

#### Dear user:

Thank you very much for choosing our products! Before using this product, please read this manual carefully. It contains important information and suggestions on installation, use, troubleshooting, etc., and keep it safe! Specifications are subject to upgrade without prior notice.

## catalogue

1.Manual basic information	2
2 .product presentation	
3 Installation and storage instructions	3
4.Operation instructions for parallel upper computer	6
5.System Watcher	11
6.remote control	
7.web client	
8.Firmware update change plate brick processing method	
9.Product Parameter	
10.Boundary dimension	
11.Storage and packaging	
12.maintain	

#### 1.Manual basic information

#### 1.1Range of application

This manual is applicable to 51.2V/100AH series of wall-mounted power supplies for home energy storage applications

#### 1.2target groups

This manual is intended for professionals and end users. Operations can be handled by the end user without any specific qualifications. Professionals must have the following skills:

1) Understand the operation of battery products;

2) Have training and know how to deal with the risks and risks arising from the installation and use of electrical equipment and fixtures;

3) After training, know how to install and debug battery products;

4 ) Understand and follow this manual and all safety knowledge  $_{\circ}$ 

#### 1.3 Safety regulations

To ensure safety, it is the responsibility of the installation personnel to familiarize themselves with the contents of this manual and all warnings prior to installation.

### Warning



#### 1) environmental requirement:

- Do not expose batteries to temperatures higher than 60 ° C;
- Do not place the battery near any heat source;
- Do not expose the battery to moisture or liquid;
- Do not expose batteries to corrosive gases or liquids;
- Do not expose the battery to direct sunlight for a long time;
- Keep batteries in a safe location away from children and animals;
- If the battery is heavy, at least two people are required to carry and install the battery to avoid battery drops and injuries;
- Do not place objects on the battery;

### 2) Operation cautions:

- This product is low voltage product, it is forbidden to use this product in series;
- Do not remove the battery without permission;
- Do not touch battery terminals with conductors;
- Do not touch the battery pack with wet hands;
- Do not squeeze, drop, or puncture the battery;
- Handle products according to local safety regulations;
- Store batteries as described in this user manual;
- Ensure reliable grounding;
- Do not short circuit batteries. Remove all jewelry that may short circuit batteries before installation and transport;
- Do not use damaged or deformed batteries;
- Disconnect the battery from the power/load before installation and maintenance, and then turn off the battery power;

- Do not stack batteries when storing or transporting them;
- The battery has self-discharge phenomenon. If it is not used for a long time, it should be replenished regularly for 3 months;
- The maximum charge-discharge power cannot exceed 5KW; otherwise, the product may be damaged<sub>o</sub>

## 2 .product presentation

This product is a 51.2V DC battery system, applied in the field of home energy storage, with inverter and other equipment to form a complete system, to meet the household daily demand for electricity. This product supports the expansion of up to 16 parallel machines to extend the power consumption time.

#### 2.1 Functional characteristics

- Lithium iron phosphate battery with high safety performance is used;
- The equipment has perfect protection function;
- Multiple machines can be used in parallel for easy expansion;
- With high precision voltage and current sampling and SOC estimation ability;

2.2Product overview



- 1 ON/OFF
- 2 LCD
- ③ USBA interface
- ④ AC output interface
- 5 Reset key
- 6 Run indicator
- ⑦ Alarm Indicator
- (8) Capacity Indicator
- 9 Communication interface with inverter
- 10 RS232 Set port
- ① Battery parallel communication port
- 12 Fuse Switch
- (13) AC input interface
- 14 PV interface
- 15 Emergency with
- 3 Installation and storage instructions
- 3.1 Unpacking inspection

1 ) Open the package of the equipment, please check the product accessories: a host, communication line, power line.

2) Check whether the equipment is damaged during transportation. If damaged or missing parts are found, do not turn on the equipment and inform the carrier and distributor.

#### 3.2 Installation and storage precautions

1 ) Installation of equipment should be operated by professionals or assisted by local dealers;

2) The battery should be mounted on a solid wall;

3) When transporting equipment, appropriate protective measures shall be taken; If the device is moved from a low-temperature environment to a high-temperature environment, water may appear. Dry the device completely before use to ensure safety;

4 ) Do not expose the equipment to damp, flammable and explosive, or a large amount of dust accumulation and other harsh environment; Do not cover and block the vent, reserve more than 10CM air flow gap around the equipment; In order to have good heat dissipation;

5) When the device is not in use for a long time, all switches on the side panel must be turned off;

#### 3.3Connection to inverter

Note: For operational safety and regulatory compliance, a separate DC overload protector or disconnect device is required between the battery and the inverter.

Warning! All wiring must be performed by professionals. Using proper cables to connect batteries is important for safe and efficient system operation. To reduce the risk, please use the cable provided by us or the cable specifications recommended by us.

Maximum discharge current	Suggested cable specifications
100A	25mm2/1*4AWG(not lower than)

1) Power line connection

**notice**! Do not place anything on the battery's positive and negative output terminals, otherwise it may cause short circuit or heat;

notice! Ensure that the positive and negative connectors are
properly installed; otherwise, battery overheating may occur;
notice! Before connecting, make sure that the circuit breaker
or isolator between the inverter and the battery is turned off
and that the positive battery (+) must be connected to the
positive inverter (+) and the negative battery (-) must be
connected to the negative inverter (-).

Use the orange and black cable that comes with the machine or the recommended cable to connect the P+,P- of the battery to the battery input of the inverter.



2) Connected inverter

A、interface definition





RJ45port	serial number	RS485- 1	CAN	RS232	RS485-2	RS485-2
	1	B : DATA-	NC	NC	B : DATA -	B : DATA -
485 A CAN L	2	A: DATA+	NC	NC	A : DATA+	A: DATA+
MILE ALLE ALLE ALLE ALLE ALLE ALLE ALLE A	3	NC	NC	ТХ	NC	NC
	4	CAN-H	CAN-H	RX	NC	NC
	5	CAN-L	CAN-L	GND	NC	NC
	6	NC	NC	NC	NC	NC
	7	A: DATA+	GND		A : DATA+	A: DATA+
	8	B : DATA-	NC		B : DATA -	B : DATA -
remark	8	The RS485-1	and CAN	ports are co	onnected to th	ne inverter

3)Instructions for parallel wiring

A、Communication connection method



Connect the CAN/RS485 battery to the inverter in parallel

with the communication cable

Connect battery in parallel with the communication cable 1) BMS Parallel module The BMS can connect communications in parallel with a maximum of 16 batteries. Support host computer address allocation, automatic allocation of master and slave devices, monitoring module and other functions. This is an internal communication bus for parallel automatic control of battery modules.

