MasterBat®

MB-51.2LI16KWH

LiFePO4 floor-mounted battery

BATTERY USER MANUAL

IMPORTANT SAFETY INSTRUCTIONS

Please keep this manual for future reference.
This manual contains all safety, installation, and operation instructions for the wall-mounted energy storage batteries. Please read ali instructions and precautions carefully before installation and use.

1. The wall-mounted energy storage battery has an unsafe voltage. Do not disassemble it by yourself to avoid personal injury. If you need maintenance, contact our professional maintenance team.
2. Do not install energy storage batteries in places accessible to children.

3. Do not install energy storage batteries in harsh environments such as damp, greasy, flammable explosive, or large amounts of dust.

4. Do not open the container when the energy storage battery is working.

5. It is recommended to install a suitable safety or circuit breaker on the outside.

6. After installation, check whether all line connections are tight to avoid the danger of heat accumulation due to virtual connection.

7. Wall-mounted energy storage battery, use DC power to charge it when charging, do not connect with other inputAC power to avoid damage.

CATALOGUE

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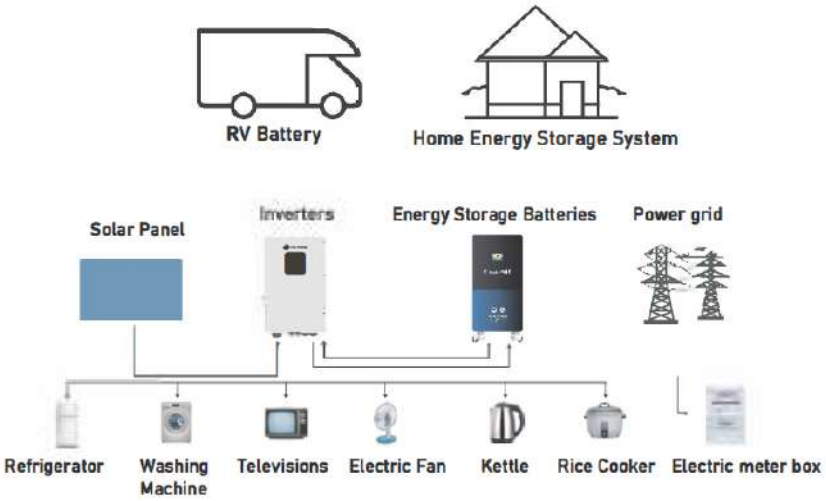
1. Basic Information

Energy storage batteries are mainly used in the field of household power storage, but are suitable for RV, household energy storage, temporary buildings, and other internal energy storage, using high-performance, long-life lithium iron phosphate batteries as the basic energy storage units, while combining advanced lithium-ion battery management system, industrial design of household products and other technologies.

Ensure high reliability and industrial standards. energy storage battery covers the energy requirements from 5.0KWH to 15KWH of a single machine, with a rated output voltage of 51.2VDC. batteries have the function of wall mounting and can support the function of external parallel use, which greatly improves its convenience. energy storage battery improves the consistency of the internal temperature field of the product, prolongs the service life, and enables the product to continue high current output through a scientific and reasonable active heat dissipation method.

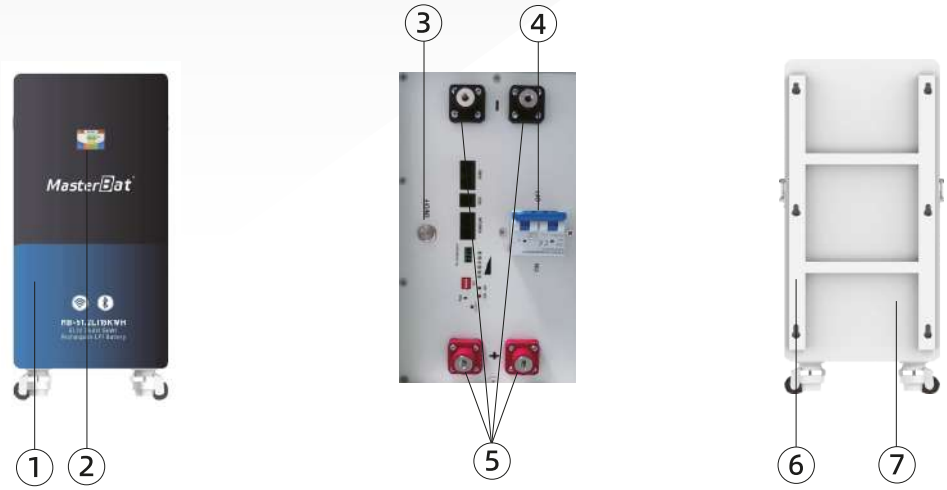


Product Peculiarity

- The external LCD screen is used to monitor the data and running status of the energy storage battery in real time.
- The battery adopts a high-performance lithium iron phosphate battery with high safety performance and long service life.
- The external weak current switch reduces the power consumption of the product and improves the safety of transportation and storage.
- It has RS232/RS485/CAN communication function, which can facilitate data communication with the equipment with communication.
- Remote data monitoring and corresponding control can be carried out by an external wireless module.
- Energy storage battery with foot pad and wall hanging mounting bracket can meet the installation of different places.
- With several protection functions, all-round protection of the safety of the power supply.

- Stable output, can be connected to the external voltage range of different natures of the load.
- Supports up to 15 independent modules in parallel.

2. Functional Appearance



①	Metal Case	⑤	Connector hole
②	LCD display	⑥	Mounting plate
③	On-off button	⑦	Battery Backplate
④	250A Breaker	⑧	Communication port

NOTICE:

In order to maintain the best and long-term performance, it is recommended that the following items be inspected twice a year.

