Tewaycell

START GREEN ENERGY WITH

Shenzhen Topway
New Energy Co.,Ltd

CORPORATE BROCHURE

Shenzhen Topway New Energy Is a focus on new energy battery research and development, production and sales as one of the high-tech enterprises.


Safe
Energy
Quality
Life

COMPANY PROFILE

Shenzhen Topway New Energy Co., Ltd was founded in 2013. We focus on manufacturing and design of lithium battery packs for Green Energy Storage Systems. We also provide the full services of customized battery products, including battery design, development, selection cells and BMS,Charger and after-sale service. The main products include OEM&ODM 12V/24V/36V/48V LiFePO4 Battery Pack, Wall-mounted ESS , All-in-one Mobile ESS , Mobile ESS ; Stack'd ESS,Inverter,Photovoltaic solar panel ,Transformers and solar street light controller.These products are widely used in the fields of home storage energy,RV energy,UPS, Tower Base Station,solar energy storage systems etc.

Since the establishment of the company,the products have been exported to more than 100 countries and regions around the world contributing greatly to the global supply of green energy,and have been well received by users all over the world. we have overseas warehouses in Germany, Poland, and the United States. We will provide you with grade A battery quality, fast delivery service, and stable DDP transportation channel. Feel free to contact us any time!

Roller Type Mobile ESS Battery

TW-MB51300-200A-HWB TW-MB51300-100A-HWB
TW-MB51200-200A-HWB TW-MB51200-100A-HWB
TW-MB48300-100A-HWB TW-MB48200-100A-HWB

Feature

※ Using lithium iron phosphate core technology, higher safety, 80% DOD charging and discharging under standard conditions, more than 6000 cycles.
※ High integrated analog front end, isolated power circuit
※ Integrated serial port IC, high voltage accuracy (≤ 20mV), high current accuracy (≤ 2% @ FS).
※ 4-way battery temperature detection (≤ 2℃), SOC estimation function, SOH estimation function.
※ Short circuit protection function, adjustable overcurrent protection, multiple sleep and wake-up modes, low power consumption.
※ Dual RS485 communication, parameter adjustable setting, buzzer alarm function, LED status indication function, charging equalization function.
※ Temperature range of battery: - 20 ℃~60 ℃.
※ Support parallel (up to 15 groups) application expansion .

Application

Standby power supply and household energy storage.
Solar and wind energy systems.

Application scenario > > >

Contents

1. Safety tips

1.1 Preface

Thanks for choosing Topway New Energy power wall battery. In order to make you better use and maintain this product, please read the user manual carefully before use.
The features of this product are as follows:

1. Adopt brand new lithium iron phosphate cell; Higher security; In the standard state, 80% DOD charge-discharge ≥6000 times cycle;
2. Highly integrated analog front end; Isolating power supply circuit;
3. Integrated serial port IC, high voltage accuracy (≤20mV), high current accuracy (≤2%@FS);
4. Four-channel battery temperature detection (≤2℃), SOC estimation function, SOH estimation function;
5. Short-circuit protection function, adjustable overcurrent protection, a variety of sleep and wake up mode, low power consumption;
6. Dual-port RS485 communication, parameter adjustable setting, buzzer alarm function, LED status indicator function, with charge balance power;
7. Wide temperature range: -20℃~60℃;
8. Parallel connection (up to 15 groups) application expansion is supported, but serial connection is not recommended.

1.2 Safety disclaimer

When installing, using and maintaining this product, users must read this chapter carefully and follow the safety precautions required in this chapter. Any injuries and losses caused by illegal operation are not related to our company.