2) "The yellow line is used to communicate with the inverter without identifying the host and connecting to the inverter. The advantage of this connection is that there is no need for dip switches to specify the primary and secondary addresses, which can be automatically assigned by the system software. The master and slave computers can display the PACK QR code of the master and slave computers through the upper computer.

3) Instructions for parallel wiring: "

" Blue cable RS485 The host

and slave are connected in parallel using common network cables, which are generally used in parallel. When the system is connected in parallel, RS485 serial port communication is used for data transmission. The parallel Pack system uses RS485 for internal communication.

B, operational approach:

- 1) Connect the blue cable first;
- 2) And connect the yellow cable;

3) Then connect the black inverter communication cable;

4 ) Then connect the inverter with the PAR CAN& RS485 port communication line;

5 ) When the communication line is connected, the BMS system automatically identifies the master and slave machines without manual

debugging.

4. Operation instructions for parallel upper computer

#### 4.1Connect to the upper computer



 ${\bf 1}$  ) Switch to the module monitoring interface first: click the button "Switch

#### to parallel mode"

equipment information	battery status				system state
quipment	-	system voltage	w V hea	1th :%	running status
oftware version ack OR code		system current	: A cyc	le index: number	heating film
Switch to parallel mode hange of address set		SOC:	%		charge MOS
protection state	monomer state (orange:m	aximum voltage, green:mi	inimum voltage, yellow	Equilibrium model) —	discharge MOS
	differential mV mV	Number of			run time:
	CELL 01: mV	CELL 02: mV	CELL 03: mV	CELL 04: mV	Onboard temperature:
	CELL 05; mV	CELL 06; mV	CELL 07: mV	CELL 08; mV	MOS1 temperature:
	CELL 09: mV	CELL 10: mV	CELL 11: mV	CELL 12: mV	MOS2 temperature:
ardware failure	CELL 13: mV	CELL 14: mV	CELL 15: mV	CELL 16: mV	battery emperature1:
	CELL 21; mV	CELL 221 mV	CELL 23: mV	CELL 24: mV	battery temperature2:
	CELL 25: mV	CELL 26; mV	CELL 27: mV	CELL 28: mV	battery temperature3:
	CELL 29: mV	CELL 30: mV	CELL 31: mV	CELL 32: mV	battery temperature4:

2) First link: Open the upper computer software of "BMS", click the menu "Connection Management" -> "Device Communication Settings", select the serial port number of the link, and click the device link. After the connection is successful, the voltage, current, and other information will be displayed.

equipment information 🛛 🔪	battery status					system state
equipment		system voltage	•• V	health :	5	running status
software version Pack QR code		system current	.: 📃 A	cycle index:	number	heating film
Switch to parallel mode						charge MOS
change of addressset		3001	7			
protection state	monomer state (orange:m	aximum voltage, green:m	inimum voltage, yel	low:Equilibrium model	D	discharge MOS
	differential mV	Number of				run time:
	CELL 01: mV	CELL 02: mV	CELL 03:	mV CELL 041	mV	Onboard temperature:
	CELL 05: mV	CELL 06: mV	CELL 07:	mV CELL 08;	mV	MOS1 temperature:
	CELL 09: mV	CELL 10: mV	CELL 11:	mV CELL 12:	mV	MOS2 temperature:
hardware failure	CELL 17: mV	CELL 14: mV	CELL 19,	mV CELL 10:	mv mV	battery emperature1:
	CELL 21: mV	CELL 22: mV	CELL 23:	mV CELL 24:	тV	battery temperature2
	CELL 25: mV	CELL 26: mV	CELL 27:	mV CELL 28:	mV	battery temperature3;
	CELL 29: mV	CELL 30: mV	CELL 31.	mV CELL 32:	mV	battery temperature4:

Connection		- 0	×
Serial Port			
Serial Port COM1	stop bit	1 •	
Baud rate 9600 •	sample interval	2000 ms	
check bit No check • Comm	nunication timeout	5000 ms	
connect	cancel		
CAN			
Baud rate 125 🖌 kbps Comm	nunication timeout	2000 ms	
sample interval 2000 ms			
connect	cancel		
			_

BMS Client1 0.8 n i Main Connection Management Protection parameter setting Firmware Update Debug Tools Calibration Get historical events Device control Other help Switching single-machine mode BUS current: 0.00 A PACK number: 3 system state: Standby system given address switch address1:0x10 voltage: 49.79 current: 0.00 host PACK information: PACK QR code: 10203040506070809000 SOC:86 address2:0x01 voltage: 49.78 address4:0x03 voltage: 49.7 current: 0.00 SOC:87 current: 0.00 SOC:87 Module unit exit: Host Settings:  $0 \times 00 \times 0$ determine 0x00 ~ determine BMS address BMS address Charge and discharge MOS control: BMS address Charge MOS control: BMS address 0x01 ~ 0x01 ~ close open close open 03/01 17:37:56 Connected devices COMB

3) Non-first link: Open the upper computer software of "BMS" and click the menu "Connection Management" -> "Connect Device" to connect the device. After successful connection, voltage, current and other information will be displayed.

1) When the upper computer is connected to the communication module, the serial port communication parameters of the BMS board can be set through the upper computer.

2) Click the menu "Connection Management" -> "Device Communication Settings" and set the serial port communication parameters in the popup window. After the communication parameters are successfully set, the upper computer may not be connected.

#### 4.3 Module control

1) First select the BMS address that you want to control

BMSCUEwrtL0.8 - Ø Main Connection Management Protection parameter setting Firmware Update Debug Tools Calibration Get historical events Device control Other help



2) "Module unit exit control" and "host setting" control need to click "determine " button, charge and discharge MOS control need to click "open" or "close" button to control charge and discharge MOS open and close

#### 4.4 Switch to the single-machine monitoring interface

1)Click the "Switch single-machine mode" button, The single-node monitoring page is displayed.

4.2 BMS communication parameter setting:

#### BMS Client1.0.8

hardware failure

2022/03/01 17:39:48 Connected devices

Main Connection Management Protection parameter setting Firmware Update Debug Tools Calibration Get historical events Device control Other help



#### 4.5 Switch to the module unit monitoring interface

COM

1) Click the green button that displays information for merging module units, The monitoring page for the corresponding IP address is displayed.

CELL 05: 3320 mV CELL 06: 3320 mV CELL 07: 3321 mV CELL 08: 3321 mV

CELL 09, 3320 mV CELL 10, 3320 mV CELL 11, 3321 mV CELL 12, 3320 mV

CELL 13, 3320 mV CELL 14, 3321 mV CELL 15, 3320 mV

HOS1

temperature:

MOS2

temperature:

battery

emperaturel: battery

temperature2: battery

temperature3: battery

temperature4.

