

User Manual

Lithium Iron Phosphate Battery (Wall-mounted/Floor-standing Series)

Suitable for Low Voltage Series: 25.6V, 48V, 51.2V



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1. Product Introduction

1.1 Functions

Battery energy storage: Stores and releases electrical energy according to the requirements of the solar energy control/inverter management system. Both input and output ports of the energy storage system are low-voltage DC. (Note: This battery cannot be used in series, only in parallel.)

Battery Charging: Connect the power control to the inverter's energy storage terminals (BAT+, BAT-), and the battery will be charged under the control of the control/inverter to store excess photovoltaic energy in the battery.

Battery Discharging: When the photovoltaic energy is insufficient to power the load, the system will control the battery to supply power to the load. The stored energy in the battery will be converted into AC power by the inverter for the load.

1.2 Features

This product is designed and developed for solar energy system energy storage, targeting the energy storage market. Integrating design features such as miniaturization, lightweight, intelligence, and long service life, it has a concise and aesthetic appearance, safe and reliable quality, and has been widely used in the global household energy storage field;

- (1) The battery adopts lithium iron phosphate(LiFePO_4) material, featuring excellent safety performance and ultra-long cycle life;
- (2) The battery system is equipped with a high-performance BMS (Battery Management System) module, with multiple protection functions such as overcharge, over-discharge, overcurrent, and temperature protection, realizing good communication between the battery system and the host;
- (3) Automatic charge-discharge management: The monitoring unit can automatically measure the battery charge-discharge current and perform float charge and cycle charge management for the battery;

- (4) Effective combination of battery control technology and computer technology to realize real-time monitoring and control of various parameters and states;
- (5) Flexible configuration: Multiple battery modules can be used in parallel to meet high-power electricity demand;
- (6) Adopting self-cooling method, ensuring low noise and stable performance during the operation of the entire system;
- (7) Equipped with functions of SOC calculation and charge-discharge cycle count calculation.

Term	BMS	SOC	SOH	DOD
Definition	Battery Management System	State of Charge	State of Health	Depth of Discharge

2. Safety Instructions

☆ Thank you for choosing the lithium iron phosphate battery. Please read this manual carefully before using the product.

☆ Do not install this product in harsh environments such as humidity, salt spray, corrosion, oiliness, flammability, explosiveness, or heavy dust accumulation.

Danger Warnings

☆ Store the battery in a cool and dry place. The environment should be free of corrosive, explosive, and insulation-damaging gases or conductive dust, and away from fire sources, heat sources, and high voltage; do not immerse the battery in water; keep it out of reach of children; pay attention to static electricity (static electricity may damage the battery protection circuit and cause battery damage).

☆ Handle the battery with care to avoid mechanical vibration, collision, and pressure impact, otherwise internal short circuit of the battery may occur, resulting in high temperature and fire.

☆ Do not short-circuit the positive and negative electrodes of the battery, and do not disassemble the battery by yourself to avoid danger. It is strictly prohibited to squeeze, drop, collide, pierce, burn or otherwise damage the battery.

☆ Improper disassembly may damage the protection function of the battery, causing battery deformation, heating, smoking, or burning.

☆ Keep the battery in a semi-charged state (40%~80% SOC is recommended). Wrap the battery with non-conductive materials to avoid direct contact between metal and the battery causing battery damage.

☆ Dispose of waste batteries safely and properly, do not throw them into fire or liquid.



Emergency Handling Methods

☆ When electrolyte leaks, avoid contact between skin and eyes with the electrolyte. If contact occurs, rinse immediately with a large amount of clean water and seek medical help. Do not allow any person or animal to swallow any part of the battery or substances contained in the battery.

☆ If the battery is severely deformed or electrolyte leaks due to collision or extrusion, place the battery in an explosion-proof box or open area if conditions permit, and evacuate personnel immediately.

☆ If the battery catches fire during use or storage, use a high-pressure water gun to extinguish the fire under the premise of ensuring personal safety.

☆ If the battery catches fire during charging, be sure to turn off the charger power supply first, then perform the next fire extinguishing action.

