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Make life full of hope

USER MANUAL



Model

FLH48100UG2MN

[1]N=5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 or 16, N is the number of battery modules.

Revision History

Revision No.	Revision Date
1.0	2025-09-09
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About This Manual

This manual describes the product, installation, operation, and maintenance procedures. Please read this manual carefully before installing and operating (the product). Keep this manual for future reference.

How to Use This Manual

Please read this manual and all relevant documents thoroughly before carrying out any operations on the battery. Ensure that the documents are stored securely and are accessible at all times. The content may be revised or updated periodically to reflect product improvements.

1. Safety Instructions

1.1 WARNING

1.1.1 Before Connecting

- After unpacking, inspect the product and the packing list carefully. If any damage is found or parts are missing, please contact your local retailer for assistance.
- Before installation, be sure to cut off the grid power and make sure the battery is in the turned-off mode.
- Ensure proper wiring by connecting the positive and negative cables correctly and avoiding short circuits with external devices.
- Directly connecting the battery to AC power is strictly prohibited.
- The battery system must be properly grounded, and the grounding resistance should be less than 1Ω.
- Verify that the electrical parameters of the battery system are fully compatible with the connected equipment.
- Keep the battery away from water and fire.

1.1.2 During Operation

- If the battery system needs to be moved or serviced, ensure that the power is disconnected and the battery is fully powered down.
- Keep the battery away from water and fire.
- Connecting the battery with a different type of battery is strictly prohibited.
- Do not operate the battery with a faulty or incompatible inverter.
- Disassembling the battery is not allowed.
- In the event of a fire, only dry-powder fire extinguishers should be used; liquid fire extinguishers must not be used.
- Please refrain from opening, repairing, or disassembling the battery unless performed by Felicitysolar staff or personnel authorized by Felicitysolar. Felicitysolar assumes no responsibility for consequences arising from unauthorized repair, disassembly, or operation.
- Do not dispose of batteries in a fire. The batteries may explode.
- Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

- A battery can present a risk of electric shock and burns from high short-circuit current.
- Faulty batteries can reach temperatures high enough to cause burns on contact.



1.2 CAUTION

- Our products undergo rigorous inspection before shipment. If you notice any unusual signs, such as the device casing bulging, please contact us promptly.
- **The product must be properly grounded prior to use to ensure safety. This battery pack must be grounded strictly as specified in the product technical manual. Incorrect grounding or poor grounding may lead to safety risks such as electric shock and equipment failure. All losses arising therefrom shall be borne by the party that violates the operation rules.**
- To ensure correct usage, verify that the parameters of connected devices are compatible. Avoid mixing batteries from different manufacturers, types, or models, and avoid using old and new batteries together..
- The ambient environment and storage methods can affect the product's lifespan. Please adhere to the operating environment guidelines to ensure the device functions optimally.
- For long-term storage, recharge the battery every six months, ensuring the charge exceeds 80% of its rated capacity.
- Recharge the battery within 18 hours after it has fully discharged or when over-discharge protection mode is triggered.
- The formula for calculating theoretical standby time is: T = C/I (where T represents standby time, C is the battery capacity, and I is the total current of all loads).
- Disconnect the charging source prior to connecting or disconnecting battery terminals;
- Do not wear any metal objects including watches and rings;
- Do not lay tools or metal parts on top of batteries;
- Battery maintenance must be performed by a skilled person. To do so:
- Use tools with insulated handles;
- Wear rubber gloves and boots;
- Determine if battery is either intentionally or inadvertently grounded. Contact with any part of a grounded battery can result in electric shock and burns by high short-circuit current.
- The risk of such hazards can be reduced if proper grounding is ensured by a skilled person during installation and maintenance.

1.3 Installation Personnel Requirements

- All work must comply with applicable local laws, regulations, and standards. Only qualified electricians (see below for qualifications) may install FLH48100UG2MN.
- **Qualifications and Training:** Hold a valid electrician vocational qualification certificate, receive training in the installation, commissioning of electrical equipment and batteries, as well as risk handling, and keep abreast of industry regulation updates.
- **Standard Compliance:** Strictly abide by technical connection conditions, standards, regulations and the requirements of this document, and promptly report any discrepancies between the documents and the actual situation.
- **Professional Knowledge:** Be familiar with the full-process operation of lithium - ion batteries, charging and discharging characteristics, abnormal situation judgment, and understand potential hazard sources.
- **Safety and Emergency Response:** Have a strong sense of safety, use protective equipment correctly, and master first-aid and emergency response skills for electrical accidents and battery leakage.

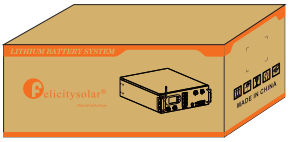
1.4 Storage Before Use

There are no operator serviceable parts inside this equipment. Service should be provided only by a qualified service technician.

- Do not expose battery to open flame.
- Do not place the product in direct sunlight.
- Do not place the product near flammable materials (may cause fire or explosion if an accident occurs).
- Store in a cool, dry, and well-ventilated area.
- Store the product on a flat surface.
- Store the product out of reach of children and animals.
- Do not damage the unit by dropping, deforming, impacting, cutting or penetrating with a sharp object.
- This may cause electrolyte leakage or fire.
- Do not touch any liquid spilled from the product, as it poses a risk of electric shock or skin damage.
- Always handle the battery wearing the insulated gloves.
- Do not step on the product or place any foreign objects on it. This can result in damage
- Do not charge or discharge a damaged battery.

2. Transportation

The battery module can only be transported in an upright position.



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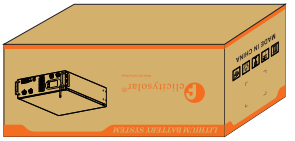

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- Smoking is prohibited in the vehicle during transportation or in the vicinity during loading and unloading

- Dangerous goods transport vehicles must meet relevant road transportation regulations and be equipped with two properly tested CO2 fire extinguishers.

- If possible, do not remove the transport packaging before arrival at the installation site.Before removing the transport protector, check if the transport packaging is damaged.

- Improper transport of battery modules may cause injury. Battery modules could be damaged if they fall or slip. Use only suitable transport/lifting equipment for safe handling.

- Wear safety shoes to avoid injury. Battery modules are heavy, and their parts could crush feet—so all personnel in transport must wear steel-toe safety shoes. Observe safety regulations at the end customer's site, especially during loading/unloading

- During transportation and installation of unpacked battery storage cabinets, the risk of injury increases, especially on sharp metal panels. Therefore, all personnel involved in transportation and installation must wear protective gloves.

- Improper vehicle transportation can cause injury. Improper transportation or improper transportation locks may cause the load to slip or overturn,resulting in injury.

- Lithium-ion battery transport is classified under hazard category UN3480, Class 9. For transport by sea or land (e.g., by vessel, road, or rail), these batteries must be packaged in accordance with Packing Instruction P903 as specified in the IMDG Code and ADR/RID. Use Class 9 'Miscellaneous Dangerous Goods' and UN identification labels when transporting Class 9 lithium-ion batteries. Refer to relevant transport documentation for details.

3. Introduction

3.1 Symbol Definition

	Danger! Serious physical injury or death may occur if not following relevant requirements.		Keep the product out of reach of children.
	Caution: Risk of electric shock.		Do not place or install near flammable or explosive materials.
	In case of electrolyte leakage, avoid contact with eyes or skin.		Disconnect the equipment before carrying out maintenance or repair.
	Do not reverse the positive (+) and negative (-) terminals of the battery pack.		EU WEEE mark: Product should not be disposed of as household waste.
	Observe precautions when handling electrostatic discharge - sensitive devices.		Instruction manual: Read it before starting installation and operation.
	Caution: Risk of electric shock from stored energy. Residual voltage may persist for a period of time even after the system is completely powered off.		CE mark: The battery system is CE certified.
	This product is recyclable.	NOTE	NOTE: Procedures to ensure proper operation.
	Do not use the Pack outside of specified conditions.		Earth terminal: The battery system must be reliably grounded to the inverter.
	Caution: This Pack is heavy and may cause serious injury if mishandled.		

3.2 General Description

FLH48100UG2MN is equipped with a lithium iron phosphate battery designed for household use. Developed to meet customer needs and market demands, this advanced battery storage solution provides high-quality, reliable power supply for various devices. The product features a long lifespan, suitability for high-temperature environments, and a compact design requiring minimal installation space.

FLH48100UG2MN features a battery management system independently developed by our team. When it is connected to a grid or photovoltaic system as the power source, the product can store energy by charging the battery. In the event of a power outage from the grid or photovoltaic system, the product can independently supply electricity to household loads. Additionally, multiple units can be connected in parallel to form a high-capacity, multi-module system to meet long-term energy storage requirements.

3.3 Description of FLH48100UG2MN

1. FLH48100UMG2 is a battery module. It needs to be used with the FLH48100UCG2 controller.
2. FLH48100UCG2 is the controller of the entire system, so each system has at least five FLH48100UMG2.
3. Our system consists of at least 1 FLH48100UCG2 +5 FLH48100UMG2 and up to 16 FLH48100UMG2.

Mode	System energy(kWh)	Discharge depth	Composition
FLH48100UG2M5	25.6	90%	FLH48100UCG2*1 + FLH48100UMG2*5
FLH48100UG2M6	30.72	90%	FLH48100UCG2*1 + FLH48100UMG2*6
FLH48100UG2M7	35.84	90%	FLH48100UCG2*1 + FLH48100UMG2*7
FLH48100UG2M8	40.96	90%	FLH48100UCG2*1 + FLH48100UMG2*8
FLH48100UG2M9	46.08	90%	FLH48100UCG2*1 + FLH48100UMG2*9
FLH48100UG2M10	51.2	90%	FLH48100UCG2*1 + FLH48100UMG2*10
FLH48100UG2M11	56.32	90%	FLH48100UCG2*1 + FLH48100UMG2*11
FLH48100UG2M12	61.44	90%	FLH48100UCG2*1 + FLH48100UMG2*12
FLH48100UG2M13	66.56	90%	FLH48100UCG2*1 + FLH48100UMG2*13
FLH48100UG2M14	71.68	90%	FLH48100UCG2*1 + FLH48100UMG2*14
FLH48100UG2M15	76.8	90%	FLH48100UCG2*1 + FLH48100UMG2*15
FLH48100UG2M16	81.92	90%	FLH48100UCG2*1 + FLH48100UMG2*16

*Note: Currently, the battery supports a maximum of 16 battery modules. For the entire energy storage system, confirm the inverter's maximum supported voltage range to determine the maximum number of battery modules that can be installed.

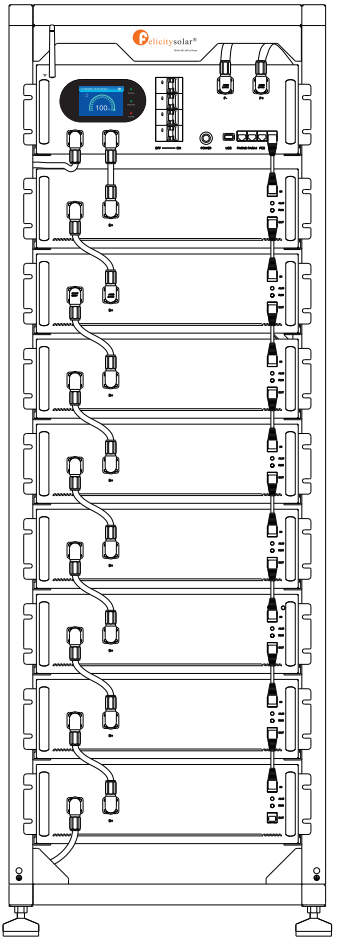
3.4 Features

- Safety and Robustness: LiFePO4 battery cells with higher safety performance and longer cycle life. The battery module is equipped with a standard aerosol fire protection system.
- Multiple Protection: Built-in smart BMS, breakers, and fuses.
- Flexible Installation: Depending on the number of modules, multiple types of multi-level racks are available. The rack integrates grounding functionality, eliminating the need for additional grounding wires.
- Wide Compatibility: Compatible with leading inverter brands.
- High Scalability: The capacity of a single cluster can reach up to 81.92 kWh, and it can support up to 16 sub-clusters. The system can be expanded to nearly 1.31 MWh at maximum.
- Flexible Configuration and Upgrades: Upgrades and parameter configurations can be performed via RS485, WiFi, Bluetooth, and USB.
- Efficient Balancing: Supports module-level voltage balancing and automatically allows the use of both new and old batteries (please contact the supplier for installation guidance).
- Wide Operating Temperature: Operates from -20°C to 55°C with excellent discharge performance and cycle life.

