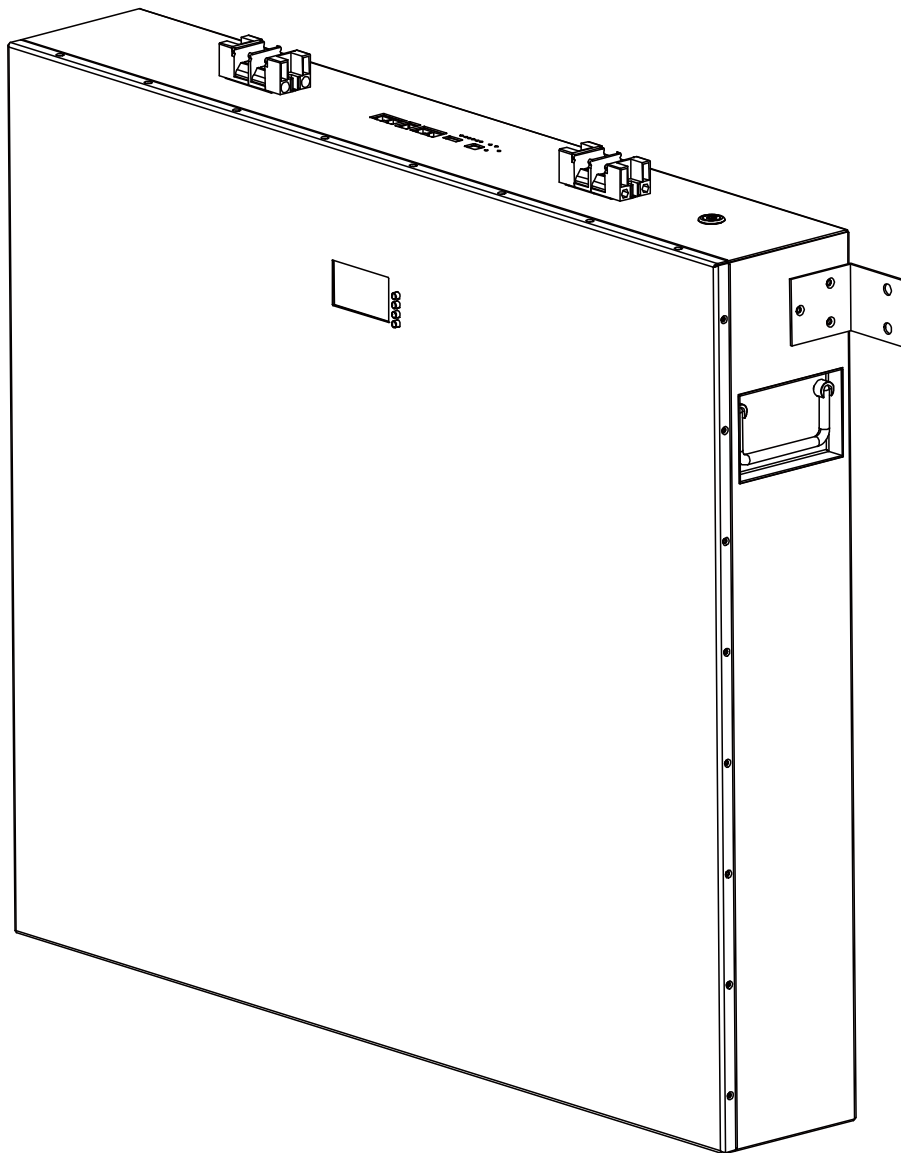
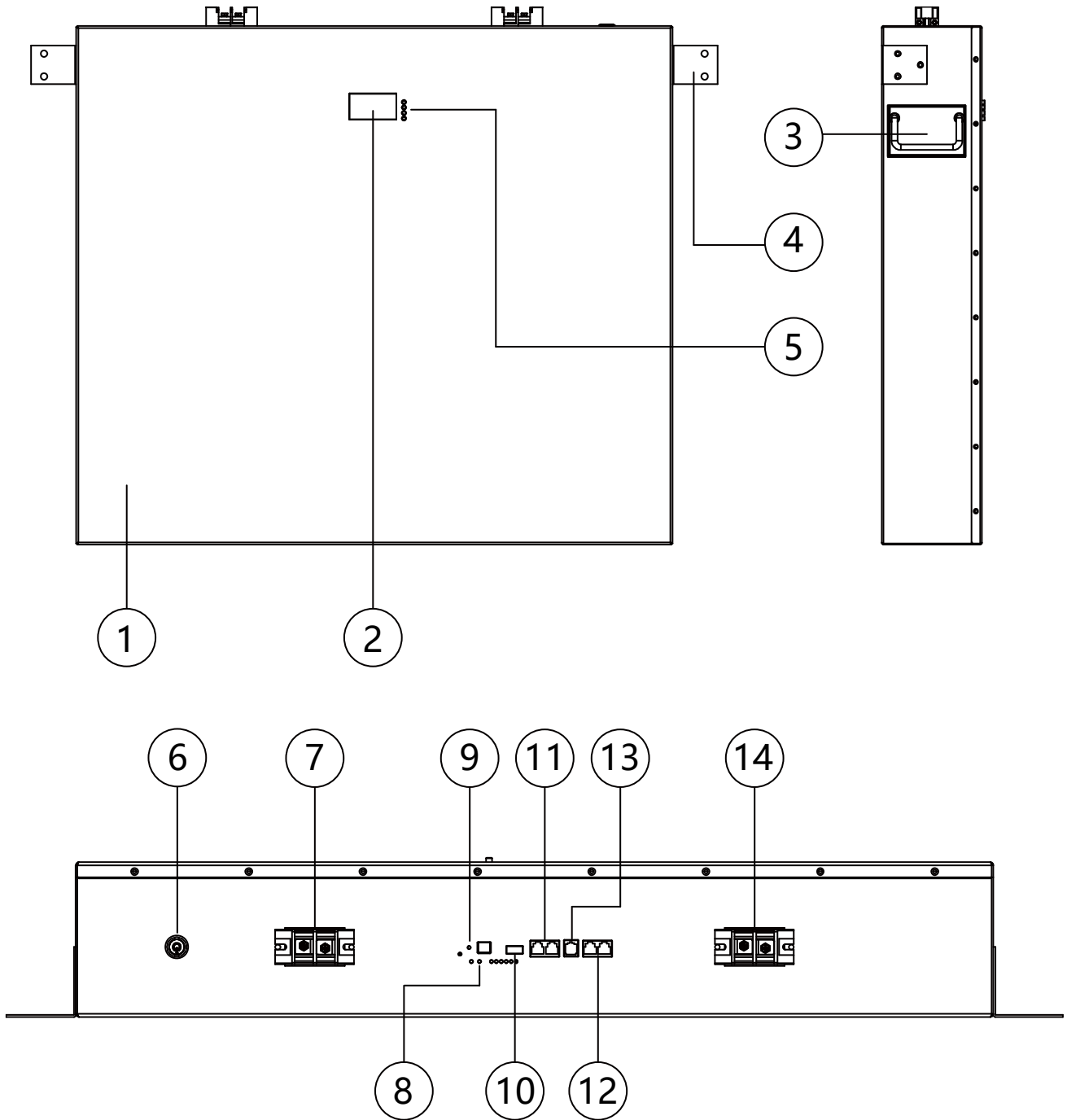