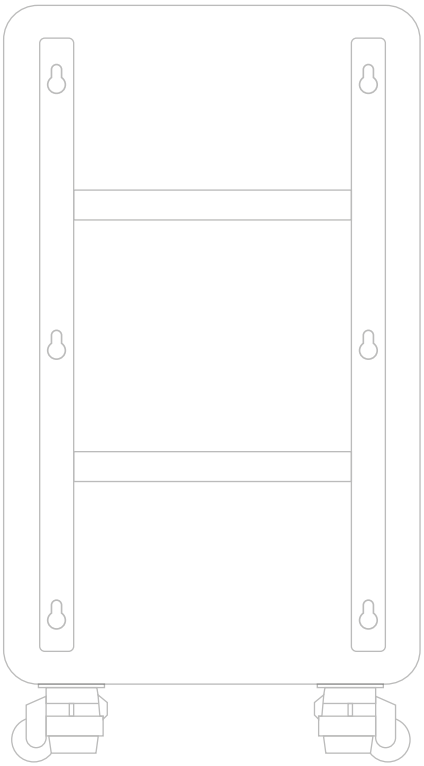
- Ensure that the surrounding air flow is not blocked, and remove any dirt and debris from the heat dissipation hale.
- Check whether all exposed conductors are aged or damaged, and replace or maintain them if necessary.
- If you do not use it for a long time, it is recommended to charge it every three months.

Electric shock danger! Before performing the preceding operations, ensure that the power supply is disconnected, and then perform corresponding checks and operations.

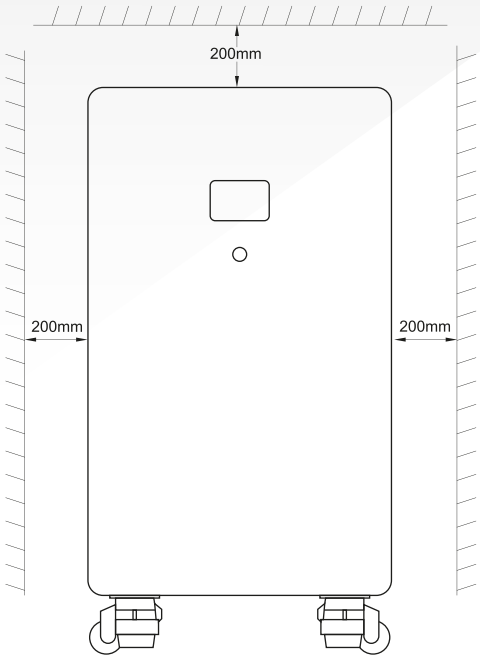
3. Installation Process

As shown in the picture (Warning: please ask far the specialized electrician to install the battery, do not install it by yourself)
After fixing the M8 expansion screws to the wall according to the position of the bracket on the back of the battery, hang the battery on the wall by aligning the holes.

- Leave a certain space around the installation for heat dissipation.
- Avoid direct sunlight and rain infiltration during outdoor installation, which may cause damage.
- Do not place metal objects nearby to prevent short circuits.
- The virtual connection point and corroded wire may cause great heat, melt the insulation layer, burn the surrounding materials and even cause fire, so it is necessary to ensure that the connector is tightened, and the wire is best fixed with cable ties to avoid shaking and causing the connector to loose during mobile application.
- After the power switch is turned off, the energy storage chassis still has high voltage. Do not open or touch the internal components.
- Do not reverse connect the charge and discharge end of this product, otherwise, it is easy to damage the equipment, or unpredictable risks occur.
- When installing wall hanging, first of all, ensure the bearing capacity of the wall, and check whether the screws are firmly installed to avoid unnecessary dangers.
- If any injury occurs during installation or use, please seek medical attention.



Overall Installation Diagram



Warning: Danger of explosion! In order to avoid accidents, do not reverse the charge and discharge port, as well as short circuit, and can not be installed in the closed ring; there must be rainproof and moisture-proof devices when outdoor installation.

Attention! When using a single battery, it is recommended to use an inverter below 10KW or other loads below 10KW.

Attention! Before making the final DC connection, ensure that the battery switch/OC circuit breaker is off ensure that the positive electrode (+) must be connected to the positive electrode (+), and the negative electrode (-) must be connected to the negative electrode (-).

Installation and Connection

Installation and connection must comply with national and local electrical code requirements. Select the corresponding ar larger wire according to the use of current, so as not to bring unnecessary trouble when using.

Determine the installation position, and ensure that the left and right air vents of the energy storage system have at least 200mm space to ensure natural convection heat dissipation.

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Recommended Externa! Wiring Diameter and Switch Selection

Model number	Recommended outer wiring diameter	Continuous system current	Circuit breaker/circuit breaker recommended
YLPW-L-14336	3AWG	150A	2P -200A

Note: The wire diameter is for reference only, if the distance between the load and the battery is relatively far, the use of larger wires can reduce the voltage drop to improve system performance. The above cable diameters and circuit breakers are only recommended. Select an appropriate cable diameter and circuit breaker based on the actual situation.