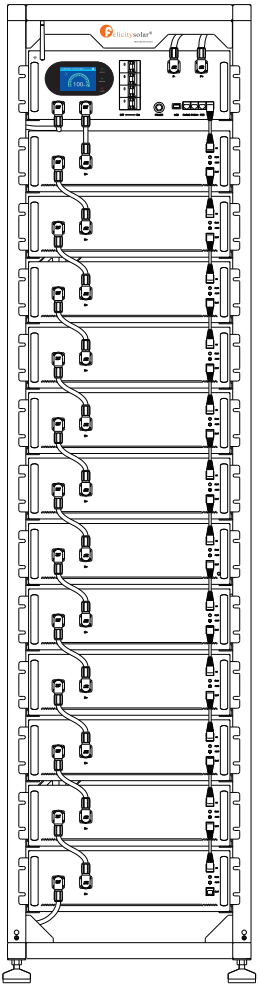
3.5 Product selection

We offer our customers four options:

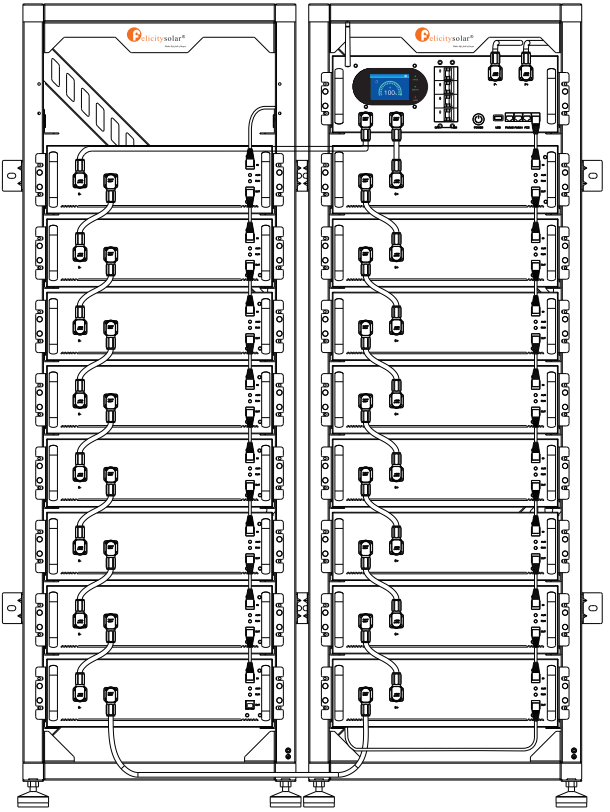
1. First option: 5 to 8 battery modules are required. A 9-layer product can be chosen, as shown in the following figure:



2. Second option: requires 9 to 12 battery modules, can choose 13 layer product solution. As shown in the following figure:



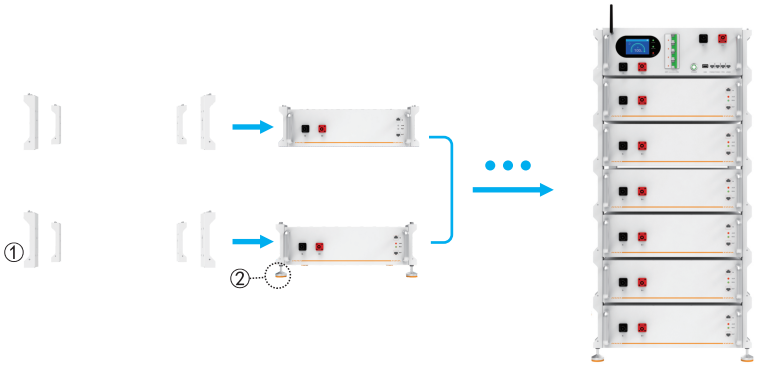
3. Third option: 13~16 battery modules are required, and two 9-layer products can be selected, as shown in the figure below:



4. According to customer needs, if the customer needs less than 7 battery packs (5~6 battery packs +1 high voltage box), then the customer can choose a simple rack (FLH48100UG2MN-1M6S).

Note: Simple bracket is optional.

The installation procedure of the simple mounting rack is shown in the figure.

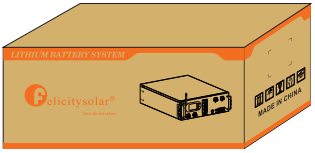


①Bracket: Each FLH48100UCG2 or FLH48100UMG2 unit is paired with four.

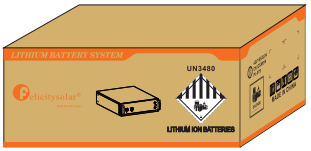
②Rubber foot: Each battery cluster is paired with four.

3.6 Product Overview

3.6.1 External Packaging

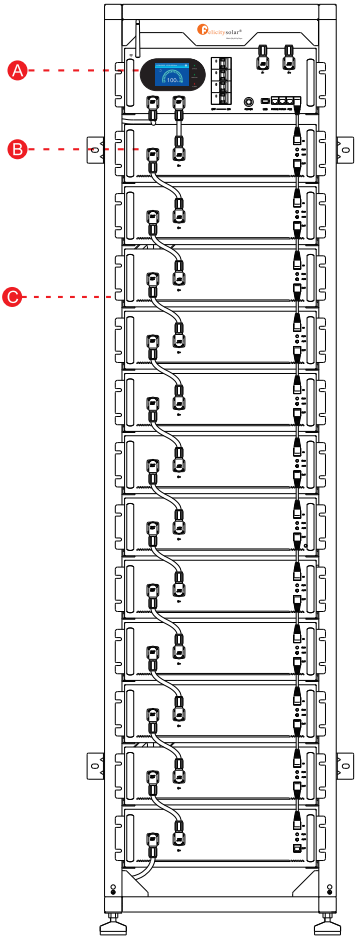


Carton box (FLH48100UCG2)



Carton box (FLH48100UMG2)

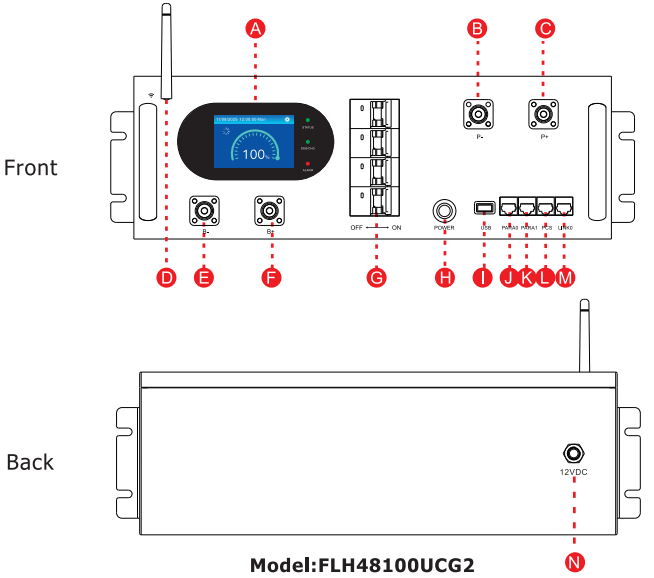
3.6.2 Battery system introduction



Code	Name	Product Model
A	High-Voltage Battery Control Unit	FLH48100UCG2(BCU)
B	High-Voltage Battery Module	FLH48100UMG2(BMU)
C	Rack	*FLH48100R13G2 *FLH48100R9G2

* FLH48100R13G2:
  Includes 1 control module and UP to 12 battery modules
* FLH48100R9G21:
  Includes 1 control module and UP to 8 battery modules

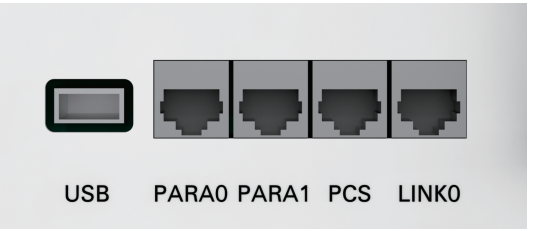
3.6.3 High-Voltage Battery Control Unit Description



Model:FLH48100UCG2

Code	Name	Definition
A	LCD Display	Indicate the important battery information
B	PCS-	Connection terminal of PCS negative pole (black)
C	PCS+	Connection terminal of PCS positive pole (red)
D	Antenna	Increase the WiFi receiving signal
E	BAT-	Connection terminal of the common negative pole of the battery (black)
F	BAT+	Connection terminal of the common positive pole of the battery (red)
G	DC Circuit Breaker	Used to manually control the output situation of battery system
H	Power Switch	Indicate the power on/off function
I	USB	BMS upgrade interface with USB
J	PARA0	The clustered interface connected to the previous battery system
K	PARA1	The clustered interface connected to the next battery system

L	PCS	The CAN/RS485 port connects to the CAN/RS485 interface of other inverters via a communication cable
M	LINK0	Connect with the first battery module and communicate with all battery modules
N	12VDC	Connect to an external 12V DC power supply for debugging the battery control unit.



Definition of PARA0		Definition of PARA1		Definition of PCS		Definition of LINK0		P1.....P8
1	BCU-ADD-OUT	1	BCU-ADD-IN	1	485B_PCS	1	BMU-ADD-IN	
2	BCU-ADD-IN	2	BCU-ADD-OUT	2	485A_PCS	2	BMU-ADD-OUT	
3	/	3	/	3	GND	3	COM-GND	8.....1
4	DAY1A	4	/	4	CANH_PCS	4	12V0_COMISO	
5	DAY1B	5	/	5	CANL_PCS	5	12V0_COMISO	
6	/	6	/	6	GND	6	COM-GND	
7	CANL_BCU	7	CANL_BCU	7	485A_PCS	7	CANL_BMU	
8	CANH_BCU	8	CANH_BCU	8	485B_PCS	8	CANH_BMU	

PCS Port Pin Definition

Battery-Felicity Solar

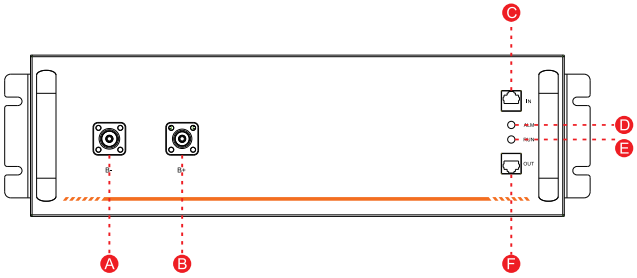
Picture	Pin	Color	Definition
P1.....P8 	1	ORG-WH	485_B
	2	ORG	485_A
	3	GN-WH	NC
	4	BU	CAN_H
	5	BU-WH	CAN_L
	6	GN	GND
	7	BN-WH	485_A
	8	BN	485_B

Inverter-Felicity Solar

Pin	Color	Definition	Picture
1	ORG-WH	/	P1.....P8 
2	ORG	/	
3	GN-WH	/	
4	BU	CAN_H	
5	BU-WH	CAN_L	
6	GN	GND	
7	BN-WH	485_A	
8	BN	485_B	

* If using this product with an inverter from another brand, please confirm the pin definition for the connection between the inverter and the battery.