24.6 °C

24.1 °C

24.2 °C

23.7 °C

23.5 °C

Ĉ

BMS Client1.0.8

Main Connection Management Protection parameter setting Firmware Update Debug Tools Calibration Get historical events Device control Other help

BUS current: 0.00 A PAC		PACK number: 3 system state:					Switching single-machine mode			
Г	addroge1-0x	10				given addre	ss	switch		
host PACK informati	voltage: 49. on: current: 0. SOC:86	.80 00	PA	CK QR code:						
address2:0x01 voltage: 49.79 current: 0.00 SDC:87	address3:0x0 voltage: 0.0 current: 0.0 SDC:0	200	address4:0x03 voltage: 49.76 current: 0.00 SDC:87		address5 voltage current SOC		add vol cur S	ress6 tage Trent DC		
aduress7 voltage current SDC	address8 voltage current SOC		address9 voltage current SOC		address10 voltage current SOC	0	addr vol cur S	ress11 tage rrent SOC		
address12 voltage current SOC	address13 voltage current SOC		address14 voltage current SOC		address15 voltage current SOC	5	addi vol cur S	ress16 tage rrent SOC		
odule unit exit: BMS address	∪x00 ~	det	ermine	Host BMS a	Settings: ddress	0x00 ~		determ		
harge and discharge MOS	0x01 ~	open clo	se	Charge	B MOS control:	0x01 ~	op	en clo		
03/01 17:40:14 Connected devices	COM3 ction parameter settin batter	ng Firmware Upd ry status	ate Debug Tools Cali	bration Ge	t historical event	s Device cont	trol Other hel system state	- 6 P		
03/01 17:40:14 Connected devices MS Client1.0.8 a Connection Management Prote- equipment information quipment 0900255017000041414C4E4E oftware version 0.2.2.0	COM3	ag Firmware Upd ry status	ate Debug Tools Cali system voltage:	bration Ge	t historical event	s Device cont	trol Other hel system state running status	- C p Standby sy		
03/01 1740.14 Connected devices AS Clevil.08 AS Clevil.08 equipment information equipment 000250017000001414074848 Nortexre version 0.2.0 acb QR code 1002004 Switch to parallel mo	COM3	ng Firmware Upd	ate Debug Tools Cali system voltage, system current:	bration Ge 49.8 V 0.0 A	t historical event health : cycle index;	s Device cont 0 % 0 number	trol Other hel system state running status heating film	- d p Standby sy close		
03/011740.14 Connected devices AS Clenti.08 AS Clenti.08 requipment information quipment 0.2.0 fack QR code Switch to parallel mo change of address	COM3	ng Firmware Upd	ate Debug Tools Cali system voltage: system current: SOCt	bration Ge 49.8 V 0.0 A 36 %	t historical event health : cycle index:	0 %	trol Other hel system state running status heating film charge MOS	- E p Standby sy close Open		
03/011740.14 Connected devices	COM3	ng Firmware Upd ry status er state (orange	ate Debug Tools Cali system voltage, system current: SOC :maximum voltage, greer	bration Ge 49.8 V 0.0 A 86 % 1:minimum vo	t historical event health : cycle index; ltage, yellow:Equil	.s Device cont 0 % 0 number .ibrium model	trol Other hel system state running status heating film charge MOS discharge MOS	– d p Standby sy close Open Open		
03/01174014 Connected devices AS ClentILOB Connection Management Prote- pulpment information quipment 90050017000001414C4248 Oftware version 0.2.0 Gake QR code 10003004 Switch to parallel mo hange of address protection state	COM3	ag Firmware Upd ry status er state (orange ential 1 mW	ate Debug Tools Cali system voltage. system current: SOC: :maximum voltage, greer Number of	bration Ge 49.8 V 0.0 A 36 % h:minimum vo	t historical event health ( cycle index, [ ltage, yellow:Equil	0 %	trol Other hel system state running status heating film charge MOS discharge MOS run time:	- D Standby sy close Open Open 25.7		
03/01174/0144 Connected devices AS ClentILOB AS ClentILOB AS Cornection Management Prote audyment information guipment SourceScoll7000041414C4848 GR code 100303044 Switch to parallel mo hange of address wrotection state	COM3	ag Firmware Upd ry status ar state (orange ential 1 mV 01; 3320 mV	ate Debug Tools Cali system voltage. system current: SOC. :maximum voltage, greer Number of 15 bunc cell 02, 3320 mV	bration Ge 49.8 V 0.0 A 36 % n:minimum vo h CELL 03-	t historical event health : cycle index; ltage, yellow:Equil	s Device cont 0 % 0 number ibrium model	trol Other hel system state running status heating film charge MOS discharge MOS run time, Onboard temperature:	- d p Standby sy close Open Open 25.7 36.9		
03/01 1740.14 Connected devices MS ClentLO.8 In Connection Management Prote requipment information Sector 2000041414C4EAB Oftware version Nate QR code Switch to parallel mo change of address protection state	COM3	ng Firmware Upd yy status nr state (oranges ential mV uure, mV	ate Debug Tools Cali system voltage. system current: SOC. :maximum voltage, greer Mumber of 15 bunc CELL 02, 3220 mV	bration Ge 49.8 V 0.0 A 86 % ::minimum vo h CELL 03:	t historical event health : cycle index; ltage,yellow:Equil 3320 mW CELL 04	s Device cont 0 % 0 number ibrium model 1 3321 mW	rol Other hel system state running status heating film charge MOS discharge MOS run time: Opboard temperature: MOSI temperature;	- Close Open Open 25.7 36.9 24.6		
03/01 1740.14 Connected devices MS Clevit.08 MS Clevit.08 MS Clevit.08 MS Clevit.08 MS Clevit.08 MS Clevit.00 MS MS Clevit.0 MS MS MS Clevit.0 MS MS MS MS Clevit.0 MS M	COM3	ag Firmware Upd yy status ar state (orange ential 1 mV 01, 3320 mV	ate Debug Tools Cali system voltage. system current: SOC. :maximum voltage, grear Number of 15 bunc CELL 02, 3320 mV CELL 06, 3320 mV	bration Ge 49.8 V 0.0 A 86 % :minimum vo h CELL 03, CELL 07,	t historical event health : cycle index ltage, yellow:Equil 3320 mV CELL 04 3321 mV CELL 04	<ul> <li>Bevice cont</li> <li>0 %</li> <li>0 number</li> <li>ibrium model</li> <li>8321 mV</li> <li>2321 mV</li> </ul>	trol Other hell system state running status heating film charge MOS discharge MOS run time; MOSI temperature; MOSI temperature;	- Close Open Open 25.7 36.9 24.6		
03/01 1740.14 Connected devices AG ClentI.08 AG ClentI.08 AG ClentI.08 AG ClentI.08 AG ClentI.08 AG ClentI.08 AG ClentI.00 AG	COM3	og Firmware Upd y status er state (orange ential 1 mV ure: 1 mV 01: 3220 mV 05: 3320 mV	ate Debug Tools Cali system voltage. system current: SOC: :naximum voltage, greer Number of 15 bunc CELL 02, 3320 mV CELL 06, 3320 mV	bration Ge 49.8 V 0.0 A 86 % A CELL 03: CELL 07: CELL 11:	t historical event health : cycle index ltage, yellow:Equil 3320 mV CELL 04 3321 mV CELL 12	. Device cont 0 % 0 number ibrium model . 3321 mV . 3321 mV . 3322 mV	trol Other hal system state - running status heating film charge NOS discharge NOS run time; Oboard temperature; NOSI temperature; bategy emperature].	- 5 Standby sy close Open 0pen 25.7 36.9 24.6		
92/01 1740.14 Connected devices MS CSertLoB O Cornection Management Prote equipment information QC005001700004141424548 Software version O.2.0 Cack QR cool004141424548 Software version Softch to parallel mo change of address xotection state xotection state	COM3	ag Firmware Upd y status ar state (orange ential 1 mV 01, 3320 mV 05, 3320 mV 09, 3320 mV	ate Debug Tools Cali system voltage. system current: SOC. :maximum voltage, greer Number of 15 bunc CELL 02, 3320 mV CELL 10, 3320 mV CELL 14, 3321 mV	bration Ge 49.8 V 0.0 A 36 % ::minimum vo h CELL 03: CELL 10: CELL 11: CELL 15:	t historical event health : cycle index ltage, yellow:Equil 3320 mV CELL 04 3321 mV CELL 05 3320 mV CELL 12 3320 mV	<ul> <li>bevice cont</li> <li>0 %</li> <li>0 number</li> <li>1brium model</li> <li>3321 mV</li> <li>3321 mV</li> <li>3320 mV</li> </ul>	irol Other hel system state running status heating film charge NOS discharge NOS run time. Obsourd temperature: NOS2 temperature: battery temperature?	- 5 Standby sy close Open 0pen 25.7 36.9 24.6 24.1 24.1		
92/01 1740-14 Connected devices MS CSentLoB In Connection Management Prote equipment operation O	COM3	ng Firmware Upd y status or state (orange ential 1 mV ure, 1 mV 01, 3320 mV 05, 3320 mV 13, 3320 mV	ate Debug Tools Cali system voltage, system current: SOC, :maximum voltage, greer Number of 15 bunc CELL 02, 3220 mV CELL 04, 3220 mV CELL 10, 3220 mV CELL 14, 3321 mV	bration Ge 49.8 V 0.0 A 86 % ::minimum vo h CELL 03: CELL 07: CELL 11: CELL 15:	t historical event health : cycle index. 1tage, yellow:Equil 3320 mV CELL 04 3321 mV CELL 03 3322 mV CELL 12 3320 mV	<ul> <li>s Device cont</li> <li>0 %</li> <li>0 number</li> <li>ibrium model</li> <li>i 3321 mV</li> <li>i 3321 mV</li> <li>i 3320 mV</li> </ul>	irol Other hel system state running status heating film charge MOS discharge MOS discharge MOS run time: Denorature: MOS2 temperature: battery temperature: battery temperature:	- 5 Standby sy close Open 25.7 36.9 24.6 24.1 24.2 23.7		