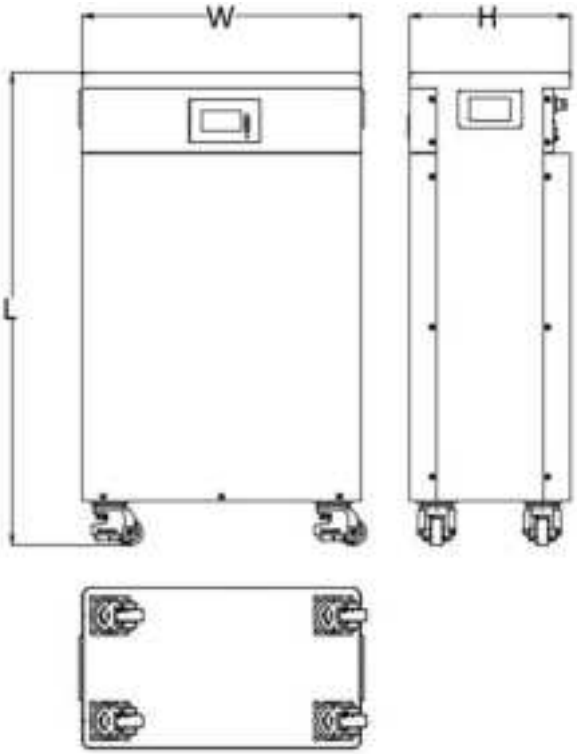
1.3 Description of safety matters

1. Keep the battery out of the reach of children and babies;
2. Do not put the battery in the oven or other similar equipment;
3. Do not remove the product label;
4. Do not try to open the battery pack;
5. Do not be exposed to the environment above 60℃(300F);
6. Do not short-circuit the positive and negative terminals of the battery with wires or other metal objects. Do not transport or store batteries with metal objects;
7. Do not expose the battery to direct heat or flame. Do not use or store batteries near fire or high temperature;
8. Do not immerse the battery in water, salt water or any other liquid or make it wet;
9. Do not pierce the battery with any sharp object, knock it with a hammer or similar device, step on it, fall it or get strong vibration;
10. Do not use the battery if it is damaged or deformed;
11. If the battery produces odor, smoke or abnormal heat, please stop using it immediately;
12. If the battery liquid leaks and comes into contact with your eyes, please don't rub your eyes, and immediately rinse them with plenty of water before seeking medical assistance.