3. Basic Product Information

3.1 Appearance & Specification Description

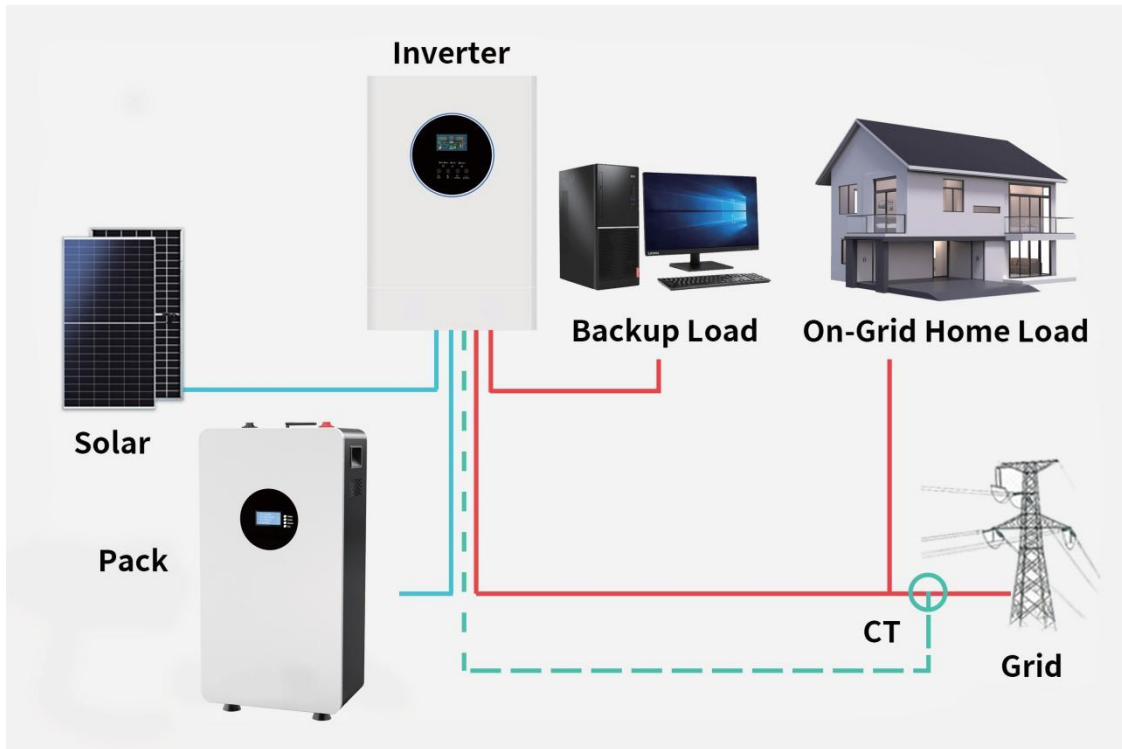
Series 1:

Product photo	Model	Charge/ Discharge Current	Voltage Range	Dimension (W*H*D) (mm)	Weight (kg)
	25.6V 100AH	<100A	21.6V-28.8V	480*160*350mm	22KG
	51.2V 100AH	<100A	43.2V-57.6V	710*530*270mm	48KG
	51.2V 100AH	<100A	43.2V-57.6V	400*170*580mm	53KG
	51.2V 200AH	<200A	43.2V-57.6V	770*620*325mm	94KG
	25.6V 200AH	<200A	21.6V-28.8V	400*170*580mm	53KG

	51.2V 280AH	<200A	43.2V-57.6V	780*450*280mm	120KG
	51.2V 300AH	<200A	40.5V-54V	780*450*280mm	125KG
	51.2V 314AH	<150A	43.2V-57.6V	740*395*250mm	112KG
	48V 314AH	<150A	40.5V-54V	740*395*250mm	105KG

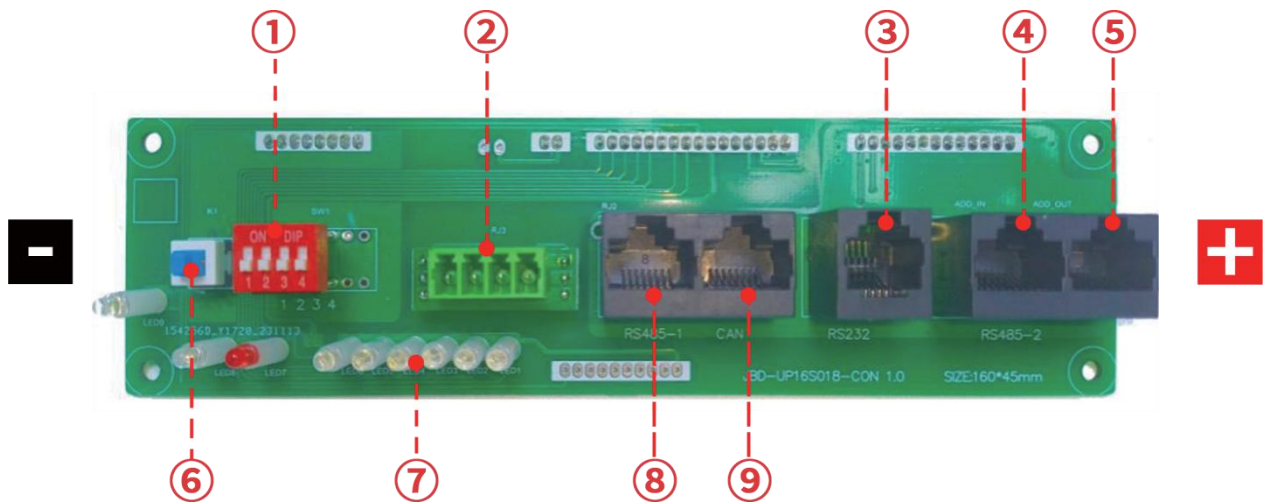
3.2 Battery Application Scenarios/Main Accessories

This product is mainly used with inverters, photovoltaic (PV) modules and related accessories to form a household energy storage system. The system stores the electrical energy generated by photovoltaic power generation in the connected battery, and converts the direct current (DC) of the battery into alternating current (AC) through the inverter.



