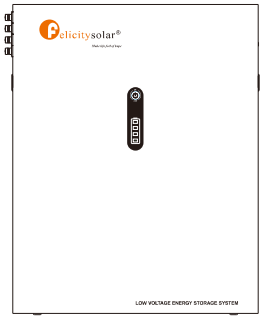
2. INTRODUCTION

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.

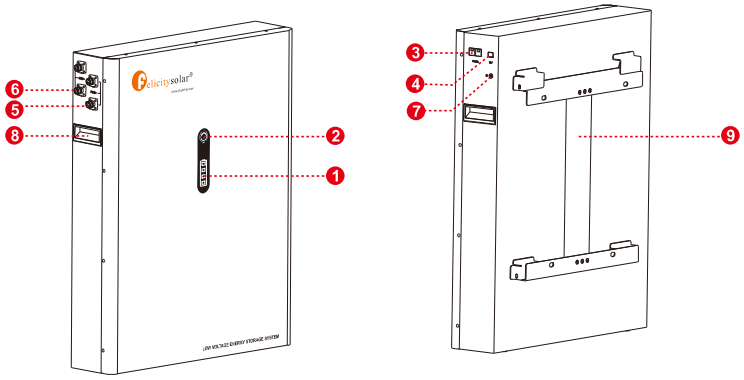
2.1 Features

- Iron phosphate-lithium power battery
- Long warranty period:5 years
- Higher energy density,smaller volumn for household.
- Support connected in parallel mode for expansion
- Photovoltaic system: This battery pack is designed for household photovoltaic systems.
- Battery management system (BMS): The battery packs built-in BMS monitors its operation and prevents the battery from operating outside design limitations.
- Expandability: This battery pack can be easily expanded by adding expansion battery packs in parallel connection.

2.2 Product Over View



48V Front view



1. LED display
2. Power On/Charging indicator
3. Communication port
4. SW
5. Battery Positive +
6. Battery Negative -
7. Earth wire
8. Handle
9. Wall mounted fixing

2.3 Specifications

Model	LPBA48170
Usable Capacity	8.7KWH
Nominal Voltage	51.2
Voltage Range	48-57.6
Recommend Charge Cut-off Voltage	57.6
Recommend Discharge Cut-off Voltage	48
MAX. Charge & Discharge Current	120A @10S
Recommend Charge&Discharge Current	≤80A
MAX. Output Power	6000W
Recommend Output Power	4000W
DOD	≥95%
Modules Connection	1~12 in parallel
Communication	CAN&RS485
Ingress Protection	IP21
Cycle Life	≥6000@25°C, 80%DOD
Working Temperature Range	Discharge:-20°C to +60°C, Charge:+0°C to +55°C
Net Weight(KG)	70.5KG
Gross Weight(KG)	88.0KG
Product Dimension(MM)	755x600x160MM
Package Dimension(MM)	855x 700x330MM

2.4 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	LPBA48170
Max. Charging Voltage	57.6V
Floating charging Voltage	57.6V
Max. Charging Current	80A*N
Cut-off voltage	48V

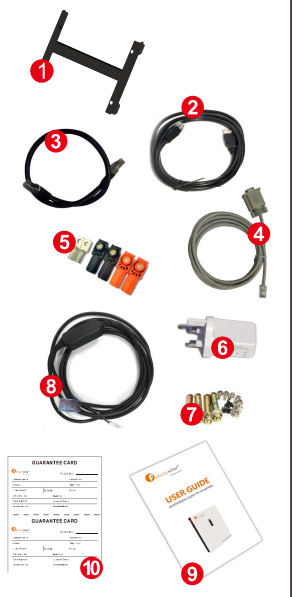
Notes: “N” means the number of battery packs connected in parallel.

