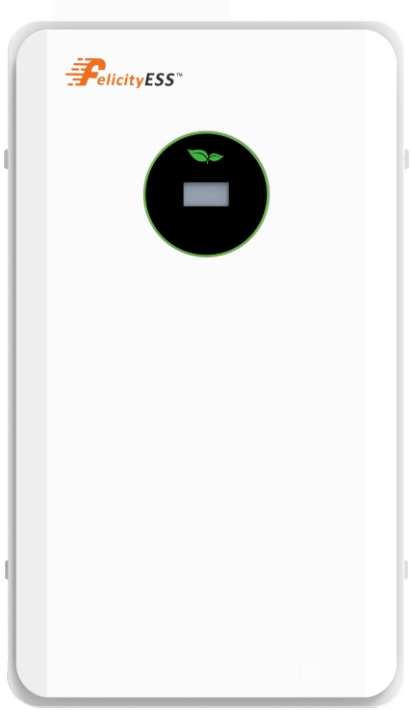
LiFePO4 Battery System

358-S010016-03

FelicityESS™

USER MANUAL

LiFePO4 Battery System for Households



In order to prevent improper operation before use, please carefully read this manual.

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1 ABOUT THIS MANUAL

1.1 Purpose

This manual describes the introduction, installation, operation and emergency situations of the battery bank. Please read this manual carefully before installations and operations. Keep this manual for future reference.

1.2 Scope

This manual provides safety and installation guidelines as well as information on tools and wiring.

1.3 Safety Instructions

⚠ WARNING: This chapter contains important safety and operating instructions. Read and keep this manual for future reference.

1.Before using the unit, read all instructions and cautionary markings on the unit, the batteries and all appropriate sections of this manual.
2. CAUTION –-- To reduce risk of injury,damage,even burst. please use it following using manual. In case of causing personal
3. Do not disassemble the battery. Take it to a qualified service center when service or repair is required. Incorrect re-assembly may result in a risk of fire.
4. To reduce risk of electric shock, disconnect all wirings before attempting any maintenance or cleaning. Turning off the unit will not reduce this risk.
5. CAUTION – Only qualified personnel can install this device with inverter.
6. For optimum operation of this battery, please follow required spec to select appropriate cable size.
7. Be very cautious when working with metal tools on or around batteries. A potential risk exists to drop a tool to spark or short circuit batteries or other electrical parts and could cause an explosion or fire.
8. Please strictly follow installation procedure.
9. GROUNDING INSTRUCTIONS - This System should be connected to a permanent grounded wiring system. Be sure to comply with local requirements.
10. NEVER cause AC output and DC input short circuited. Do not connect to the mains when DC input short circuits.
11. Warning!! Only qualified service persons are able to service this device.
12. Battery should be installed indoor and kept away from water, high temperature mechanical force and flames.
13. Do not install the battery in any environment of temperature below 0°C or over 55°C,and humidity over 80%.
14. Do not put any heavy objects on the battery.

1.4 Can be connected in parallel

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 charging.

Special 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 for discharge. 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.

1.5 Safety rules

To avoid property damage and personal injury, the following rules shall be fllowed when working on the hazardous live parts of the battery energy storage system:

·It is available for use.
·Ensure that it will not restart.
·Make sure there is no voltage.
·Grounding protection and short circuit protection.
·Cover or shield adjacent live parts.

1.6 Safety information

Part damage or short circuit may cause electric shock and death. A short circuit can be caused by connecting battery terminals, resulting in current flow, This type of short circuit shall be avoided under any circumstances, For this reason, follow these instructions:

•Use insulated tools and gloves.
•Do not place any tools or metal parts on the battery module or high-voltage control box.
•When operating the battery, be sure to remove watches, rings, and other metal objects.
•Do not install or operate this system in explosive or high-humidity areas.
•When working on the energy storage system, first turn off the charging controller, then the battery, and ensure that they are not turned on again.

Improper use of the battery energy storage system can lead to death. The use of the battery energy storage system beyond its intended use is not allowed, because it may cause great danger.
Improper handling of the battery energy storage system can cause life-threatening risks, serious injury or even death.

⚠ **Warning!** improper use can cause damage to the battery cell.

•Do not expose the battery module to rain or soak it in liquid.
•Do not expose the battery module to a corrosive environment (such as ammonia and salt).

1.7 Installation

·After unpacking, please check the product for damages and missing parts.
·Make sure that the inverter and battery is completely turned off before commencing installation.
·Do not interchange the positive and negative terminals of the battery.
·Ensure that there is no short circuit of the terminals or with any external device.
·Do not exceed the battery voltage rating of the inverter.
·Do not connect the battery to any incompatible inverter.
·Do not connect different battery types together.
·Please ensure that all the batteries are grounded properly.
·Do not open the battery to repair or disassemble. Only FelicityESS is allowed to carry out any such repairs.
·In case of fire, use only dry powder fire extinguisher. Liquid extinguishers should not be used.
·Install the battery away from children or pets.
·Do not use battery in high static environment where the protection device might be damaged.
·Do not install with other batteries or cells.