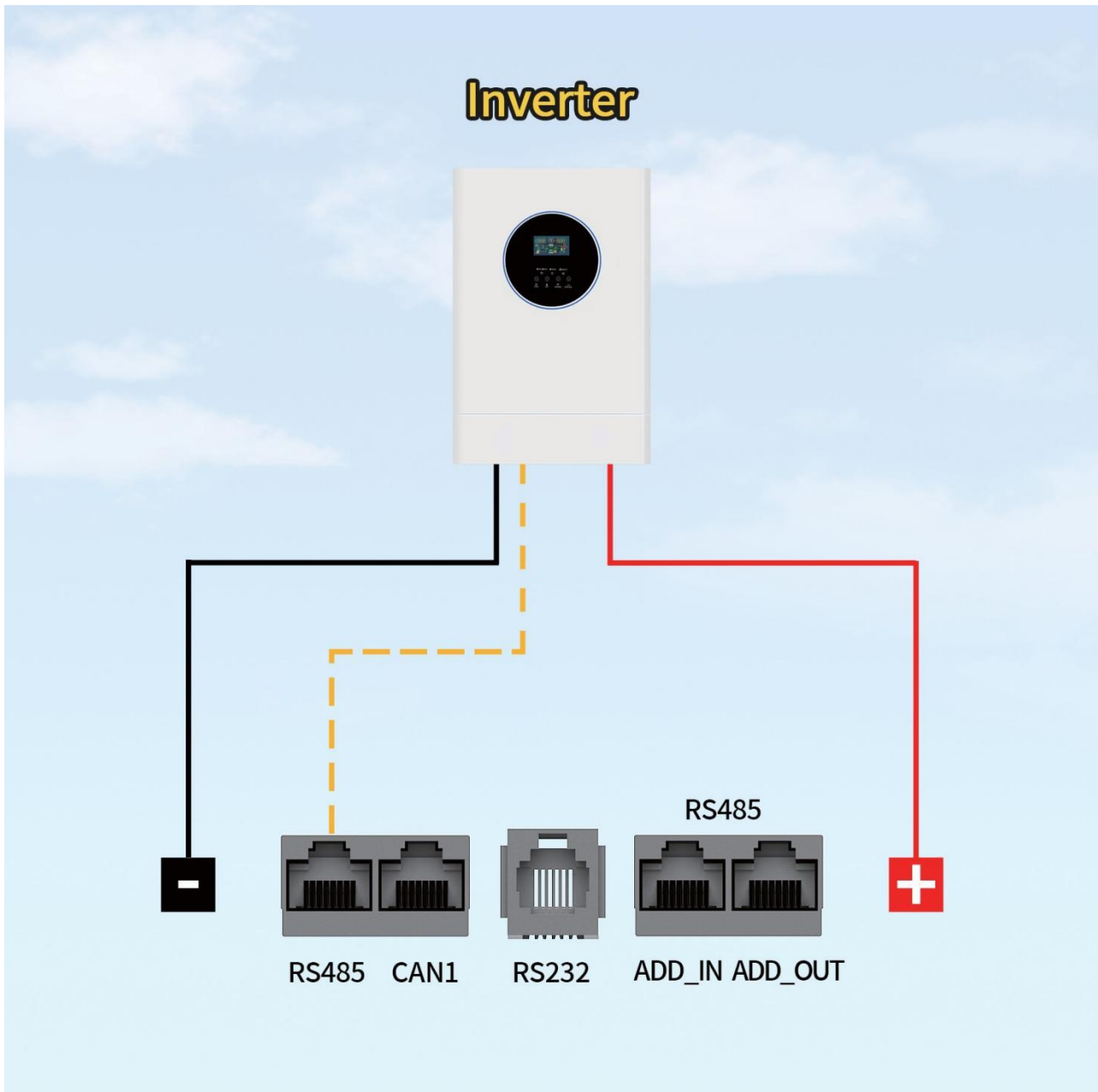
Accessories: Power cable; Communication cable

