RACK BATTERY PACK USER MANUAL

@2023

Rack Battery Pack

User Manual

Product Name: 48V55/100/104/134/156/172/200/280/300Ah Battery

Model No: B-LFP48-55/100/104/134/156/172/200/280/300E

Version No: V2.2

Content

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 shutdown;
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 2.8/5.1/5.3/6.9/8.0/8.8/10.2/14.3/15.3kwh 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

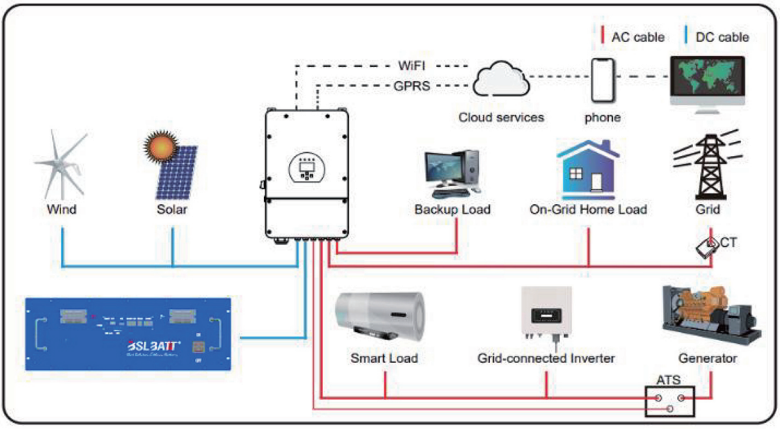
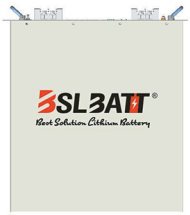
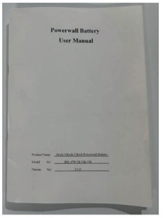


Figure 1. System Connection Diagram

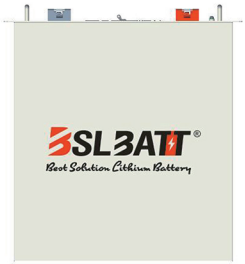
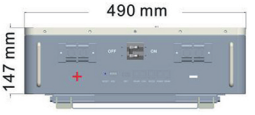
3.Product Specification

N	Item	General Parameter								
1	Nominal Voltage	51.2V								
2	Rated Capacity(Ah)	55	100	104	134	156	172	200	280	300
3	Cell Model(LFP-3.2V)	55Ah	100Ah	104Ah	67Ah	156Ah	86Ah	100Ah	280Ah	100Ah
4	Pack configuration	16S1P	16S1P	16S1P	16S2P	16S3P	16S2P	16S2P	16S1P	16S3P
5	Rate power(Wh)	2816	5120	5325	6861	7987	8806	10240	14336	15360
6	Charging Voltage	58.4V								
7	Float charge Voltage	55V								
8	Discharge Cut-off	40V								
9	Charging Current	40A	80A		120A			160A		
10	Max Discharging	50A	100A		150A			200A		
11	Charge over Current	60A	110A		160A			210A		
12	Discharge over Current	60A	120A		165A			215A		
13	Pack Weight (Kg)	30	53	55	62	71	78	95	110	130
14	Internal Impedance	≤100mΩ								
15	Communication protocol	CAN(500Kb/s)/RS485(9600b/S)								
16	Host software and	RS232								
17	Operation Temperature Range	Charge:0~55℃								
		Discharge: -10~55℃								
18	Storage Temperature	0℃~25℃								
Note: Parameters can be adjusted according to customer requirements										

3.1Packing List

Battery pack	Output cable	Parallel communication line	users manual
			

4.Battery Drawing

51.2V 55Ah	51.2V 104Ah	51.2V 130Ah
		
		
Product size :495*442*88mm	Product size :495*442*177	Product size :560*442*177mm
51.2V 172Ah	**51.2V 200Ah**	**51.2V 300Ah**
		
		
Product size :403*600*225mm	Product size :680*442*222mm	Product size :700*442*265mm