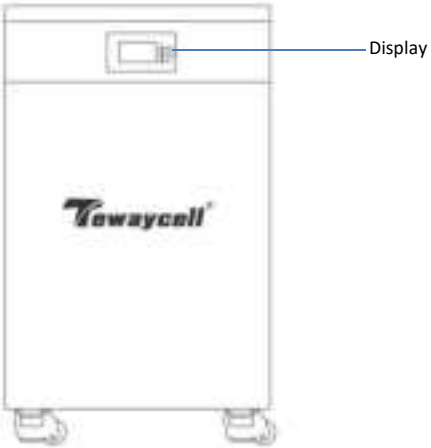
2. Product description

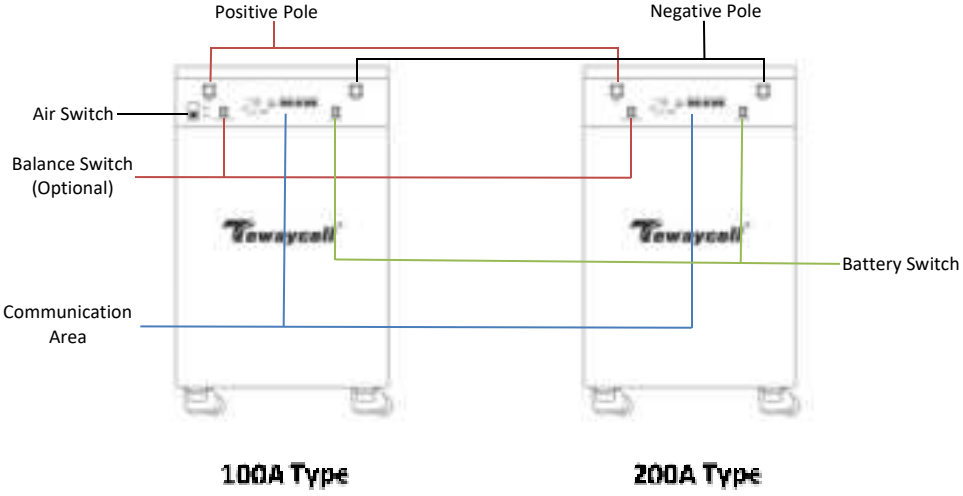
2.1 Product dimension

Model	Size(L*W*H)
TW-MB51300-200A-HWB	880*520*300mm
TW-MB51300-100A-HWB	
TW-MB48300-100A-HWB	
TW-MB51200-200A-HWB	830*450*300mm
TW-MB51200-100A-HWB	
TW-MB48200-100A-HWB	

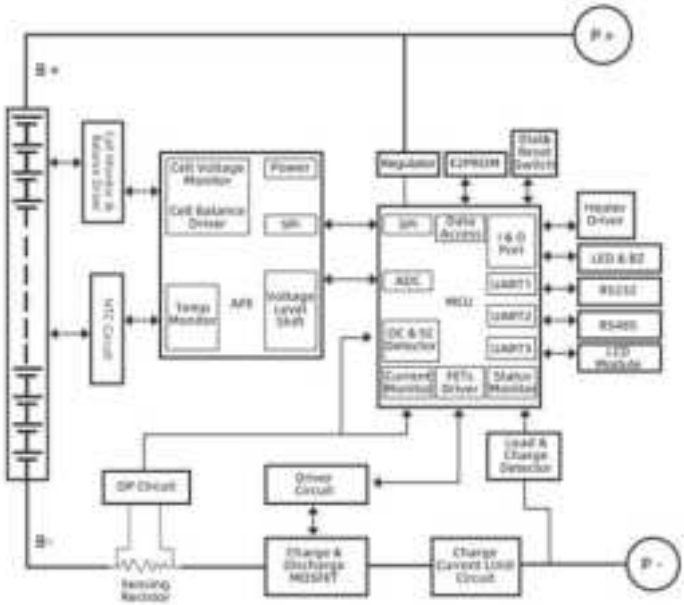


2.2 Product details





2.3 Electrical schematic diagram



3. Technical specifications

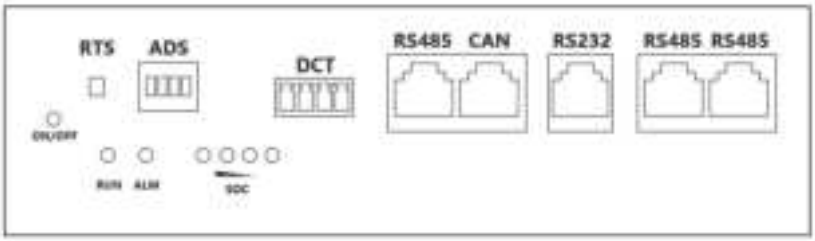
Table 1Technical specification table

No.	Project	Specifications			
1	Model	TW-MB51300-200A-HWB(16S)	TW-MB51200-200A-HWB(16S)	TW-MB51300-100A-HWB(16S) TW-MB48300-100A-HWB(15S)	TW-MB51200-100A-HWB(16S) TW-MB48200-100A-HWB(15S)
2	Nominal capacity	300Ah@0.2C	200Ah@0.2C	300Ah@0.2C	200Ah@0.2C
3	Nominal voltage	51.2V(16S) 48.0V(15S)			