3.3 Battery Interface Diagram



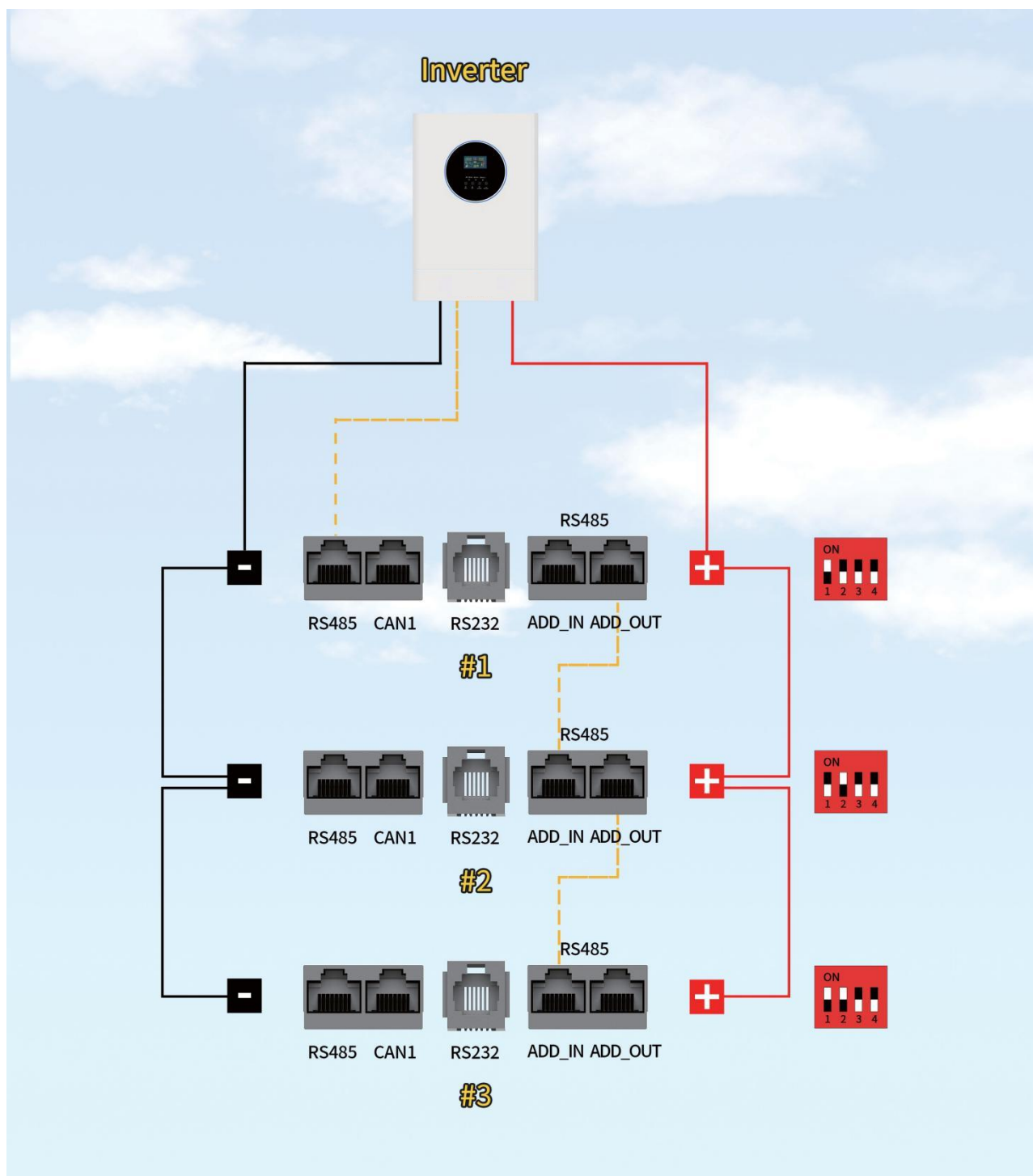
NO.	Name	Function Description
0	Battery Negative Electrode	Connect to inverter
0	Battery Positive Electrode	Connect to inverter
1	DIP Switch	Address setting
2	Dry Contact	Switch signal for controlling external devices (such as generators)
3	RS.232	Connect to computer
4	RS485-IN (ADD)	Battery parallel connection
5	RS485-OUT (ADD)	Battery parallel connection
6	RST	Reset function
7	Indicator Light	Display battery state of charge
8	RS485	Connect to computer or inverter
9	CAN	Connect to computer or inverter

3.4 Battery Wiring Diagram



The communication between the battery and the inverter is optional between CAN and RS485.

3.5 Battery Parallel Wiring Diagram



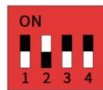
Battery parallel connection guide and DIP switch setting method.

3.6 Parallel DIP Switch Settings

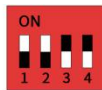
This product is mainly used with inverters, photovoltaic (PV) modules and related accessories to form a household energy storage system. The system stores the electrical energy generated by photovoltaic power generation in the connected battery, and converts the direct current (DC) generated by photovoltaic power generation into alternating current (AC) through the inverter for use in the household power grid.