4.1.Interface Description

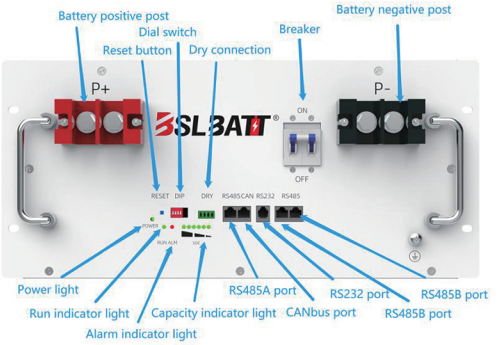


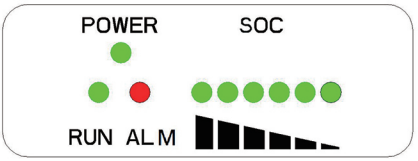
Figure 2

Table1.Battery Pack Frontpanel 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 failure or protection
6	RS485A Port	RS485	RS485 communication with monitoring equipment
7	CANbus port	CAN	CANbus 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

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 alarm ALM 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 ●
SOC (%)	0～16.6%	off	off	off	off	off	Flash 2	off	off	off	off	off	Bright
	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

Positive and negative output interface: Connect the battery positive (+) and negative (-) through the DC isolator to the inverter positive and negative connection inlet.

RS485：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 2~15.

RS232：BMS can communicate with the upper computer through the RS232, RS485 interface, so as 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.

CAN: With dual isolation CAN communication, default communication rate 500 K, active 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 to set 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

4.4 Interface Diagram

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.

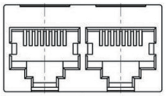
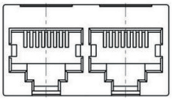
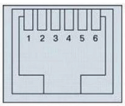
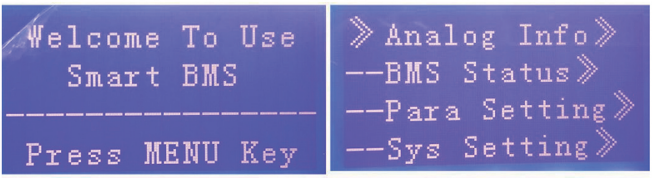
Parallel communication		RS485B-8P8C		RS485B-8P8C	
		RJ45		RJ45	
		1,8	RS485-B	9,16	RS485-B
		2,7	RS485-A	10,15	RS485-A
		3,6	GND	11,14	GND
		4,5	NC	12,13	NC
External communication		RS485A port		CAN port	
		RJ45		RJ45	
		1,8	RS485-B1	1,2,3,6,8	
		2,7	RS485-A1	5	CAN-L
		3,6	GND	4	CAN-H
		4,5	NC	7	GND
Communication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

