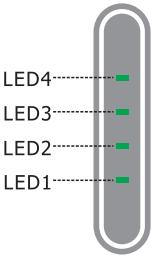
3.5 LCD Display Icons

The: LED shows the SOC of module N.

				
100%	75%	50%	25%	Flashing SOC<10%

Note: The battery need to be fully charged for at least once in one month to ensure the accurate SOC calculation.

3.5.1 ON/OFF or SOC Led(Mode or SOC)



LED Definition	ON/OFF		LED Status				Fault Info
	Green LED	Red LED	LED1	LED2	LED3	LED4	
Power OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Power ON	OFF	ON	ON	ON	ON	ON	
Stand By	OFF	OFF	SOC				SOC<10%(Default):LED1 Flash
Normal	ON	OFF	Running/SOC				SOC<10%(Default):LED1 Flash
Discharge	ON	OFF	SOC				SOC<10%(Default):LED1 Flash
Charge	Flash	OFF	Running				
Low Power	Flash	OFF	OFF				
Fault	OFF	ON	ON	OFF	OFF	OFF	Battery Voltage High
			OFF	ON	OFF	OFF	Battery Voltage Low
			ON	ON	OFF	OFF	Cell Voltage High
			OFF	OFF	ON	OFF	Cell Voltage Low
			ON	OFF	ON	OFF	Charging Current High
			OFF	ON	ON	OFF	Discharging Current High
			ON	ON	ON	OFF	BMS Temperture High
			OFF	OFF	OFF	ON	BMS Temperature Low
			ON	OFF	OFF	ON	Cell Temperture High
			OFF	ON	OFF	ON	Cell Temperature Low
			ON	ON	OFF	ON	Current Sensor Abnomal

3.6 Battery Management System(BMS)

Voltage Protection

Low Voltage Protection in Charging:

When the voltage of any battery cell or the total voltage falls below the rated protection value during discharging, over-discharging protection is activated, and the battery system stops supplying power externally. Once the voltage of each cell returns to the rated range, the protection is released.

Over Voltage Protection in Charging:

During charging stage, the system will stop charging when the total voltage of the battery pack is higher than rated value or the voltage of any single cell reaches the protection value. When total voltage or all cell back to rated range, the protection is over.

Current Protection

Over Current Protection in Charging:

When the charging current reaches the trigger value and lasts for 15 seconds, charging overcurrent protection is activated, entering fault mode. The battery disables both charging input and discharging output, and displays fault code C05 on the screen. The fault is automatically cleared after 1 minute. After 10 occurrences, the fault can no longer clear automatically, requiring a manual battery restart.

Over Current Protection in Discharging:

When the discharging current reaches the trigger value and lasts for 15 seconds, discharging overcurrent protection is activated, entering fault mode. The battery disables both charging input and discharging output, and displays fault code C06 on the screen. The fault is automatically cleared after 1 minute. After 10 occurrences, the fault can no longer clear automatically, requiring a manual battery restart.

3.7 System Connection Diagram

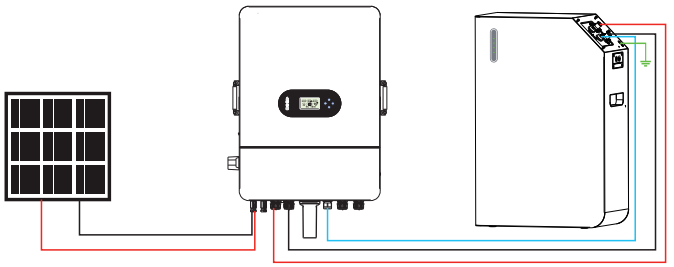


Figure 3-1 Single Battery System Connection Diagram

When paralleling multiple battery packs, please use a combiner box or a copper busbar.