4	Charging voltage	56.8-57.6V(16S) 53.2-54V(15S)			
5	Operating voltage	43.2~44.8V(16S) 40.5~42.0V(15S)			
6	Charging standard current	60A	40A	60A	40A
7	Standard charging mode	At a temperature of 25°C, charge to 58.4V with a constant current of 0.2C5A, and then change continuously with a constant voltage of 58.4V until the current is not greater than 0.02C5A.(16S) At a temperature of 25°C, charged to54.75V at a constant current of 0.2C5A, and then, changed continuously with constant voltage of 54.75V until the current was not more than 0.02C5A. (15S)			
8	Maximum charging current	200A		100A	
9	Maximum discharge current	200A		100A	
10	Charging temperature	0°C to 45°C (32°F to 113°F) @60±25% relative humidity			
11	Discharge temperature	-20°C to 60°C (-4°F to 140°F) @60±25% relative humidity			
12	Storage temperature	-20°C to 60°C (-4°F to 140°F) @60±25% relative humidity			
13	Line joint	250A Self-Locking Fitting Quick Release Connector		120A Self-Locking Fitting Quick Release Connector	
15	Communication protocol	RS485、RS232、CAN			
16	Support inverter brand	Growatt、Deye、Goodwe、Voltronic power、Sofar、VICTRON、Solis、Megarevo、SRNE			

4. BMS characteristics

4.1 Instructions for LED lights



Four green capacity indicators, a red alarm indicator, a green running indicator and a switch indicator.

4.1.1 SOC capacity indicator

Table 2 SOC indicator status table

Condition		Charge				Discharge			
Capacity indicator lamp		L1	L2	L3	L4	L1	L2	L3	L4
power（%）	0~25%	Flash 2	OFF	OFF	OFF	ON	OFF	OFF	OFF
	25~50%	ON	Flash 2	OFF	OFF	ON	ON	OFF	OFF
	50~75%	ON	ON	Flash 2	OFF	ON	ON	ON	OFF
	75~100~	ON	ON	ON	Flash 2	ON	ON	ON	ON
Running indicator light		ON				Flash 3			

4.1.2 Status indicator

Table 3 Status indicator status table

Status	Warning/Normal/ Protection	ON/OFF	Run	Alert	LED Battery Level Indicator				explain
		•	•	•	•	•	•	•	
Shut down	Sleep mode	ON	OFF	OFF	OFF	OFF	OFF	OFF	Light off
Standby	normal	ON	Flash 1	OFF	According to the electricity indication				standby mode
	warning	ON	Flash 1	Flash 3					Module low voltage
charge	normal	ON	ON	OFF	According to the power indicator (the maximum LED of the power indicator flashes 2)				The maximum power LED flashes (flash 2),and the ALM does not
	warning	ON	ON	Flash 3					

									flash during the overshoot.
	Overcharge Protection	ON	ON	OFF	ON	ON	ON	ON	If there is no mains supply,the indicator turns to standby
	Temperature,over current,failure, protection	ON	OFF	ON	OFF	OFF	OFF	OFF	stop charging
discharge	normal	ON	Flash 3	OFF	According to the electricity indication				
	warning	ON	Flash 3	Flash 3					
	UVLO	ON	OFF	OFF	OFF	OFF	OFF	OFF	Stop discharge
	Temperature, over current, short out, reversed polarity ,FAIL-SAFE	ON	OFF	ON	OFF	OFF	OFF	OFF	Stop discharge
Invalid		OFF	OFF	ON	OFF	OFF	OFF	OFF	Stop charging and discharging

Table 4 LED flashing description

Flashing mode	ON	OFF
Flash 1	0.25s	3.75s
Flash 2	0.5s	0.5S
Flash 3	0.5s	1.5s

4.2 Boot and sleep mode

Sleep mode: the battery will be in sleep mode if any of the following conditions are met

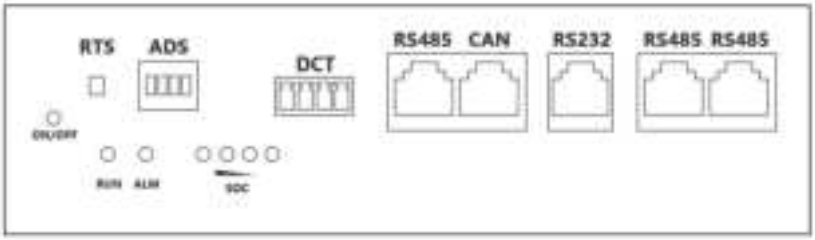
1) The battery or battery pack over discharge protection lasts for 30 seconds and is not released.
2) Press the power on / off button for 3 seconds and release.
3) The minimum voltage of the battery is lower than the "sleep voltage" setting in the setting, without charging and discharging.
4) Standby for more than 24 hours without charging and discharging.
5) Switch to the upper computer for sleep manually.