2) After entering the module monitoring interface, refer to the Operation Instructions for Upper Computer in the single machine section for setting parameters.

4.6 Set the address of the current single machine or module unit

1) Enter the hexadecimal address in the box to the right of the single-node address

٥

equipment information equipment	battery status	system state	
0900250017000041414C4E4E	system voltage: 49.8 V health , 0 %	running status Sta	andby system
software version 0.2.0 Pack QR code 10203040506070809000	system current: 0.0 Å cycle index. 0 number	heating film	close
Switch to parallel mode	SOC1 86 %	charge MOS	Open
protection state	monomer state (orange:maximum voltage,green:minimum voltage,yellow:Equilibrium model	discharge MOS	Open
	differential 1 mW Number of 15 bunch	run time:	25.7 H
	pressure: monomers:	Onboard temperature:	36.9 °C
	CELL 01: 3320 mV CELL 02: 3320 mV CELL 03: 3320 mV CELL 04: 3321 mV	MOS1 temperature:	24.6 °C
	CELL 05: 3320 mV CELL 06: 3320 mV CELL 07: 3321 mV CELL 08: 3321 mV	MOS2 temperature:	C
hardware failure	CELL 09. 3320 mW CELL 10. 3320 mW CELL 11. 3321 mW CELL 12. 3320 mW	battery emperature1:	24.1 °C
	CELL 13: 3320 mV CELL 14: 3321 mV CELL 15: 3320 mV	battery temperature2:	24.2 °C
		battery temperature3	23.7 °C
		battery temperature4.	23.5 °C

٥

2022/03/01 17:39:48 Connected devices COM3

BMS Client1.0.8

#### 2 ) Click the "Settings" button on the right

equipment information	battery sta	atus							system state	
equipment			syst	em voltage:	49.8 V	health		0 %	running status	Standby system
software version 0.2.0								-	heating film	close
ack QK code 10203040506070809000			syst	em current;	0.0 A	cycle i	ndex	0 number	thousand them	
change of address set			SOC		86 %				charge MOS	Open
protection state	monomer st	ate (orange	:naximum v	oltage, green	:minimum v	oltage, yell	ow:Equilit	rium model	discharge MOS	Open
	differentia	1 1	Number of	1E huma					run time,	25.7 H
	pressure:		monomers	bunc	1				Onboard temperature:	36.9 °C
	CELL 01.	3320 mV	CELL 02:	3320 mV	CELL 03:	3320 mV	CELL 04a	3321 mV	MOS1 temperature:	24.6 °C
	CELL 05:	3320 mV	CELL 06:	3320 mV	CELL 07:	3321 mV	CELL 08;	3321 mV	MOS2 temperature:	r
hardware failure	CELL 09:	3320 mV	CELL 10:	3320 mV	CELL 11:	3321 mV	CELL 12:	3320 mV	battery emperaturel:	24.1 °C
	CELL 13:	3320 mV	CELL 14:	3321 mV	CELL 15:	3320 mV			battery temperature2,	24.2 °C
									battery temperature3:	23.7 °C
									battery temperature4:	23.5 °C

#### 4.7The monitoring page of the specified address is displayed

1) Enter a hexadecimal address in the box to the right of the single-node address, for example, 0x10. Enter 10 in the box.



#### 2) Click the "Switch" button on the right



#### 4.8 Description of firmware updates

1 ) Connect the BMS and open the firmware update program. Connect the BMS to the computer using the BMS communication cable, and then open the firmware update program.