3. INSTALLATION

3.1 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	NAME	SPECIFICATION	PICTURE
1	Wall mount	Wall mount bracket	
2	Communication line 1	Grid activation communication wire (used with 6)	
3	Communication line 2	Used for Communication among batteries	
4	Communication line 3	Used for communication between battery and host computer	
5	Connector&Terminal	Connector&Terminal	
6	Adapter	Used for activating the pack when grid power recover	
7	Screw	Mounting screw	
8	PV Wake up line	Used for auto restart when PV comeback in off-grid system	
9	User manual	User manual	
10	Guarantee card	Guarantee card	

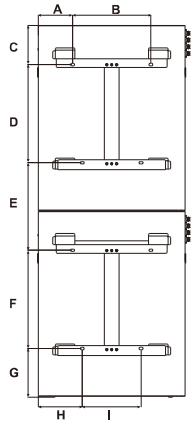


3.2 Mounting the Unit

Consider the following points before selecting where to install:

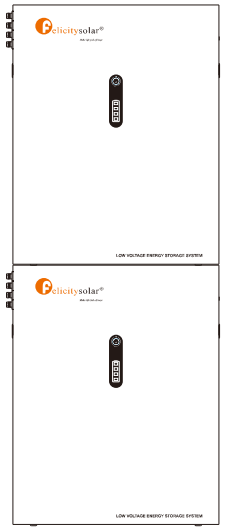
- Do not mount the battery on flammable construction materials.
- The ambient temperature should be between 0°C and 45°C to ensure optimal operation.
- The recommended installation position is to be adhered to the wall vertically.
- Be sure to keep other objects and surfaces as shown in the right diagram to guarantee sufficient heat dissipation and to have enough space for removing wires.

	LPBA48170
A	140
B	320
C	159
D	401
E	357
F	401
G	198
H	180
I	240

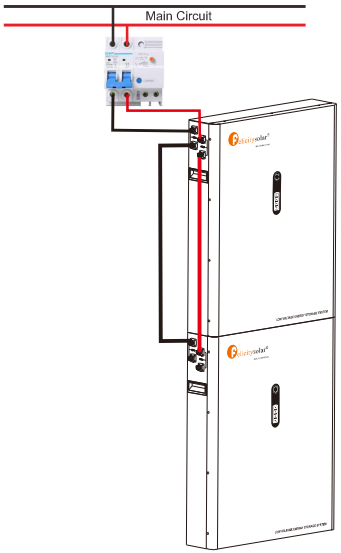


3.3 Connection for Parallel Mode

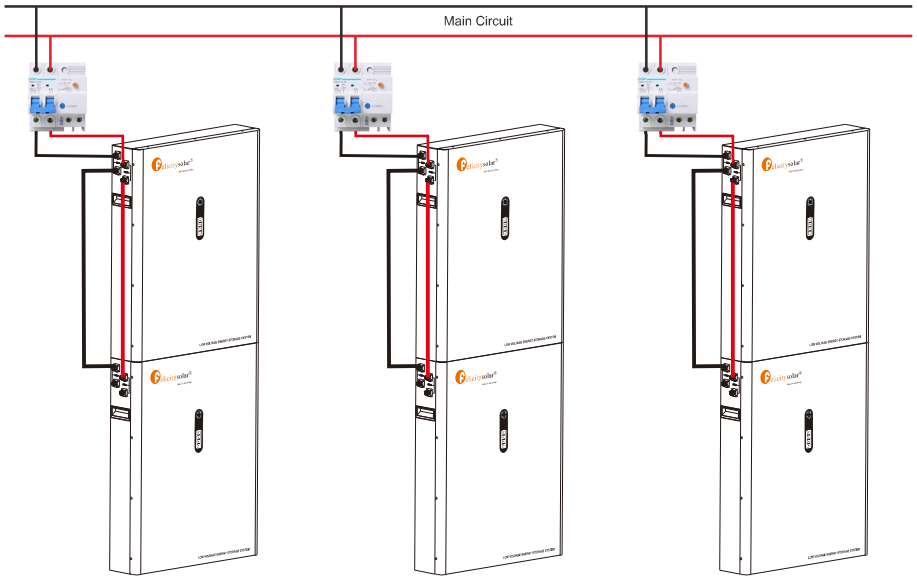
The LPBA battery support to be connected in parallel for expansion. If you need one more battery bank work in parallel mode, connect the battery as shown in PIC 2



Step 1: The batteries are placed as shown in Figure 1



Step 2: The schematic diagram of the parallel connection of two battery packs is shown in Figure 2.



Step 3: The schematic diagram of the parallel connection of six battery packs is shown in Figure 3.