2.SYMBOLS

	Danger!Serious physical injury or even death may occur if not follow the relative requirements.		Install the product out of reach of children
	Caution, risk of electric shock.		Do not place norinstall near flammable or explosive materials
	In case of electrolyte leakage, keep leaked electrolyte away from eyes or skin.		Disconnect the equipment before carrying out maintenance or repair
	Do not connect the Pack's positive(+) and negative(-)terminal reversely.	SGS	Societe Generale de Surveillance S.A.
	Observe precautions for handling electrostatic discharge sensitive devices.		Instruction manual:Read the instruction manual before starting installation and operation.
	Caution, risk of electric shock, energy storage timed discharge	CE	CE mark:The inverter complies with the CE directive.
	Recyclable.	NOTE	Note:The procedures taken for ensuring proper operation.
	Do not use the Pack beyond specified conditions		Earth terminalThe inverter must be reliably grounded.
	Take care! This Pack is heavy enough to cause serious injury.		EU WEEE mark:Product should not be disposed as household waste.

3.TRANSPORTATION

3.1 Regulations for the transport of battery modules

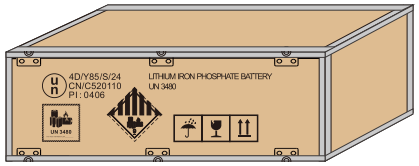
It is necessary to comply with the relevant regulations and provisions on roads for shipping lithium-ion products in the corresponding countries.

- Smoking is prohibited in the vehicle during transportation or in the vicinity during loading and unloading
- The dangerous goods transport vehicles shall meet relevant regulations concerning road transportation and shall be equipped with two tested CO2 fire extinguishers.
- The battery energy storage system can be damaged, if not properly transported. The battery module can only be transported vertically. Note that these parts may be top-heavy. Failure to follow this instruction may result in damage to the part.

- 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. The single battery module weighs 90kg. It could cause injury if it falls or slips. Use only suitable transport and lifting equipment to ensure safe transport.
- Wear safety shoes to avoid the danger of injury. When transporting the battery module, their parts may be crushed due to their heavy weight. Therefore, all persons involved in transportation must wear safety shoes with toe caps. Please observe the safety regulations for transportation at the end customer's site, especially during loading and 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.

3.2 Permissible and Impermissible Storage Positions of a Packaged

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



4. STORAGE

- Do not expose battery to open flame.
- Do not place the product under direct sunlight.
- Do not place the product near flammable materials. It may lead to fire or explosion in case of accident.
- Store in a cool and dry place with ample ventilation.
- 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. It may cause leakage of electrolyte or fire.
- Do not touch any liquid spilled from the product. There is a risk of electric shock or damage to skin.
- 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 damaged battery.

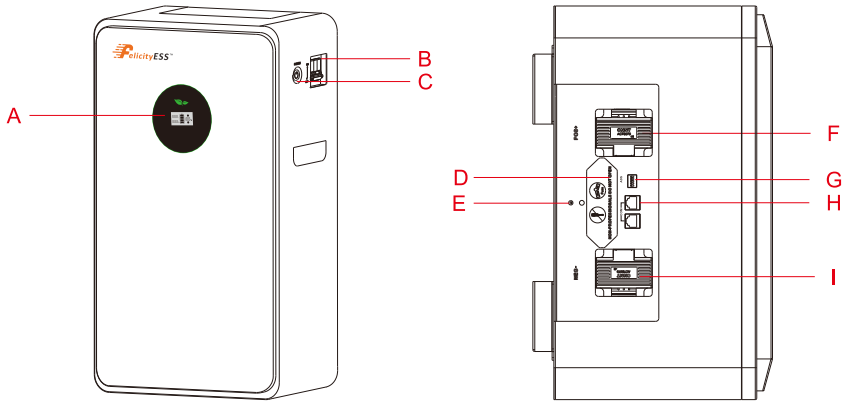
5. INTRODUCTION

The battery system main using solar power system for family house. It also have a with to controller the battery easily and protect our Household application timely.

5.1 Features

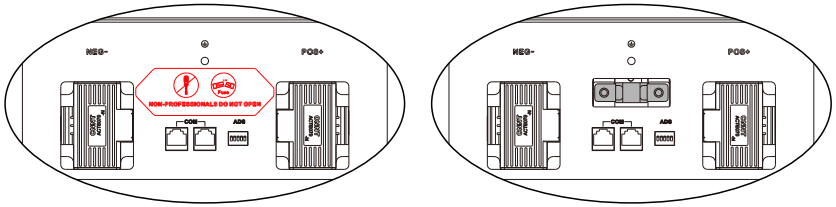
LiFePO4: Higher safe performance and longer cycle life.
Multiple Protection: Built-in smart BMS,Breaker and Fuse.
Flexible Installation: Wall-Mounted or Floor-Mounted.
Wide Compatibility: Compatible with leading inverter brands.
High Scalability: Capacity up to 157.4kWh.
Built-in WFI: Remote monitoring of battery pack data.
Fire Extinguishing Gel Inside.