BAT-1



BAT-2



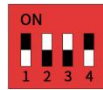
BAT-3



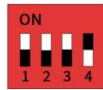
BAT-4



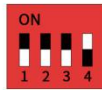
BAT-5



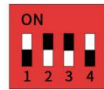
BAT-6



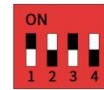
BAT-7



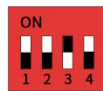
BAT-8



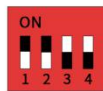
BAT-9



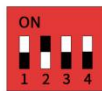
BAT-10



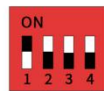
BAT-11



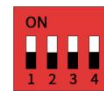
BAT-12



BAT-13



BAT-14



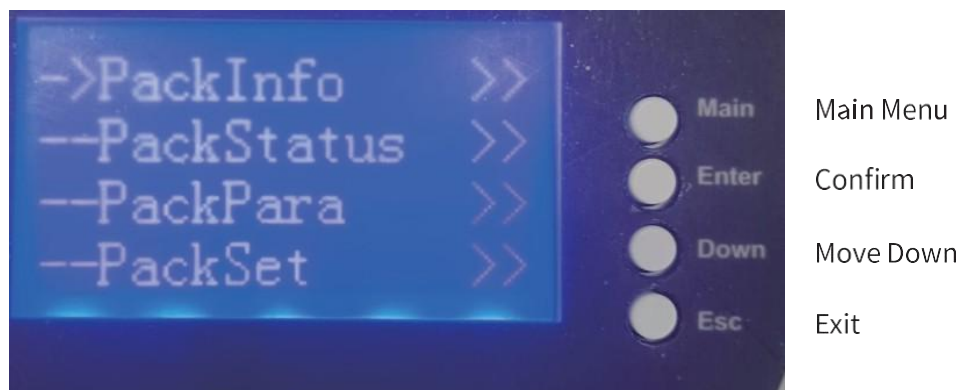
BAT-15

Address	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

4. Display Control

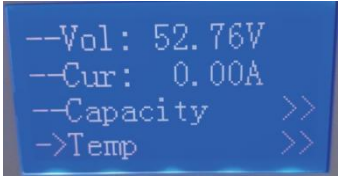
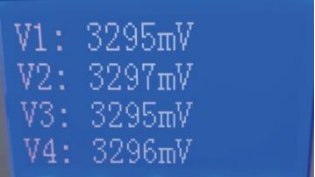
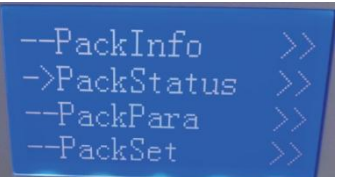
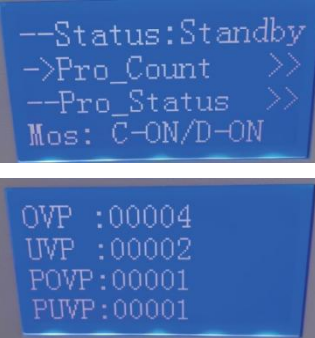
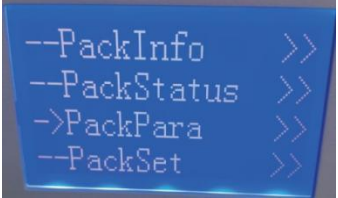
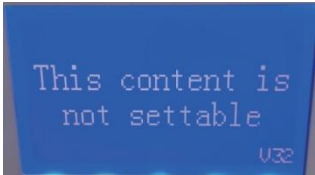
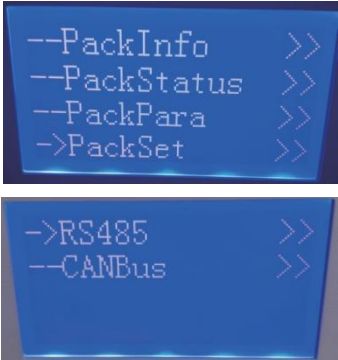
4.1 Display Screen Introduction

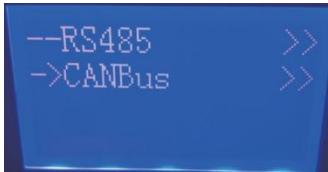
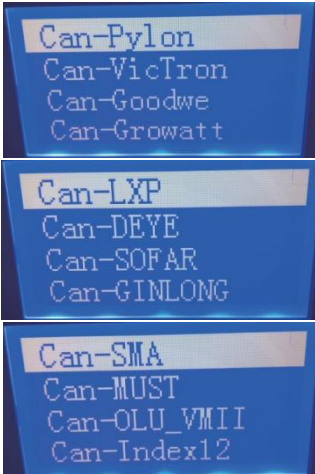
The display screen can be used to view battery data and select communication protocols.



Name	Definition
Battery Pack Information	View data such as voltage, current, temperature, etc.
Battery Pack Status	View protection status, protection times, and protection flags
Battery Pack Parameters	Set some protection parameters (not open to users currently)
Battery Pack Settings	Set BMS host RS485 protocol or CAN protocol

Home Page	Detailed Display	
		Voltage: Display of battery modules Current: Charging (+)/Discharging (-) current
		Capacity: RSOC: Remaining State of Charge (percentage) Remain: Remaining capacity of the battery pack FCC: Full Charge Capacity of the battery CYC: Cycle count

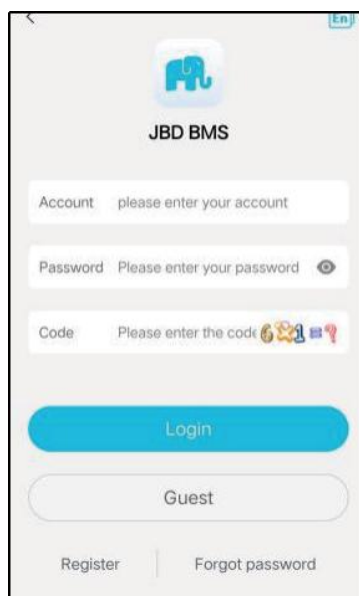
Home Page	Detailed Display	
		Temp: Display temperatures of all BMS probes
		Cell Information: View voltage of each cell (unit: millivolt, mv)
		Protection Functions: OVP: Overvoltage Protection(single cell) UVP: Undervoltage Protection (single cell) POVP: Pack Overvoltage Protection PUVP: Pack Undervoltage Protection COTP: Charging Over-temperature Protection CUTP: Charging Under-temperature Protection DOTP: Discharging Over-temperature Protection
		Not activated
		Supported Protocols (Partial List): Pylontech, GoodWe, Sunmoon, Pengcheng, Deye, Invt, Solis, Sungrow, SVC, Nanjing Oulu, Sanke