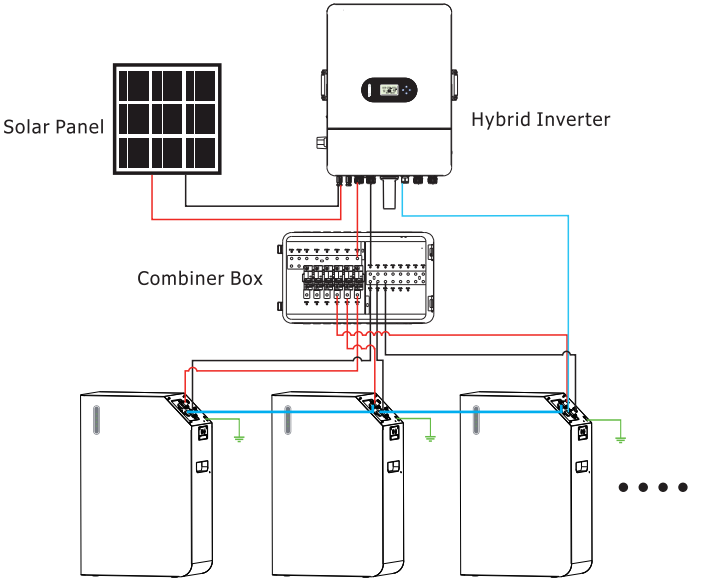


Figure 3-2 Multiple Battery Parallel System Connection Diagram

4. Installation and Configuration

4.1 Preparations for Installation

4.1.1 Safety Requirement

This system must only be installed by personnel trained in power supply systems and possessing adequate knowledge of such systems.

The safety guidelines outlined below, along with applicable local safety standards, must be strictly adhered to during installation.

- All circuits interfacing with this power system and carrying external voltages below 48V must comply with SELV requirements as specified in the IEC60950 standard.
- If working within the power system cabinet, ensure the system is completely powered down, and all battery devices are switched off.
- The distribution cables should be arranged systematically and equipped with protective measures to prevent accidental contact while operating power equipment.

4.1.2 Installation Environment

- Working temperature: -20℃~+55℃
- Charging temperature range: -20℃~+55℃
- Discharging temperature range: -20℃~+55℃
- Storage temperature: 0℃~+35℃
- Relative humidity: 5% ~ 95%
- Elevation: ≤2000m

Operating environment: Suitable for indoor and outdoor installation at locations shielded from direct sunlight, wind, conductive dust, and corrosive gases.

Ensure the following conditions are met:

- The installation site should be distant from the sea to prevent exposure to saltwater and high humidity.
- The ground at the installation location must be flat and level.
- The site should be free of flammable or explosive materials.
- Optimal ambient temperature: 20°C to 30°C.
- Avoid areas with excessive dust or clutter.

4.1.3 Tools



Screw Driver



Crimping Modular



Safety Shoes



Multimeter



Safety Gloves



Safety Goggles



Plier



Ribbon



Electric drill

4.2 Unpacking Inspection

- Upon arrival at the installation site, loading and unloading should strictly follow the established rules and procedures to prevent exposure to sunlight and rain.
- Before unpacking, verify the total number of packages against the shipping list attached to each package, and inspect the outer cases for any signs of damage. After unpacking, carefully check for loose or damaged wiring and contacts, cracks, deformations, leaks, or any other form of damage. If any damage is detected, the battery must be replaced immediately. Do not attempt to charge or use a damaged battery, and avoid contact with any liquid from a ruptured battery.
- During unpacking, handle all components with care to protect the surface coating from damage.

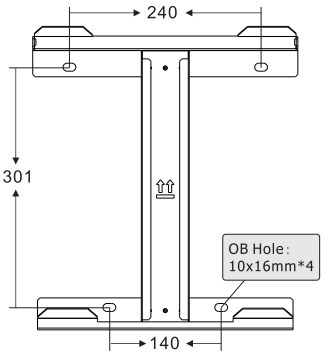
No.	Description	Quantity	Picture
1	User Manual	1	
2	Warranty Card	1	
3	Quick Installation Guide	1	
4	Lock Wall Components: Used for product transportation and wall fixation	1	
5	Power Cable: 2AWG, allows for charging and discharging up to 150A, used for connecting to external PCS	2	
6	Communication Cable:Gray, used for RS485 communicationwith Felicity inverters (Model:IVCM,IVEM,IVPS/M IVGM)	1	
7	Communication Cable: Blue, Used for communication with inverters from other brands.	1	
8	Communication Cable: Black,used for parallel communication between battery packs	1	
9	Screws M4X12*2 PCS Screws M8X60*4 PCS	/	
10	Signal Terminal: Used for creating custom communication cables	2	
11	Ribbon: Used to fix the power cable	3	
12	Fuse: Spare parts for repair and replacement in case of fuse damage	1	