Wake up: the battery will exit sleep mode if any of the following conditions are met

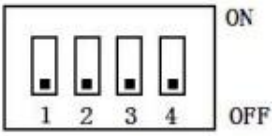
1) Charger is plugged in; The charger voltage is greater than 48V.
2) Press the power on / off button for 3 seconds and release.
3) Plug in the communication cable and open the upper computer software (not available if it is under over discharge protection).

Note: if over discharge protection is enabled, the battery will be in sleep mode. The battery will wake up automatically every 4 hours and turn on the charge / discharge MOS. If charging is available, the battery will be charged, otherwise it will return to sleep mode. If it has been awakened 10 times but cannot be charged, the battery will not wake up again automatically.

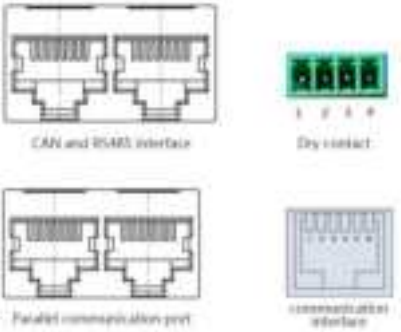
4.3 Communication area



1. RS232: BMS can communicate with upper computer through RS232 interface, so as to monitor various information of battery, including battery voltage, current, temperature, status and battery production information, etc. the default baud rate is 9600bps.
2. RS485: with dual RS485 interface, you can view the information of pack. The default baud rate is 9600bps.If it is necessary to communicate with the monitoring equipment through RS485, the monitoring equipment is used as the host, polling data according to the address, and the address setting range is 1 ~ 15.
3. CAN: CAN communication, baud rate 9600bps.
4. RS485 and CAN: The user can communicate with the inverter through these two interfaces.
5. RS485 add RS232: The users can connect to the computer through these two interfaces.
6. DCT: Dry contact interface.
7. Rst: reset button.
8. ADS: dial switch



9. Interface diagram



10. Definition of electrical interface

RS232 -- 6P6C vertical RJ11 plug	
RJ11 pin	Definition Description
2	NC
3	TX(Single board)
4	RX(Single board)
5	GND

Table 5 RS485 and CAN Interface

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

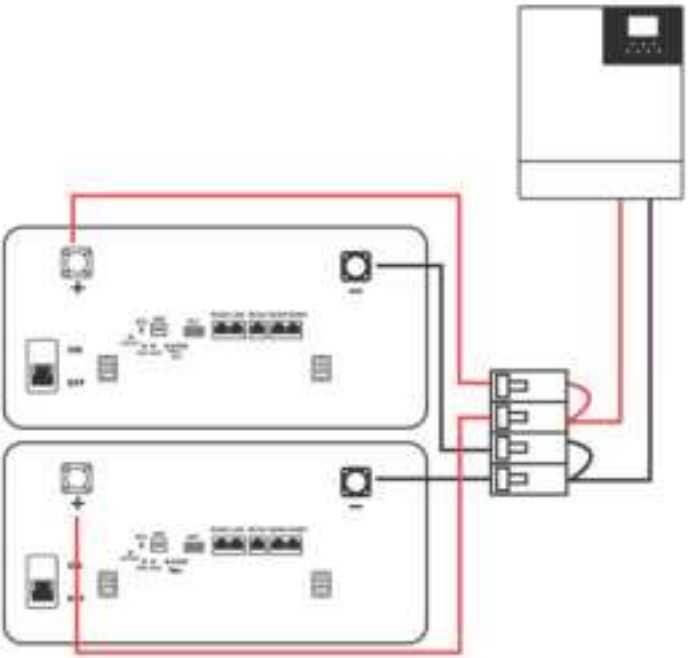
Table 6 Parallel communication port

RS485 - 8P8C vertical RJ45 socket		RS485 - 8P8C vertical RJ45 socket	
RJ45 pin	Definition Description	RJ45 pin	Definition Description
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

