



Wall-mounted Home Battery System User Manual

LFP Wall-2500



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About this Document

This document describes the installation, electrical connection, operation and commission of 51.2V 50Ah Wall-mounted Battery System (hereafter simply put LFP Wall-2500). Before installing and operating LFP Wall-2500, ensure that you are familiar with product features, functions, and safety precautions provided in this document.

1 Product Information

1.1 Battery Overview

The battery is a wall mounted lithium battery pack which consists of long span LiFePO4 battery cells and functional BMS. It can store and release electric energy based on the requirements of the inverter controller. It is mainly for home energy storage system.

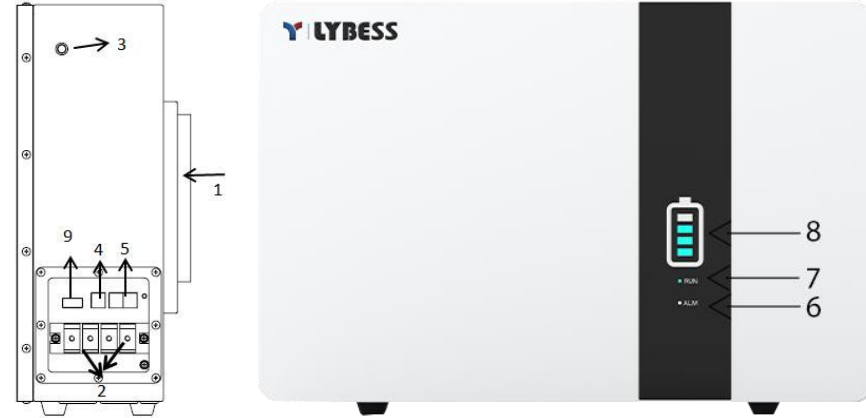
Features

- LiFePO4 prismatic cell
- > 6000 cycles @0.5C conditions
- Maximum 1C charge and discharge capability
- Wall mounted IP 65 grade
- Be extended to 8 packs maximum
- Protective and active BMS allows greater reliability and control
- Building in terminal design
- Fully recyclable at the end of life
- Compact

1.2 Appearance

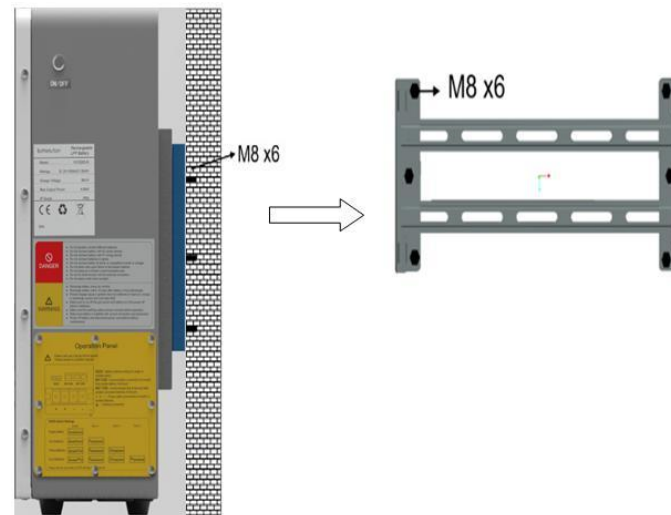


1.3 Front Panel



(1) Wall mount

Please mount bracket on the wall by six M8 bolts firstly. Then lift battery and stuck with bracket.



1.3 Front Panel

(2) Wiring block

2P (1P positive and 1P negative) power interface, printed by "+" and "-", front-mounted wiring method, positive and negative terminals are insulated by thermoplastic polyester (PBT) insulating sheets.

(3) Switch

BMS switch, when it is turned off, the BMS can be put to sleep and the charge and discharge MOS transistors will be turned off at the same time; normal operation will be restored after it is turned on. Note: Please do not turn on the system switch when the product is not in use to avoid self-consuming the lithium battery.

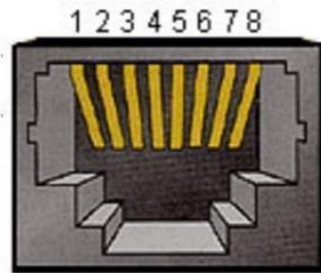
Version 1: CAN2.0B/RS485

(4) CAN2.0B COMM to inverter

BMS supports the function of CAN communication for battery pack uploading, baud rate of 500K. CAN communication interface adopts 8P8C network cable interface. It can communicate with inverter or CAN TEST through CAN interface. When the battery pack is connected, RS485 communication is connected, the data, status and information of the battery pack can be uploaded to PCS through CAN communication.

CAN communication interface definition:

| Pins | Definition |
|------------|------------|
| 1、 2、 7、 8 | NC |
| 4 | CAN-H |
| 5 | CAN-L |
| 3、 6 | GND |



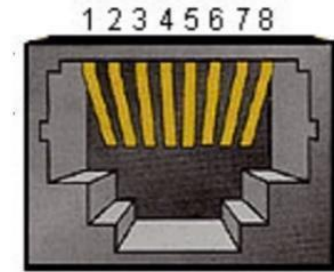
(5) RS485 COMM to parallel battery

The BMS has RS485 communication for multiple battery pack collections, and the baud rate is 19200bps. RS485 communication interface adopts 8P8C network cable interface.

