LiFePO4 Battery System for Households

3058-010004-00

USER GUIDE

LiFePO4 Battery System for Households

Contents

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 Safety Instructions

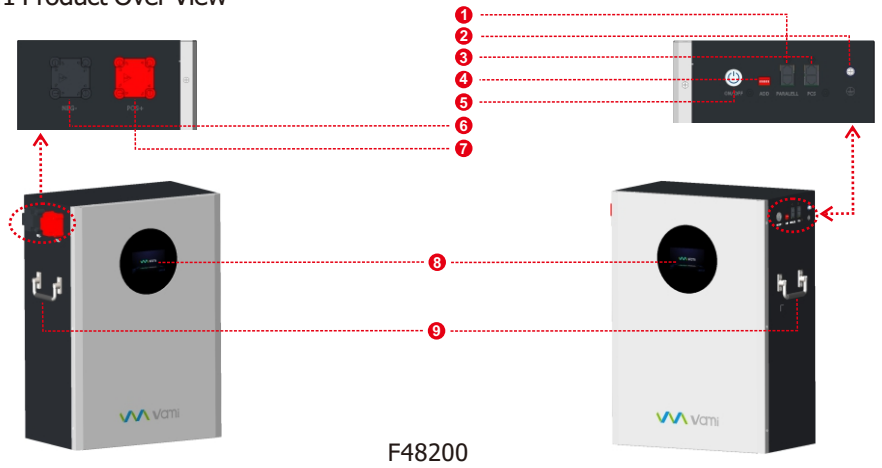
WARNING: This chapter contains important safety and operating instructions. Read and keep this manual for future reference.

1.Before using the unit, read all instructions and cautionary markings on the unit, the batteries and all appropriate sections of this manual.
2. 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.
3. To reduce risk of electric shock, disconnect all wirings before attempting any maintenance or cleaning. Turning off the unit will not reduce this risk.
4. For optimum operation of this battery, please follow required spec to select appropriate cable size.
5. 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.
6. GROUNDING INSTRUCTIONS - This System should be connected to a permanent grounded wiring system. Be sure to comply with local requirements.
7. Battery should be installed indoor and kept away from water, high temperature mechanical force and flames.

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 Product Over View



F48200

1. Parallel Port
2. Earth Wire
3.PCS Port
4. DIP Switch
5. Switch
6. Battery Negative-
7.Battery Positive+
8. Display Screen
9.Handle

2.2 Specifications

Model	F48200
Usable Capacity	10.24KWH
Nominal Voltage	51.2V
Voltage Range	43.2V-57.6V
MAX. Charge / Discharge Current	200A/200A
Recommend Charge & Discharge Current	120A
MAX. Output Power	10000W
Recommend Output Power	7200W
DOD	≥80%
Modules Connection	1~16in 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 to55°C
Net Weight(KG)	85KG
Gross Weight(KG)	99KG
Product Dimension(MM)	420*610*274mm
Package Dimension(MM)	700*510*455mm

2.3 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	F48200
Max. Charging Voltage	57.6V
Floating charging Voltage	57.6V
Max. Charging Current	200A
Cut-off voltage	43.2V

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
❶	Communication line 1	Used for communication between battery and PCS	
❷	Communication line 2	Used for communication among batteries	
❸	Cables	Used for battery parallel connection	
❹	User manual	User manual	
❺	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.

SUITABLE FOR MOUNTING ON CONCRETE OR OTHER NON-COMBUSTIBLE SURFACE ONLY.

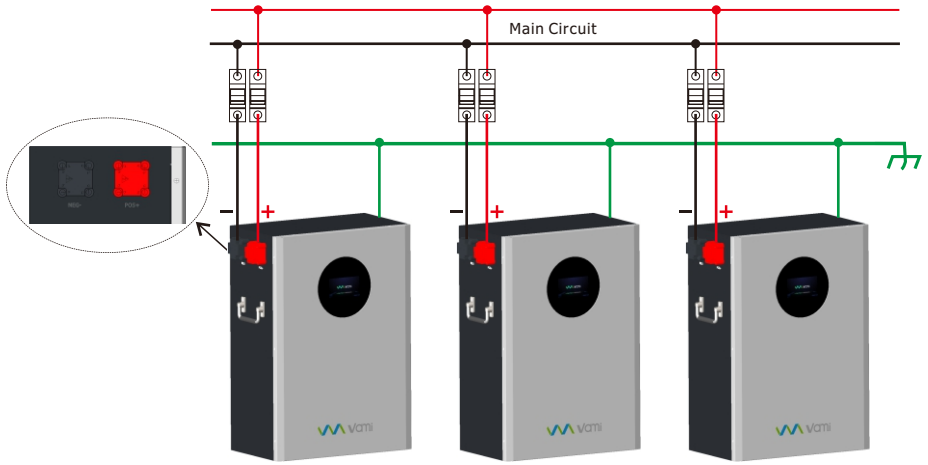
WARNING: Shock Hazard
Installation must be performed with care due to high battery voltage in series.