Table 6 Communication interface table

4.5 Display rendering

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：

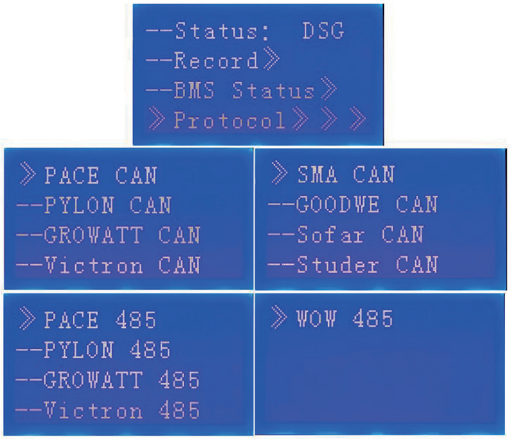


Battery parameters page

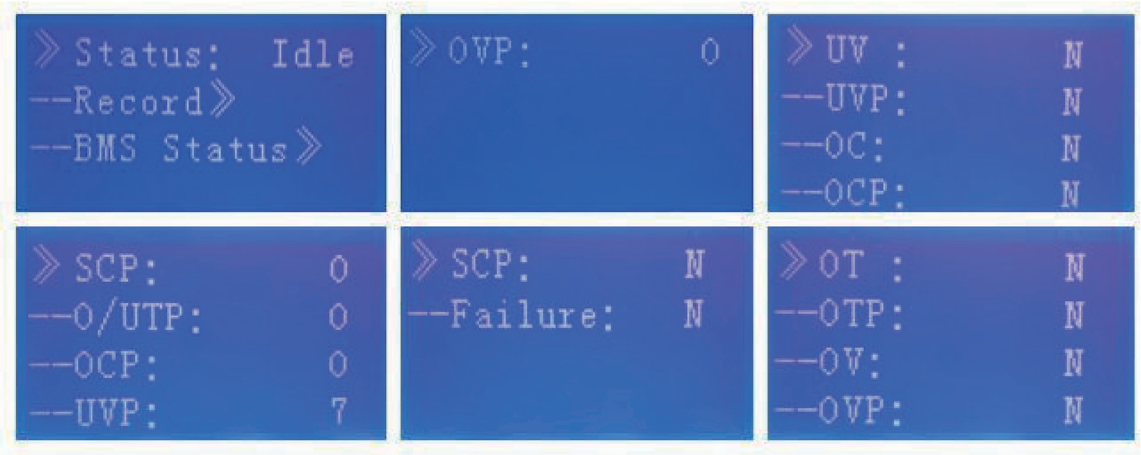
When the cursor" 》 "is point to "Battery Parameters Acquisition" ， press "ENTER" key will enter the page of"Battery Parameters Acquisition" ,As shown in the figure below：

Protocol selection function

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

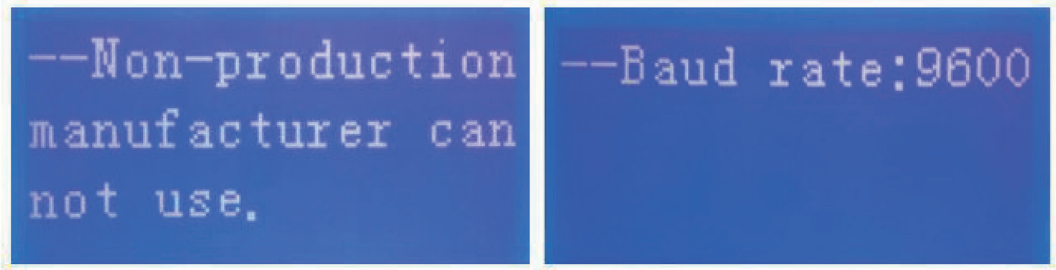


When the cursor “》”is point to”Battery Status”，press “ENTER” key will enter the page of “Battery Status”，As shown in the figure below：



Parameter Settings

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



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 25°C and 55°C.
Temperature and humidity stays 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 25°C to 55°C. Frequent exposure to severe operating condition would exacerbate the performance and lifetime of the battery.

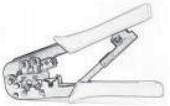
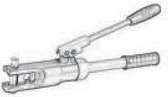
NOTICE

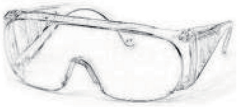
Make sure that the cross-sectional area of charging cables is 25 to 35 mm^2

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

5.3Installation 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.

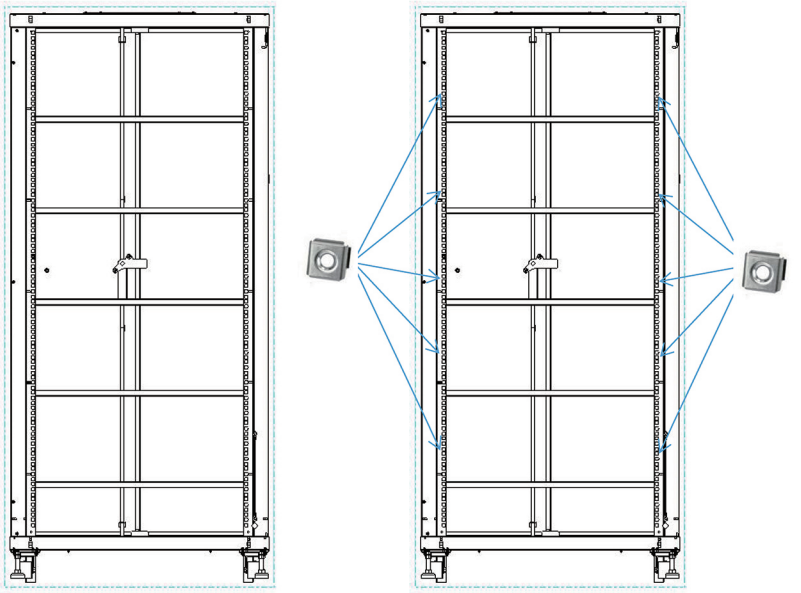


Figure 3

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.