文件 主页 共享 查看					~
📙 🖛					
> + 🛧 📒 « Work > C	QtProgram > FirmwareUpdateProgram >	~ õ	户 在Firmwa	reUpdateProgram 中接	ж.
^	28	停改日期	22	大小	
* 快速访问	- karan	2022/02/20 18:22	-		
- 三泉田 メ	bearer	2022/12/29 10:22	×3+9-		
🕹 下数 🛷	imageformate	2022/12/29 18/22	×1+×		
· 文档 /	imagetormats	2022/12/29 18:22	×3+30;		
- 四片 /	platforms	2022/12/29 10:22	×1+++		
BaiduNetdiskDownload	translations	2022/12/29 10:22	×1+×		
	D3Dcompiler 47 dll	2012/12/11 10:55	大开关 命用程序计算	3 285 KB	
release	Eirmearel InProgram eve	2022/12/0 18:20	市田旧本	7.4 VB	
Work	D Ebegi di	2020/11/3 22:08	位用44.85~22	29 KB	
微信面片	Bibacc e da2-1 dll	2018/3/10 21/12	心田居住27日 周	112 88	
MPS回母	B ENGLESV2 dil	2020/11/3 22:08	应用程度計量	4 409 KB	
	Bibstdc+++6.dll	2018/3/19 21-12	位用程序并属	1 507 KB	
💻 此电脑	B Buinchread, 1 dll	2018/3/19 21-12	应用每435年間	46 KB	
3D 对象	apengl32ew.dll	2016/5/14 21:08	应用程序计量	15.621 KB	
HUAWEI Mate 30 Pro	OtSCore dll	2022/11/25 16:18	位的现代计算	6.478 KB	
圖 视频	CHSGwi.dll	2020/11/3 22:08	应用程序扩展	6 788 KB	
- 图片	Gt5Network.dll	2020/11/3 22:08	应用程序扩展	1.849 KB	
12 文档	R Qt5SerialPort.dll	2020/11/3 22:23	应用程序扩展	90 KB	
TE	Qt5Svg.dll	2020/11/3 22:23	应用程序扩展	365 KB	
081	Gt5Widgets.dll	2020/11/3 22:08	应用程序扩展	6.192 KB	
』 首乐					
医 東西					
System (C:)					
Run (D:)					
					1000

2 )Check whether the serial port device number and baud rate are correct. Select the corresponding serial port number and confirm whether the baud rate is 9600. Then open the serial port and wait for the cloud center to return the latest version.



3) When the latest version number appears, confirm version and start updating.

Parameter Configuration	Status Info					
SerialPort Number: COM19 🗸	Latest Firmware version:	1. 2. 4	Server	Status:	Connec	teo
Baud rate: 9600 $\checkmark$ CLOSE	Current Firmware version:	1. 2. 4				
Jerral Inneout						_
Serial Timeout						
Serial Timeout						
Serial Timeout						
Serial Timeout						
Serial Timeout						
Serial Timeout						
Serial Timeout						
Serial Timeout						
Serial Timeout						
Serial Timeout						
Serial Timeout						
Serial Timeout						
Serial Timeout						
Download the updated firmware						
						_

4) After the update is complete, connect to the BMS using monitoring software



After the update is complete, the update software will prompt the completion of firmware update and display the current version number of BMS. At this time, close the program and press the switch button on the front panel to start the system.

5) After connecting to the BMS, restore default parameters. After starting

the system, start the monitoring software and connect to the BMS.

6) After the connection is successful, the protection parameter setting page is displayed to restore default Settings.

7 ) After entering the screen for setting protection parameters, click Restore default parameters and wait for the BMS response. After the restoration is successful, a dialog box is displayed indicating that the restoration is successful.

% notice1 : If the progress bar restarts during the update, it may be because the network is unstable. You need to wait for a while or use a new network connection.

 $\%\,\text{notice2:}\,$  Do not close the serial port or exit the application when the firmware is being updated.

## **5.System Watcher**

#### 5.1 APP monitor

1) Number Of Logon

All the functions of the APP need to be logged in before they can be used



#### 5.2 Bluetooth passthrough

1) Connecting device

A、The search page for Bluetooth devices is displayed





Note: If listening fails or the device does not respond, you need to refresh

#### and try to connect again

## 2.2 Monitoring instruction

#### 1) Monitor main page



2 ) Detailed monitoring page

A 、 Basic information of the device (left) and detailed battery status interface (right)



B、Monomer state (green is the default color, yellow is the lowest voltage of the monomer, and red is the highest voltage of the monomer)



#### C、system state

The running state is divided into "system standby", "charging mode", "discharge mode" and "debugging mode".



#### D、Fault message

A device fault is reported to the fault information

11:56 🔟 🕸	ă Q	0.60 KB/s	HD 2	4G	4G* \$1111 (82) 4
<	Detailed info				

DeviceNo 9B8D30373830300D45393739

Device	Battery	Cell	System	Fault
Protecti	on status			
Hardwai	re failure			

#### 2.3 parameter configuration

1 ) The protection parameter function is displayed



2 ) Read protection parameter

If "Read Failed" appears, click Read protection parameters again

12:02 🖾 🕂 🛞 🏥 🖏 🖏	≅0+ 14:41 ≅ O ↓
⊲.Click to Read Protection	1
parameter DeviceNo 9B8D30373830300D453937	39
BMS Adr 13	DeviceNo A89531353532320A30343832
Read Send ALL Restore	BMS Adr 13
Analog Secondary fault Function Para	Read Send ALL Restore
System voltage Cell voltage Charge an	d di Analog Secondary fault Function Parameter
System overvoltage Sene	2.Wait to read
Level 1 protection threshold	System voltage Cell voltage Charge and dis
Level 2 protection threshold	System overvoltage Send
Level 3 protection threshold	
Level 1 protection return difference	threshold 57.6 V
Level 2 protection return difference	Level 2 protection threshold 57.6 V
Level 3 protection return difference	Level 3 protection 57.6 V
Land Talabati	linesholu

3 ) Setting protection parameters

After the parameters are read successfully, select the protection parameters that you want to change and click Send.