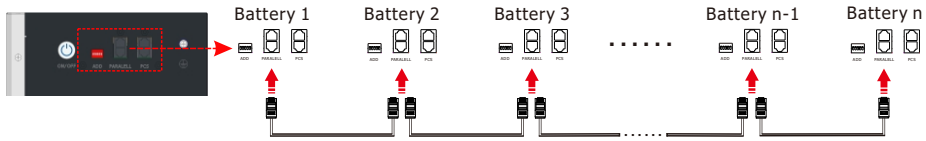
CAUTION!!

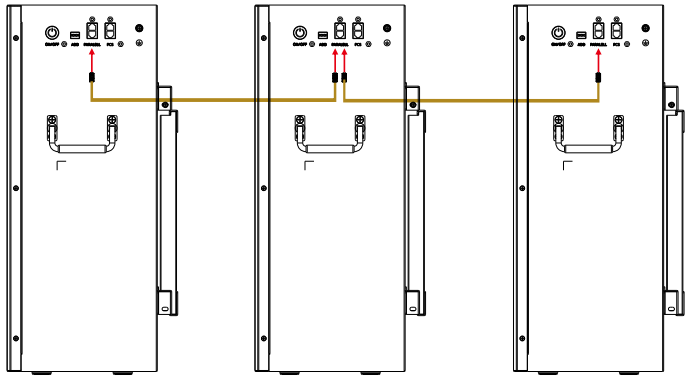
1) Follow local electric safety and installation policy, a suitable breaker between battery system and inverter could be required.
2) All the installation and operation must follow local electric standard

3.3 Connection for Parallel Mode

The F series battery support to be connected in parallel for expansion. Please refer to the following figure for multi-battery parallel.







Connect parallel communication cable one by one.

Step : The schematic diagram of the parallel connection of three F48300 battery packs is shown.

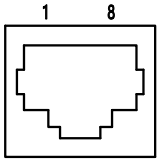
4. OPERATION

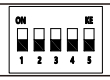
4.1 Switch On / Off

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

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
 PCS	1	RS485-B
	2	RS485-A
	3	NC
	4	CAN-H
	5	CAN-L
	6	COM-GND
	7	RS485-A
	8	RS485-B

DIP SWITCH		
	1-4	Communication Address
	5	Termination Resister

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

4.2 DIP switch SW1-SW5 Description

DIP switch SW1-SW4 Description						
SW1	SW2	SW3	SW4	Remarks	DIP switch SW5 Description	
0	0	0	0	ID=16,communication address is0x10	SW5	Remarks
1	0	0	0	ID=1,communication address is0x01	1	means connect 120Ω resistor
0	1	0	0	ID=2,communication address is0x02		
1	1	0	0	ID=3,communication address is0x03	0	means disconnect 120Ω resistor
0	0	1	0	ID=4,communication address is0x04		
1	0	1	0	ID=5,communication address is0x05		
0	1	1	0	ID=6,communication address is0x06		
1	1	1	0	ID=7,communication address is0x07		
0	0	0	1	ID=8,communication address is0x08		
1	0	0	1	ID=9,communication address is0x09		
0	1	0	1	ID=10,communication address is0x0A		
1	1	0	1	ID=11,communication address is0x0B		
0	0	1	1	ID=12,communication address is0x0C		
1	0	1	1	ID=13,communication address is0x0D		
0	1	1	1	ID=14,communication address is0x0E		
1	1	1	1	ID=15,communication address is0x0F		

1.When multiple battery packs communicate, the first and the last battery pack SW5 needs to be in the ON status, otherwise the communication may have interference.

2.When the battery pack ID is set to 1-16, it means that the parallel operation is required, and it is necessary to detect whether the parallel condition is satisfied .

3.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

5. EMERGENCY SITUATIONS

VAMI cannot guarantee Strong battery absolute safety.

5.1 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.

5.2 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.

5.3 Wet Batteries

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

5.4 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, VAMI does not assume any direct or indirect liability.

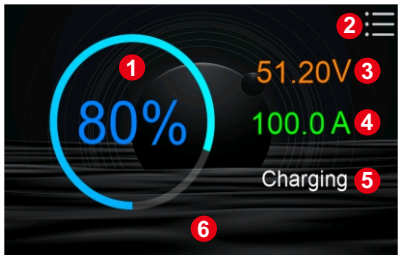
- Product modified, design changed or parts replaced.
- Changed, or attempted repairs and erasing of series number or seals;
- System design and installation are not in compliance with standards and regulations;
- The product has been improperly stored in end user’s premises;
- Transport damage (including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

Claim should be made directly to shipping or insurance company.