Home Page	Detailed Display	
		Nanjing Oulu Sanke

4.2 WIFI/Bluetooth

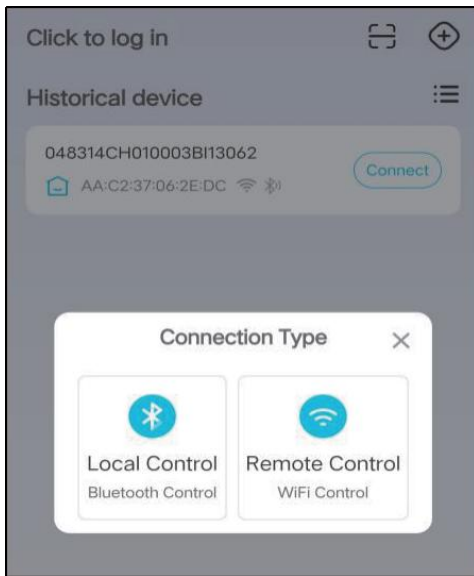
Bluetooth Function Introduction: The communication module is connected to the protection board through the UART interface. Connect to the Bluetooth broadcast corresponding to the communication module via a mobile application. Once the Bluetooth connection is successful, real-time information of the protection board can be viewed and configured, and related OTA operations can be performed. The communication module is connected to the protection board through the UART interface for configuring WIFI account and password information. The module can be connected to the local WIFI network.

The QR code for application download is shown below.



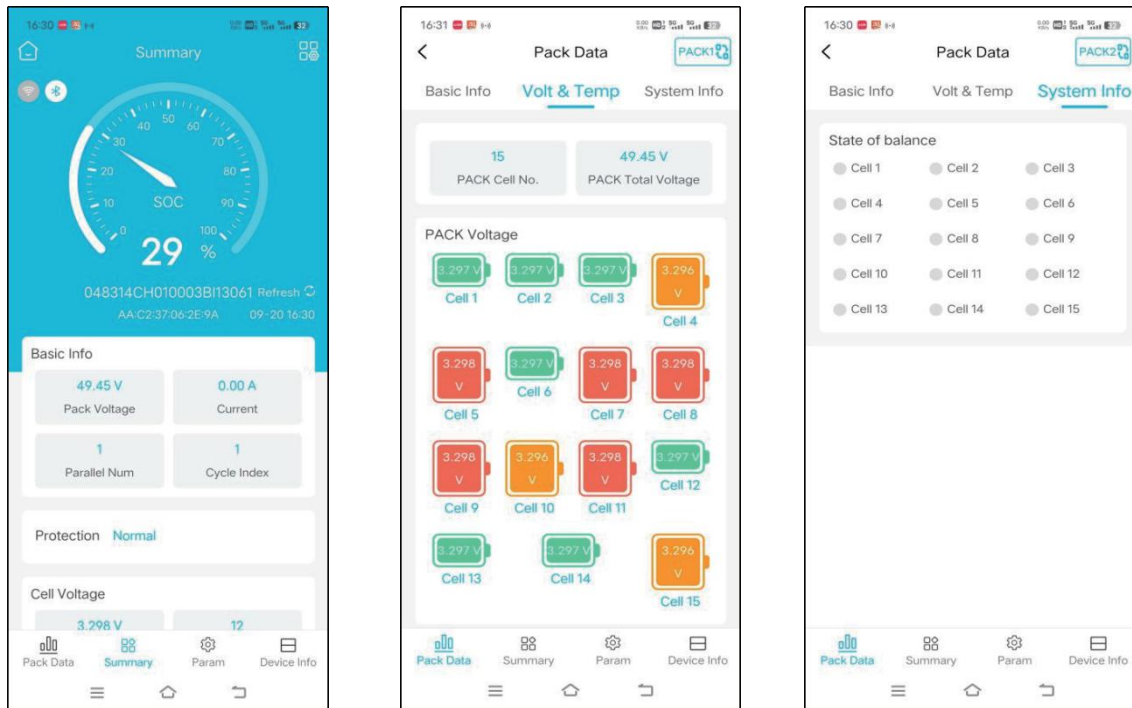
4.3 Bluetooth Usage & Setup Method

1. Open the "BMS Cloud Client" application on your mobile phone.
2. Click "Add" in the upper right corner of the homepage.



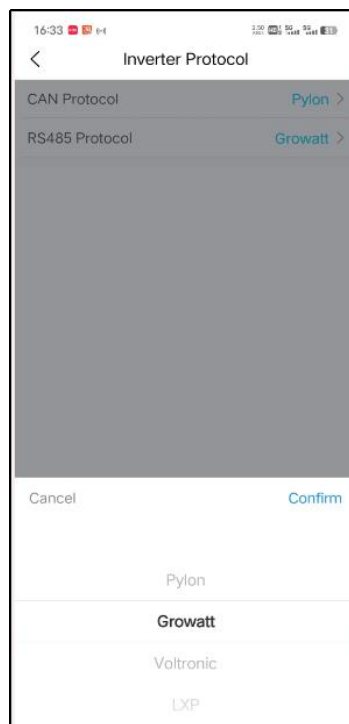
4.4 Checking Battery Information via Mobile Phone

Operational steps to be supplemented according to the actual APP interface.

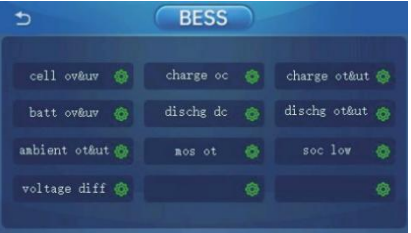


4.5 Protocol Modification via Mobile APP (Battery without Screen)

This page can be used to set the BMS host RS485 protocol or CAN protocol.