Quick Installation Manual

48V240Ah

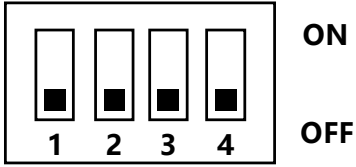


Introduction to appearance



- | | |
|--|----------------------------------|
| 1. Face cover | 8. LED status indicator |
| 2. LCD status display | 9. Reset hole |
| 3. Handle | 10. Parallel DIP switch |
| 4. Wall-mounted fixed ears | 11. RS485/CAN communication port |
| 5. The screen displays the operation buttons | 12. RS232 communication port |
| 6. Switch | 13. RS485 communication port |
| 7. Black battery negative electrode | 14. Red battery negative pole |

A. DIP switch setting comparison table.



ASD	ASD			
	#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

B. Communication between modules in parallel

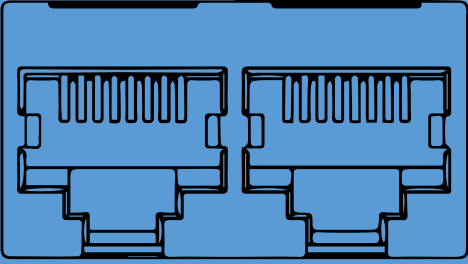


Schematic diagram of parallel wiring of lithium battery communication protocol

See the table below for details.