6. LCD Display

6.1 Main Screen

The LCD is touchscreen, below screen shows the overall information of the battery.
Swipe to return to the system menu interface.



1.Battery SOC

2.Go to Menu page

3.Battery pack voltage

4.Battery current

5.Battery charging or discharging status

6.Error message

6.2 System Menu

This page shows you the selections of Battery state,Setting and Othersudes battery state, Setting items and others .

1.Return to Main page

2.Go to Battery State page

3.Go to Setting page

4.Go to Others page

NOTE:
1).Swipe left to return to Main page
2).Swipe right to enter the Parallel Data page

6.3 Battery State

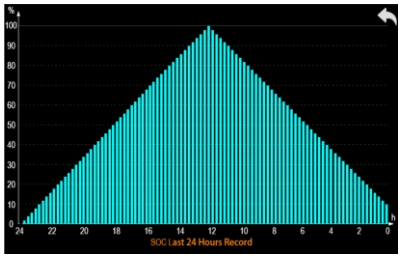
This page displays battery pack voltage, current, soc/soh, temperature, mos state and battery capacity.

1).Swipe left to return to the System Menu interface

2).Swipe right to enter the SOC Curve page

6.4 SOC Curve

This page shows you the SOC record of last 24 hours.

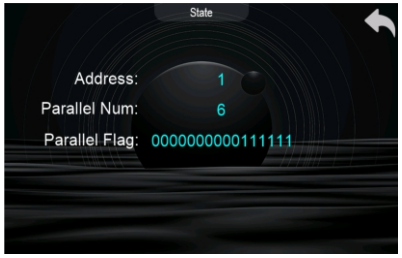


1).Swipe left to return to the Battery Status page

2).Swipe right to enter the Parallel Data page

6.5 Parallel Data

This page shows you the detail of parallel system including local address and parallel status.

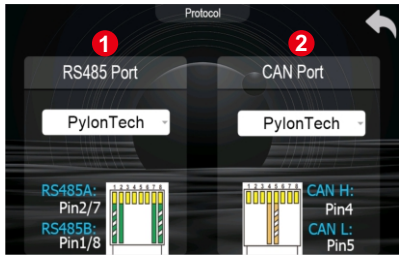


1).Swipe left to return to the SOC Curve page

2).Swipe right to enter the Battery Status page

6.6 Protocol

This page shows you the protocol of RS485 port and CAN port. Swipe to return to the system menu interface.

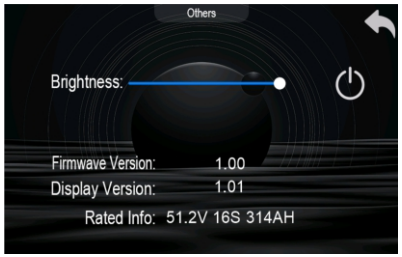


1.The protocol setting of RS485 port

2.The protocol setting of CAN port

6.7 Others Menu

This page shows you the operation of LCD brightness, firmware version and rated information of battery pack. Swipe to return to the system menu interface.



7. Fault Code Table

When fault event happens, battery will cut off output, and the LCD displays the fault code.

Fault Code	Fault information	Trouble shooting
E01	Battery Over Voltage	The battery voltage is abnormally high, Please stop charging , restart the battery, if the error happens again,contact after-sales service.
E02	Battery Low Voltage	The battery voltage is abnormally low,please charging.
E03	Over Charge Current	The charge current is too large. Reduce the charge current, if the error happens again,contact after-sales service.
E04	Over Discharge Current	The discharge current is too large. Reduce the load power, if the error happens again,contact after-sales service.
E05	Cell Over Voltage	The cell voltage is abnormally high, Please stop charging , restart the battery, if the error happens again,contact after-sales service.
E06	Cell Low Voltage	The cell voltage is abnormally low,please charging.
E07	Cell Over Temperature	The cell temperature is abnormally high, Please stop charging , Let stand for 1 hour, if the error happens again,contact after-sales service.
E08	Cell Low Temperature	The cell temperature is abnormally low, if the ambient temperature is not below -20 ℃, contact after-sales service.
E09	BMS Over Temperature	The BMS temperature is abnormally high, Please stop charging and discharging , Let stand for 1 hour, if the error happens again,contact after-sales service.
E10	BMS Low Temperature	The BMS temperature is abnormally low, if the ambient temperature is not below -20 ℃, contact after-sales service.
E13	Parallel Commucation Fail	Communication failure, check parallel wiring and dip, restart the battery,if the error happens again, contact after-sales service.