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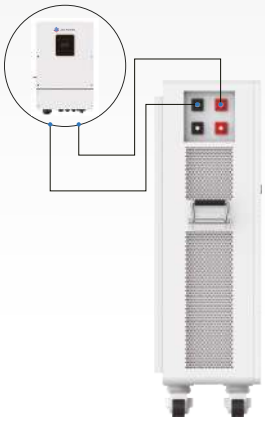
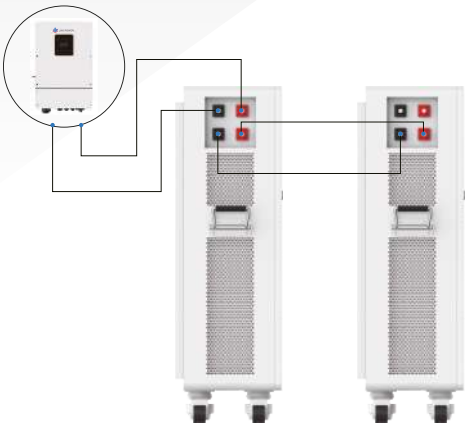
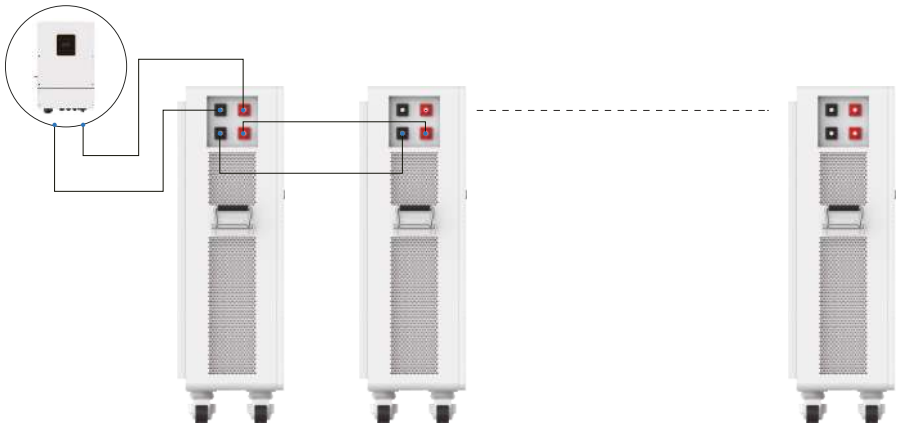
4. Parallel Operation



Schematic diagram of the connection of the output outlet when a battery is used



Schematic diagram of connecting the output outlet when two batteries are used



When multiple batteries are used in parallel, the output outlet connection diagram

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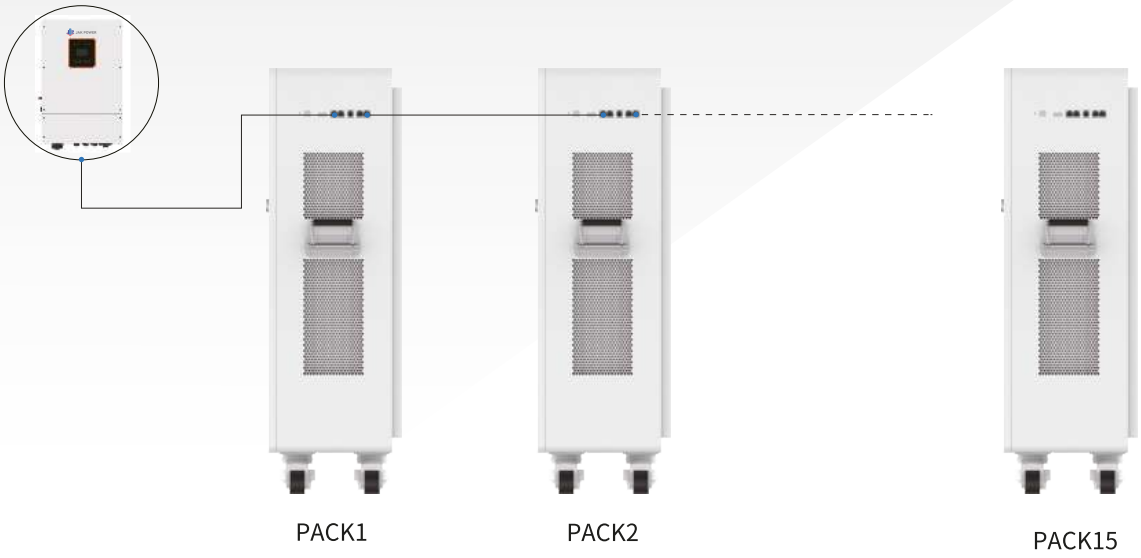


Schematic diagram of signal outlet connection when multiple batteries are used in parallel

Attention

- Up to 15 machines in parallel!
- When battery strings are connected in parallel, the hardware address of each PACK in the battery string is unique.
- You must set one as a host. The host (RS485/CAN) communicates with the reverse controller or inverter. The hardware addresses can be set by the dip switch on the board.

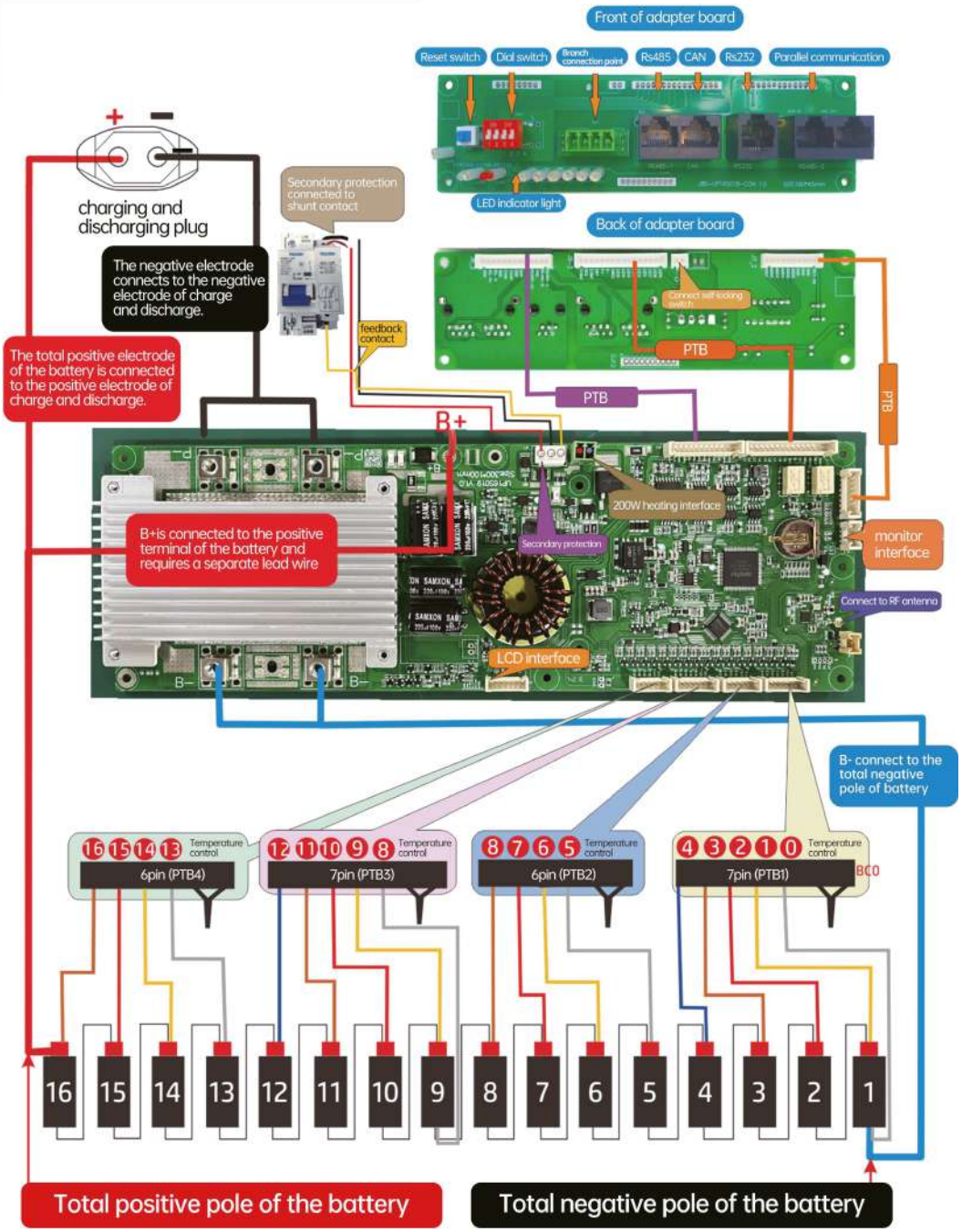
Recommended Inverter Parameters:

Battery Type: LiFeP04 (lithium iron phosphate)	
Discharge cut-off voltage: 43.2V	Overvoltage protection: 58.4V
Overdischarge recovery: 46.4V	Overvoltage recovery: 54V
Normal charging voltage: 58.4V	

Product wiring diagram

The B+ power supply line of the protection board should be separately connected to the positive of the highest series of battery cells (as shown in the following figure), and must not be placed after the circuit breaker or the B+ power line.

The secondary protection device (three-terminal or circuit breaker) must be placed on the P- line and must not be placed on the B- line or B+ line.



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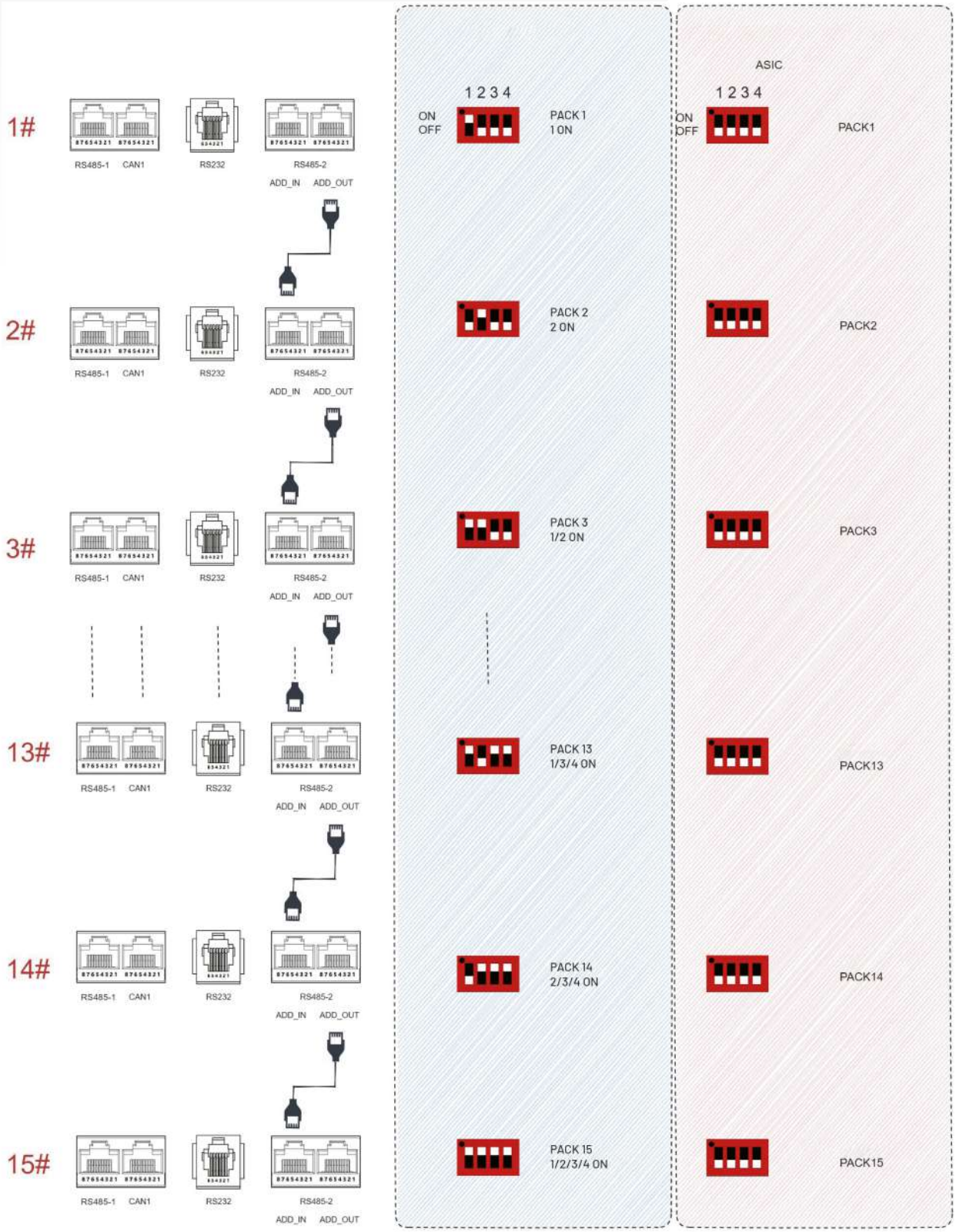
Instructions for parallel connection wiring