5.2 Product Overview



Code	Name
A	LCD display
B	Breaker
C	Power On/Charging indicator
D	Fuse
E	Earth wire
F	Battery Positive +
G	Switch
H	Communication port
I	Battery Negative -

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



If the fuse is burnt out, please open the cover and replace it

5.3 Specifications

Model	LUX-E-48200LG03
Battery Type	LiFePO4
Nominal Energy	10.5kWh
Nominal Capacity	205Ah
Scalability	Max.15 pcs in Parallel(157.4kWh)
Nominal Voltage	51.2V
Operating Voltage	44.8~57.6V
Recommend Charge/Discharge current	100A
Max. continuous charge/Discharge current[1]	150A
Peak Charge/Discharge current(15s)	200A
Depth of discharge(DOD)	≥ 95%
Display type	LCD
Protection Level	IP21
Working Temperature Range	Charge:0~+55°C
	Discharge:-20C~+55°C
Storge Temperature Range	0°C~+35°C
Humidity	5%~95%
Altitude	≤ 2000m
Communication	RS485 / CAN
Cycle Life[2]	≥ 6000 Cycles
Installation	Wall-Mounted/Floor-Mounted
Protection	Built-in smart BMS, Breaker,Fuse
Warranty Period[3]	10 Year
Product Weight Approximate	90kg
Package Weight Approximate	110kg
Product Dimension	783x450x274mm
Package Dimension	900x570x450mm
[1] Max. continuous charge/discharge current is affected by temperature and SOC.	
[2] Test conditions: 0.2C Charging/Discharging @25℃, 80% DOD.	
[3] Conditions apply, refer to FelicityESS Warranty policy.	

5.4 Recommended Settings

Lithium battery pack is not same as lead-acid battery, so for the devices which you connect with the battery pack for charging or discharging, such as inverters, MPPT charger controllers or UPS, please implement pre-settings as recommended settings as below before you launched them.

Setting	LUX-E-48200LG03
Max. Charging Voltage	57.6V
Floating Charging Voltage	57.6V
Max. Charging Current	150A*N
Cut-off Voltage	48V

Notes: “N” means the number of battery packs connected in parallel.

6. INSTALLATION

6.1 Tools


Screw Driver


Crimping Modular


Safety Shoes


Multimeter


Safety Gloves


Safety Goggles


Plier


Ribbon


Electric drill

6.2 Unpacking and Inspection

Before installation, please inspect the unit. Be sure that nothing inside the package is damaged. You should have received the following items inside of package.

NO.	DESCRIPTION	QUANTITY	PICTURE
1	User manual	1	
2	Warranty card	1	
3	Lock wall components: Used for product transportation andwall fixation	1	
4	Power Cable: 0.9 meters, 35mm², allows for charging and discharging up to 150A, used for connecting to external PCS.	2	

5	Communication Cable 1: used for parallel communication between battery packs.	1	
6	Communication Cable 2: used for RS485 communication with Felicity inverters	1	
7	Communication Cable 3: used for CAN/RS485 communication with inverters from other brands.	1	
8	Screws M4X12*2 PCS Screws M8X60*4 PCS	/	
9	Signal Terminal: used for creating custom communication cables.	2	

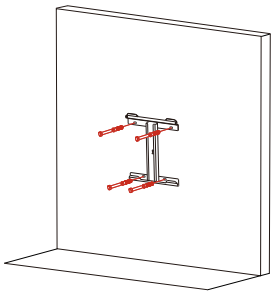
6.3 Mounting the Unit

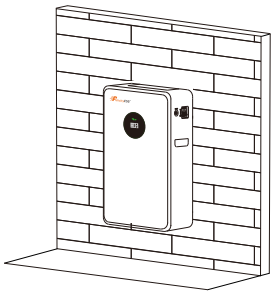
Consider the following points before selecting where to install:
- Do not mount the battery on flammable construction materials.
- The ambient temperature should be between 0°C and 45°C to ensure optimal operation.
- The recommended installation position is to be adhered to the wall vertically.
- Make sure that other objects and surfaces are consistent as shown in the image below to ensure adequate heat dissipation and enough space to remove wires.

Please follow below steps to implement battery connection:
1. Assemble battery ring terminal based on recommended battery cable and terminal size.
2. Connect all battery packs as units requires. It’s suggested to connect at least 2 sets for inverter larger than the energy of a battery pack in parallel connection.