3.6.4 High-Voltage Battery Module Description

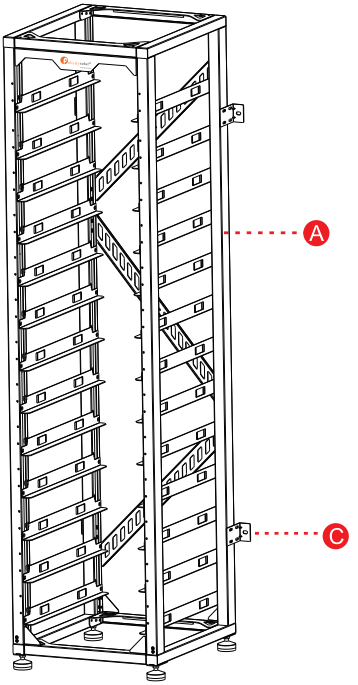


Model:FLH48100UMG2

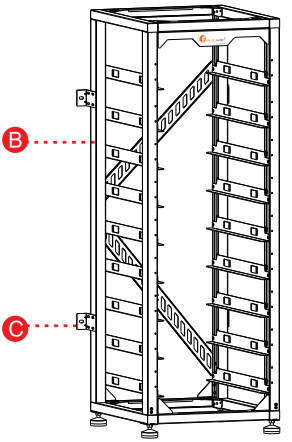
Code	Name	Definition
A	BAT-	Negative terminal of battery module (black)
B	BAT+	Positive terminal of battery module (red)
C	IN	Communication input connection to previous FLH48100UMG2
D	ALM	Indicates battery fault status (illuminates when fault occurs)
E	RUN	Indicates normal battery operating status (remains on during normal operation)
F	OUT	Communication output connection to next FLH48100UMG2

3.6.5 Rack Introduction

- FLH48100R13G2: Built in 1 control module and UP to 12 battery modules;
- FLH48100R9G2: Built in 1 control module and UP to 8 battery modules;



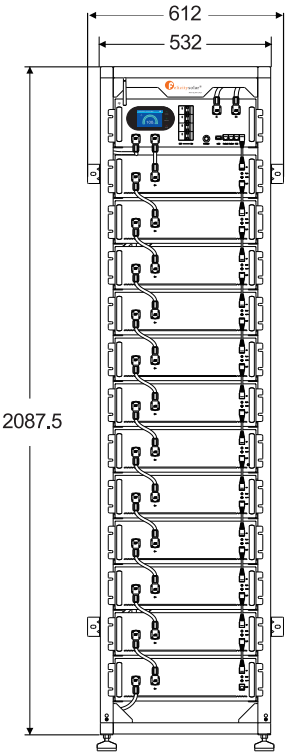
Code	Name
A	Rack (R13)
B	Rack (R9)
C	Fixed trestle

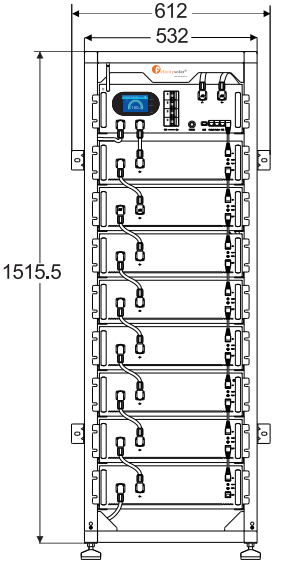


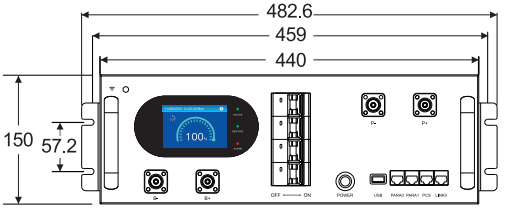
FLH48100R13G2

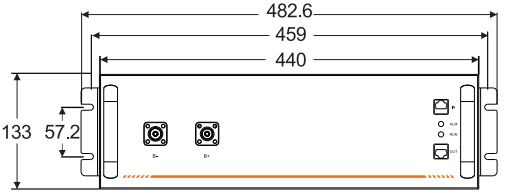
FLH48100R9G2

3.6.6 Product size information









4. Installation and Configuration

4.1 Pre-Installation Preparation

4.1.1 Safety Requirement

This system shall only be installed by personnel who have received training in power supply systems and possess sufficient expertise in such systems.

During installation, the safety guidelines outlined below, together with applicable local safety standards, must be strictly followed.

- All circuits that interface with this power system and carry external voltages below 48 V must comply with the SELV (Safety Extra-Low Voltage) requirements as specified in IEC 60950.
- Before working inside the power system cabinet, ensure that the system is completely de-energized and all battery devices are turned off.
- Distribution cables shall be organized in a systematic manner and fitted with protective measures to prevent accidental contact during the operation of power equipment.

4.1.2 Installation Environment

- Working temperature: -20℃ - +55℃
- Charging temperature range: 0℃ - +55℃
- Discharging temperature range: -20℃ - +55℃
- Storage temperature: 0℃ - +35℃
- Relative humidity: 5% - 95%
- Elevation: ≤3000m
- Heat source: ≥50cm
- Fire source: ≥500cm
- Clearance to the roof: >600mm

Operating environment: Only suitable for indoor installation. It should be kept away from direct sunlight, wind, conductive dust and corrosive gases. It complies with pollution degree 2 and overvoltage category II requirements. Please ensure the following conditions are met:

- The installation site shall be located away from the sea to avoid exposure to saltwater.
- The installation floor must be flat.
- The site shall be clear of flammable or explosive substances.
- Areas with excessive dust or clutter shall be avoided.
- Recommended ambient temperature: 5°C to 40°C
- Max. altitude: ≤3000 m
- Max. operating relative humidity: 5%~85%(Non-condensing)

4.1.3 Tools



Screw Driver



Crimping Modular



Safety Shoes



Multimeter



Safety Gloves



Safety Goggles



Plier



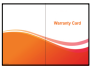
Ribbon



Electric drill

4.2 Unpacking Inspection

- Upon arrival at the installation site, loading and unloading shall strictly comply with prescribed procedures to protect against direct sunlight and rain.
- Prior to unpacking, shall verify the total number of packages against the shipping list attached to each package, and inspect the outer casings for any signs of damage. After unpacking, conduct a thorough inspection for loose or damaged wiring, contacts, cracks, deformations, leaks, or any other forms of damage. If any damage is detected, the battery must be replaced immediately. Never attempt to charge or use a damaged battery, and avoid contact with any liquid from a ruptured battery.
- During unpacking, exercise caution when handling all components to protect the surface coating from damage.

FLH48100UCG2			
No.	**Description**	**Quantity**	**Picture**
1	High-Voltage Battery Control Unit 1000V/100A	1	
2	User manual	1	
3	Warranty card	1	
4	Power Cable 1: 5m, 4AWG (21.15mm²), supports charging and discharging current up to 110A, used to connect to external PCS+ (red). Connector: One end is crimped with ES08-P25S-02-L-RD, specifications: length 65mm, width 20mm, connected to the battery pack main control PCS+; the other end is crimped with SC25-8, specifications: width 13mm, length 33mm, aperture Φ8.5mm, connected to the inverter BAT+.	1	
5	Power Cable 2: 5m, 4AWG (21.15mm²), supports charging and discharging current up to 110A, used to connect to external PCS- (black). Connector: One end is crimped with ES08-P25S-02-L-BK, specifications: length 65mm, width 20mm, connected to the battery pack main control PCS-; the other end is crimped with SC25-8, specifications: width 13mm, length 33mm, aperture Φ8.5mm, connected to the inverter BAT-.	1	
6	Power Cable 3: 2m, 4AWG (21.15mm²), used for serial connection from master control to slave control (black). Connector: Both ends are crimped with ES08-P25S-02-L-BK, specifications: length 65mm, width 20mm.	1	
7	Power Cable 4: 25mm, 4AWG, used for serial connection from master control to slave control (red). Connector: Both ends are crimped with ES08-P25S-02-L-RD, specifications: length 65mm, width 20mm.	1	

8	Communication Cable 1: 3m, enables communication between the battery and the computer host via an RS485 adapter, while also flexibly matching communication cables for different inverters. Cable type: CAT.5E UTP 7×012BC×8C. Terminal: One end is a plastic-encapsulated RJ45 plug (8P8C) for connection to the battery pack main control PCS port; the other end leads out core wires (4: CAN_H, 5: CAN_L, 7: 485_A, 8: 485_B), with the wire ends stripped 10mm and tin-plated.	1	
9	Communication Cable 2: Used for communication between the battery pack and the Felicity inverter. Length: 3000mm, CAT.5E UTP 7×012BC×8C. Terminal: Plastic-encapsulated RJ45 plugs (8P8C) ×2, one end used to connect to the battery pack main control PCS port, and the other end used to connect to the inverter's BMS port.	1	
10	Communication Cable 3: 1.2m, used for parallel cluster communication connection between two battery control units. Cable type: S/FTP 24AWG 4 pairs + braid + aluminum foil + cotton thread.Terminal: RJ45 shielded plug (8P8C), nickel-plated iron shell ×2.	1	
11	Communication Cable 4: 150mm, used for communication connection between battery control unit FLH48100UCG2-US and the first-generation battery model FLH48100UMG1. Cable type: S/FTP 24AWG 4 pairs + braid + aluminum foil + cotton thread. Terminal: RJ45 shielded plug (8P8C), nickel-plated iron shell×2.	1	
12	Communication Cable 5: 103mm, used for communication connection between battery control unit FLH48100UCG2-US and the second-generation battery model FLH48100UMG1. Cable type: S/FTP 24AWG 4 pairs + braid + aluminum foil + cotton thread. Terminal: RJ45 shielded plug (8P8C), nickel-plated iron shell×2.	1	
13	Screw: used for installing control box.	4	
14	Signal Terminal: For making custom communication cables.	2	
15	Ground Wire 1: 145mm, 10AWG (5.26mm²), used for grounding connection between the battery control unit FLH48100UCG2 and the first-generation battery model FLH48100UMG1. Terminal: Both ends are crimped with RNB5.5-5, compatible with M5 screws.	1	
16	Ground Wire 2: 2m, 10AWG (5.26mm²), used for connecting the PE grounding point of the battery cluster to the PE grounding point of the inverter. Terminal: Both ends are crimped with RNB5.5-5, compatible with M5 screws.	1	

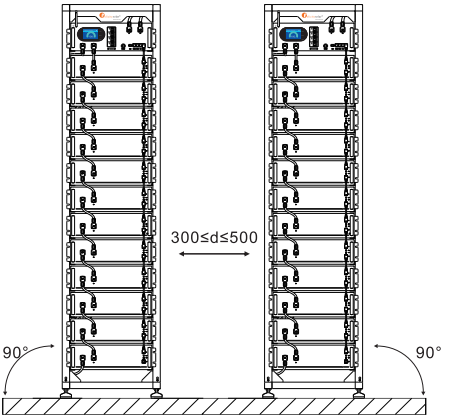
17	External 12V DC Power Supply Debugging Harness	1	
18	120Ω Terminal Resistor: Used for BMU communication and parallel communication.	2	
19	Terminal SC25-8: For inverter battery terminals; connects to the combiner box during installation.	2	
20	Magnetic Ring:Improve the electromagnetic anti-interference performance (69x36x19 mm)	1	

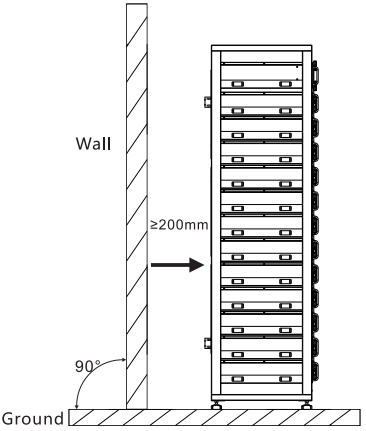
FLH48100UMG2			
No.	**Description**	**Quantity**	**Picture**
1	5.12 kWh Battery Module	1	
2	Warranty Card	1	
3	Power Cable: 60mm, 4AWG (21.15mm²), supports charging and discharging current up to 110A, used for series connections between battery pack modules. Connector: One end is crimped with ES08-P25S-02-L-BK, specifications: length 65mm, width 20mm; the other end is crimped with ES08-P25S-02-L-RD, specifications: length 65mm, width 20mm.	1	
4	Communication Cable: Used for communication connections between battery pack modules. Length: 155mm, CAT.5E 26AWG S/FTP 4 pairs + braid + aluminum foil + cotton thread. Terminal: Both ends are crimped with RJ45 shielded plugs (8P8C), nickel-plated iron shell ×2.	1	
5	Screws: For installing battery pack modules.	4	

