1 and 2.

bit CODER: this is Binary CODER, Calculated by 8 4 2 1 BCD code. PACK 1 set as Master (BCD 1 0 0 0), see Table5.It support 15 PCS pack(max) in parallel. Address “0” is only used for single mode.

Step 8:

Connect the parallel communication cable (yellow network line). Any Pack has 2 PCS RS485B

port for parallel communication, 1 PCS RS485A and 1PCS CAN port for inverter or other device. RS232 port only used for host software and update the firmware. See Figure 5

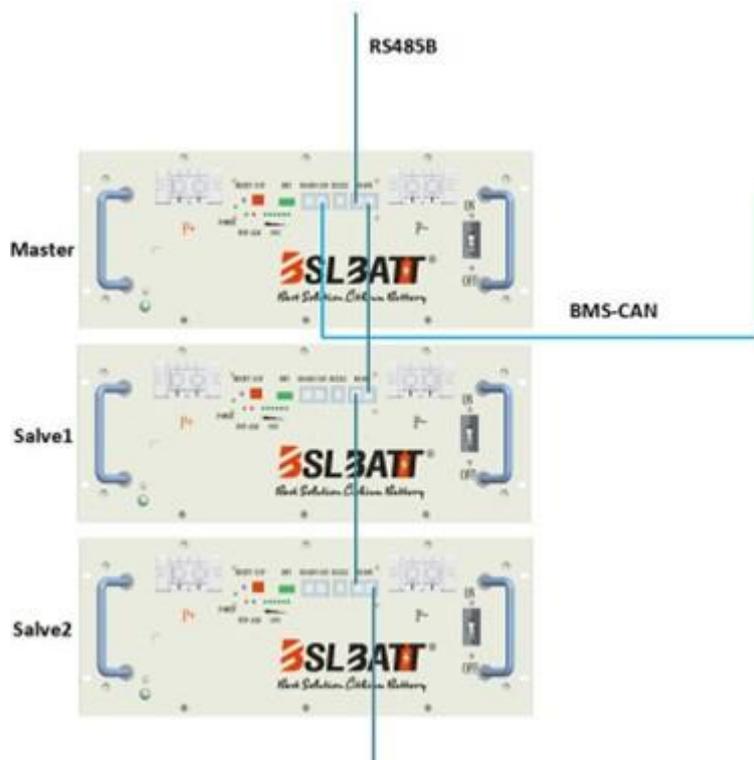


Figure 5

Step 9:

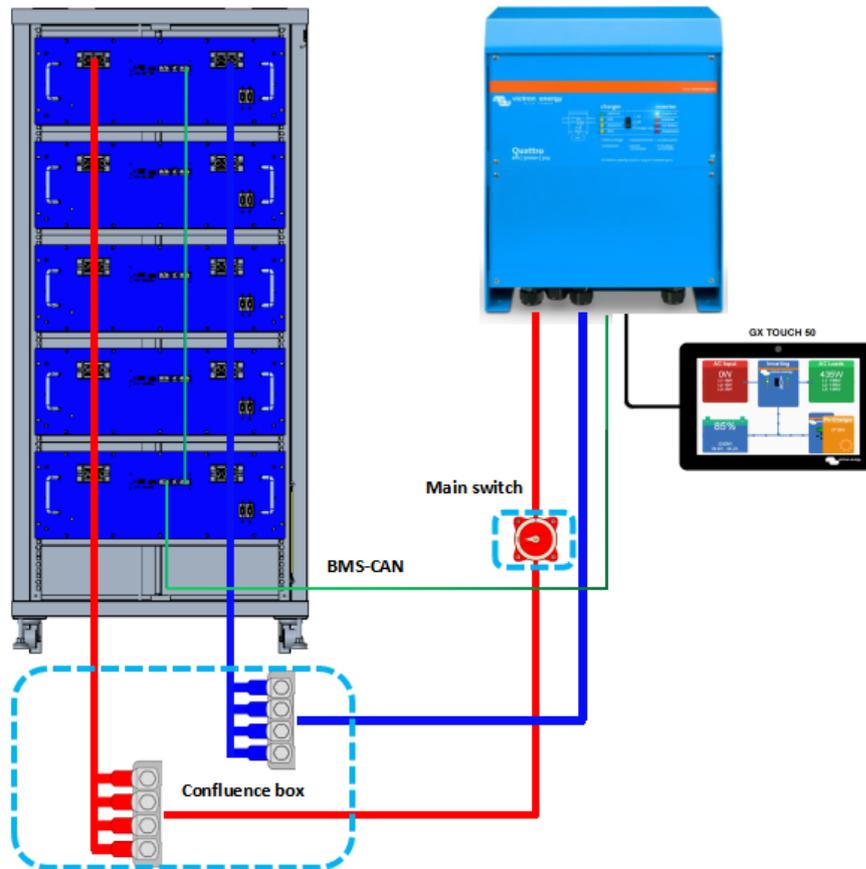
Start and stop battery pack. Confirm that the operation is correct, and the battery function can be turned on after the wiring is correct, and You can press down power switch(ON/OFF) 3 second for start battery pack, then turn on switch in the Breaker, the battery start working and output, it enter standby mode(if there is no power switch, please use a little pole and press down the RESET key 3-6second, like as follow picture, LED indicate all running status and check itself). See Figure 6