Four-digit dial parallel setting



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3. String number configuration

3.1 (Short-circuit configuration of the acquisition line)

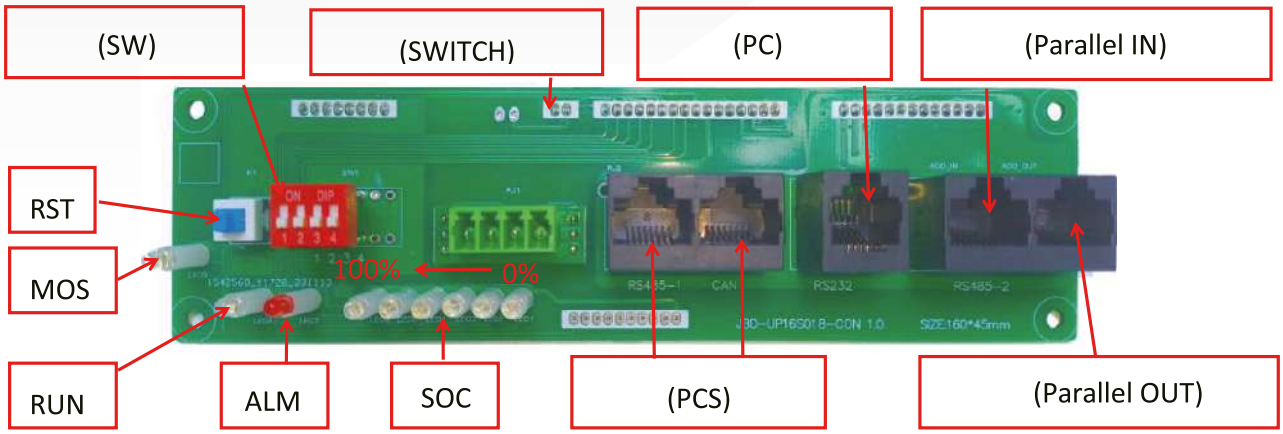
Note: ■ Wires of the same color are short-circuited together

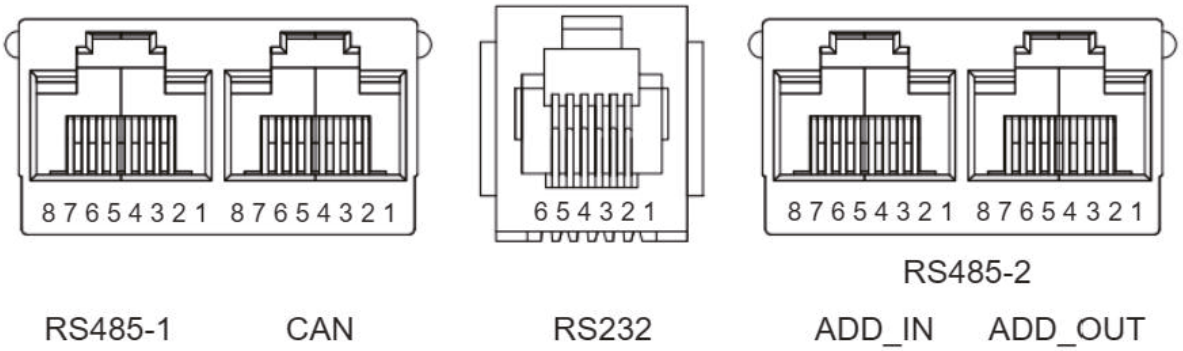
(String number configuration)									
7P+6P	8S	9S	10S	11S	12S	13S	14S	15S	16S
BC16	B16+	B16+	B16+	B16+	B16+	B16+	B16+	B16+	B16+
BC15	B15+	B15+	B15+	B15+	B15+	B15+	B15+	B15+	B15+
BC14	B14+	B14+	B14+	B14+	B14+	B14+	B14+	B14+	B14+
BC13	B13+	B13+	B13+	B13+	B13+	B13+	B13+	B13+	B13+
BC12	B12+	B12+	B12+	B12+	B12+	B12+	B12+	B12+	B12+
BC11	B11+	B11+	B11+	B11+	B11+	B11+	B11+	B11+	B11+
BC10	B10+	B10+	B10+	B10+	B10+	B10+	B10+	B10+	B10+
BC9	B9+	B9+	B9+	B9+	B9+	B9+	B9+	B9+	B9+
BC9-	B9-	B9-	B9-	B9-	B9-	B9-	B9-	B9-	B9-
BC8	B8+	B8+	B8+	B8+	B8+	B8+	B8+	B8+	B8+
BC7	B7+	B7+	B7+	B7+	B7+	B7+	B7+	B7+	B7+

3.2 (Host computer string number configuration)

(Run the upper computer JBD-ES-UP-Vxxx , connect the protection board using the 485 communication tool and communicate normally (the wiring definition and baud rate are described below), complete the string number setting according to the illustration instructions. After the setting is completed, the protection board will automatically restart, and the basic parameters of the protection board will be automatically configured according to the string number setting.)