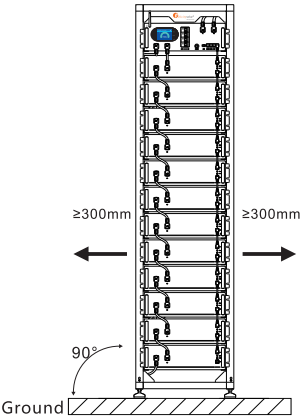
4.3 Installation Procedure

4.3.1 Battery Mounting

(a) Floor-Mounted method

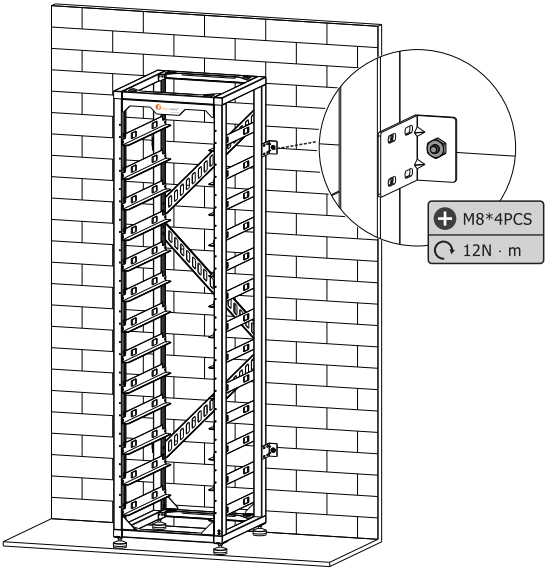




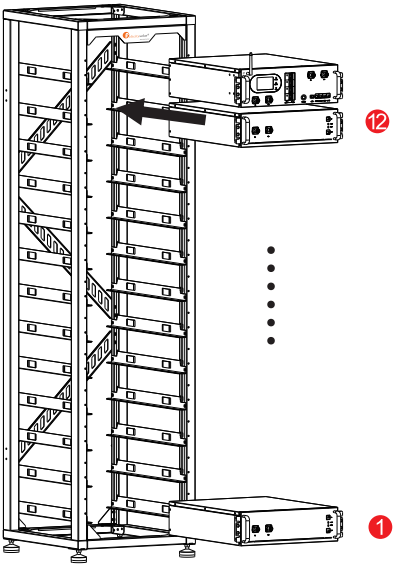


(b)Wall-Mounted Method

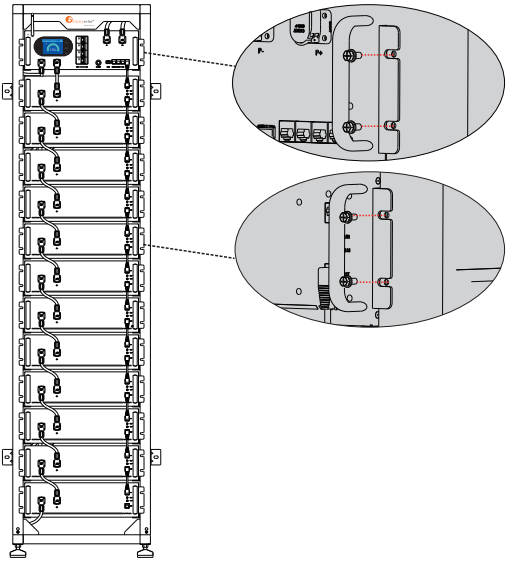
Step 1: Remove the battery, control box, and frame from the packaging. Use a hammer drill to drill a mounting hole for the frame in the wall. The hole should have a diameter of 10 mm and a depth of 60 mm.



Step 2: Secure the rack to the wall, then insert the battery and control box into the rack from the bottom up.



Step 3: Secure the battery and control box to the rack.

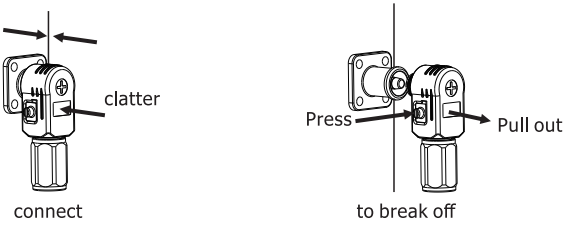


Note:

1. Prior to installation, verify that the ground surface is level and free of inclinations.
2. Ensure the rack is positioned against a wall and properly secured.
3. During placement, push inward from the bottom upward, following the direction indicated by the arrow.
4. When installing the battery, ensure it is pushed all the way to the bottom of its compartment.
5. Secure the battery using the provided accessory screws. Exercise caution to prevent the battery from falling.
6. Once the battery is secured, connect the power cable.
7. Each battery module must be wired in series only. Never connect modules in parallel.

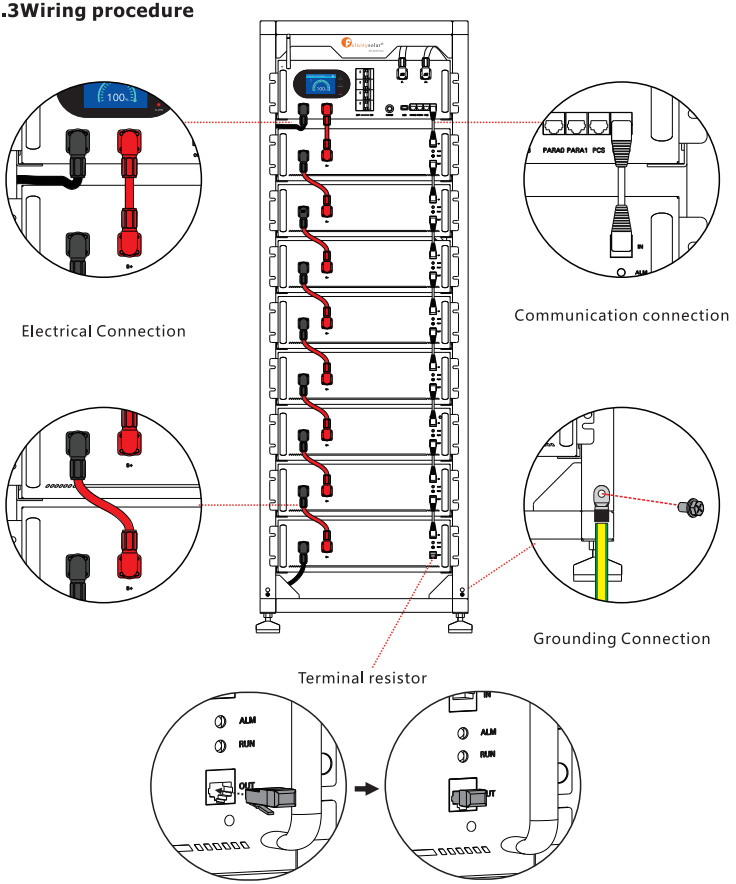
4.3.2 Terminal Connection

Power terminal



Note:Press the position indicated in the figure above before disconnecting the power terminal.

4.3.3Wiring procedure



Note:

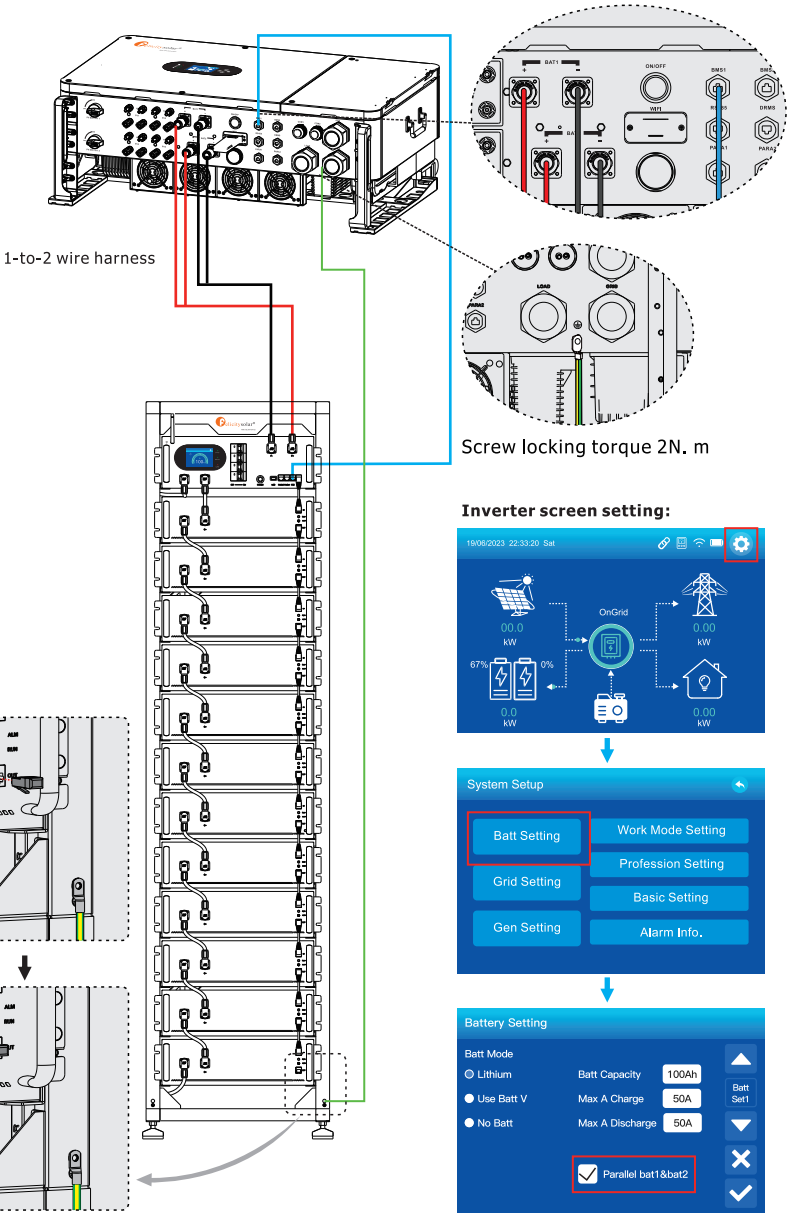
- Connect battery packs in series only, following the electrical connection procedure. Start from the top pack: connect its negative terminal to the positive terminal of the next pack below. Repeat this step for each subsequent pack. For the final pack, connect its negative terminal to the negative terminal of the high - voltage control box. Then, connect the positive terminal of the top pack to the positive terminal of the high - voltage control box. Do not connect packs in parallel. Parallel connection may result in system failure, equipment damage, or personal injury.
- During equipment installation: First, establish a reliable ground connection to the inverter through the grounding port at the bottom of the frame. Then, establish reliable ground connections for both the battery system and the frame.
- During equipment disassembly: First, disconnect the power circuit between the battery system and the inverter. Next, disconnect the ground connection between the battery system and the frame. Finally, disconnect the ground connection between the frame and the inverter.

Screw tightening torque: 5 N·m (Newton-meters).

The control box must be connected to the ground wire of the base.