#### 2.4 calibration parameter

1 ) Enter the calibration parameter page, enter the parameter and click calibration. If "Calibration succeeded" is displayed, parameter correction is complete

11:56 <b>D</b> ¢	ଷ୍ର ଛୁଇଅ ଅପ୍ଟି 4ରୁ 4ରୁ କରୁ କରୁ 4	12:03 🖾 🕸	
⊂ xe⊡ Devia 9B8D30373830	eNo 300D45393739	DeviceNo 9B8D30 1.ln BMS Adr 13 ~	9373830300D45393739 put parameter
Running info Fault	B III info Statistical analysis	Total voltage of battery pack PACK port	v v
Control		CHG port voltage	brate
Debug 🕂	Parallel	2.Click System current ratio	r "calibrate" v calibrate
Time	Parameters C	Battery capacity	AH
Protection 😑	Carrier plate =	SOC Current cycle number	% calibrate
	-		

#### 2.5 Inverter protocol

1 ) The page for setting the inverter protocol is displayed

Firmware Firmware Setting	0	Inverter 🔝
Wifi Set WiFi Set	\$	Can Baud rate 💿

2 ) Select the inverter communication mode first, then select the inverter protocol

14:48 🗑 🗓 中 🔌 않 않 🛄 🖏 🐄 🗇 🗩 +	15:04 ID
DeviceNo A89531353532320A30343832	DeviceNo 499931353532331441373999 2.Click "Set"
BMS address	BMS address 01 V
Set	Set
Communication Mode RS485 ~	Communication Mode RS485 ~
Inverter Protocol	Inverter Protocol
	Afore Voltronic Pylon INVT Gladewate MEGAROVC

#### 2.6 Firmware Update

1) The firmware update page is displayed The firmware update page is displayed



2 ) Select update device type



- 3 ) Download the firmware package from the server
- 4 ) Firmware Update
- 5 ) Firmware update completed
- 2.7 Fault diagnosis
- 1) Read history data

A, Enter the history page, slide down the function selection page, and click the history function function



# B、Obtain the historical record. After the historical record is read, you can analyze the fault based on the date and time type



2) Monitor interface fault alarms

You can analyze the fault based on the alarm information reported in the protection status and hardware fault

#### DeviceNo 9B8D30373830300D45393739

Device	Battery	Cell	System	Fault
Protection status				
Hardwa	re failure			

#### 3) Monomer equalization

You can view the monomer status on the Detailed Monitoring page.

## 6.remote control

#### 6.1 Equipment distribution network

- 1 ) Bluetooth connected device
- For details, see Connecting Devices
- 2 ) The wifi Settings page is displayed

Function selection page slide, click wifi setting function

Firmware Firmware Setting	Ø	Inverter 🔝
<b>Wifi Set</b> WiFi Set	\$	Can Baud rate 🔄

3 ) Click Add Network

14:08 🖾 🕸

<

#### Add NetWord

4 ) Input Wifi information

Bluetooth will be automatically disconnected after Wifi setting is successful



#### 6.2 remote connection

1 ) Viewing online devices



2 ) Enter parallel monitoring

If the device is in the parallel state and is a master, real-time parallel information is displayed

3 ) Enter standalone monitor

15:18 🖾 🔚 🕂	\2 0.00 001 40 40° 중 000 4	14:09 🖾 🕸		
< Run	ning Info	く返回		
DeviceNo 49993	31353532331441373999			
Record time		87253	Device 037363238	No 0D38393633
A OA 1.click "stand	€ ov			
Single machin 0 Modules Nums	ne monitoring	Running info	Fault in	fo Statistical analysis
€Host	stand-alone	Control		
Total Voltage	SOC Current	Debug DEBUGCONTROL	۱	Parallel
ov ≣Slave	0% OA	<b>Time</b> CALIBRATION	ŋ	Parameters
Total	2 Total	<b>Protection</b> PROTECTPARMS		Carrier plate 😑
Voltage SOC Curren	Voltage 0% 0A			21

4 ) Enter the single device function page (same as Bluetooth)

## 7.web client

## 7.1Number Of Logon

System website: http://ems.scc-tech.com/

Enter the account number, password and graphic verification code, and click login

/	Language -
0 628 0 0059 02	
Copyright & 2021 - 2022 ems All Rights Reserved.	

## 7.2Monitoring instruction

1) Detailed information display



EMS	E menus DimsRunningtinto	BMS	९ ४ न 🔯 .
3 Device -	Liet + • menus EmeRamingInts +		
	Device 2023-04-14 00:00:04	Batlery	System
<ul> <li>Into</li> <li>Distribution</li> <li>Approval</li> <li>Track</li> </ul>	Device No. 672530373632386038396533 Ver PACK PACK12345678912345670000000000	Voltage         52.00V         SOH         100%           1%         Corrent         0.05A         Cycle number: 0           SOC         50%         Corrent         0.05A	Running Bystem standby state Heating close film
	Protection status	Cel(mV)	Charge Main charging MOS on
LargeScreen     version Managem*		Cell voltage difference 3xx7 Cell wander 16 Daud Cell 1 333 Cell 3337 Cell 3330	Discharge Main dischurging MOS on Running 72H
図 menus pres produ 著 menus pres purch	Hardware failure	CELU 2000 CELU 2000 CELU 2000	On board 0°C temperature
E 2222 - 6 2222 -		CELLIO 3300 CELLII 3300 CELLIS 3330	MOS 25.8°C Temperature 1 MOS 22°C
antee -		CELL13 3331 CELL14 3333 CELL16 3330	Tarrear threa?

#### 2) Large screen monitoring

EMS	E menus BrisRunninghto	BMS	५ % त 👰
3 Device 🔿	Del + • menus binoforminginio +		
	Device 2023-04-14 00:00:04	Battery	System
<b>di</b> info	Device No 672530373632380D38383633	Voltage 52.05V SOH 100%	Running System standby
Distribution	Ver	1% Current 0.05A Cycle number 0	state
		SOC 50%	Heating close
	PACK PACK123456789123456700000000		film
	Protection status	Cell(mV)	Charge Main charging MOS on
LargeScreen	Click this	Cell voltage difference 3mi/ Cell number 16 Strand	MOS
			Discharge Main discharging MOS on
& Monitor -		CELL1 (332) CELL2 (333) CELL3 (333)	Running 75H
T manual over product			time
	Hardware failure	CELL4 3330 CELL5 3331 CELL5 3332	On board 0°C
			Imperature
> ~aee ~		CELL7 3330 CELL8 3330 CELL9 3332	MOS 25.8°C
<b>.</b> 1938 -			Temperature1
5 9788 ··		CELL10 3330 CELL11 3330 CELL12 3333	MOS 27°C
			Yammaratuna'i
Notes -		CELL13 3331 CELL14 3333 CELL15 3330	





3) Parameter configuration



4) Calibration parameter





1) Read history



2)Monitoring page fault alarm

You can analyze the fault based on the alarm information reported in the protection status and hardware fault



#### 7.4 Monomer equalization

You can view the Monomer status on the Monitoring page in details, as shown in 7.1.

#### 7.5Hierarchical account management



1)Process for group users to add customer accounts

The user management page is displayed, and a user is added. The user name is the login account of the user.