4.6 Protocol Modification via Mobile APP (Battery without Screen)

Home Page	Notes
	The homepage mainly displays parallel operation statistical information, such as average SOC, maximum and minimum single-cell voltage, maximum and minimum single-cell temperature, average battery voltage, total system current, average remaining capacity of the system, operating power, charge-discharge MOS status, and language switching function.
	After entering the slave page: The upper part displays slave selection. The middle part intuitively displays battery power and SOH data, as well as battery voltage, current, charge-discharge status, and fault display status. The lower part displays slave battery cell and temperature data, as well as ambient temperature and MOS temperature data. Background color description of slave address: Blue = currently selected slave, Green = online slave detected, White = offline slave.
	Login Password: 666888
	Parameter Setting Page includes: Single-cell overvoltage/undervoltage parameters, pack overvoltage/undervoltage parameters, ambient high/low temperature parameters, excessive voltage difference parameters, charging overcurrent parameters, discharging overcurrent parameters, MOS high-temperature parameters, charging high/low temperature parameters, discharging high/low temperature parameters, SOC alarm parameters, etc.

Home Page	Notes
	Supported Protocols: Pylontech, GoodWe, Growatt, Shouhang, Weikeychuan, Sunmoon, Pengcheng, Deye, Ginlong, SMA, etc .

5. Wall-mounted Battery Installation

5.1 Accessories



Mounting plate



Screws

5.2 Installation & Fixation



1. Select a solid load-bearing wall and mark the distance between the installation holes of the battery bracket according to the planned position;
2. Drill a hole of about 75mm with a 10mm drill bit, and tighten the expansion screw hook provided with the package;
3. Install the battery bracket (accessory) on the back of the battery, and ensure all six screws are tightened;
4. Lift the battery, align the groove on the back of the battery bracket with the expansion screw hook, and hang the battery.

6. Installation Instructions

6.1 LED Blinking Indications

Blinking Mode	ON Duration	OFF Duration
Blinking 1	0.25S	3.75S
Blinking 2	0.5S	0.5S
Blinking 3	0.5S	1.5S

6.2 Buzzer

Fault Condition: Beeps for 0.25 seconds every second.

Protection State: Beeps for 0.25 seconds every 2 seconds (excluding overvoltage protection).

Alarm State: Beeps for 0.25 seconds every 3 seconds (excluding overvoltage alarm).

The buzzer function can be enabled or disabled via the host, with the factory default setting as Disabled.

6.3 Reset Button Description

When BMS is in Sleep Mode: Press and hold the button for 3~6 seconds, then release. The protection board will be activated, and the LED indicators will light up sequentially starting from "RUN" with a 0.5-second delay.

When BMS is in Active Mode:

Press and hold the button for 3~6 seconds, then release. The protection board will enter sleep mode, and the LED indicators will light up sequentially starting from the lowest power indicator with a 0.5-second delay.

Press and hold the button for 6~10 seconds, then release. The protection board will be reset, and all LED indicators will light up simultaneously for 1.5 seconds.

Parameters and Functions After Reset: Parameters and functions set via the upper computer are retained. To restore factory default parameters, use the "Restore Defaults" function on the upper computer. However, operation records and stored data (e.g., battery capacity,

cycle count, protection records) will remain unchanged.

6.4 Sleep & Wake-up

Sleep Mode Activation

The system will enter low-power mode if any of the following conditions are met:

Over-discharge protection of a single cell or the entire battery pack remains active for 30 seconds.

The reset button is pressed and held for 3~6 seconds, then released.

The minimum single-cell voltage is lower than the sleep voltage, and the duration reaches the sleep delay time (with no communication, no protection, no balancing, and no current simultaneously).

The standby time exceeds the forced shutdown threshold.

Note: Before entering sleep mode, ensure no external voltage is connected to the input terminal; otherwise, the device cannot enter low-power mode.

Wake-up Conditions

When the system is in low-power mode, it will exit and enter normal operation mode if any of the following conditions are met:

Connect a charger with an output voltage greater than 48V.

Press and hold the reset button for 3~6 seconds, then release.

Activate via the RS232 interface.

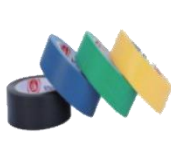
6.5 Precautions

LED Label Explanation

To ensure user safety during product use, this manual provides relevant identification information and uses appropriate symbols to alert users. It is recommended that users carefully read the list of symbols used in this manual.

	Low Risk: Failure to avoid may result in minor or moderate injury.
	High Risk: Failure to avoid may result in severe injury or death.
	Disconnect the battery terminals before operating the battery.
	If the battery is dropped or crushed, it may explode or be severely damaged.
	Exposure to open flames or other extreme heat sources may cause the battery to explode.
	Grounding: The system must be properly grounded to ensure operator safety.
	This side up.
	Handle with care to avoid damage.
	Keep dry.
	Keep the battery out of reach of children.
	Do not short-circuit.
	Do not reverse the positive and negative electrodes.