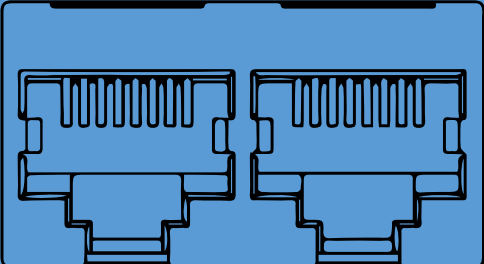
1. Connect the red positive battery
2. Connect the black negative battery
3. Connect the red positive inverter
4. Connect the black negative inverter
5. Connect 485/CAN inverter
6. Connect the communication of the battery
7. Connect the communication of the computer

Interface definition



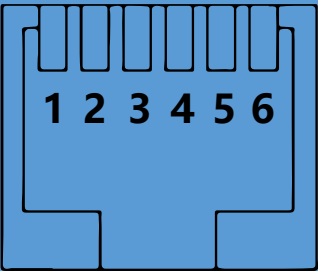
RS485/CAN

RS485 connected to inverter		CAN is connected to the inverter	
RJ45 pin	Define a description	RJ45 pin	Define a description
1、 8	RS485-B	1、 2、 3、 6、 8	NC
2、 7	RS485-A	5	CANL
3、 6	GND	4	CANH
4、 5	NC	7	GND



RS485

RS485 parallel battery	
RJ45 pin	Define a description
1、 8	RS485-B
2、 7	RS485-A
3、 6	GND
4、 5	NC



RS232

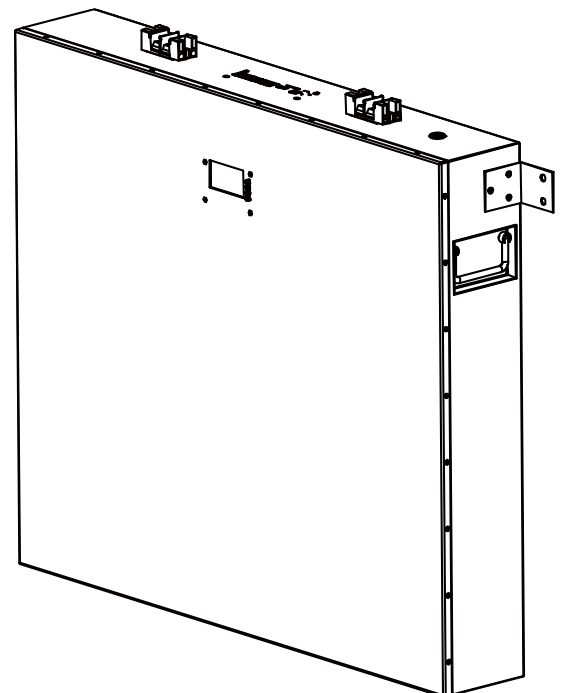
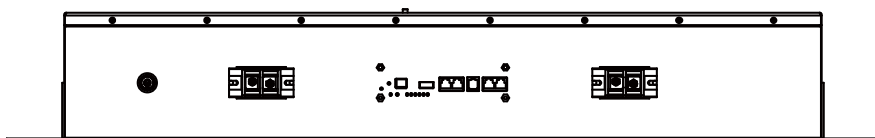
RS232 linked PC	
RJ11 pin	Define a description
2	NC
3	TX
4	RX
5	GND