4.4 System Connection Diagram

Negative Power Line Positive Power Line RJ45 485/CAN Communication Ground Connection



4.5 Power On/Off Procedures

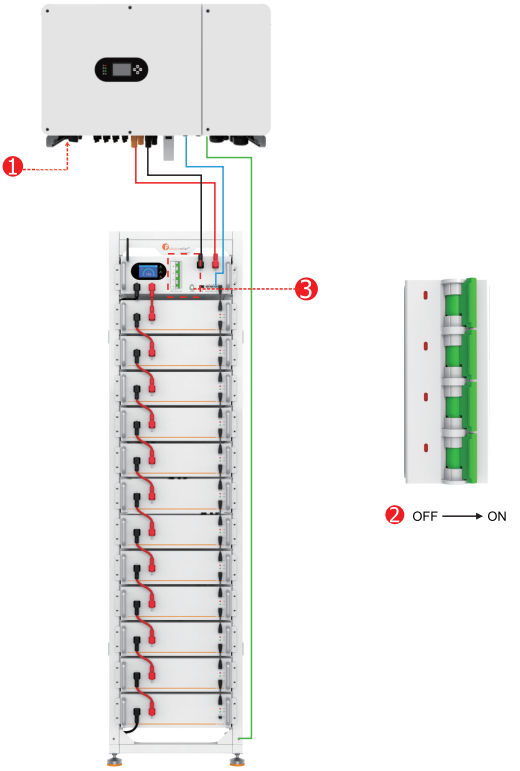
Power on steps:

Step 1: Confirm that the battery and inverter are properly wired, then start the inverter ❶ .

Step 2: Turn on the battery breaker by switching it from "OFF" to "ON" ❷

Step 3: Press and hold the power button ❸ for 3 seconds to activate the battery system.

If the battery clusters are connected in parallel, connect the harnesses in sequence as indicated and then turn on them one by one.



Power down steps:

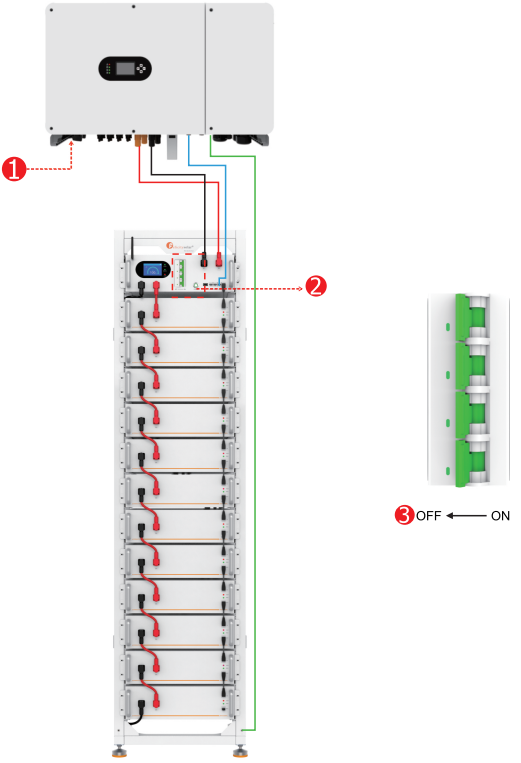
Step 1: Shut down the inverter❶;

Step 2: Press and hold the power button❷for 3 seconds to turn off the battery system;

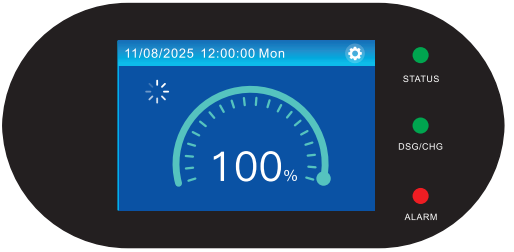
Step 3: Turn off the battery breaker by switching it from "ON" to "OFF"❸

Note:

- If batteries are connected in parallel, shut them down one by one.
- Both the positive and negative poles of the battery system are connected through the DC circuit breaker. Opening the breaker isolates all live conductors in the battery system.
- Before performing any maintenance, repair, or replacement on the battery system, verify that it has been completely powered down following the shutdown procedure.

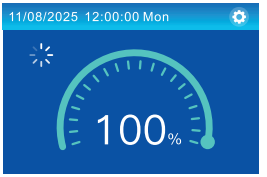


4.6 LCD Display Icons



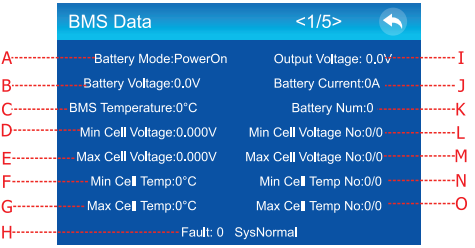
Name	Description
LCD touch screen	Display the information of the battery.
Status LED	Indicates the operating status of the battery, which is always on when running normally.
Charge & Discharge LED	Indicates the charging&discharging status ot the battery; A long bright light indicates discharging, and a flashing light indicates charging.
Alarm LED	Indicates the fault status of the battery, which lights up when the fault occurs.

4.6.1 Main Interface



Battery Information	
	Indicates SOC.
	Indicates the battery level, with each grid representing 5%.
	This icon lights up to indicate that the battery is waiting to be connected, and there is no output at this time. After entering normal working mode, this icon disappears.

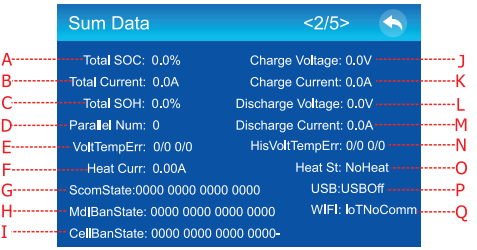
4.6.2 BMS Data



Code	Name	Definition
A	Battery Mode	Current operating status of the battery system.
B	Battery Voltage	Total voltage of the battery system.
C	BMS Temperature	BCU board temperature of the battery system.
D	Minimum Cell Voltage	Minimum cell voltage of the battery system.
E	Maximum Cell Voltage	Maximum cell voltage of the battery system.
F	Minimum Cell Temperature	Minimum cell temperature of the battery system.
G	Maximum Cell Temperature	Maximum cell temperature of the battery system.
H	Fault Status	Indicates the current fault status.
I	Output Voltage	PCS port voltage of the battery system.
J	Battery Current	Charge/Discharge current of the battery system. Positive for charging; negative for discharging.
K	Battery Number	Number of successfully addressed BMUs in the battery system.
L	Minimum Cell Voltage Number	Cell number of the cell with the minimum voltage in the battery system.
M	Maximum Cell Voltage Number	Cell number of the cell with the maximum voltage in the battery system.
N	Minimum Cell Temperature Number	Cell number of the cell with the minimum temperature in the battery system.
O	Maximum Cell Temperature Number	Cell number of the cell with the maximum temperature in the battery system.

4.6.3 Sum Data

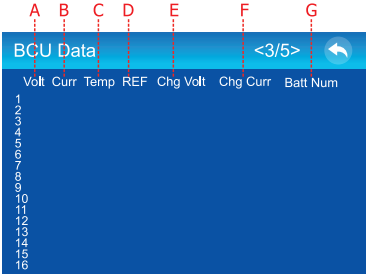
This page displays the summary information of parallel battery system (If it is a single-cluster system, the information displayed is its own):



Code	Name	Definition
A	Total SOC	SOC of the battery system.
B	Total Current	Total Current of the battery system.
C	Total SOH	Total SOH of the battery system.
D	Parallel Number	The number of the successfully paralleled batteries.
E	Voltage Temperature Error	Current records of BMU cells or temperatures error
F	Heat Current	Heat Current of the battery system. If this battery does not support the heating function, please ignore it.
G	Slave Com State	BMU communication state. Binary numbers are used to determine which BMUs are online.
H	MdIBanState	MdIBanState indicates the balancing status of the battery module, and its binary value is used to identify which BMUs (Battery Management Units) are currently in the balancing state.
I	CellBanState	CellBanState indicates the balancing status of individual cells, and its binary value is used to identify which cells are currently in the balancing state.
J	Charge Voltage	Charge limited voltage of the battery system.
K	Charge Current	Charge limited current of the battery system.
L	Discharge Voltage	Discharge limited voltage of the battery system.
M	Discharge Current	Discharge limited current of the battery system.
N	History Voltage Temperature Error	Historical records of the battery cells or temperatures;
O	Heat State	Heat state of the battery system. If this battery does not support the heating function, please ignore it.
P	USB Status	The USB operating status is classified into four states — Off (no device connected), Busy (upgrade or history recording in progress), Fault (malfunction detected), and Done (operation completed successfully).
Q	WIFI Status	The WiFi operating status encompasses six states — IoTNoComm (no communication with the MCU), ConnErr (connection to the router failed despite valid configuration), ConnRouOK (router connected), ConnSerOK (server connected), ConfigRou (configuring connection to the router or base station), and UpgradIoT (firmware upgrade of the IoT device is ongoing).

4.6.4 BCU Data

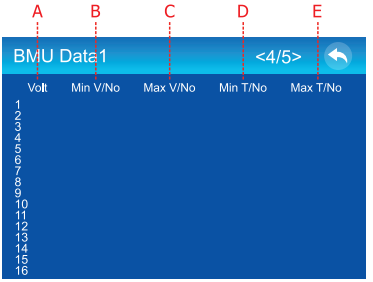
This page shows detailed information about the battery cluster parallel system.



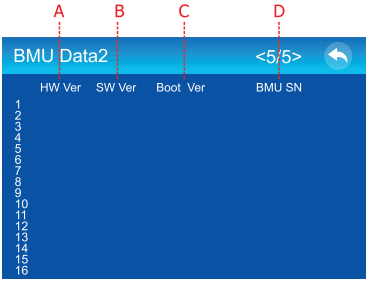
Code	Name	Definition
A	Voltage	Every battety voltage of the parallel battery system.
B	Current	Every battety current of the parallel battery system.
C	Temperature	Every battety temperature of the parallel battery system.
D	Reference SOC	Every battety reference SOC of the parallel battery system.
E	Charge Voltage	Every battety charge limited voltage of the parallel battery system.
F	Charge Current	Every battety charge limited current of the parallel battery system.
G	Battery Number	Battery address number.

4.6.5 BMU Data

This page displays the detail information of battery system:



Code	Name	Definition
A	Voltage	Every BMU voltage of the battery system.
B	Minimum Voltage/No	Minimum cell voltage of the BMU and cell number.
C	Maximum Voltage/No	Maximum cell voltage of the BMU cell number.
D	Minimum Temperature/No	Minimum cell temperature of the BMU cell number.
E	Maximum Temperature/No	Maximum cell temperature of the BMU cell number.