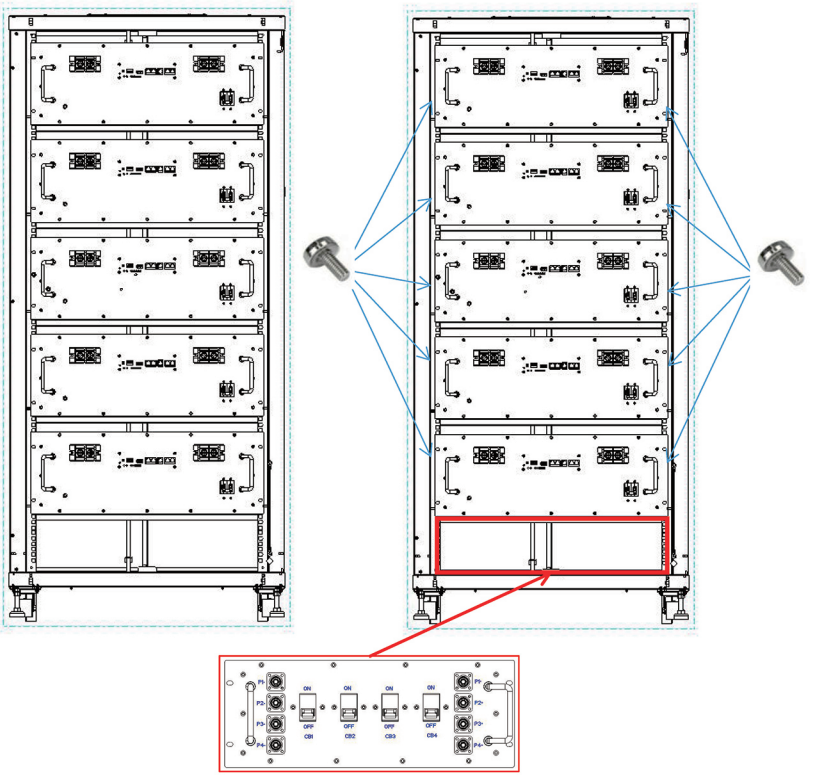


Figure 4

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

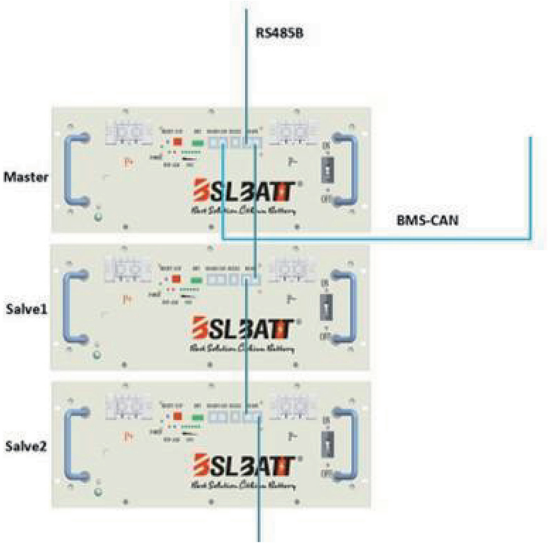


Figure 5

Step 9:

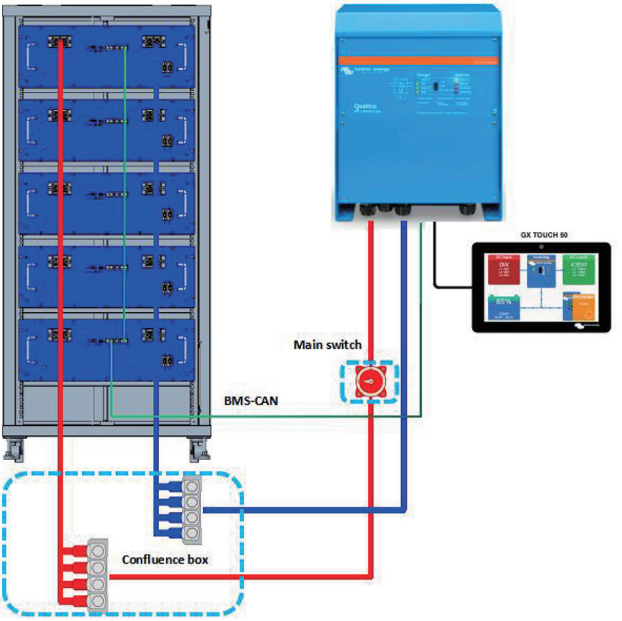
Start and stop battery pack.Confirm that the operation is correct, and the battery function can be turned on after the wiring is correct ,and You can press down power switch(ON/OFF) 3 second for start battery pack,then turn on switch in the Breaker , the battery start working and output ,it enter standby 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 it's self). 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 .