5. Description of parallel connection

5.1 Parallel Connection Diagram

If parallel batteries are required, connect the wires according to the diagram, max support for 15 batteries in parallel

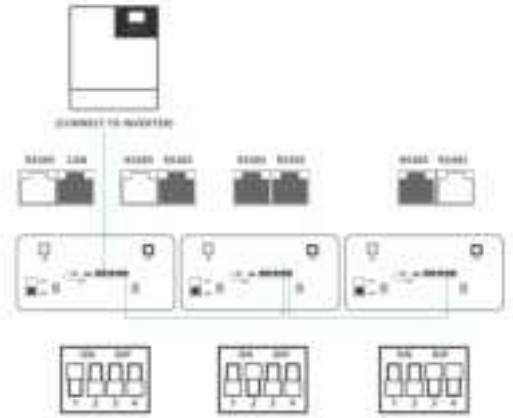


5.2 Communication line parallel diagram

The signal line connected to the inverter should use RS485 communication line or CAN communication line. If it is necessary to use batteries in parallel:
① RS485 cable shall be used to connect the parallel communication port. Refer to the communication line parallel diagram;
② The address of the battery needs to be set. Refer to the dial switch setting table for address setting.

Table 7 The Dial Switch Setting Table

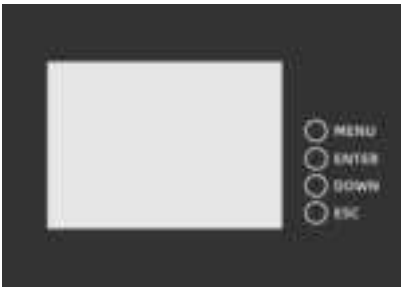
Address	Dial switch position			
	#1	#2	#3	#4
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF
8	OFF	OFF	OFF	ON
9	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON
11	ON	ON	OFF	ON
12	OFF	OFF	ON	ON
13	ON	OFF	ON	ON
14	OFF	ON	ON	ON
15	ON	ON	ON	ON



6. Operating instructions

6.1 Operating instructions of the display screen

6.1.1 Introduction of LCD Display



Button Description:
MENU: enter the management system.
ENTER: enter the submenu.
DOWN: moves the cursor down or to the next page.
ESC: returns to the previous one

6.1.2 Boot screen

Battery protection status:
Overvoltage: OV
Low voltage: LV
Overtemperature: OTt
Low temperature: IT
Over current: OC
Short circuit: SC
Note: when the battery is protected, the corresponding protection status will be displayed; otherwise, the protection status will not be

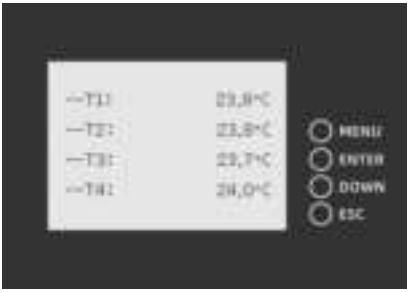
Press “MENU” to enter the main menu
Note:“》”indicates that there is a submenu. Press ”enter” to enter the submenu

Analog Info	》
BMS Status	》
Para Setting	》
Sys Setting	》

Move the cursor to Analog info and press enter

Pack V	
Im	
Temperature	》
Cell Voltage	》
CellCapacity	》

Move the cursor to "temperature" and press "enter" to check the battery temperature information, then press "down" to turn the page



T1	XX℃
T2	XX℃
T3	XX℃
T4	XX℃
PCB-T	XX℃
ENV-T	XX℃

Move the cursor to "cell voltage" and press "enter" to check the battery voltage information, then press "down" to turn the page

Cell 01	xxxxmV
Cell 02	xxxxmV
Cell 03	xxxxmV
Cell 04	xxxxmV
Cell...	xxxxmV
Cell 15	xxxxmV
Cell 16	xxxxmV

Move the cursor to “CellCapacity” and press Enter to check the battery capacity information

SOC	X%
FCC	XAH
Rm	XAH
CC	0

Move the cursor to “BMS Status”, press Enter to check the battery status, and press “▼” to turn the page

Status	
Record	》
BMS Status	》

Move the cursor to "Record", then press "Enter" to check the battery alarm information, then press "DOWN" to turn the page.