Common abnormal phenomena of battery system and elimination methods

Symptom	Probable causes	
BMS cannot be activated	<p>Whether the BMS weak current switch is turned on.</p> <p>Module serial connection error</p>	<p>Check the cable and install it as described in the installation manual</p>
The BMS red light is always on	<p>Red light warning, there is a failure,</p>	<p>Locate the point of failure as shown in the table above.</p> <ol style="list-style-type: none"> 1. Voltage sensor failure/temperature sensor failure: check whether the sampling line is connected correctly, and the sampling line can be replaced for troubleshooting; Reboot and observe whether to recover 2. Charging circuit failure, discharge circuit failure: contact the manufacturer for consultation 3. Battery failure: check whether the sampling terminal wiring is normal: after turning off the BMS, check whether the voltage value of each module is within the voltage range in the manual: observe whether it is cleared after restarting, otherwise please contact the manufacturer 4. Sampling IC signal failure: check whether the voltage sampling line is connected normally, and the sampling line can be replaced for troubleshooting: observe whether it is restored after restarting: if it is not restored, please contact the manufacturer
The BMS and inverter cannot communicate	<ol style="list-style-type: none"> 1. The BMS auxiliary code address is different from the address of dynamic cyclic query 2. When multiple units are connected in parallel, they cannot communicate normally 3. The communication serial port setting is incorrect 4. The order of RS485 communication lines is wrong 5. The physical connection is abnormal 	<ol style="list-style-type: none"> 1. Detect and reset the RMS dial-up address 2. When multiple units are connected in parallel, different addresses need to be set, and the dialing address of each product should be based on the dynamic loop 3. Reset the address. Set the correct serial port configuration according to our communication protocol. 4. Please connect the communication cable correctly according to the requirements of the installation manual 5. Check whether the physical connection of the communication circuit is normal

Safety and precautions

1. The battery module must be used with BMS, and it is forbidden to mix batteries from different manufacturers.
2. Check whether the battery module voltage is damaged; If there is any abnormality, please stop using it.
3. It is forbidden to stack the entire trailer battery with the forklift plate during transportation and storage, and it is forbidden to stack the battery modules when installing and transporting the battery. There are positive and negative lead terminals or communication wire lead terminals, and it is forbidden to squeeze, stack, and put down.
4. Battery module parallel matching requirements: (precautions before installation).
 - (1) The battery modules of the same two models, the same capacity, and the same voltage are connected to 48V in parallel.
 - (2) Continuous use is prohibited.
5. There are parallel lines in the battery module box, and the parallel lines correspond to the battery module. Mixing is prohibited.
6. It is forbidden to use or place the battery module in a place with elevated temperature, high heat source, away from fire source and water source.
7. It is forbidden to disassemble the battery module, bump, throw, step on the battery module, disassemble the BMS and remove the yellow tamper-proof sticker without authorization.
8. Before installing the battery module, please check whether the battery open circuit voltage is within the normal range. The module is printed with "positive" and "negative" signs, and the electrical performance should be correctly determined. Reverse or short-circuit operation of the battery is prohibited.
9. Insulating tools and gloves should be used during installation and transportation, and metal-containing conductors such as watches, bracelets, rings and so on should be removed from the wrist to prevent electric shock and short circuits between positive and negative poles. During installation, battery modules are highly insulated and protected. When the battery pole is close to the battery holder or other conductor, the battery pole or battery holder needs to be insulated.
10. It is recommended that two people carry it at the same time. The means of transport are safety ropes or load-bearing net bags. The battery box must be transported to the site by itself. Violent construction is prohibited to avoid damage to the product.
11. Installation and Maintenance Requirements. After the battery module is mounted on the wall, poles and inserts need to be installed for front maintenance.
12. Battery rack compatibility: multiple sets of parallel batteries, battery rack installation steps, battery module installation and cable connection, select the corresponding installation diagram according to diverse types of batteries, no battery rack installation (such as outdoor integrated power cabinet) refer to the battery module installation and cable connection diagram in the battery rack installation mode.
13. Please read this installation manual carefully before installation. If you have any questions, please contact your supplier.



BMS test

After installing the BMS and battery modules in the above order, you need to activate the BMS and press the ON/OFF button to power up the BMS. After the BMS is activated, only the green light is on in normal working (red and orange LED lights are off). When the alarm indicator appears red, press the reset button to restart and eliminate the alarm (when the subtitle cycle of the capacity indicator flashes, nine indicators flash three times during self-test, indicating that the forced restart is successful). Long press RESET or ON/OFF reset button 3S, all BMS LEDs turn off.