Figure 5

Step 10:

Running the device, set the external charger or inverter parameters, please set according to the corresponding operation manual. Can not exceed the rated parameter requirements.

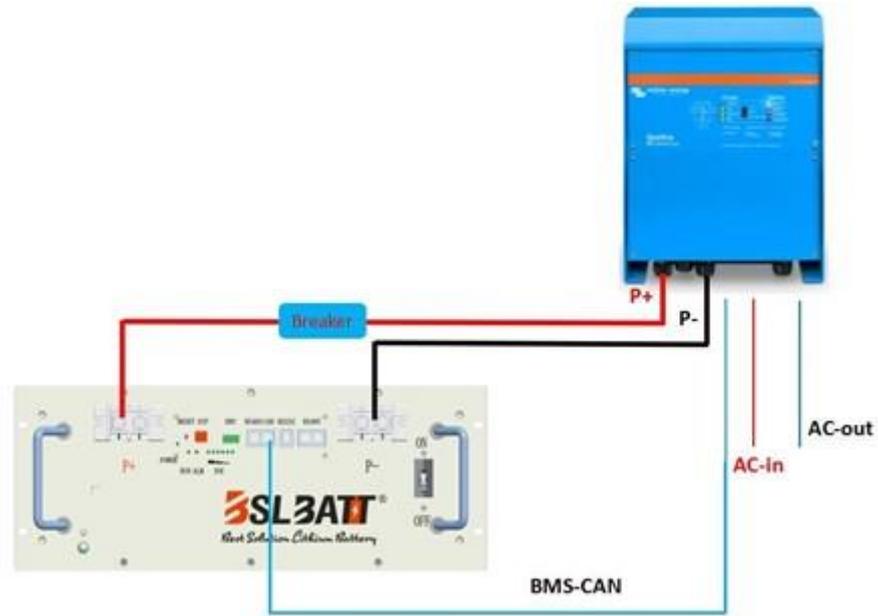


5.4. Installing battery strings in parallel.

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.