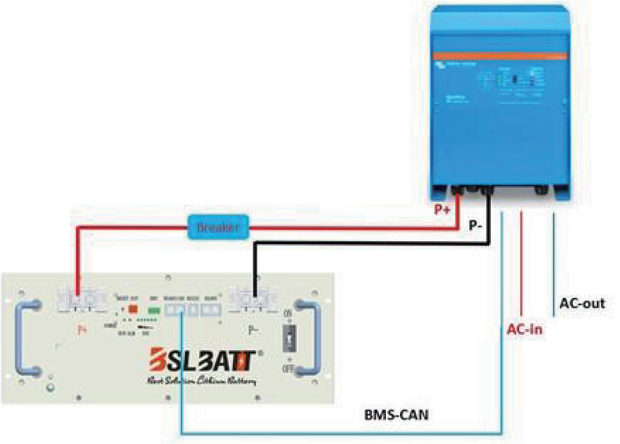


5.4 Installing battery strings in parallel

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.

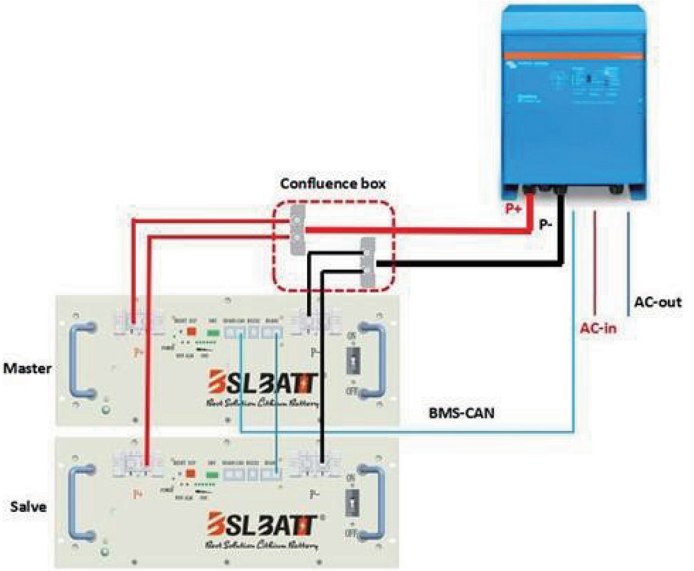
One battery pack's positive is connected with another battery pack's positive, negative is connected with negative. The communication between the battery packs adopts RJ45 network wire to connect through the RS485, the battery packs dial code address were set as table 5.

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



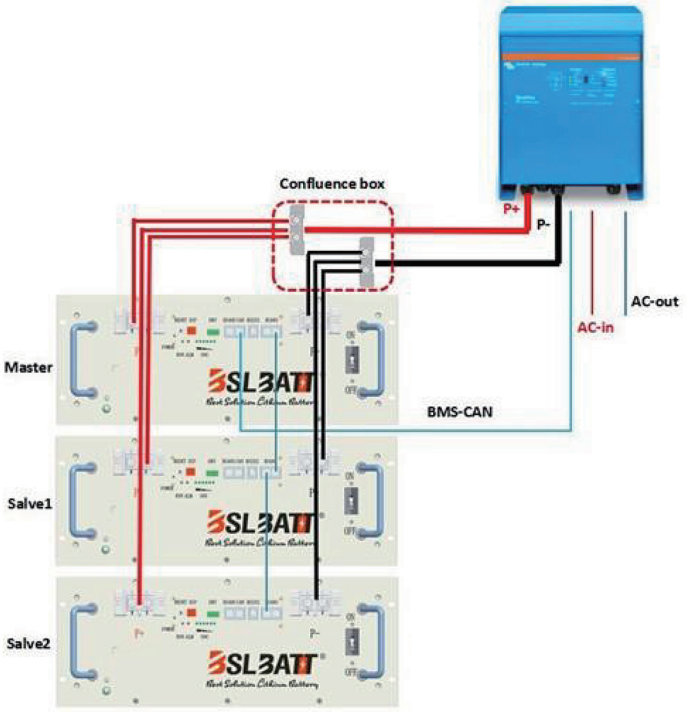
5.4.2 2pack---1 Inverter.