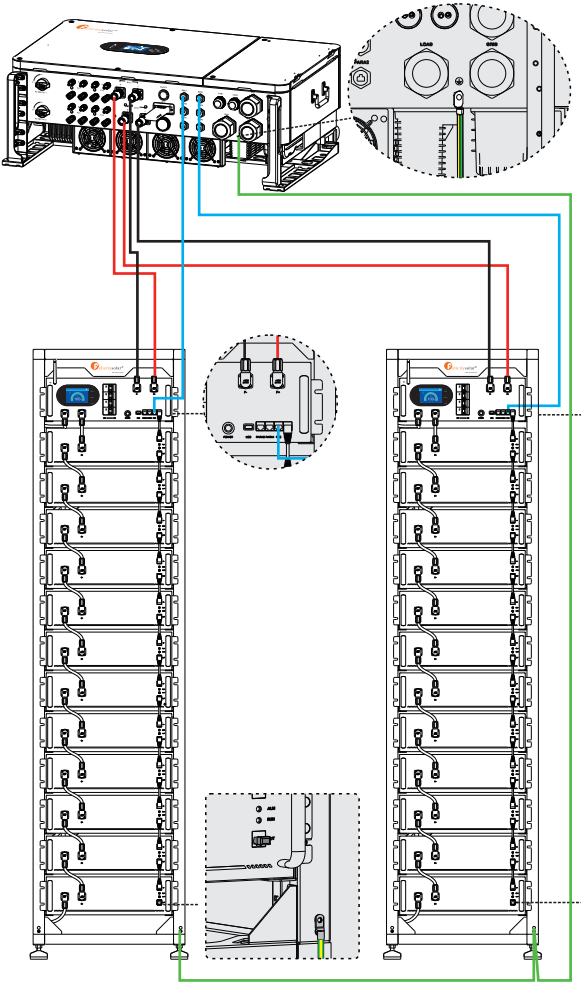


Code	Name	Definition
A	HW Ver	Hardware version of the slave unit
B	SW Ver	Software main version and sub-version of the slave unit (major.minor)
C	Boot Ver	Bootloader version of the slave unit
D	BMU SN	Serial number of the slave BMU

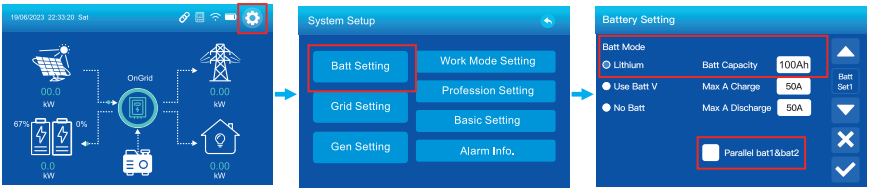
4.7 Multi-cluster Battery System Connection

4.7.1 Two battery clusters connected to the inverter

Negative Power Line Positive Power Line RJ45 485/CAN Communication Ground Connection



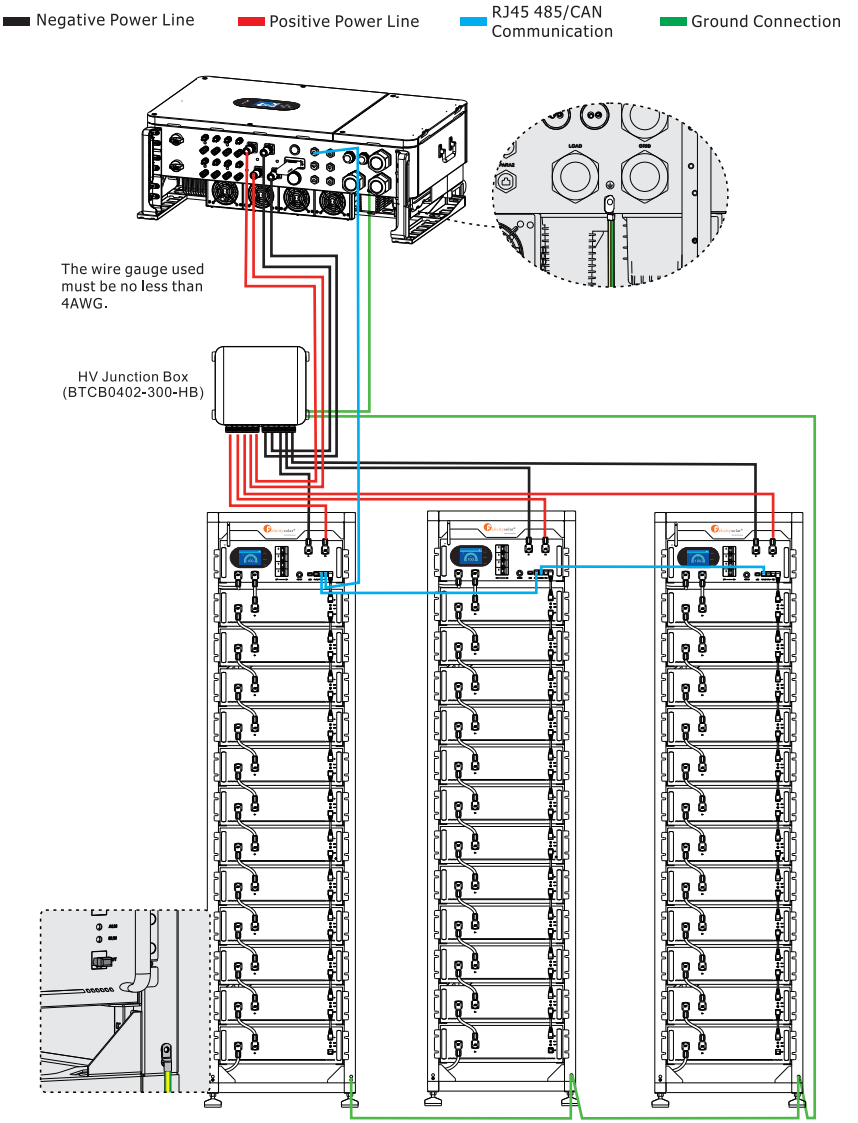
Inverter Display Setup Steps:



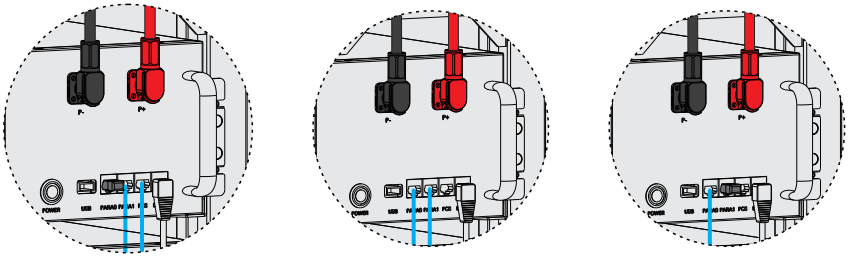
4.7.2 Three battery clusters connected to the inverter

The FLH48100UG2 supports parallel connection for expansion. It can support up to 16 clusters FLH48100UG2 in parallel. Before setting up the parallel system, it is necessary to carefully read this chapter to ensure that the number of each cluster's BMUs is consistent, that the addresses are set correctly, and that the electrical connections are safe and correct.

1.Wiring Diagram

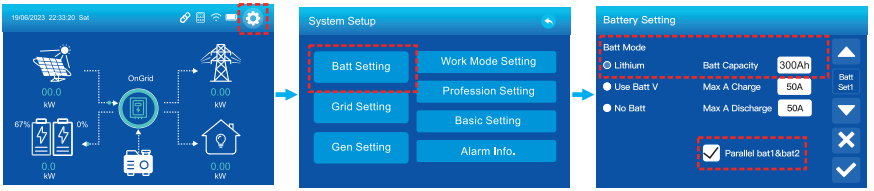


Schematic Diagram of Communication Port Connections



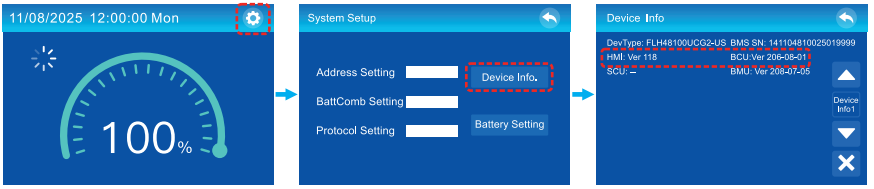
BAT1 BAT2 BAT3

2. Inverter Display Setup Steps



3. Battery Cluster Configuration Steps

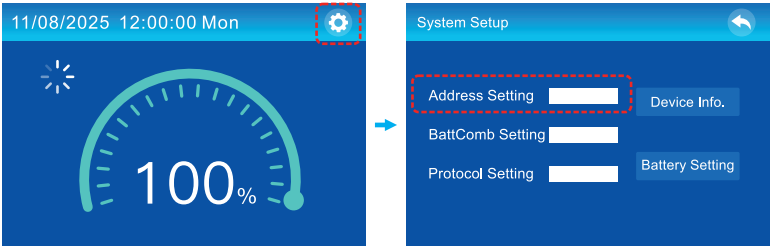
Prior to system setup, upgrade the main control software and LCD firmware to a version no lower than that shown in the figure. If the program version is lower than the version shown in the picture, please contact the supplier.



Battery pack parallel operation address setting:

1.After connecting the battery cables, power on the battery pack and configure the main control address via the display. Main control addresses must be unique (no duplicates), with a maximum configurable address of 16.

2.Once the address is configured, restart the battery pack.

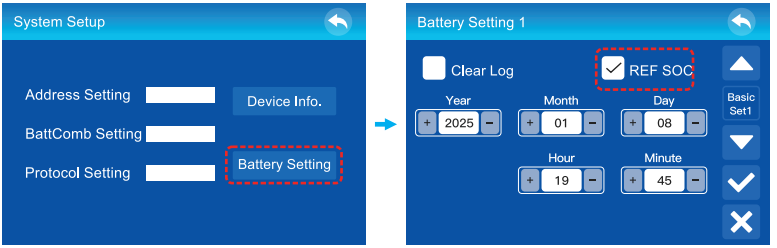


"Protocol Setting": This feature is currently under development and requires no attention for the time being.

Parallel SOC Averaging Setting

1.After connecting the battery cables, go to the "System Setting" page and click "Battery Setting".

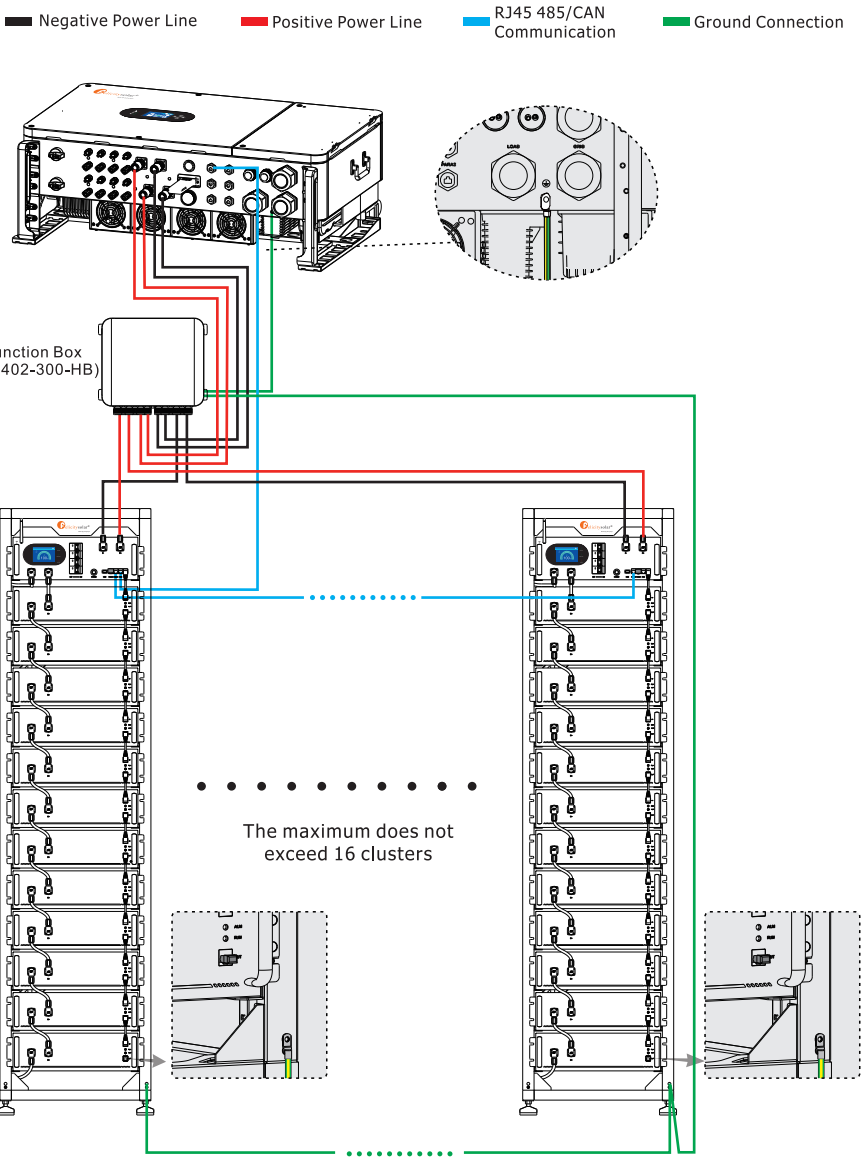
2.Check the "REF SOC" option.