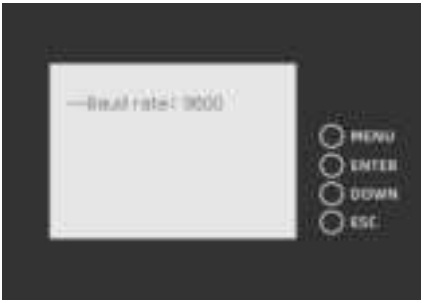
SCP	
0/UTP	
0CP	
UVP	
0VP	

Move the cursor to "BMS Status", then press "Enter" to check the battery protection information, and then press "DOWN" to turn the page.

UV	Y/N
UVP	Y/N
OC	Y/N
OCP	Y/N
OT	Y/N
OTP	Y/N
OV	Y/N
OVP	Y/N
SCP	Y/N
Failure	Y/N

Move the cursor to "Para Setting" and press “Enter”to check the gyroscope information, then press "▼" to turn the page.

Move the cursor to "Sys Setting", then press Enter to check the version information, and then press "▼" to turn the page.



Hibernation and activation functions
After 1 minute of button-free operation in normal operation, the display will turn off (backlight only), and pressing any button while the screen is off will allow the screen to light up and function normally.

7. Active Equilibrium Function (Optional)

Test Item	Min	Type	Max
Single IC working voltage (Single series)	1.8V		4.5V
Balance opening voltage difference on		/	
Balance closing voltage difference on			
Accuracy of the balance voltage difference		5mV≦	
Balanced turn-on voltage (first string voltage)		2.90V≧	
Balanced turn off voltage (first string voltage)		2.50V≦	
Balanced current (large voltage difference and large current)	0	/	6A
Balanced operating voltage range (B0 to B+ voltage)	46.4V		68.0V
current consumption when working	100uA		1000uA
current consumption when sleeping	0		8.0uA
Working temperature	-40~+85℃		

8. Fire extinguishing function (Optional)

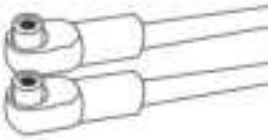
The battery is equipped with an aerosol fire extinguishing device. When the battery experiences a short circuit and catches fire, the fire extinguishing device can detect the temperature and automatically extinguish the fire.

Item	Parameter
Model specifications	QRR0.04G/S-MC-40-F-02-11
Working temperature range	－ 30 ℃ ～ ＋ 70℃
Relative humidity of working environment	≤95％RH
Start mode	Hot start
Spray time	≤3s
Starting temperature of thermal initiator	170±10℃

9. Product list and tools

9.1 Product packing lists

Home energy storage system series power supply has been strictly inspected before delivery, but may be damaged in transit, therefore, after unpacking the box, please check whether the following items are complete, confirm the model, capacity, input voltage and output voltage, and whether the specified content when ordering; If anything abnormal or inconsistent occurs, please contact the distributor as soon as possible.

	Picture			Description	Qty
Home energy storage battery					1 pieces
Product manual					1 pieces
Positive/negative connector plug					Positive/negative each one
Signal line(Optional)	CAN	Connect inverter	RJ45		4-CAN-H 5-CAN-L
	RS485	Connect inverter	RJ45		1、8-RS485-B 2、7-RS485-A

10. Instruction manual

1. Place the battery in an appropriate position, plug the positive/negative connector into the positive/negative socket.
2. Connect the other end of the positive and negative lead to the inverter.
3. Turn on the rocker switch and the air switch.