7. INSTALLATION PROCEDURE

7.1 Setup Script



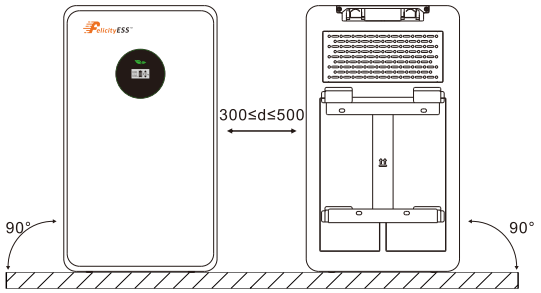


Using wall mounted components, first fix the wall mounted components to the wall, and then lift the machine onto the wall mounted components to secure it

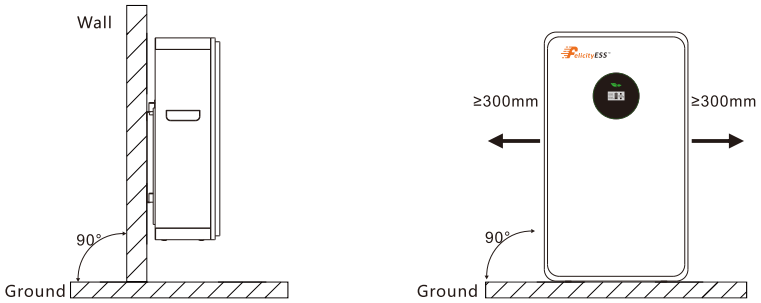
Note:Do not use wall mounted components, place the chassis against the wall and secure it with fixing components

7. 2 Floor Installation with Base

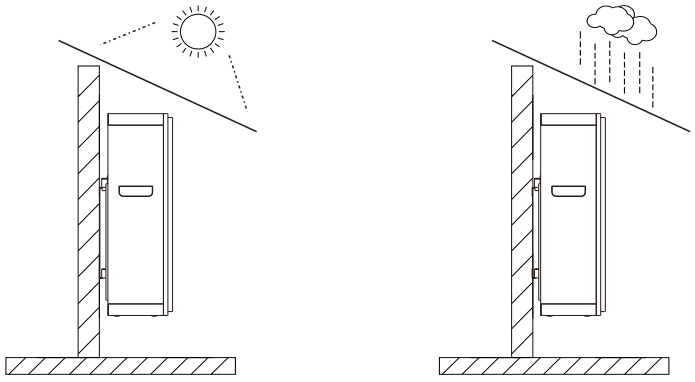
Installation Location Requirements



Ground(Two rows installtion)



7. 3 Installation Environment





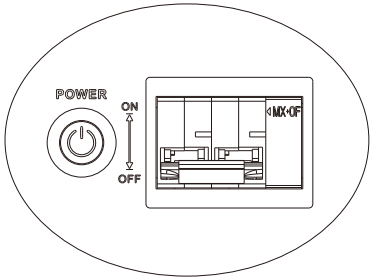
Max.+50°C

Min.-10°C



RH.+5%~+95%

7.4 Battery system switch operation



Power ON battery system:

Turn the breaker to the "ON" state, press the POWER button 1 seconds, wait for the battery system LED light to light up,indicating that the boot is complete.

Power OFF battery system:

Turn the breaker to the “OFF” state, turn off the entire battery system.

7.5 Connection for Parallel Mode

The FelicityESS 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 1.

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

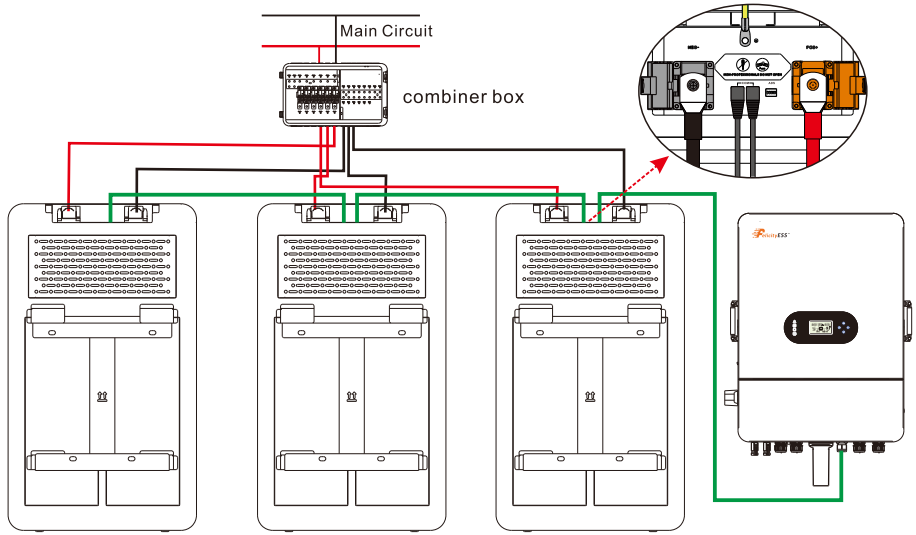
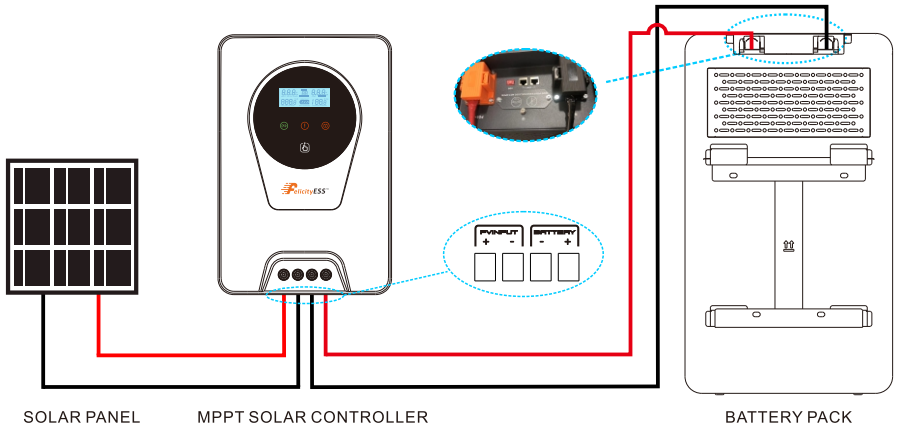