6.6 Installation Tools

					
hammer driver	Drill Driver	Multimeter	Ammeter	Level gauge	Hammer
					
Screwdriver+	Screwdriver-	Tape measure	Electrical tape	Protective gloves	Goggles
					
Utility knife	Wire nippers	Wire crimper	Pen	Spanner	Pliers

6.7 Installation Environment

- (1)The battery operates optimally within a temperature range of 20~40°C.
- (2)Avoid installation in environments with direct high-temperature exposure or rain.
- (3)Avoid installation near high-temperature heat sources or low-temperature cold sources.
- (4)Avoid installation in locations with large ambient temperature fluctuations.
- (5)Avoid installation in environments with strong interference.
- (6)Avoid installation in areas accessible to children.
- (7)Avoid installation in water-prone areas.
- (8)Do not place flammable or explosive materials around the device.

Warning: The battery is a non-user-serviceable component. In case of abnormalities, contact the after-sales department for maintenance. Unauthorized disassembly of the battery will void the warranty.

(1)Charging Environment Requirements

Use a charging device that matches the battery parameters; do not use a device with mismatched voltage. The recommended continuous charging current is $0.2CA \sim 0.5CA$.

(2)Charge within an ambient temperature range of $0^{\circ}\text{C} \sim 45^{\circ}\text{C}$, ensuring no flammable materials are nearby and ventilation is adequate.

(3)Charging Time: Do not charge the battery for more than 12 hours. Overcharging may affect battery life and pose safety risks.

(4)Normal Charging Phenomenon: Battery capacity increases rapidly in the early stage of charging and slowly in the later stage, which is a normal safety design for charging.

(5)Winter Charging Notes: When the outdoor temperature is below -20°C , the battery will stop charging (normal phenomenon). Charge in an appropriate ambient temperature to ensure charging efficiency.

(6)Normal Temperature Rise: The battery pack casing may heat up slightly during charging, which is normal. Use with confidence and keep away from children.

6.8 Storage Environment

(1)The battery has a certain self-discharge rate.

(2)Store the battery in an environment with a temperature of $-10^{\circ}\text{C} \sim 45^{\circ}\text{C}$. Avoid storage in locations with temperatures exceeding 50°C , as this may cause overheating, fire, functional failure, or shortened service life.

(3)Regular Maintenance for Long-term Non-use: If the battery pack is not used for a long time, perform regular maintenance and charging; otherwise, the battery may be completely discharged, causing irreversible damage.

(4)Optimal Storage Capacity: The recommended storage capacity is 30% SOC. Long-term storage with SOC below 10% or above 50% may cause irreversible capacity degradation.

(5)Safety Storage Standards for Lithium Battery Self-discharge Protection:

When not in use for a long time, the battery SOC shall not be lower than 30%.

Store the battery separately, and the safe storage period shall not exceed 6 months; otherwise, there may be risks of battery power failure and irreversible issues.

(6)Avoid storing the battery in locations with a risk of falling to prevent uncontrollable damage, leakage, overheating, smoking, fire, or explosion.

(7)Prohibit exposure to strong static electricity or magnetic fields, as this may damage the battery's safety protection devices and pose safety risks.

Note: The manufacturer shall not be liable for improper use caused by battery undervoltage or abnormal power supply.

Usage Instructions:

(1)Wiring: Ensure the correct polarity of the battery's positive and negative electrodes and the connection cables to the power supply device.

(2)First Use: Due to transportation reasons, the battery's stored capacity is usually below 30% when used for the first time.

(3)Daily Use: Maintain the battery capacity above 10% and charge it in a timely manner to extend the battery cycle life.

(4)Avoid prolonged high-rate discharge during normal use.

(5)Do not connect any conductors to the two terminals of the battery, as this will cause an external short circuit.

6.9 Severe Warnings

Do not use the battery in rain or during washing, and do not immerse the battery in water. Internal short circuits may cause the lithium battery to explode or catch fire, resulting in permanent damage.

Additional Precautions:

To prevent leakage, abnormal heating, fire, performance degradation, or explosion, use the battery in accordance with the following instructions. The company shall not be liable for accidents caused by non-compliance with these instructions.

- (1) Prohibit severe vibration; handle the battery with care.
- (2) Do not immerse the battery or its accessories in water or other liquids; keep them moisture-proof.
- (3) Avoid short-circuiting the positive and negative electrodes of the battery pack.
- (4) Prohibit disassembly of the battery. Disassembly may cause internal short circuits, decomposition of internal materials, fire, explosion, or electrolyte leakage. If electrolyte comes into contact with skin, eyes, or other parts of the body, rinse immediately with water and seek medical attention promptly.
- (5) Do not dispose of waste batteries in fire, as this may cause explosions or other dangerous accidents.
- (6) If the battery is damaged, deformed, leaks electrolyte, or emits an unusual odor, stop using it immediately and send it to an authorized manufacturer's agency or relevant institution for proper disposal. Keep leaked electrolyte away from fire to avoid explosion.
- (7) Battery Replacement: Batteries shall be replaced by the battery supplier; users are not allowed to replace them without authorization.
- (8) Prohibit unauthorized disassembly of the battery pack and charger. The company shall not be liable for any losses caused thereby.
- (9) Do not mix batteries of different capacities, models, or types.
- (10) Before use, the product must be properly grounded to ensure safety.

(内容由AI生成，仅供参考)