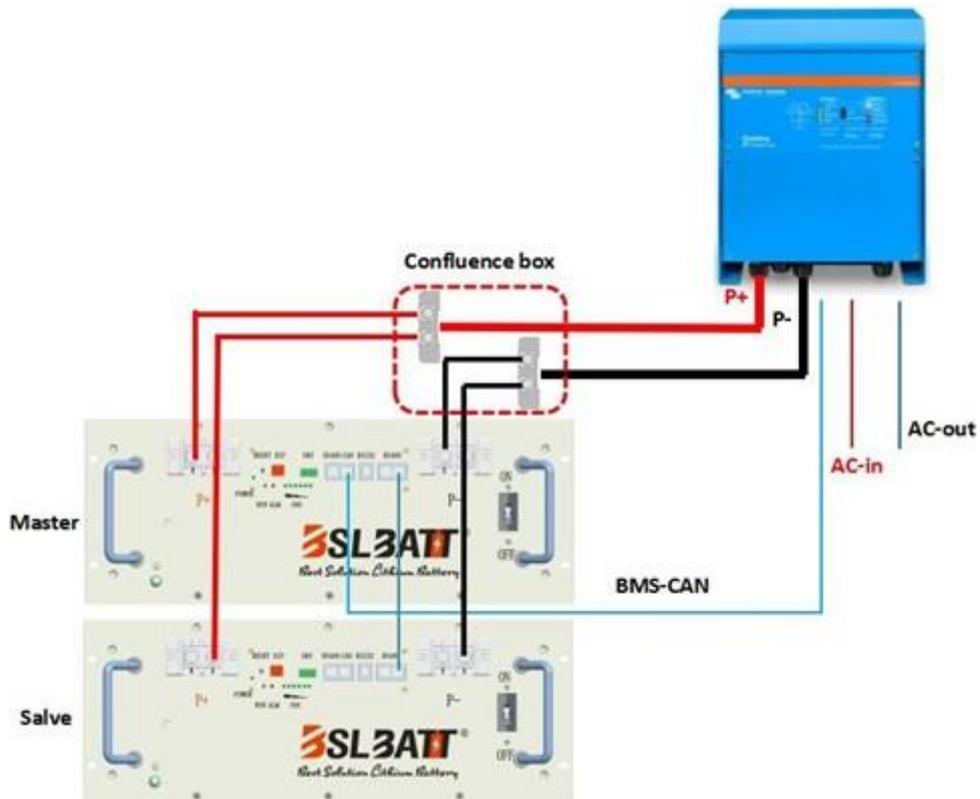
One battery pack's positive relates to another battery pack's positive; negative relates to negative. The communication between the battery packs adopts RJ45 network wire to connect through the RS485, the battery packs dial code address were set as table 5.

5.4.1. 1pack---1 Inverter. Single mode.



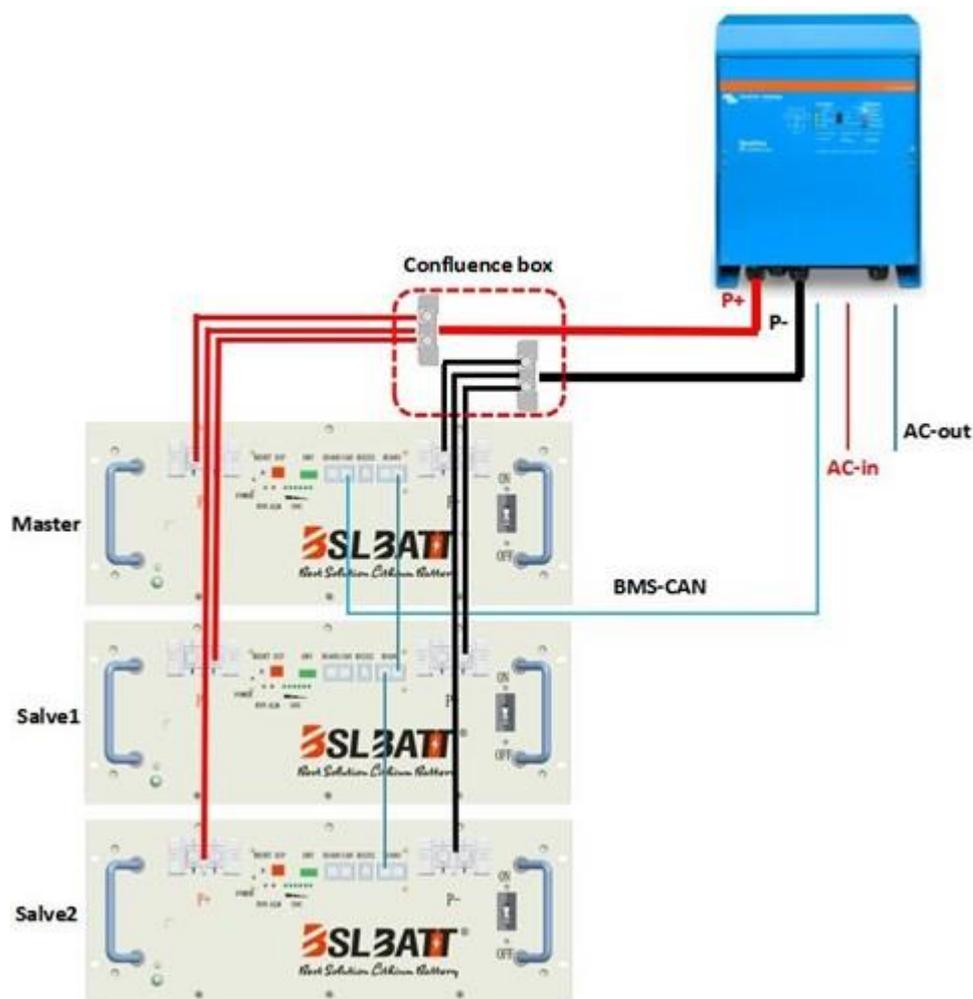
5.4.2. 2pack---1 Inverter.