4. (Schematic diagram of communication interface)
4.1 (Illustration of the interface with a 232 adapter boar





MasterBat®

USER MANUAL

APP BLUETOOTH

LFP MONOBLOCK BATTERIES

mb LITHIUM

BLUETOOTH

Google Play

Apple Store

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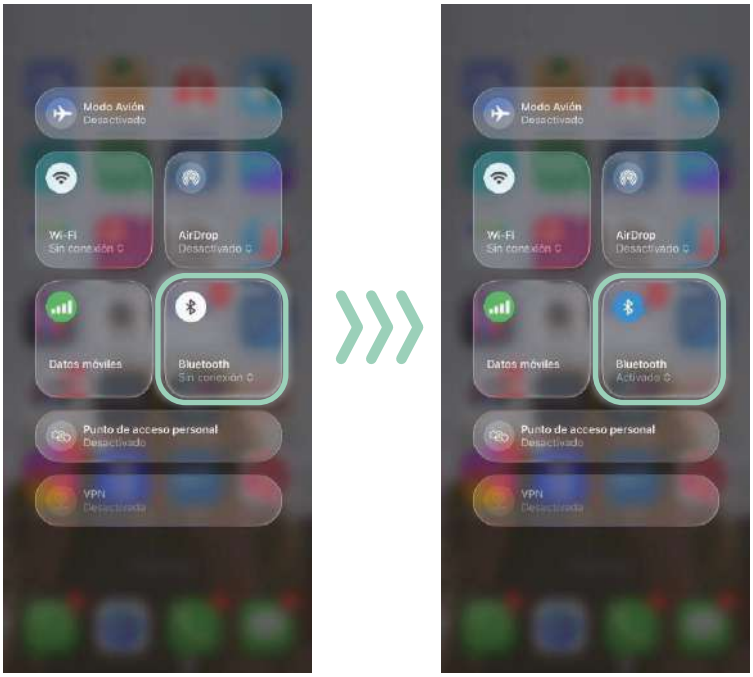
MASTER BATTERY

Instructions for Use

Connect your battery via Bluetooth and monitor its performance in real time. Our app tracks key parameters (voltage, temperature, and capacity) and stores usage history to optimize the lifespan of your lithium battery system.
Safety and stability, all from your device.

1. Turn on the Bluetooth icon on your smartphone.



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2. Download the app

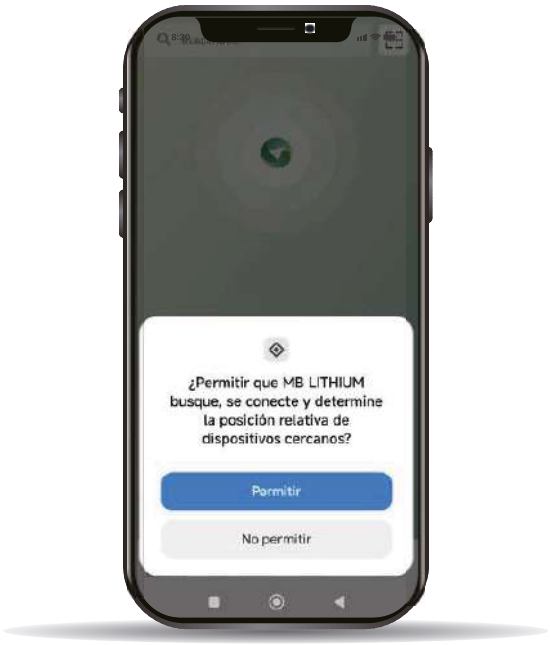
Download the MB LITHIUM Bluetooth app from the Apple Store or Google Play, or scan the QR code below.

Google Play

Apple Store

2. Allow access to the app

The first time you launch the app, you'll need to click “Allow” to connect to compatible devices and access your location.



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MASTER BATTERY

2. Product List

On the app's home screen (Figure 1), you'll see a list of Bluetooth-enabled products within range as long as your Bluetooth is turned on.

3. Battery Scan

Tap the "Scan" icon in the upper-right corner of the screen to activate the camera and scan the product code. (Figure 2)

The first time you tap the "Scan" icon, you will be asked to authorize the app to use your smartphone's camera.

Tap "Allow" or "While using the app." At that point, your phone's camera will activate, and you will be able to scan your battery.