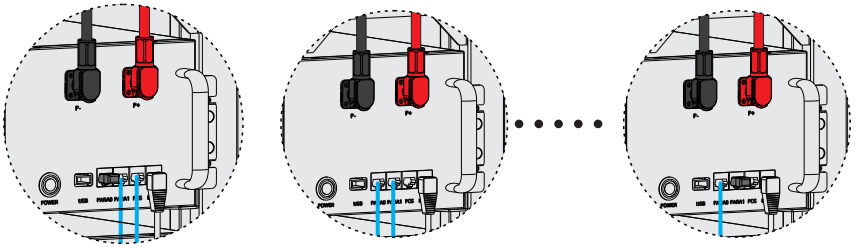
Click "REF SOC"

4.7.3 Multiple battery clusters connected to the inverter

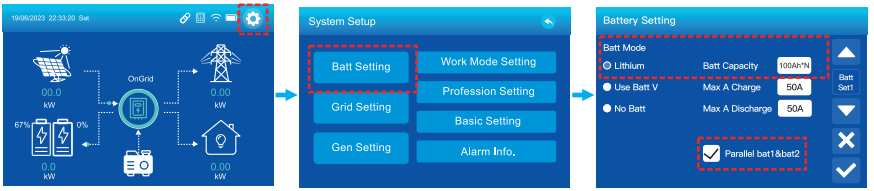
1.Wiring Diagram



Schematic Diagram of Communication Port Connections

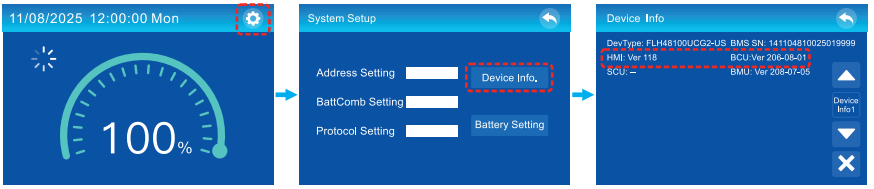


2. Inverter Display Setup Steps



3. Battery Cluster Configuration Steps

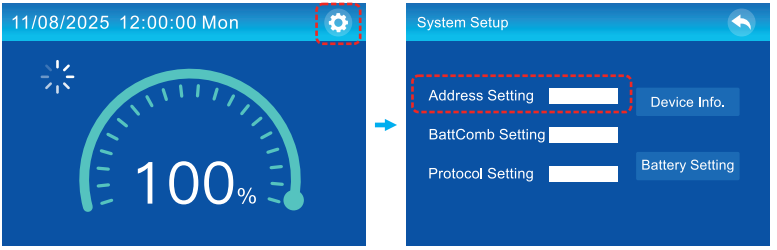
Prior to system setup, upgrade the main control software and LCD firmware to a version no lower than that shown in the figure. If the program version is lower than the version shown in the picture, please contact the supplier.



Battery pack parallel operation address setting:

1.After connecting the battery cables, power on the battery pack and configure the main control address via the display. Main control addresses must be unique (no duplicates), with a maximum configurable address of 16.

2.Once the address is configured, restart the battery pack.

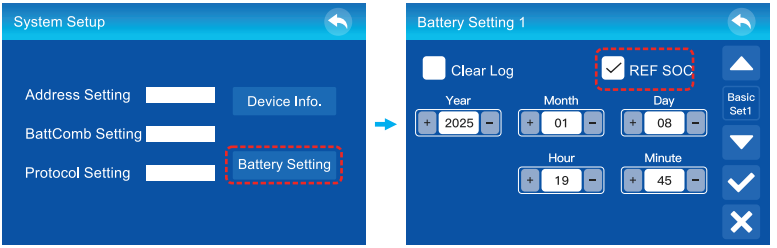


"Protocol Setting": This feature is currently under development and requires no attention for the time being.

Parallel SOC Averaging Setting

1.After connecting the battery cables, go to the "System Setting" page and click "Battery Setting".

2.Check the "REF SOC" option.



Click "REF SOC"

5. Smart Energy Management & Quick Network Setup Guide

For a better product experience, we strongly recommend installing and using the APP to connect and set up your device network. Through the APP, you can monitor your system's real-time operating data, keeping track of power generation, daily energy output, revenue, and carbon reduction at any time. Any equipment abnormalities will also trigger instant alerts, giving you a clear and comprehensive view of your plant's status. Once connected, you can also enjoy convenient services such as remote operation & maintenance and one-click repair requests, truly achieving intelligent management and maximizing the power generation revenue and service life of your plant.

5.1 Download the APP

Please use your mobile phone to scan the QR code below to download and install the "Fsolar" APP.

Fsolar APP

5.2 APP User Guide (SOP)

Scan the QR code to view the full tutorial, or visit the URL below on your computer browser to quickly learn the following functions:
Fsolar Features, User Registration, Create Plant, Device Network, Setup Home/Plant, Service Center

Web access: https://shine.felicitysolar.com/app_operation_manualen.html

5.3 Web Access

You can also access the web management platform via a computer browser to experience large-screen monitoring and more management features.
Web access: https://shine.felicitysolar.com

6. Fault Code Table

Code	Fault Description	Recommended Action
F01	Battery Voltage High	Battery overvoltage fault & Battery undervoltage fault. Please check whether the power cables and communication cables of the battery system are connected correctly. After checking the wiring harness connections and restarting the system, if the fault is not eliminated, please contact the battery supplier.
F02	Battery Voltage Low	
F03	Cell Voltage High	Battery cell overvoltage fault & Battery cell undervoltage fault. If the same fault is reported multiple times, please contact the battery supplier.
F04	Cell Voltage Low	
F05	Battery Charge Current High	Battery charge overcurrent & Battery discharge overcurrent. If the same fault is reported multiple times, please contact the battery and converter supplier.
F06	Battery Discharge Current High	
F07	BCU Temperature High	BCU over temperature. The battery system may have been exposed to extremely high ambient temperatures for an extended period while operating at high power continuously. Please let it stand idle for a while before continuing to use it. If the same fault is reported multiple times, please contact the battery supplier.
F08	TBD	The F08 code has not been assigned a specific fault yet. Please ignore it.
F09	Cell Temperature High	Cell over temperature. The battery system may have been exposed to extremely high ambient temperatures for an extended period while operating at high power continuously. Please let it standidle for a while before continuing to use it. If the same fault is reported multiple times, please contact the battery supplier.
F10	Cell Temperature Low	Cell under temperature. Please note the installation and usage environmental temperatures. If the same fault is reported multiple times, please contact the the battery supplier.
F11	AFE Communication Fault	The chip operation is stuck. Please try to restart the battery. If the same fault is reported multiple times, please contact the battery supplier.
F12	Soft Start Fault	Battery soft start fault. Please confirm whether there is a short circuit on the P+/P-. After checking it and restarting the system, if the fault is not eliminated, please contact the battery supplier.

F13	BMU Device Communication Fault	BMU communication fault. Please confirm whether the BMUs communication harness are well connected. After checking it and restarting the system, if the fault is not eliminated, please contact the battery supplier.
F14	Insulation Resistance Low Fault	Insulation resistance low fault. Please turn off the battery system and contact the battery supplier.
F15	TBD	The F15 code has not been assigned a specific fault yet. Please ignore it.
F16	TBD	The F16 code has not been assigned a specific fault yet. Please ignore it.
F17	Parallel Fault	Please confirm whether the parallel battery system has been set up correctly in accordance with the requirements, such as: the 120Ω terminating resistor, the parallel cluster network cables, the addresses of each parallel cluster on the LCD must be unique, and the number of BMUs (Battery Management Units) in each cluster's battery system must be consistent, etc. After checking and restarting the system, if the fault is not eliminated, please contact the battery supplier.
F18	Relay Self-diagnosis Fault	Please turn off the battery system and contact the battery supplier.
F19	Relay Driver Fault	Please try to restart the battery. If the same fault is reported multiple times, please contact the battery supplier.
F20	Fuse Fault	Fuse fault. Please turn off the battery system and check the fuse status.
F21	Insulation Function Fault	BCU insulation function fault. Please try to restart the battery. If the same fault is reported multiple times, please contact the battery supplier.
F22	BMU Address Fault	BMU Address Fault Please try to restart the battery and check the blinking status of the BMU's status indicator lights. If the same fault is reported multiple times, please contact the battery supplier.

F23	Cell Temperature Harness Shortage Fault	Cell temperature harness shortage fault. If the same fault is reported multiple times, please contact the battery supplier and check the BMU temperature harness state.
F24	Cell Temperature Harness Open Fault	Cell temperature harness open fault. If the same fault is reported multiple times, please contact the battery supplier and check the BMU temperature harness state.
F25	Cell Voltage Harness Open Fault	Cell Voltage Harness Open Fault If the same fault is reported multiple times, please contact the battery supplier and check the cell voltage harness state.
F26	Heating Power Over Fault	Heating power over fault. Please turn off the battery system and contact the battery supplier.
F27	Heating Circuit Fault	Heating circuit fault. Please turn off the battery system and contact the battery supplier.
F28	Module Balance Relay Fault	Module balance relay fault. Please turn off the battery system and contact the battery supplier.
F29	Delta Voltage Fault	Excessive voltage difference fault. If the same fault is reported multiple times, please contact the battery supplier and check the cell voltage harness state.
F30	BCU analog device communication fault	Please try to restart the battery. If the same fault is reported multiple times, please contact the battery supplier.
F31	Parallel Communication Fault	Please confirm whether the parallel battery system has been correctly connected with the parallel cluster network cables in accordance with the requirements. After checking, restart the system. If the fault persists, please contact the battery supplier.
F32	Parallel PowerLine Fault	Please confirm whether the parallel battery system has been correctly connected with the parallel cluster power cables in accordance with the requirements. After checking, restart the system. If the fault persists, please contact the battery supplier.

7. Maintenance Guidelines

7.1 General

Maintenance must be performed by a licensed electrician every 6 months.

Power off completely and set the DC breaker to "OFF" before maintenance.

Wear insulated gloves, safety shoes and other PPE.

7.2 Electrical Connection Inspection (Mandatory Items)

Item	Standard
DC breaker	Smooth operation, no sticking
PCS+/PCS- and BAT+/BAT- terminals	Torque 5 N·m; no looseness, discolouration or overheating
Series cables between modules	No damage or looseness
Earthing connection	Earth resistance < 1 Ω
Communication cables (RJ45)	No oxidation, latches locked
Terminal temperature (under load)	Stop if temperature difference > 15° C
Insulation resistance (to earth)	≥ 1 MΩ; otherwise contact supplier

7.3 Anti-Static Enclosure Cleaning

- Never wash with water; do not use organic solvents (alcohol, petrol, etc.).
- Use an anti-static vacuum or a slightly damp anti-static cloth (wring until no dripping).
- Wear an anti-static wrist strap during cleaning.
- Power off before cleaning; after cleaning, ensure vents are clear and labels are legible.
- If bulging, deformation or leakage is found, stop using and contact supplier.

7.4 Safety Warning Summary

- Only licensed electricians may perform maintenance; always power off first.
- In case of fire, use only dry-powder extinguishers.
- Keep a brief maintenance log on file for at least the warranty period.

8. Battery Recycling

Aluminum, copper, lithium, iron, and other metal materials are extracted from discarded LiFePO4 batteries using an advanced hydrometallurgical process, achieving a comprehensive recovery efficiency of up to 80%. The detailed process steps are outlined as follows.

8.1 Cathode Material Recycling Process and Steps

The aluminum foil used as a current collector is an amphoteric metal. Initially, it is dissolved in an NaOH alkaline solution, which allows aluminum to enter the solution as $NaAlO_2$. After filtration, the filtrate is neutralized using a sulfuric acid solution, leading to the precipitation of $Al(OH)_3$. When the pH exceeds 9.0, most of the aluminum precipitates, and the resulting $Al(OH)_3$ can meet chemical-grade purity specifications upon analysis.