Pack 1 is slave; pack 2 is master; Negative and Positive power cable has the same length.
Figure11



5.4.3. 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. Figure12.



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.

6. Appendix1

When the equipment manufacturer confirms that it is necessary, it can authorize to provide the customer with the host software and operating instructions.



Figure 7 RS232 Serial port communication device

Host soft operation:

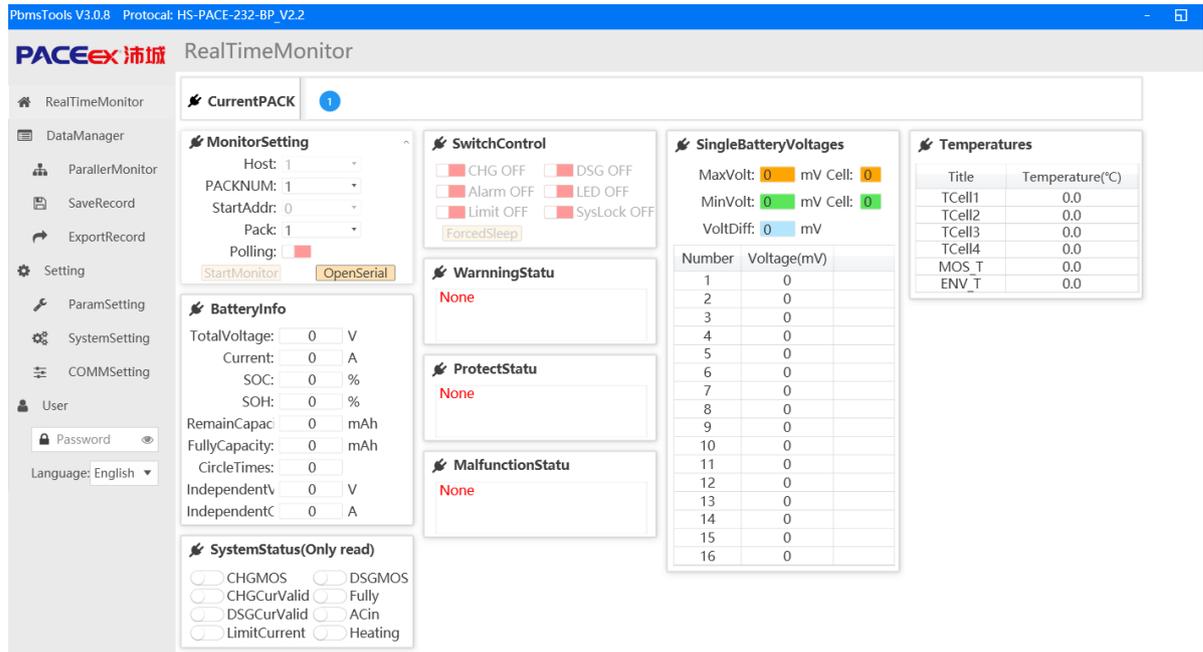
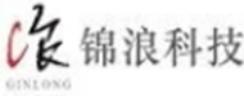


Figure 8

7. Appendix2

Multi Inverter protocol support:

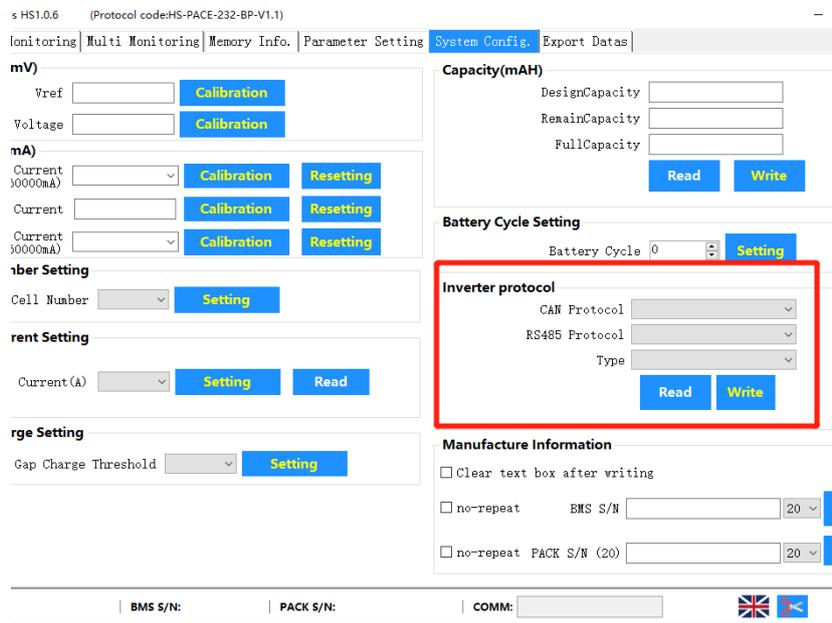
NO	Type	Inverter	Protocol
1	CAN	Pylon 	PYLON CAN LV V1.3-2019.03.01
2		DEYE/Sunsynk 	PYLON CAN LV V1.3-2019.03.01
3		Growatt 	Growatt CAN LV V1.09-2020.10.22
4		Victron 	Victron CAN 2021.01.07
5		Luxpower 	Luxpowertek CAN V1.0-2020.02.11
6		SMA 	SMA CAN V2.0
7		Goodwe 	GoodWe CAN Inverter LV V1.7-2020.02.28

8	Studer		STUDER CAN V1.02-2018.06.14
9	Sofar		SofarSolar CAN inverter V6
10	Ginlong/Solis		GINLONG CAN LV V1.0-2019.12.28
11	TBB_LITHIUM		TBB CAN V1.05-2021.04.20
			TBB CAN V1.1-2021.10.21
12	Daneng		DANENG CAN V10-2022.10.10
13	Aiswei		AISWEI CAN V1.0
14	SAJ		SAJ CAN V1.9-2022.06.30
15	MUST		MUST CAN V2.0.2-2021.06.02
16	Megarevo		PYLON CAN LV V1.3-2019.03.01
17	Afore		Afore CAN Hybrid Inverter V2.2-2023.06.02

1	RS485	Pylon		PYLON RS485 LV-BPB V3.5-2019.08.07
2		DEYE/Sunsynk		PYLON RS485 LV-BPB V3.5-2019.08.07
3		Growatt		Growatt RS485 V2.01-2019.02.13
4		Voltronic		Voltronic RS485 Inverter V1.0-2018.09.11
5		Phocos		Phocos RS485 2021.04.07
6		Luxpower		Luxpowertek RS485 inverter V0.3-2020.07.06

7	WOW		WOW RS485 Modbus V1.3-2017.06.27
8	Sorotec		Sorotec RS485 Inverter V1.22-2017.11.28
9	Hypon		HYPONTECH RS485 Modbus V2.0-2023.06.29
10	Afore		Afore RS485 Hybrid Inverter V1.02-2022.03.07

Default setting: CANBUS - Victron, RS485-DEYE.



s HS1.0.6 (Protocol code:HS-PACE-232-BP-V1.1)

Monitoring Multi Monitoring Memory Info. Parameter Setting **System Config.** Export Datas

mV
Vref
Voltage

mA
Current 30000mA
Current
Current 30000mA

Number Setting
Cell Number

Current Setting
Current (A)