Figure 1: The parallel connection of three battery packs

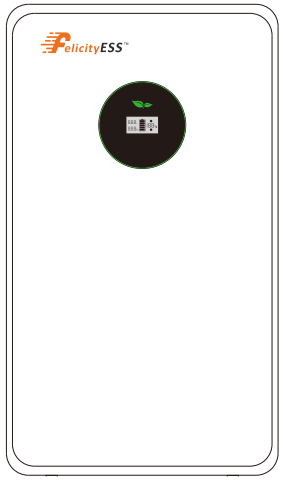
Note: After completing the above steps, arbitrarily select the positive and negative poles of one of the battery packs to output. After confirming the correct connection of the inverter, controller and battery, you can turn on any of the switches and use the battery group happily.

For pure off-grid systems, the power line needs to be connected to the battery's MPPT charging controller and the battery pack is only charged by the solar panel, the connection diagram is as follows:



8. OPERATION

Once the batteries are connected well, close the breaker to the ON block, press On/Off button to enable the output of the battery pack.

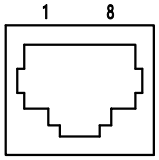


8.1 Switch On / Off

1.Switch on: press On/Off button to switch on the battery, then the battery will do self-inspection before enable output. The LCD will show the SOC.

2.Switch off: press and hold On/Off button for 1to3 seconds, the battery will shut down directly.

Description for Communication port

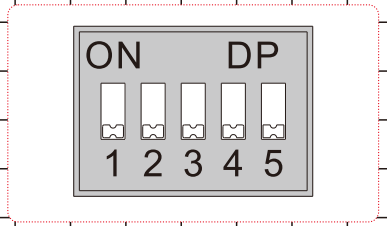
Picture	PIN	Description
	1	Trigger-GND
	2	Trigger-VCC
	3	CANL-PCS
	4	CANH-PCS
	5	RS485-B
	6	RS485-A
	7	CANL
	8	CANH

DIP SWITCH		
	1-4	Communication Address
	5	Termination Resister

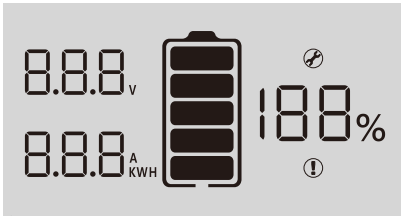
8.2 Parallel DIP Switch

Adjust each battery pack dialer from left to right according to the diagram below (from top to bottom)

No.of BAT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1PCS	1,5 ON														
2PCS	1,5 ON	2,5 ON													
3PCS	1,5 ON	2 ON	1,2,5 ON												
4PCS	1,5 ON	2 ON	1,2 ON	3,5 ON											
5PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3,5 ON										
6PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3 ON	2,3,5 ON									
7PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3 ON	2,3 ON	1,2,3,5 ON								
8PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3 ON	2,3 ON	1,2,3 ON	4,5 ON							
9PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3 ON	2,3 ON	1,2,3 ON	4,5 ON	1,4,5 ON						
10PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3 ON	2,3 ON	1,2,3 ON	4,5 ON	1,4 ON	2,4,5 ON					
11PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3 ON	2,3 ON	1,2,3 ON	4,5 ON	1,4 ON	2,4 ON	1,2,4,5 ON				
12PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3 ON	2,3 ON	1,2,3 ON	4,5 ON	1,4 ON	2,4 ON	1,2,4 ON	3,4,5 ON			
13PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3 ON	2,3 ON	1,2,3 ON	4,5 ON	1,4 ON	2,4 ON	1,2,4 ON	3,4 ON	1,3, 4,5ON		
14PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3 ON	2,3 ON	1,2,3 ON	4,5 ON	1,4 ON	2,4 ON	1,2,4 ON	3,4 ON	1,3,4 ON	2,3,4, 5 ON	
15PCS	1,5 ON	2 ON	1,2 ON	3 ON	1,3 ON	2,3 ON	1,2,3 ON	4,5 ON	1,4 ON	2,4 ON	1,2,4 ON	3,4 ON	1,3,4 ON	2,3,4 ON	1,2,3 4,5ON



8.3 LCD Display Icons



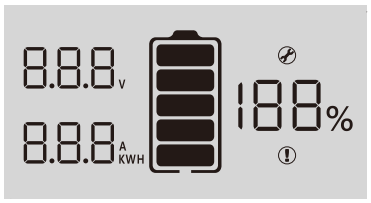
Icon	Function Description
Display Information	
8.8.8 V	Indicates battery voltage.
8.8.8 A KW	Indicates battery current or watt Short press the switch button to switch watt and current
188%	Indicate SOC.
Battery Information	
	Indicates battery level by 0-20%,21-40%, 41-60%61-80%,81-100%.(When charging,this icon is displayed for horse running;When discharging,the icon displays constant).
Fault information	
	Indicates a fault.
set information	
	Indicates settings.