	System / User List - menus历史记录列来	• User •	2. CI	ick this	BMS						9.35	त 🥶 .	
-			BP68	MARASO	493.086 II	输入手机员员	NS INC	1.15					
5	These .		(Signation	1 Field	<ul> <li>(68E)0</li> </ul>	0.828	0 1818						
	1000		+ #12	2,642 0.889	1 BA 1 2 BH							a) (a) ( <b>H</b>	
Berninger,	100			nn.	Hote.	0.020	1000		100	1.00000		£/S	
O System	1001				1000	1000	1001	1.000	-				
	(		1		1.00	Jun I with	100				100.0		
L User	Contract of Contra	1.Click	"User"						-		-	100 -25	
10.00					and the second second	and the second s	1000						
in the second	1.11												
100.000							1000						
Post	122												
-									-				
	1.1						1000						
											-		
							1.1						
								100					
iii. Maana a													
	1												

#### 2) Process for group users to bind devices to customer accounts.



Enter the customer information to bind the device to the customer account.

GARBEITER	E Gent / Gent	n	- AL	2	Demo								९ % त 💽 .
	• 2511A +			绑定用户				×					
			職法状态						• ##				
				,职制	inst Astra	* 用户密码	网络人用户常用						
	08455	用中名称	展開業作	*用户名称	BogTerig	· 手机号码	胡输入于机带机		10	生产白菜	人際日期	212 M	19/15
	672830373632380 D38392633	demo	Demo	体组织的	WALK PERMIT				×	2023-01-11	2023-01-07 10:16 14	admin	0.82 256 184
	289430375632380 838393633	demo .	Demo						3X		2023-02-08 09-19.	admin	ARC ONN BES
	688E30373830300 045393738		Demo		m-D	und		Ron	x.		2023-02-20 14:57. 54	adminy	
	44FA33503636080 040343436		Deno	9:20:25	B/L	BMS	:11212/08-001	HINS	3×:		2023-02-24 14 10 21	advin	0.22 9.82 HEF
	448331383332390 D36333834		Demo	*26.5	84	BMS					2023-03-24 17:32. 00	admin	
	976030373632585 C38393633		Demo	1000	894E	-tints					2023-03-26 17:16 56	aomin	ADD NES SEA
	985830373632380 138393633		Demo	*#K	#H	BMS					2023-03-29 14:10 41	admin	ORG WESTERS
	958030373830300 D45393739	demo	Demo	1004	WR.	BMS	( Model	HMS	206	2023-04-12	2023-04-15 11:18 05	admin	
	872530373632380 038393633		Demo	*8:6	89.	BMS					2023-04-11 14.47 13	admin	
											耳 9 条 10新元	-	т ва т л

#### 3) Group user unbind equipment process.

EMS	Device / List			BMS							9. ж. п 🙀 .
3 Device	Ltt · netus 历史记录形象 · User ·										
≣ 08	Device No Plazas anter device na	Active Status	Plains solid active	station, 🕤 🗸 Rar	Status Plane of	ictius slatas 👘 👳	Q Rearch	C Reset			
di teto	1 Import ± Export						(	Click "U	nbind"		(a) (a)
Ostribution	Davice No Nick Name	Group	Active Status	Run Status	Device Type	Device Model	Manufacturier	Production Time*	Joining Time	Creator	Operate
🖷 Approvali	989745483037360 348363131	环李鼎盦	Inactivated	Power outage	MPPT	主经运备-001	HYDX	2021-01-18	2022-11-22 15 51: 02	platformTest	2.Update @Location @Active #More
4 Track	F05E58383436190 Iuanxu 039394B4C Iuanxu	环中最值	Activation	Power outage	MPPT	主控设备-001	HYDX	2021-01-18	2021-12-30 08:00 00	admin	C Update C Location
LargeScreen	4340363237390D0 136595153	Green Energy	Inactivated	Power outage	MPPT	出现设备-001	HYDX	2021-01-18		admin	2.Opdate Dilocation VEActive IIINore
<ul> <li>version Managem</li></ul>	54E446553736341 560303538	环中最直	Inactivated	Power outage	мррт	主1912版-001	HYDX	2021-01-18	2022-11-22 16 18 56	admin	2.Update @Location @Active #More
🗊 menus pros produ	7A2539393531391 454313338	Green Energy	Inactivated	Power outage	MPPT	主经设备-001	HYDX	2021-01-18		admin	⊘Update ⊡Location ®Active MNore
₩ menus.pms.purch	882539393531391 454313338	Green Energy	Inactivated	Power outage	MPPT	主经设备-001	HYDX	2021-01-18		admin	∠Update ©Location SkActive 10Nore
6 7-0838 ·	772539393531391 454313338	Green Energy	Inactivated	Power outage	MPPT	主控设备-001	HYDX	2021-01-18		admin	2 Update Clucation TLActive ElMore
12 T-82	922539393531391 454313338	Green Energy	Inactivated	Power outage	MPPT	主经设备-001	HYDX	2021-01-18		admin	2.Update
k augu -	8C2559393551391 454313338	Green Energy	Inactivated	Power outage	MPPT	主担谅\$6-001	HYDX	2021-01-18		admin	⊘Update @Location ⊛Active IIINore

A、Click OK to submit for approval.

EMS	E Device / Lat			BMS							९ ४ त 🙀 .
	Let >      merus 出生注意列制 -      User -										
	Device No Phone article device on	Active Status		nation in 1840	Status Piccon select		O Seets	C Read			
	Topi i store										
	Davice No Nick Name	Group	Active Status	Run Status	Device Type	Device Modal	Manufacturor	Production Time	Joining Time	Creator	Operate
	989745483037360 348953131	H788	Inactivated	Power outage	MPPT	112538-001	HYDX	2021-01-18	2022-11-22 17.51 02	platformTest	2.Uptale (Stocalize S.Acros Hittory
	F05558383436190 Ruinter 023394840	日子用盘	Activation	Power outage	MPFT	主投资第-001	HYDX	2021-01-18	2021-12-30 08.00 00	admin	2. Update
	434036323739000 136995153	Green Energy	Inactivated	Tip Are you sure to un	bind the data item whos	× e device	HYDX	2021-01-18		admin	d Dortme - Di Locarine Militative Militati
	54E446553736341 500303538	HPRE	Inactivated	number is 'F05E5	638343619003939484C Canod	Canton	HYDX	2021-01-18	2022-11-22 16 18 56	admin	2. Update D.Lonabar B.AcDie Milder
	7A2599999591391 454213330	Green Energy	Inactivated	Power outage	мерт	<b>王经经验</b> 001	HYDX	2021-01-18		admin	2. Motote (Disacator RiActive White
	0025303030331301 454313338	Green Energy	Inactivated	Power outage	MPPT	1122年6-001	HYDX	2021-01-18		admin	2. Update El Location SLACIVE IIINore
	7725393935531391 454313338	Green Energy	Inactivated	Power outage	MPPT	<u>主担保</u> 备-001	HYDX	2021-01-18		admin	2 Optimie - 20 Lacadore 10. Active - 20 Active
	922539993531191 454313330	Green Energy	Inactivated	Power outage	мерт	主由设备-001	HYDX	2021-01-18		admin	2.00400 Elisatus SALIos Elisa
	8C25290005531201 454213338	Green Energy	Inactivated	Power outage	мерт	100 mm 001	HYDX	2021-01-18		admin	2.066ate .21.000ates RiActive Million

#### B、Group users for approval.



C、After the approval, the device is unbound successfully.