Charge Setting
Gap Charge Threshold

Capacity(mAH)
DesignCapacity
RemainCapacity
FullCapacity

Battery Cycle Setting
Battery Cycle 0

Inverter protocol
CAN Protocol
RS485 Protocol
Type

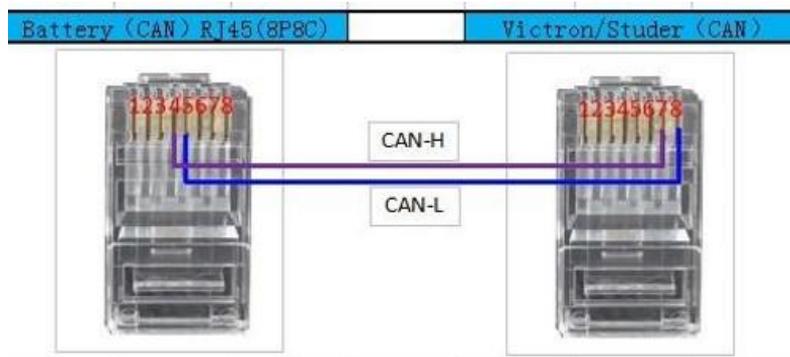
Manufacture Information
 Clear text box after writing
 no-repeat BMS S/N 20
 no-repeat PACK S/N (20) 20

BMS S/N: | PACK S/N: | COMM:  

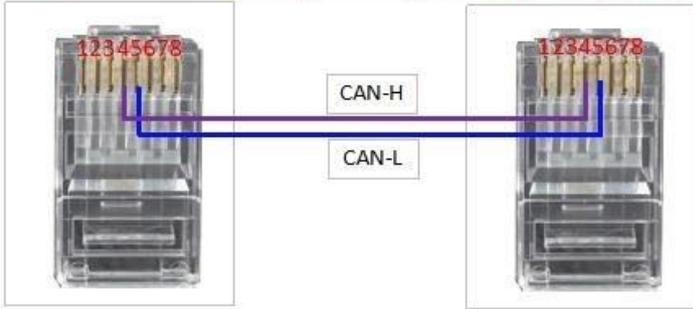
Remark:

- Please ask your sales team to provide password for host computer software administration enter.
- Different inverters the pin assignment is not the same, please contact inverter supplier for detailed RJ45 cables of pin assignment.

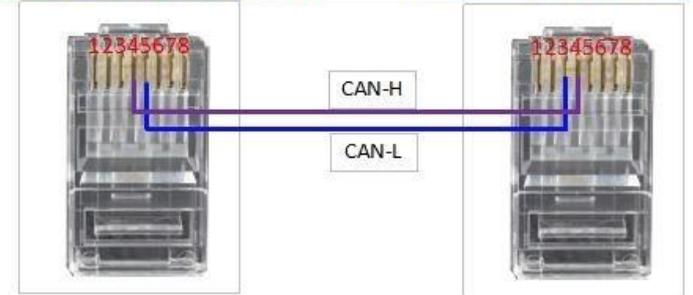
Connector pin configurations for the above-mentioned inverter manufacturers are listed below:



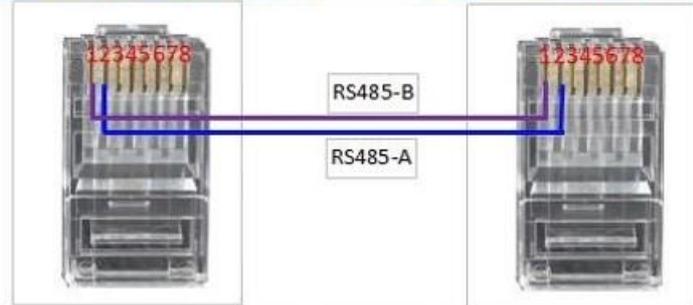
Battery (CAN) RJ45(8P8C)		SMA/Goodwe/Deye/Sunsysk/Sa far/Growatt (CAN)
--------------------------	--	---



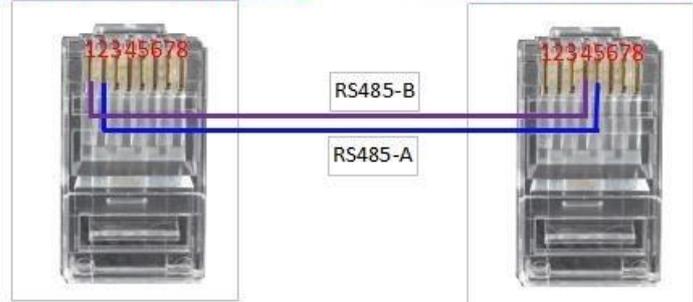
Battery (CAN) RJ45(8P8C)		Lux (CAN)
--------------------------	--	-----------