8.4 BMS Information Page

The basic information will be displayed in turn after power on.

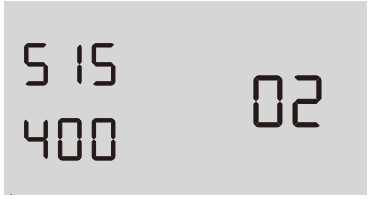
BMS power on information

BMS information is all on.



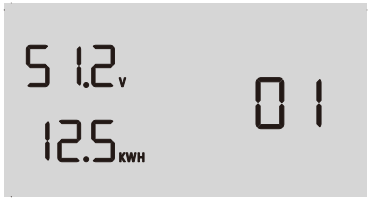
BMS version

Eg:“515” is the software version ;“400” is the IAP version and temporary version;“02” is the countdown.



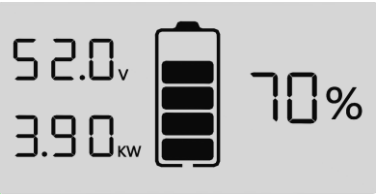
BMS type

Eg: Rated voltage is "51.2V"; model is "12.5KWH", "01"is the countdown.



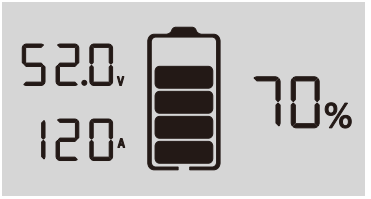
BMS data

Eg: "52.0V" / "3.90KW" / "70%" refers to battery voltage. power and SOC.



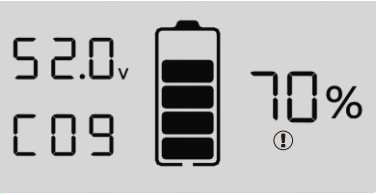
BMS data

Eg: "52.0V" / "120A" / "70%" refers to battery voltage. current and SOC.



BMS fault code / flag

Eg:"52.0V" / "C09" / "70%" are battery voltage, fault code and SOC respectively, and Fault icon constant.



8.5 Fault Code Table

Fault Code	Fault Information	Trouble Shooting
C01	Battery overvoltage	Restart the unit, If the error happens again, please return to repair center.
C02	Battery undervoltage	Restart the unit, If the error happens again, please return to repair center.
C03	Cell overvoltage	Restart the unit, If the error happens again, please return to repair center.
C04	Cell undervoltage	Restart the unit, If the error happens again, please return to repair center.
C05	Charge overcurrent	Restart the unit, If the error happens again, please return to repair center.
C06	Discharge overcurrent	Restart the unit, If the error happens again, please return to repair center.
C07	MOS overtemperature	1 .The inner temperature is over the limitation. 2.Check whether the ambient temperature is too high.
C08	MOS undertemperature	1 .The internal temperature is lower than the limit range. 2.Check whether the ambient temperature is too low.

C09	Cell ovetemperature	Restart the unit, If the error happens again, please return to repair center.
C10	Cell undertemperature	Restart the unit, If the error happens again, please return to repair center.
C11	Abnormal current sampling	Restart the unit, If the error happens again, please return to repair center.
C12	Abnormal output impedance	Restart the unit, If the error happens again, please return to repair center.
C13	Parallel failed	1.Please check if single unit is installed to parallel system. 2. If this error happens during parallel installation, please check wires connectiotn. If they are connected correctly, please funish parallel installation first, and then restart the unit. 3. If the problem remains, please contact your installer.
C14	Output loss	1. Please check whether the circuit breaker is closed; 2. Please check whether the fuse is normal; 3. Restart the unit, If the error happens again, please return to repair center.

8.6 DIP Switch SW1-SW4 Description

DIP switch SW1-SW4 Description ①						
Sw1	SW2	SW3	SW4	Remarks	DIP switch SW5 Description②	
0	0	0	0	means ID=0,communication address is0x00/0x10③	SW5	Remarks
1	0	0	0	means ID=1,communication address is0x01④	1	means connect 120Ω resistor
0	1	0	0	means ID=2,communication address is0x02		
1	1	0	0	means ID=3,communication address is0x03	0	means disconnect 120Ω resistor
0	0	1	0	means ID=4,communication address is0x04		
1	0	1	0	means ID=5,communication address is0x05		
0	1	1	0	means ID=6,communication address is0x06		
1	1	1	0	means ID=7,communication address is0x07		
0	0	0	1	means ID=8,communication address is0x08		
1	0	0	1	means ID=9,communication address is0x09		
0	1	0	1	means ID=10,communication address is0x0A		
1	1	0	1	means ID=11,communication address is0x0B		
0	0	1	1	means ID=12,communication address is0x0C		
1	0	1	1	means ID=13,communication address is0x0D		
0	1	1	1	means ID=14,communication address is0x0E		
1	1	1	1	means ID=15,communication address is0x0F		
Remark①: 1 in SW1-SW5 indicates ON status, and 0 indicates OFF status.						
Remark②: When multiple battery packs communicate, the last battery pack SW5 needs to be in the ON status, otherwise the communication may have interference.						
Remark③: When the battery pack ID is set to 0, it means stand-alone operation, and it is not necessary to detect whether the parallel condition is satisfied ⑤						
Remark④: When the battery pack ID is set to 1-15, it means that the parallel operation is required, and it is necessary to detect whether the parallel condition is satisfied ⑤						
Remark⑤: The parallel condition is that the difference between the battery voltage of the local battery and all the battery pack voltages is <3V, otherwise wait until the condition is satisfied						