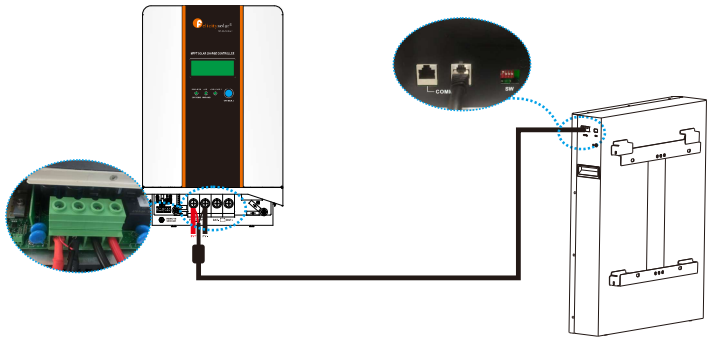
Step 4: The communication terminal (the other end) is connected as shown in Figure 4. Only one communication line (network cable) is required to connect through the hole between the two batteries. Another one is used as a backup.

Note: After completing the above 4 steps, arbitrarily select the positive and negative poles of one of the battery packs to output (the upper battery pack or the lower battery pack, you can not select the positive and negative poles of the two battery packs at the same time). 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.

Note: One group of LPBA48V can be stacked up to 6 layers, and up to 12 in parallel connection.

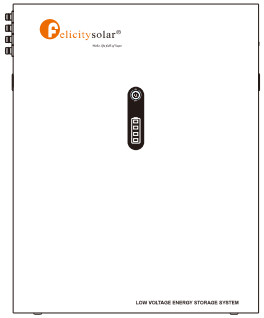
48V Front view

For pure off grid system ,the PV awake wire need to be connected with MPPT charge controller if the battery pack is charged by solar panels only . The connection diagram as below :



4. OPERATION

Once the batteries are connected well, simply press On/Off button to enable the output of the battery pack.



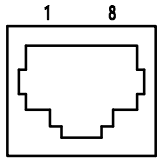
48V Front view

4.1 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 LED will show the SOC.

2.Switch off: press and hold On/Off button for 3 seconds, the battery will shut down directly.

Description for Communication port

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

DIP SWITCH		
	1-4	Communication Address
	5	Termination Resister

4.2 Description for LED

The SOC of the battery is shown by the LED

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

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

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

BATTERY MODE	ON/OFF		SOC				REMARK
	GREEN LED	RED LED	LED1	LED2	LED3	LED4	
POWER OFF	OFF	OFF	OFF	OFF	OFF	OFF	
POWER ON	OFF	ON	ON	ON	ON	ON	
STANDBY	OFF	OFF	SOC				SOC<10%(DEFAULT): LED1 FLASH
NORMAL	ON	OFF	RUNNING/SOC				SOC<10%(DEFAULT): LED1 FLASH
DISCHARGE	ON	OFF	SOC				SOC<10%(DEFAULT): LED1 FLASH
CHARGE	FLASH	OFF	RUNNING				
LOW POWER	FLASH	OFF	OFF				
FAULT	OFF	ON	ON	OFF	OFF	OFF	BATTERY VOLTAGE HIGH
			OFF	ON	OFF	OFF	BATTERY VOLTAGE LOW
			ON	ON	OFF	OFF	CELL VOLTAGE HIGH
			OFF	OFF	ON	OFF	CELL VOLTAGE LOW
			ON	OFF	ON	OFF	CHARGING CURRENT HIGH
			OFF	ON	ON	OFF	DISCHARGING CURRENT HIGH
			ON	ON	ON	OFF	BMS TEMPERATURE HIGH
			OFF	OFF	OFF	ON	BMS TEMPERATURE LOW
			ON	OFF	OFF	ON	CELL TEMPERATURE HIGH
			OFF	ON	OFF	ON	CELL TEMPERATURE LOW
			ON	ON	OFF	ON	CURRENT SENSOR ABNOMAL

4.4 DIP switch SW1-SW4 Description

DIP switch SW1-SW4 Description ①					DIP switch SW5 Description②	
Sw1	SW2	SW3	SW4	Remarks	SW5	Remarks
0	0	0	0	means ID=0,communication address is0x00/0x10③		
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