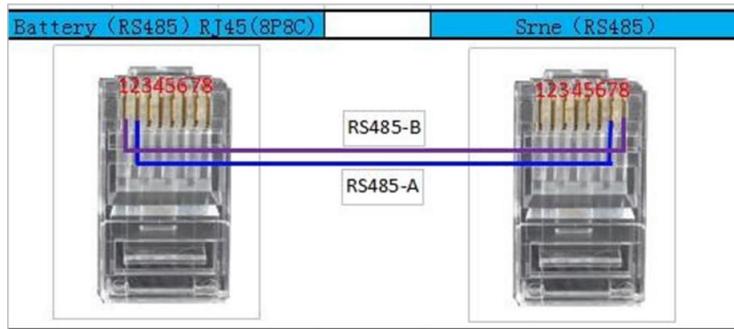


Battery (RS485) RJ45(8P8C)		Lux/Growatt (RS485)
----------------------------	--	---------------------



Battery (RS485) RJ45(8P8C)		Voltronic (RS485)
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8. Appendix 3

8.1. Abnormal Situation Addressing

1. What if the battery pack does not work properly after power on?

A: The most direct way is to connect to the upper computer, through the upper computer to find the fault phenomenon, causes can be roughly analyzed from the upper computer interface prompt alarm, protection, fault, and other information, it can also provide necessary reference for further testing.

2. Under what circumstances will RS232 communication fail?

A: The following steps can be taken to eliminate the problem:

- 1) Confirm that at least one of the indicator lights of the battery pack is on or flashing, that is, the battery pack is in normal working condition.
- 2) Confirm that the host computer software selects correct COM port (view device manager);
- 3) Confirm whether the RS232 communication line is fully inserted into the corresponding communication interface of the battery pack.

3. Under what circumstances will RS485 fail to parallel batteries communication?

A: The possibility of failure of parallel batteries communication is as follows: first ensure whether the parallel RS485 communication port has been connected, and then make sure that the address dialing position of the battery pack is correct, and make sure that the RS485 terminal Plug-in in the right place.

4. What is the fault alarm mechanism?

A: battery pack has fault alarm function, can be checked through upper computer software.

Failure includes:

- 1) Sampling failure: analog front-end and main control chip communication failure. When the fault occurs, the charge and discharge function is turned off, and the fault alarm can be automatically cleared after the fault is cleared.
- 2) Temperature NTC failure mainly detects whether the temperature NTC is short-circuited or disconnected. When the fault occurs, the charge and discharge function is turned off, and the fault alarm can be automatically cleared after the fault is cleared.
- 3) Cell failure: the voltage difference of the cell exceeds 1V, or the difference between the total voltage detection voltage and the sum of single cell voltage is more than 5V, or the minimum voltage is less than 0.5V. The voltage sampling line disconnect also reports the same fault. When

the fault is cleared, the fault alarm can be automatically cleared.

After the battery is connected to the system and shows over-current protection or short circuit protection. This is not a problem with the battery pack, but the capacity load of the electrical equipment is too large. Charging can remove the alarm or extend the battery pack pre-charge circuit delay time.

8.2. Product Responsibilities and Consulting

We will not be liable for the accidents resulting from operation breaking this specification and user manual.

We will not send separate notice, provided that the contents of this specification are changed due to improvement of product quality or technological upgrading, if you want to understand the latest information of this product, please contact us.

The shelf life of this product is within 60 months after it is delivered; we will maintain the product, which is in the warranty period for free of charge, if it has any product quality problems within the specified operation range, we may replace the relevant parts, if we fail to maintain it, To achieve the purpose of sustainable use without performance reduction; our after-sales service personnel will propose the specific maintenance and troubleshooting methods. In case of any questions, please contact us.

WARRANTY CARD			
Product Name		Model Number	
BATCH NO.		Shipping Date	
The Buyer		Phone	
Address			
If a device becomes defective during the agreed warranty period, please report the defective device situation to the original manufacturer with this warranty card. Supplier or end users required to send the warranty claim form to the original manufacturer or authorized service partner with all the necessary information. Customers must present this warranty card, battery purchasing invoice, extension warranty letter if applicable, and other related materials as well if required. It is the responsibility of the warranty holder to substantiate the warranty claim and show that the conditions are met. Please note the original manufacturer reserve the ultimate explanation right on this warranty card.			

THANK YOU FOR CHOOSING
LET'S DEVELOP TRUST AND BUSINESS