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:

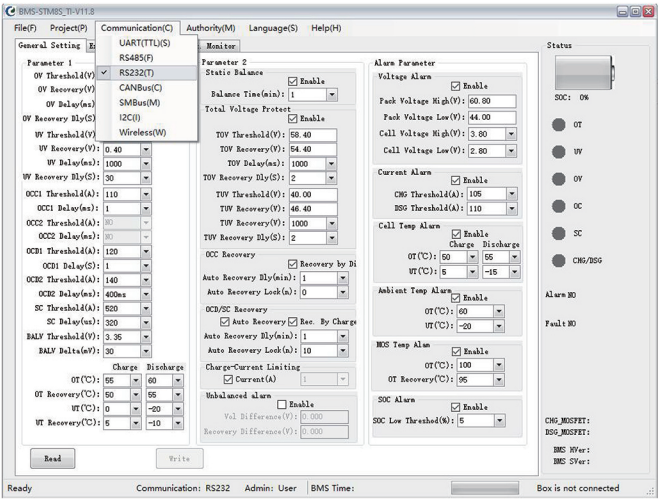


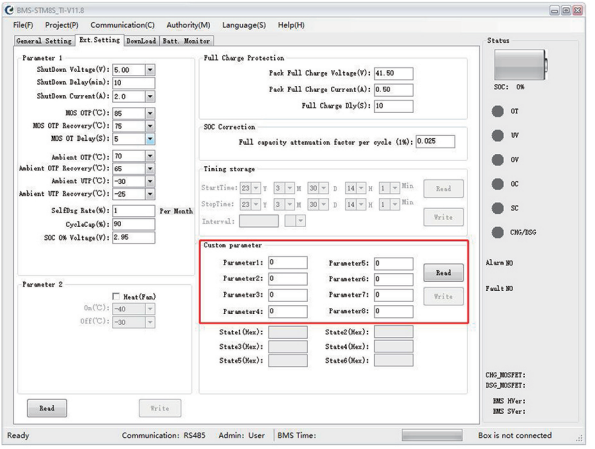
Figure 8

7.Appendix2

Multi Inverter protocol support.

Default setting: CANBUS - Victron, RS485-DEYE.

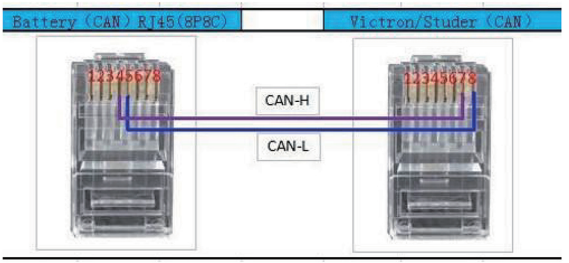
NO	Mode	Inverter	Baud rate	Parameter
1	CAN	Megarevo	500 Kbps	8=0
2		Pylon	500 Kbps	8=1
3		Goodwe	500 Kbps	8=1
4		Sol-Ark	500 Kbps	8=1
5		Deye	500 Kbps	8=1
6		Growatt	500 Kbps	8=2
7		Saijina	500 Kbps	8=2
8		Senergytec	500 Kbps	8=3
10		SOFAR	500 Kbps	8=4
11		Sorotec	500 Kbps	8=4
12		SMA	500 Kbps	8=4
13		Victrion	500 Kbps	8=4
14		MUST	500 Kbps	8=5
15		Luxpower	500 Kbps	8=6
16		SE	500 Kbps	8=7
17		Daneng	500 Kbps	8=8
18	RS485	Goodwe	9600 bps	Default
19		YWT	9600 bps	Default
20		Pylon	9600 bps	Default
21		Eastups	9600 bps	Default
22		Growatt	9600 bps	4=0
23		Saijina	9600 bps	4=0
24		WOW	9600 bps	4=1
25		Voltronic	9600 bps	4=2
26		Snat	9600 bps	4=3
27		Luxpower	9600 bps	4=4
28		Lantrun	9600 bps	4=5
29		Sol-Ark	9600 bps	4=6
30		SE	9600 bps	4=7