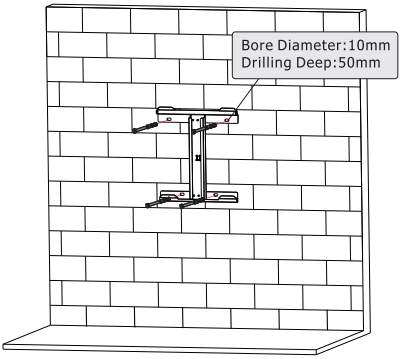
4.3 Installation Procedure

4.3.1 Mounting the Battery

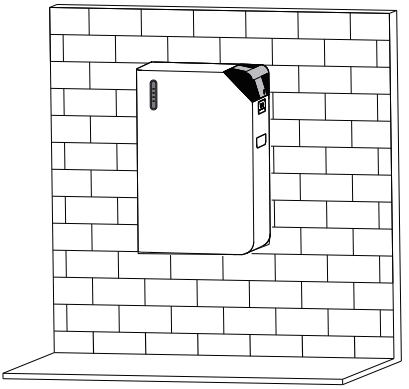
(a) Wall-Mounted method

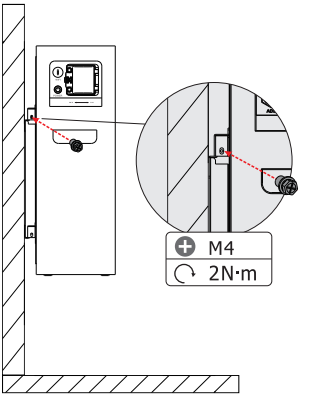
Step 1: Using wall mounted components, first fix the wall mounted components to the wall.Use a 10mm drill bit (10mm diameter, 50mm depth) to drill 4 holes in the correct location.





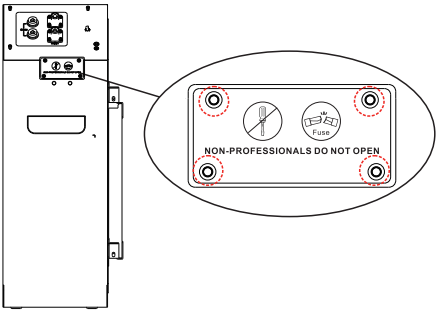
Step 2: Lift the machine onto the wall mounted components to secure it, Lock one M4*12 screw on the left and right sides of the wall mount.





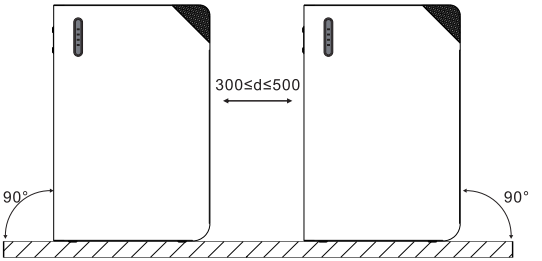
Note:

1. Do not use wall mounted components, place the chassis against the wall and secure it with fixing components
2. If the fuse is blown, please follow the steps below:
   Step 1: Use a Phillips-head screwdriver to remove the screws from the fuse cover.
   Step 2: Open the fuse cover, remove the old fuse, and replace it with the new one.
   Step 3: Reattach the fuse cover and secure it in place.

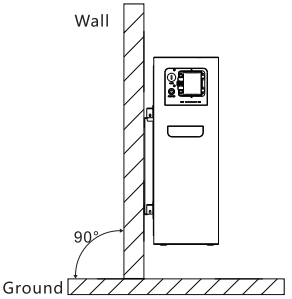


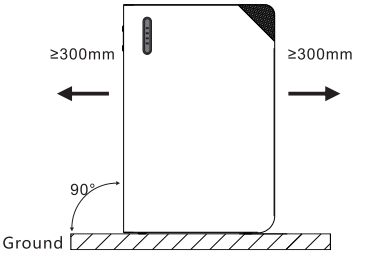
Fuse(Non professionals are not allowed to open this cover)

(b) Floor-Mounted method



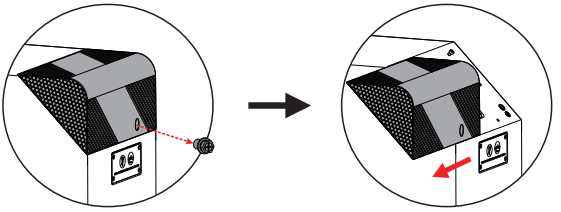
Ground(Two rows installtion)



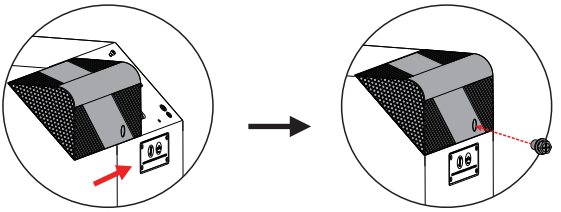


(c) Install and remove decorative cover

• Before wiring: Remove the screws on the side of the protective cover and slide the cover forward to begin wiring.