9. Configure Network

9.1 Download APP

Scan the QR Code on the right side and download the APP.

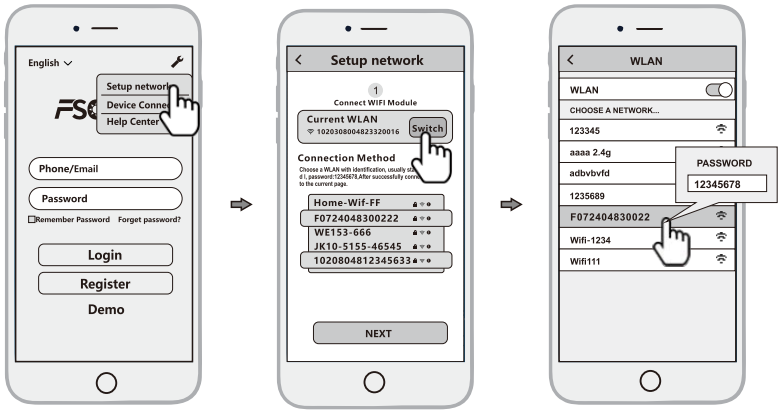
Fsolar APP

9.2 Connect to Built-in WIFI wireless network

Configure the mobile phone WLAN to connect to the wireless network of the Built-in WIFI

1) Run the APP, enter the login page, click the [Setup network] button to enter the network configuration page.

2) On the network configuration page, click the [Switch] button to enter the mobile phone WLAN page.



Configure the mobile phone WLAN to connect to the wireless network of the Built-in WIFI.

1) Run the APP, enter the login page, click the [Setup network] button to enter the network configuration page.

2) On the network configuration page, click the [Switch] button to enter the mobile phone WLAN page.

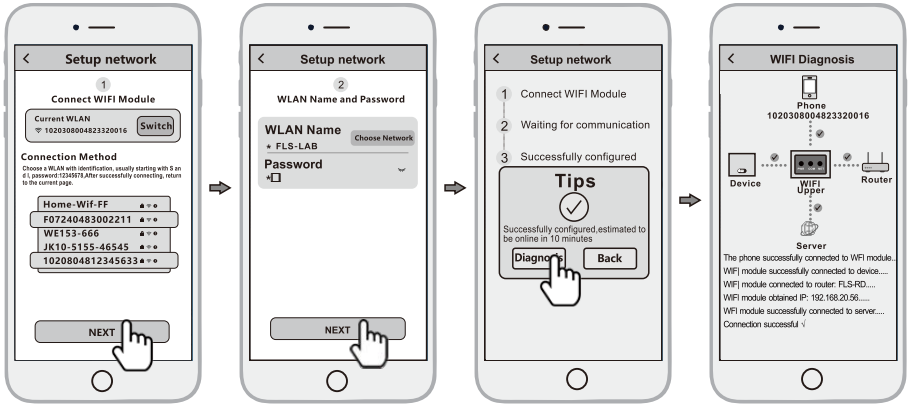
3) On the WLAN page of the mobile phone, find the corresponding wireless network name (SSID) of the Smart WiFi module, starting with F(e.g. Fxxxxxxxxxxxxxxxxx， the xxxxxxxxxxxxxxxxx is the same as the device serial number). enter the module wireless network password (default password: 12345678), and connect to the wireless network of the Built-in WIFI.

9.3 Configure the network

1)After the mobile WLAN is connected to the wireless network of the Built-in WIFI,return to the network configuration page ofthe APP and click the [NEXT] buttonto enter the WiFi network page.

2) On the WiFi network page, select the router wireless network to which the Built-in WIFI needs to connect, or directly enter the route name,enter the router wireless network password and click the [NEXT] button.

3)And then wait for the Built-in WIFI to connect to the router's wireless network, which will takesome time.
Then you can use the diagnostic function of the APP or according to the fault appendix to troubleshoot the problem.