The filter residue is treated with sulfuric acid and hydrogen peroxide, which allows lithium iron phosphate to dissolve into the solution as $Fe_2(SO_4)_3$ and Li_2SO_4, while separating it from carbon black and the carbon coating on lithium iron phosphate. After filtration, the pH of the filtrate is adjusted using NaOH and ammonia solution. Iron is first precipitated as $Fe(OH)_3$; subsequently, the remaining solution is treated with a saturated Na_2CO_3 solution at 90°C to induce precipitation.

8.2 Anode Material Recycling

The recovery process for anode materials is rather straightforward. Upon separation of the anode plates, the copper achieves a purity exceeding 99%, qualifying it for further refining into electrolytic copper.

8.3 Separator Recycling

The diaphragm material is primarily non-hazardous and holds no recycling value.

8.4 Recycling Equipment List

Automatic dismantling machine, pulverizes, wet gold pool, etc.

9. Disposal

Please abide by the regulations for the disposal of used batteries. Damaged batteries must be stopped immediately. Before disposal, please contact the installer or sales partner and ensure that the batteries are kept away from moisture and direct sunlight.

For details on battery module processing, please contact us in a timely manner:
E-mail: technicalsupport@felicitysolar.com
Web: **https://www.felicitysolar.com**

Caution:

1. Do not discard batteries (including rechargeable batteries) as household garbage! According to regulatory requirements, you are obligated to hand over used batteries and rechargeable batteries to the designated recycling channels for disposal.
2. If used batteries are not properly disposed of, they may release pollutants, posing a threat to the environment and health.Improper storage or handling may lead to the leakage of harmful substances.
3. Batteries contain recyclable resources such as iron and lithium, and recycling them can achieve circular value.







Don't regard batteries as household garbage!

AppendixI: Specifications

Model[1]	FLH48100UG2M5	FLH48100UG2M6	FLH48100UG2M7	FLH48100UG2M8	FLH48100UG2M9	FLH48100UG2M10	FLH48100UG2M11	FLH48100UG2M12	FLH48100UG2M13	FLH48100UG2M14	FLH48100UG2M15	FLH48100UG2M16
Product Series Name	FLH											
Battery Type	LiFePO4											
Nominal Energy	5.12kWh											
Nominal Voltage	51.2V											
Nominal Capacity	100Ah											
Number of Battery Modules[2]	5(Min)	6	7	8	9	10	11	12	13	14	15	16(max)
System Nominal Voltage (V)	256	307,2	358,4	409,6	460,8	512	563,2	614,4	665,6	716,8	768	819,2
System Operating Voltage (V)	232-288	278,4-345,6	324,8-403,2	371,2-460,8	417,6-518,4	464-576	510,4-633,6	556,8-691,2	603,2-748,8	649,6-806,4	696-864	742,4-921,6
System Energy (kWh)	25.6	30.72	35.84	40.96	46.08	51.2	56.32	61.44	66.56	71.68	76.8	81.92
System Usable Energy (kWh)	23,04	27,648	32,256	36,864	41,472	46,08	50,688	55,296	59,904	64,512	69,12	73,728
Rated DC Power (kW)	25.6	30,72	35,84	40,96	46,08	51,2	56,32	61,44	66,56	71,68	76,8	81,92
Recommend Charge/Discharge Current	50A											
Max. continuous Charge/Discharge Current[3]	100A											
Depth of Discharge(DOD)	90%											
Display Type	LED+LCD(Touch)											
IP Rating of Enclosure	IP20											
Working Temperature Range	Charge:0°C~+55°C											
	Discharge:-20°C~+55°C											
Storage Temperature Range	0°C~+35°C											
Humidity	5%~95%											
Altitude	≤3000m											
Cycle Life[4]	≥6000											
Installation	Rack-Mounting											
Protection	Built-in smart BMS, Breaker, Fuse											
Communication Port	RS485/CAN											
Warranty Period[5]	10 Years											
Certification	CE / IEC 62619 / IEC 62040 / UN38.3											
Control Module FLH48100UCG2 — Product Dimension	482.6x565x150mm											
Control Module FLH48100UCG2 — Package Dimension	687x562x269mm											
Control Module FLH48100UCG2 — Product Weight Approximate	17.5kg											
Control Module FLH48100UCG2 — Package Weight Approximate	24.7kg											

Battery Module FLH48100UMG2	Product Dimension	482.6x565x133mm
	Package Dimension	687x562x250mm
	Product Weight Approximate	42.5kg
	Package Weight Approximate	46kg
	Battery Designation[1]	IFpP54/150/120[(1P16S)NS]M/-20+50/90
Rack FLH48100R13G2	Product Dimension	590×532×2087.50mm(13th floor)
	Package Dimension	657×138×2167mm
	Product Weight Approximate	49kg
	Package Weight Approximate	57kg
Rack FLH48100R9G2	Product Dimension	590×532×1515.5(9th floor)
	Package Dimension	657×138×1595mm
	Product Weight Approximate	37.7kg
	Package Weight Approximate	43.2kg
FLH48100UG2MN -1M6S	Product Dimension	Bracket:143×50×32mm(single unit) Rubber foot:D40×M8×L68(single unit)
	Package Dimension	367×367×138mm
	Product Weight Approximate	Bracket: 263g(single unit) Rubber foot: 89.5g(single unit)
	Package Weight Approximate	8.8kg

[1] N=5,6,7,8,9,10,11,12,13,14,15 or 16.N is the number of battery modules connected series and should not exceed 16.($5 \leq N \leq 16$)

[2] Currently, the battery supports a maximum of 16 battery modules. For the entire energy storage system, confirm the inverter's maximum supported voltage range to determine the maximum number of battery modules that can be installed.

[3] Max. continuous charge/discharge current is affected by temperature and SOC.

[4] Test conditions: 0.5C Charging/Discharging@25±2°C,EOL70%.

[5] Conditions apply, refer to Felicitysolar Warranty policy.

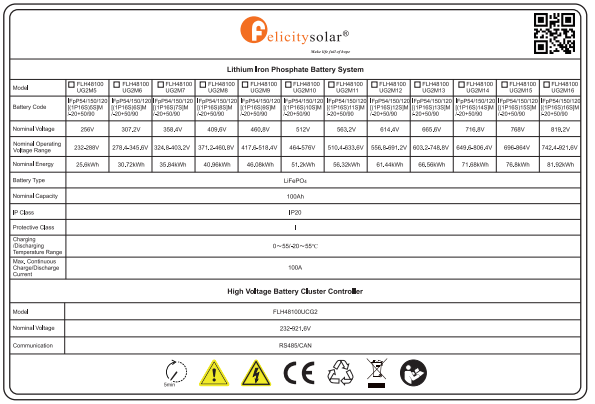
System Weight/Dimension

Model	5	6	7	8	9	10	11	12	13	14	15	16
System Weight: With FLH48100UG2MN-1M6S rack	236.67kg	280.222kg	\	\	\	\	\	\	\	\	\	\
System Dimension: With FLH48100UG2MN-1M6S rack	546.6x565x883mm	546.6x565x1016mm	\	\	\	\	\	\	\	\	\	\
System Weight: With FLH48100R9G2 rack	267.7kg	310.2kg	352.7kg	395.2kg	475.4kg	517.9kg	560.4kg	602.9kg	645.4kg	687.9kg	730.4kg	772.9kg
System Dimension: With FLH48100R9G2 rack	590x532x1515.5mm				590x532x1515. 5mm*2							
System Weight: With FLH48100R13G2 rack	279kg	321.5kg	364kg	406.5kg	449kg	491.5kg	534kg	576.5kg	\	\	\	\
System Dimension: With FLH48100R13G2 rack	590x532x2087.5mm											

Appendix II: Labels

The label on the left is for the battery system, and the label on the right is for the battery pack.The system label is attached to the right side of the high-voltage control box. The battery pack labels are attached to the right side of each battery pack.

After the initial system installation, tick the corresponding system model on the label based on the number of battery packs installed. For example,with 12 battery packs, tick FLH48100UG2M12.

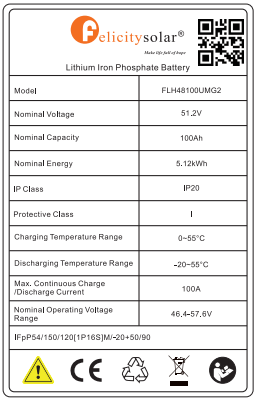


Lithium Iron Phosphate Battery System

Model	☐ FLH48100 UG2M5	☐ FLH48100 UG2M6	☐ FLH48100 UG2M7	☐ FLH48100 UG2M8	☐ FLH48100 UG2M9	☐ FLH48100 UG2M10	☐ FLH48100 UG2M11	☐ FLH48100 UG2M12	☐ FLH48100 UG2M13	☐ FLH48100 UG2M14	☐ FLH48100 UG2M15	☐ FLH48100 UG2M16
Battery Code	IFpP54/150/120[1P16S/65]M/-20+50/60	IFpP54/150/120[1P16S/65]M/-20+50/60	IFpP54/150/120[1P16S/75]M/-20+50/60	IFpP54/150/120[1P16S/85]M/-20+50/60	IFpP54/150/120[1P16S/85]M/-20+50/60	IFpP54/150/120[1P16S/105]M/-20+50/60	IFpP54/150/120[1P16S/113]M/-20+50/60	IFpP54/150/120[1P16S/123]M/-20+50/60	IFpP54/150/120[1P16S/133]M/-20+50/60	IFpP54/150/120[1P16S/143]M/-20+50/60	IFpP54/150/120[1P16S/153]M/-20+50/60	IFpP54/150/120[1P16S/165]M/-20+50/60
Nominal Voltage	256V	307,2V	358,4V	409,6V	460,8V	512V	563,2V	614,4V	665,6V	716,8V	768V	819,2V
Nominal Operating Voltage Range	232-288V	278,4-345,6V	324,8-403,2V	371,2-460,8V	417,6-518,4V	464-576V	510,4-633,6V	556,8-691,2V	603,2-748,8V	649,6-806,4V	696-864V	742,4-921,6V
Nominal Energy	25,6kWh	30,72kWh	35,84kWh	40,96kWh	46,08kWh	51,2kWh	56,32kWh	61,44kWh	66,56kWh	71,68kWh	76,8kWh	81,92kWh
Battery Type	LiFePO4											
Nominal Capacity	100Ah											
IP Class	IP20											
Protective Class	I											
Charging /Discharging Temperature Range	0~55/-20~55℃											
Max. Continuous Charge/Discharge Current	100A											

High Voltage Battery Cluster Controller

Model	FLH48100UCG2
Nominal Voltage	232-921,6V
Communication	RS485/CAN



Lithium Iron Phosphate Battery

Model	FLH48100UMG2
Nominal Voltage	51.2V
Nominal Capacity	100Ah
Nominal Energy	5.12kWh
IP Class	IP20
Protective Class	I
Charging Temperature Range	0~55°C
Discharging Temperature Range	-20~55°C
Max. Continuous Charge /Discharge Current	100A
Nominal Operating Voltage Range	46.4~57.6V

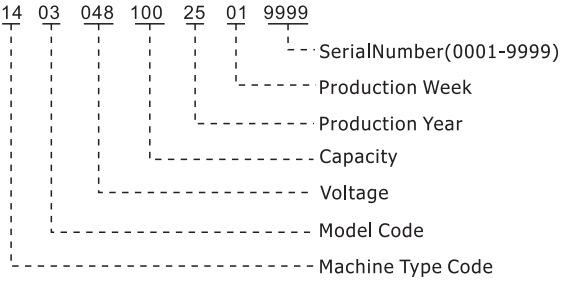
IFpP54/150/120[1P16S]M/-20+50/90

Appendix III: SN Description

1.High-Voltage Battery Control Unit SN Description

For example

FLH48100UCG2 SN: 140304810025019999



Note: The SN code of the main controller is the SN code of the entire system.

2.High-Voltage Battery module SN Description

For example

FLH48100UMG2 SN: 075504810025019999