• After wiring is complete: Slide the protective cover back into the designated position and tighten the screws that were removed.



4.3.2 Batteries in parallel

TheFLB48230WG1-H series battery support to be connected in parallel for expansion. If you need one more battery bank to work in parallel mode, connect the battery as shown in Figure 4-1.

* It is recommended to use battery pack combiner box(BTCB0606/BTCB0303) or confluence copper bar confluence.

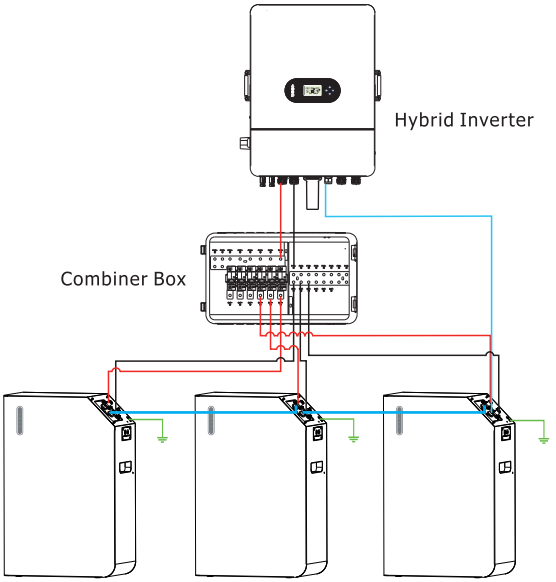
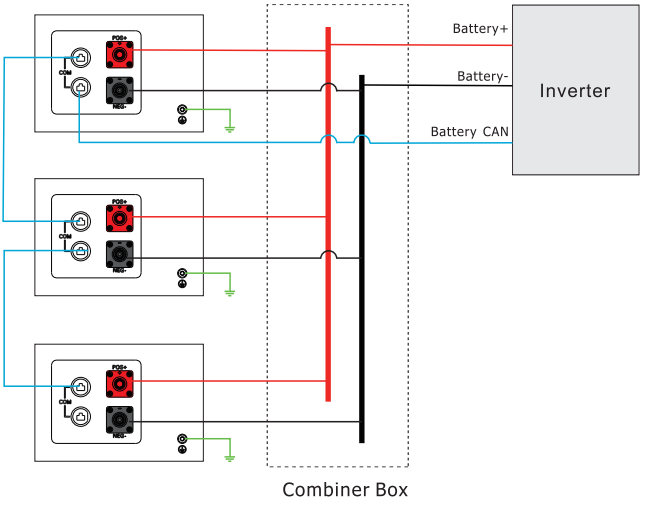


Figure 4-1 The parallel connection of three battery packs



4.3.3 Series connection is not allowed

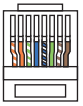
1)The batteries can be connected in parallel. Series connection is not allowed.Use in upright position only.

2)The batteries are not allowed to connected with PWM controller for chargingSpecial Attention: Due to the built-in protection board of the lithium battery pack is with over-discharge protection function, it is strongly recommended to stop using the load when the battery pack is over-discharged. The battery pack cannot be repeatedly activated fordis charge. Or the battery may be failed to be activated by the AC or PV activation cable It requires a special charging activation method), so cannot be charged. Therefore, when the battery pack is low power, please charge the battery as soon as possible when main power or solar energy is available.

5. Operation

5.1 Description of Communication Port

BATTERY-Felicitysolar

Picture	Pin	Color	Definition
P1……P8 	1	ORG-WH	CAN-GND
	2	ORG	+5V-BUS
	3	GN-WH	CANL-PCS
	4	BU	CANH-PCS
	5	BU-WH	RS485-B
	6	GN	RS485-A
	7	BN-WH	CANL
	8	BN	CANH



INVERTER

Pin	Color	Definition	Picture
1	ORG-WH	/	P1……P8 
2	ORG	/	
3	GN-WH	CANL-PCS	
4	BU	CANH-PCS	
5	BU-WH	RS485-B	
6	GN	RS485-A	
7	BN-WH	/	
8	BN	/	