When the BMS is operating normally, measure the battery voltage, adjust the floating voltage of the switching power supply to be consistent with the battery voltage, check the positive and negative cables of the switching power supply, connect the positive and negative poles of the switching power supply to the positive bus bar of the battery (or the positive pole of the 48V battery system), connect the negative pole of the switching power supply to the negative bus of the battery (or the p output of the BMS): close the battery cell/empty of the power supply, and modify the power supply parameters according to the following table.

Appendix: Parameter settings of lithium iron battery in switching power supply system

NO	The parameter type	48V battery
1	Float voltage	52V (configurable)
2	Charging voltage equalization	53.6V (configurable)
3	Battery capacity	Please set it according to the actual installed battery capacity
4	charge	Typical zero. 20 c; Up to 1C (configurable).
5	Overvoltage alarm	54.2V
6	Low voltage alarm	42.9V
7	End of discharge	39V

The battery system is connected to the dynamic environmental monitoring FSU.

1. After the battery system is installed, you need to connect the RS485/RJ45 network port of the BMS module with a communication network cable. Multiple BMS modules can be cascaded via communication network cable (no connection is required for a single module).

2. When multiple BMS modules are used in parallel, you need to set the communication address (that is, the dial switch ADD). When using a single BMS module, the communication address is one and the dial is "1". The initial state is "O", which is "off", and dial to "1", which is "on".

Note: RS485 network cable interfaces of the BMS can communicate. Multi-level cascading starts at address #1 (communication starts at #2), dials according to the dial switch comparison table, as shown below. Through the host computer software, set the master - slave BMS, usually the first is the master BMS, the others are set to the slave BMS, it is recommended to have up to 1 2 units in parallel.

Installation and maintenance fault handling of lithium battery modules

BMS module LED indicator definition

Logo	Display content	color	description
Error	Fault indicator	red	The red light is on all the time. 1. Short circuit, reverse connection, 2. Battery failure: battery voltage less than 2.5V or greater than 4.1V 3. BMS faults (voltage sensor, temperature sensor failure, charge, and discharge current abnormality).
Ra	Run the light	green	1. Idle: The green light is on all the time 2. Charging: Green light flashes slowly 3. Discharge: The green light flashes rapidly 4. Fully charged: green light is always on; four capacity lights are on
Alpine pasture	Alarm indicator	Yellow	1. Warning: Yellow light flashing -1Hz (battery voltage too low, discharge current, temperature too low, temperature too high, capacity too low, package voltage too high) 2. Protection: orange light is always on (battery voltage is too low, battery cell voltage is too low, charge and discharge are too current, temperature is too low, package voltage is too high)
Soc	Battery capacity indicators	green	The capacity LED indicator only blinks slowly 0.5HZ when charging, and the other indicators are always on: when the capacity is 100%, all 4 lights are on: When the capacity is 99%-75% (inclusive), the top 4th light flashes slowly The bottom three lights are always on: When the capacity is 74%-50% (inclusive), the top third light flashes slowly, and the bottom two lights are always on: When the capacity is 49%-25% (inclusive), the top second light flashes slowly, and the bottom light is always on: When the capacity is 24%- At 0% inclusive, the first light on the top blinks slowly

How to judge the LED and buzzer when the BMS fails

Invalid error status judgment	The buzzer is invalid
<p>Input condition: When in protected state or fault state:</p> <ol style="list-style-type: none">1. Press the "RESET 1S" key to release and hear a short "beep" buzzer2. The RUN light is on, the ERR light flashes the number of times, and the alarm code is displayed in turn.3. After display, the ERR light returns to the state of always on	<p>Input condition: The buzzer controls 15S for one cycle</p>
<p>Judgment:</p> <p>Flashing red light:</p> <p>Voltage sensor failure: one time</p> <p>Temperature sensor failure: two times</p> <p>Charging circuit failure: three times</p> <p>Discharge circuit failure: four times</p> <p>Battery failure: five times</p> <p>Sampling IC communication failure: six times</p>	<p>Judgment:</p> <ol style="list-style-type: none">1. Reverse connection, short circuit; four times;(highest priority)2. Battery failure; three times.3. Voltage sensor failure, temperature sensor failure; two times.4. Charging and discharging circuit failure; one time; (lowest priority)