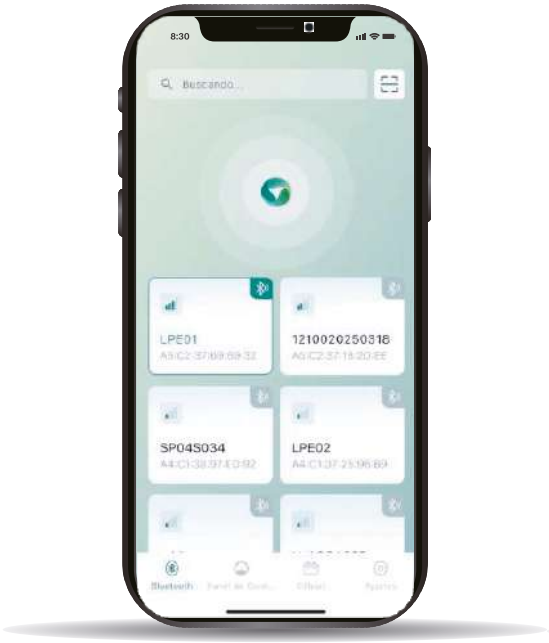

Figure 1
Product list

Figure 2
Product scan

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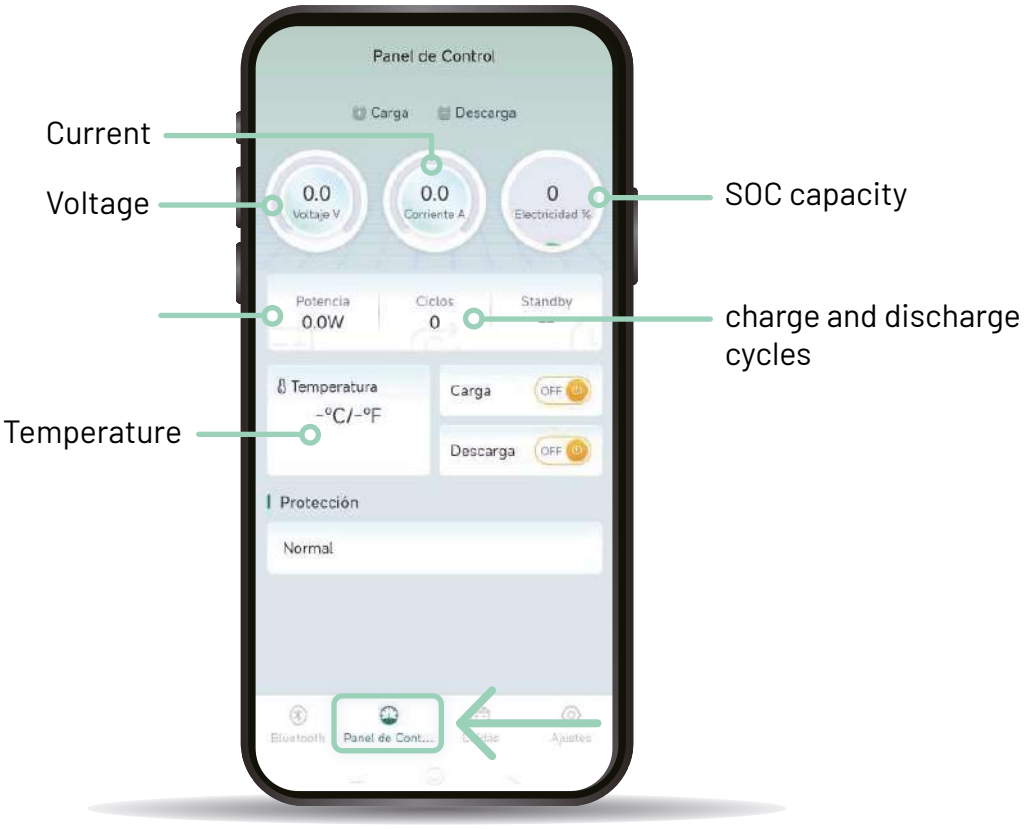
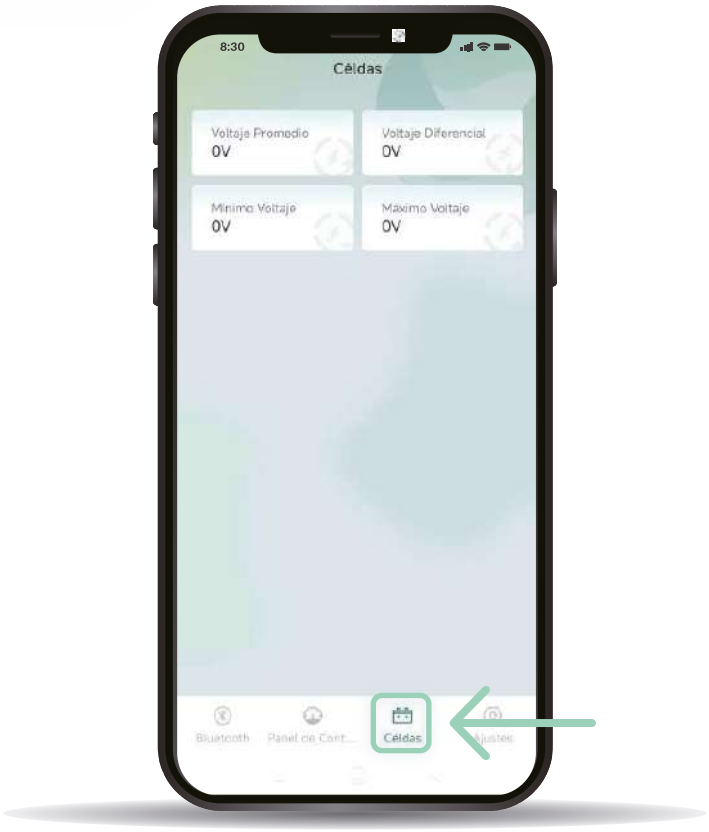
4. Control Panel

On the Control Panel tab, you can view data related to voltage, current, battery charge status, power, etc.



5. Cells

On the next tab, you can view the status of the cells in real time.



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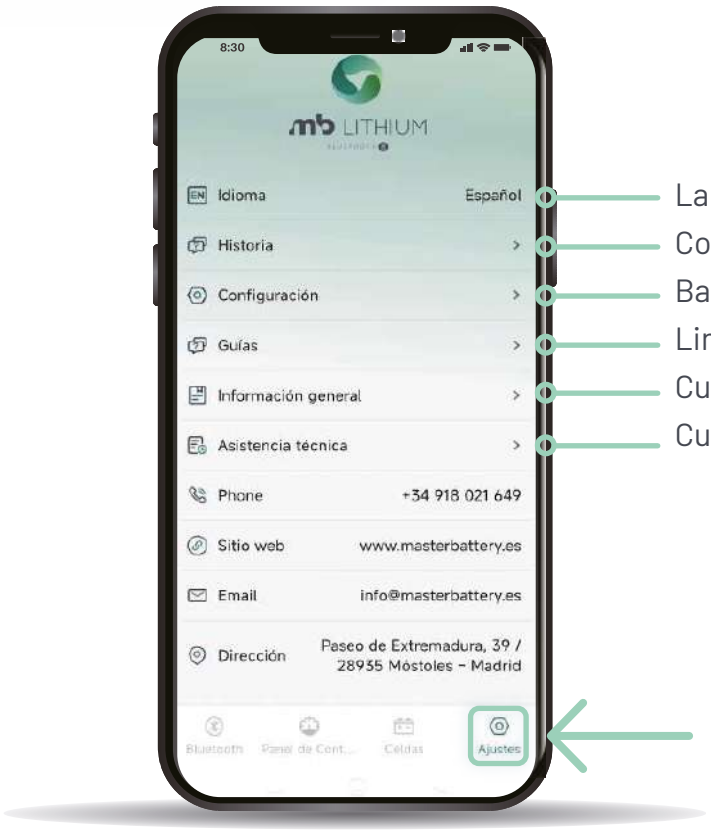
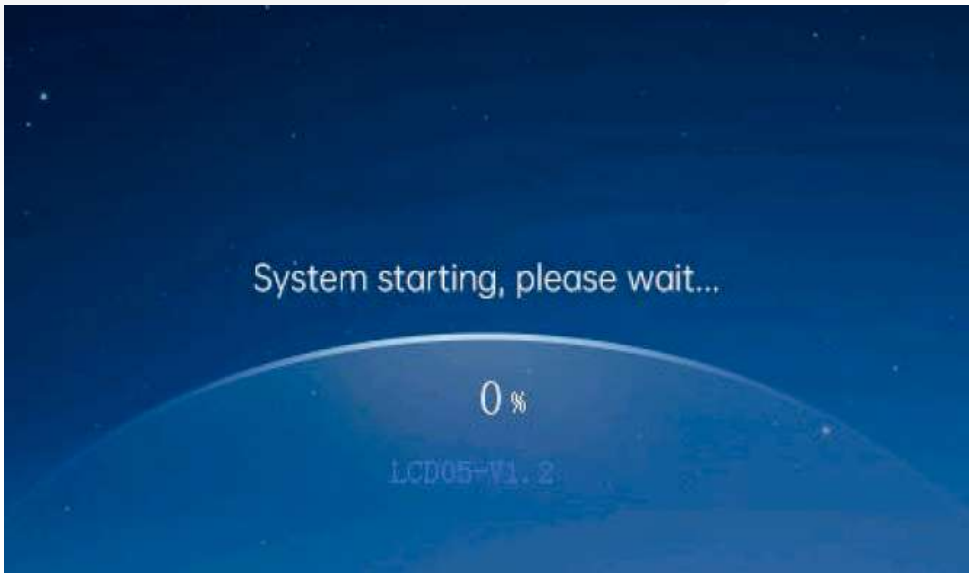
6. Settings