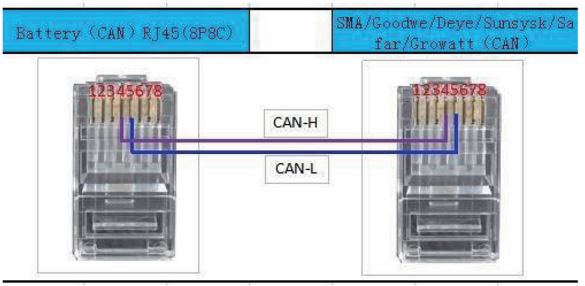


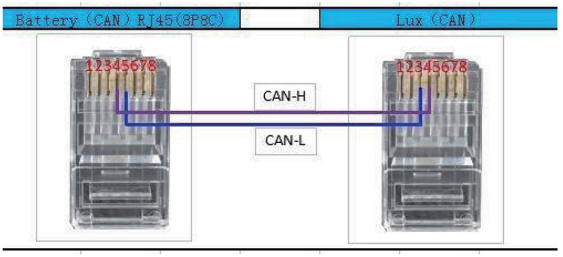
Remark：

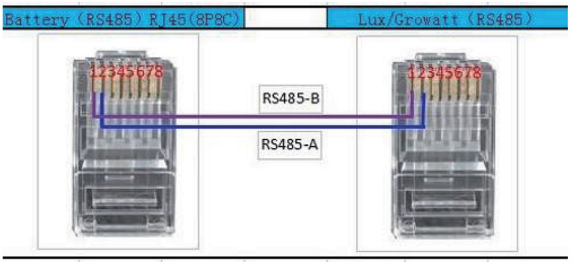
- Please ask your sales team to provide password for host computer software administration enter.
- Different inverters the pin assignment are not the same, please contact inverter supplier for detailed RJ45 cables of pin assignment.

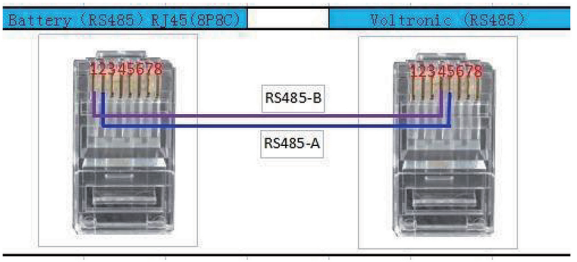
Connector pin configurations for the above-mentioned inverter manufacturers are listed below:

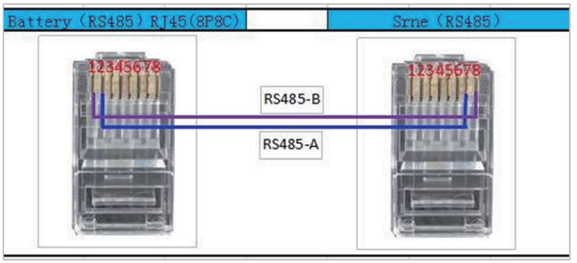





Battery (CAN) RJ45(8P8C)
Lux (CAN)
12345678
12345678
CAN-H
CAN-L


Battery (RS485) RJ45(8P8C)
Lux/Growatt (RS485)
12345678
12345678
RS485-B
RS485-A


Battery (RS485) RJ45(8P8C)
Voltronic (RS485)
12345678
12345678
RS485-B
RS485-A


Battery (RS485) RJ45(8P8C)
Srne (RS485)
12345678
12345678
RS485-B
RS485-A

8. Appendix3

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 paralleling 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 precharge circuit delay time.

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; provided that 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, provided that it has any product.
quality problems within the specified operation range; we may replace the relevant parts, if we fail to maintain it,
so as 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.		Shiping 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

BSL NEW ENERGY TECHNOLOGY CO., LTD
Building1 Zhongkai Innovative Base - Huifeng 6th Road
ZhongKai Hi-tech Zone, HuiZhou City, Guangdong, China.
inquiry@bsl-battery.com
www.bsl-battery.com