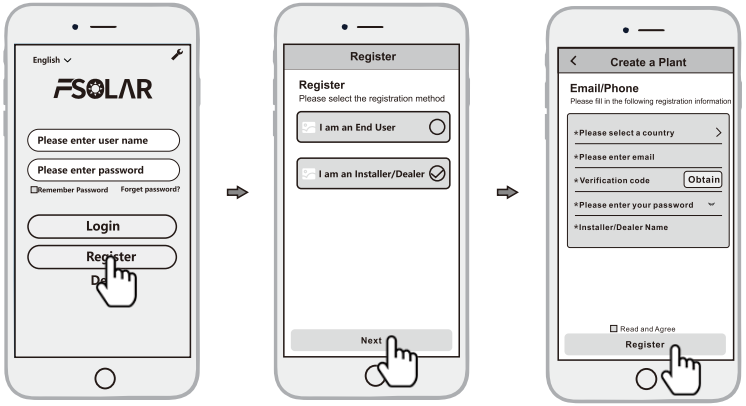


10. Create the plant

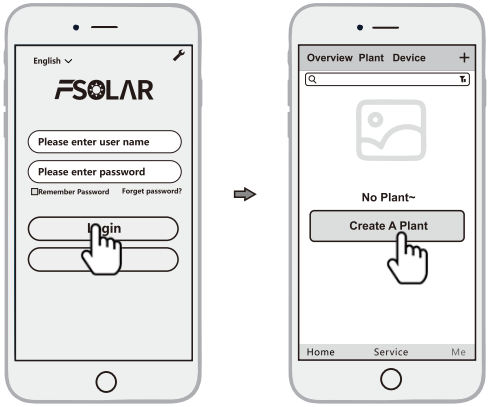
After the Built-in WIFI is connected to the server, it will transmit the data of the device to the server. And after the plant is created, users can view and manage the device via the APP or web browser.

10.1 Manage device via APP

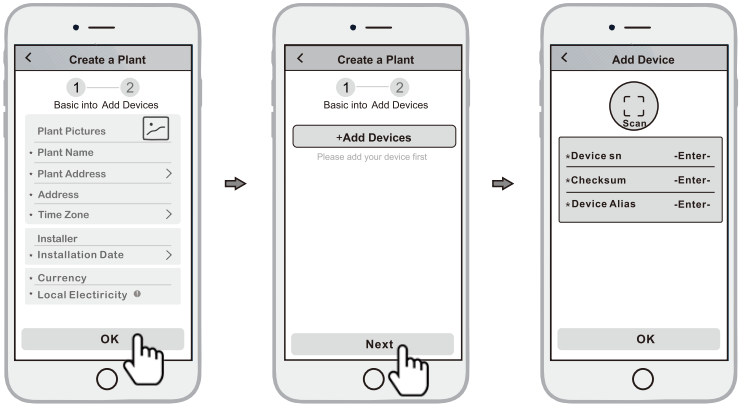
10.1.1 Register an account
Run the app, enter the login page, click the [Registration] button, select the role you want to register, enter and fill in the relevant information (optional email/phone number) to register.



10.1.2 New power station construction
1) Log in with the newly registered account, enter the homepage, and click on [Create A Plant]



2) Fill in the corresponding information and click [OK]
3) Click [Add device], click the above icon [scan], align the bar code/two-dimensional code on the side of the inverter or battery pack to scan, or fill in the SN and activation code on the label.



4) Manage the device via a web browser, please refer to: https://shine.felicityess.com

11. EMERGENCY SITUATIONS

FelicityESS cannot guarantee battery absolute safety.

11.1 Fire

In case of fires, make sure that the following equipment is available near the system.

- SCBA (self-contained breathing apparatus) and protective gear in compliance with the Directive on Personal Protective Equipment 89/686/EEC.
- NOVEC 1230, FM-200, or dioxide extinguisher

Batteries may explode when heated above 150°C. KEEP FAR AWAY from the battery if it catches fire.

11.2 Leaking Batteries

If the battery pack leaks electrolyte, avoid contact with the leaking liquid or gas. If one is exposed the leaked substance, immediately perform the cations described below.

- Inhalation: Evacuate the contaminated area, and seek medical attention.
- Contact with eyes: Rinse eyes with running water for 5 minutes, and seek medical attention.
- Contact with skin: Wash the affected area thoroughly with soap and water, and seek medical attention.
- Ingestion: Induce vomiting, and seek medical attention.

11.3 Wet Batteries

If the battery pack is wet or submerged in water, do not let people access it, and contact your supplier for help.

11.4 Damaged Batteries

Damaged batteries are not fit for use and are dangerous and must be handled with the utmost care. It may leak electrolyte or produce flammable gas. If the battery pack seems to be damaged, pack it in its original container, and then return it to your supplier.

11.5 Warranty

Products that are operated strictly in accordance with the user manual are covered by the warranty. Any violation of this manual may void the warranty.

Limitation of Liability

Any product damage or property loss caused by the following conditions, FelicityESS does not assume any direct or indirect liability.

- Product modified, design changed or parts replaced.
- Changed, or attempted repairs and erasing of series number or seals;
- System design and installation are not in compliance with standards and regulations;
- The product has been improperly stored in end user's premises;
- Transport damage (including painting scratch caused by movement inside packaging during shipping). A claim should be made directly to shipping or insurance company.

LiFePO4 Battery System for Households