The Settings tab contains the app's configuration options.
From here, you can change the language, view your battery usage history, download the app's user guide, and access support and technical assistance.



- Language selection: English/Spanish.
- Comparison of historical battery data.
- Battery settings.
- Link to the app user guide.
- Customer advice and support.
- Customer support and technical assistance.

5. (Function Introduction)
5.1 {Starting screen)



5.2 (Main screen)

The main page mainly displays parallel statistics, such as the average SOC, the highest and lowest cell voltage, the highest and lowest cell temperature, the average battery voltage and the total current of the system, the average remaining capacity of the system, the operating power, the charge and discharge MOS status, and the language switching function.

5.3 (Language)

The system supports switching between Chinese and English. The switch button is in the upper right cerner of the main page.

5.4 (Slave)

After entering the slave page, the upper part displays the slave selection, the middle part visually displays the battery power and SOH data, the center displays the battery voltage and current, charge and discharge status and fault display status, and the lower part displays the slave battery cell and temperature data, as well as the ambient temperature and MOS temperature data.

Background color description of the slave address: blue indicates the selected slave controller, green indicates the online slave controller, and white indicates the offline slave controller.

5.5 (Parameter 5etting)
5.5.1 (Users login)
Password 666888

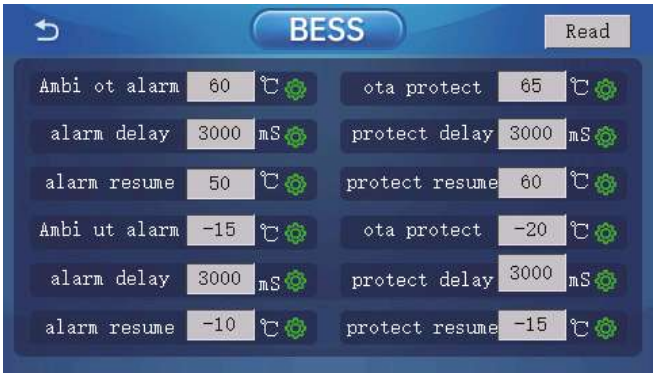
5.5.1 (Parameter setting selection)

On the parameter setting page, you can set cell over voltage and under voltage parameters, total over voltage and under voltage parameters, ambient high and low temperature parameters, excessive pressure difference parameters, charge over current parameters, discharge over current parameters, MOS high temperature parameters, charge high and low temperature parameters, discharge high and low temperature parameters, and SOC alarm parameters.

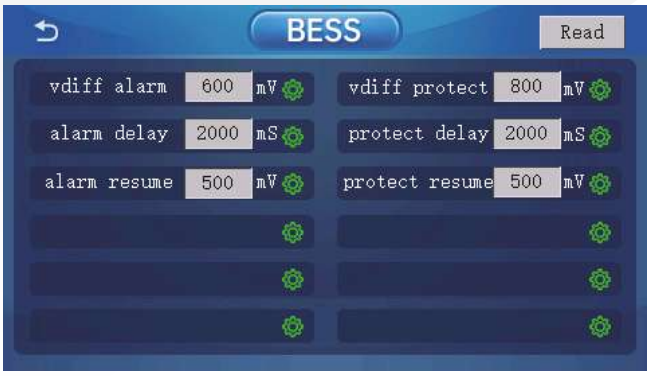
5.5.3(cell over voltage and under voltage parameters)

5.5.4 (pack over voltage and under voltage parameters)

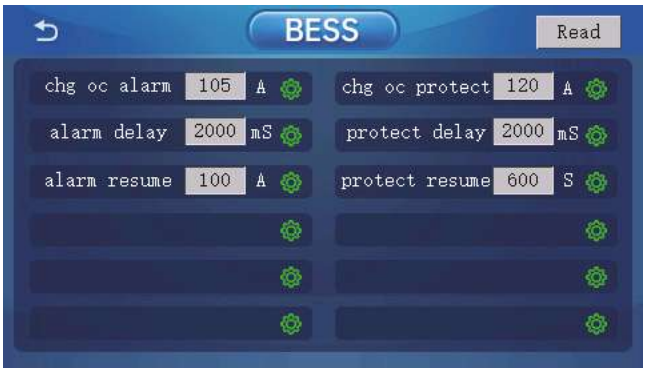
5.5.5 (Ambient high and low temperature parameters)



5.5.6 (Pressure difference parameters)



5.5.7 {Charging over current parameters)



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