GARBERRA	E Gette / Get	10		Nr.	Demo							۹ 🛚	л 💽
i RM1072	• I28338 ·												
		956	激活状态	領法理論等状态		165K6 00/08	180 v	Q. 108 0 200					
di iseaa	A 1915												0
	28.955	用户实物	集团条件	激活状态	运行状态	设备类型	设备型带	生产厂商	生产日期	入网日期	232.8		操作
≠ 设备审批	672630373632380 D38393633	demo	Demo	2018	新田	BMS	主控设备-001	HYDX	2023-01-11	2023-01-07 10-18 14	admin	0.842	ONU UPS
+ i2m010	289430373632380 B38393633		Demo	*855	新电	BMS	主控设备-001	HYDX		2023-02-08 09:19: 44	admin	0.7812	983 185
B 取泉大居 5.0019-30	688E30373830300 D45393739		Demo	202	新史	BMS	主控设备-001	HYDX		2023-02-20 14:57: 54	admin	0.00	ona nes
	44FA33303636080 048343436		Demo	未設活	Bitt	BMS	主控设备-001	HYDX		2023-02-24 14:10 21	admin	命市位	ona nës
	448331383332350 D36333634		Demo	未設法	新电	BMS				2023-03-24 17:32 00	admin	a ma	ona nes
	976830373632380 C38393633		Demo	*205	ane.	BMS				2023-03-28 17:18. 58	admin	11/2/12	ORM DES
	983830373632380 138393633		Demo	*365	Miriti	BMS				2023-03-29 14 10 41	admin	1.90	ana upp
	988D30373830300 D45393739	demo	Demo	20.5	新命	BMS	Model	HYDX	2023-04-12	2023-04-13 11 18: 05	admin	0.80	ONS DEP
	872530373632380 D38393633		Demo	未服活	ttie.	BMS				2023-04-11 14:47: 13	admin	0.00	ORN HEF
	872530373632380 D38390633		Demo	末飯活	169.	BMS				2023-04-11 14.47: 13 其9条 10系统	admin	ARG	o <b>x</b> a Rit

## 8. Firmware update change plate brick processing method

#### 8.1 Remove the battery case to expose the BMS protection plate

1 ) First, place the upper battery cover face up and lay it flat. Then, remove the fastening screws on both sides of the chassis to remove the upper cover.

2 )After removing the upper cover, remove the screws securing the battery front panel to facilitate operation of the BMS protection plate.

3 )After removing the front panel holding screws, prepare a hard rod and a pair of needle-tipped tweezers.

#### 8.2The firmware update mode is forcibly entered

1) After the first step, insert tweezers into the hole at position 1 below to connect it, and then press the button at position 2 below to put the BMS into firmware update mode.





After the tweezers are inserted, press this button

Use pointed tweezers to connect the "DIO" and "GND" holes

2 ) After the operation is successful, the BMS enters the firmware update mode, and indicator 6 on the front panel blinks.



3) After confirming that the BMS is in firmware update mode, connect the BMS using the communication cable, open the firmware update program, and follow the steps in 4.8 to update the firmware.



## 9. Product Parameter

NO. Item General F	Parameter
--------------------	-----------

1		Battery type	LiFePO4 Battery
2		Standard capacity(0.5C)	100Ah
3		Rated voltage	51.2V
4		Rate Power	5120Wh
5		Internal Impedance	≤60mΩ
6		Max.Charge voltage	58.4V
7	Battery	Cut-off voltage	45V
8		Standard charge current	20A
9		Standard discharge current	100A
10		Continuous discharge current	100A
11		Battery dimension	$L580 \pm 3 \times W300 \pm 3 \times H520 \pm 3mm$
12		Total weight ( Approx.)	Approximately 60kg
13	AC	Rated output voltage	230Vac ± 5%
14	Output	Surge power	10kVA

15		Efficiency 93%				
16		Output waveform	Sine v	vave		
17		Rated input voltage	230\	/ac		
18	AC Input	Rated frequency	50Hz/60Hz(se	elf-adaption)		
19		MPPT voltage range	120Vdc ~ 450Vdc			
20	PV input	Maximum photovoltaic array power	5k\	V		
			Standard	0°C ~ 45°C		
13		Charge method (CC/CV)	Discharge	–20℃ ~ 55℃		
			Storage	–20℃ ~ 45℃		
14		Capacity @ shipment	50%-60%			

10.Boundary dimension



Front view and side view

## 11.Storage and packaging

#### 11.1storage environment

1 ) If the device is not installed immediately, ensure that the storage environment meets the following conditions.

- The device is packed in a packing case. Place desiccant in the packing case and seal the packing case.
- once opened within 3 days if not to install, recommended to save equipment in packaging box.
- Storage SOC: 25~50%SOC, charge and discharge cycle once every 3 months.
- Storage temperature range: -20 ° C to 40 ° C for a maximum of one month. Not more than 1 year at 0–35 ° C.

- Humidity range: 0 to 95% No condensation. Do not install the battery port if it is wet and dewy.
- Equipment should be stored in shady and cool place and avoid direct sunlight.
- equipment storage should be away from the goods such as inflammable, explosive, prone to corrosion.
- Equipment prohibited the rain.

#### 11.2packing list

- before open cell outer packing, please check if the outer packing was damaged, and check the battery model. If there is any abnormality, do not open the packing case, and contact the after-sales service center as soon as possible.
- After unpacking the battery, check whether the product delivery is complete according to the packaging information. If there is any anomaly, please contact the after–sales service center as soon as possible.



## 12.maintain

System O&M Project	maintenance period
If the battery is not in use, fully charge the battery	Once every 3
and reduce the capacity to 25–50%.	months
Check whether the wall hanger is loose. If yes,	Once every 6

tighten it to the corresponding position.	months
Check whether the shell is damaged. If so, please	Once every 6
repaint or contact the after-sales service center.	months
Check whether the exposed wire is worn. If so,	Once every 6
replace the corresponding cable or contact the	months
post-sale service center	
Check whether debris accumulates around the	Once every 6
battery. If so, clean it up to avoid affecting the heat	months
dissipation of the battery.	



- If you find any problem that may affect the battery or the battery and energy storage inverter system, please contact the after-sales personnel\_ $\circ$ 

• If the copper wire inside the conductive wire is exposed, do not touch it. High pressure is dangerous. Please contact the after-sales staff and do not disassemble it without permission $_{\circ}$ 

• In case of other emergencies, please contact the after-sales personnel in the first time and operate under the guidance of the after-sales personnel, or wait for the on-site operation $_{\circ}$