1.3 Front Panel

RS485 pin interface definition (RJ45-8P8C)

| Pins | Definition |
|------|------------|
| 1、 8 | RS485-B |
| 2、 7 | RS485-A |
| 3、 6 | GND |
| 4、 5 | NC |



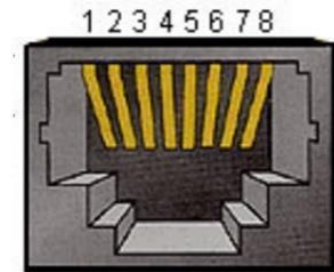
Version 2: RS485/RS485

(4) RS485 COMM to inverter

The BMS has RS485 communication for multiple battery pack collections, and the baud rate is 9600bps. RS485 communication interface adopts 8P8C network cable interface.

RS485 pin interface definition (RJ45-8P8C)

| Pins | Definition |
|------------|------------|
| 1、 2、 7、 8 | NC |
| 4 | RS485-A |
| 5 | RS485-B |
| 3、 6 | GND |



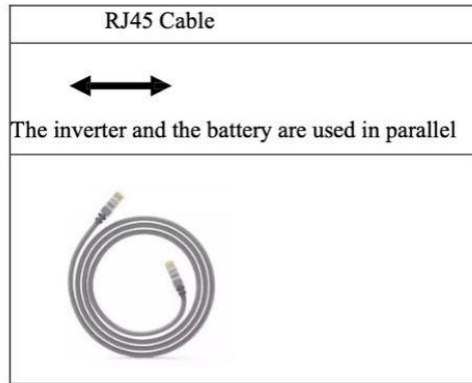
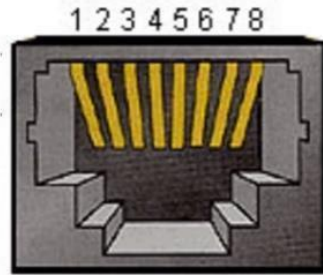
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RS485 pin interface definition (RJ45-8P8C)

1.3 Front Panel

| Pins | Definition |
|------|------------|
| 1、 8 | RS485-B |
| 2、 7 | RS485-A |
| 3、 6 | GND |
| 4、 5 | NC |



(6) LED indicators

1.3 Front Panel

| System | Status | RUN | ALM | SOC | | | | Definition |
|--------------|------------------|----------|----------|----------------|-----|-----|-----|---|
| | | ● | ● | ● | ● | ● | ● | |
| switch on | sleeping | off | off | off | off | off | off | All off |
| standby | normal | on | off | SOC indicators | | | | standby |
| Charging | normal | on | off | SOC indicators | | | | Flashing |
| | OC ALM | on | Flashing | SOC indicators | | | | Flashing |
| | OT ALM | on | Flashing | SOC indicators | | | | |
| Dis charging | normal | Flashing | off | SOC indicators | | | | SOC indicators |
| | alarm | Flashing | Flashing | SOC indicators | | | | |
| | All Protect-ions | off | on | off | off | off | off | Fully discharged or 48 hours no instructions, going into sleep mode |
| | UV Protect-ions | off | off | off | off | off | off | Stop discharging |

(7) Red alarm indicator, normally off. And always on under fault conditions with beep.

(8) SOC indicator, four green LED lights to display the real-time SOC capacity of the lithium battery pack.

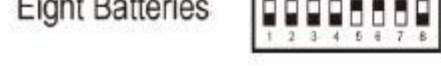
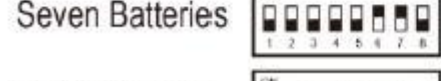
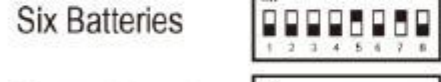
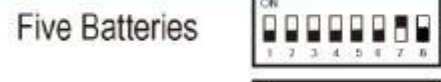
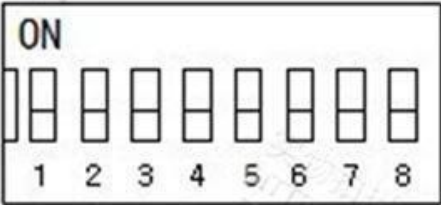
| Status | charge | | | | discharge | | | |
|----------|----------|----------|----------|----------|-----------|-----|-----|-----|
| SOC | L4● | L3● | L2● | L1● | L4● | L3● | L2● | L1● |
| 0 ~ 25% | off | off | off | flashing | off | off | off | on |
| 25 ~ 50% | off | off | flashing | on | off | off | on | on |
| 50 ~ 75% | off | flashing | on | on | off | on | on | on |
| ≥75% | flashing | on | on | on | on | on | on | on |
| RUN ● | on | | | | flashing | | | |

1.3 Front Panel

(9) DIP Switches

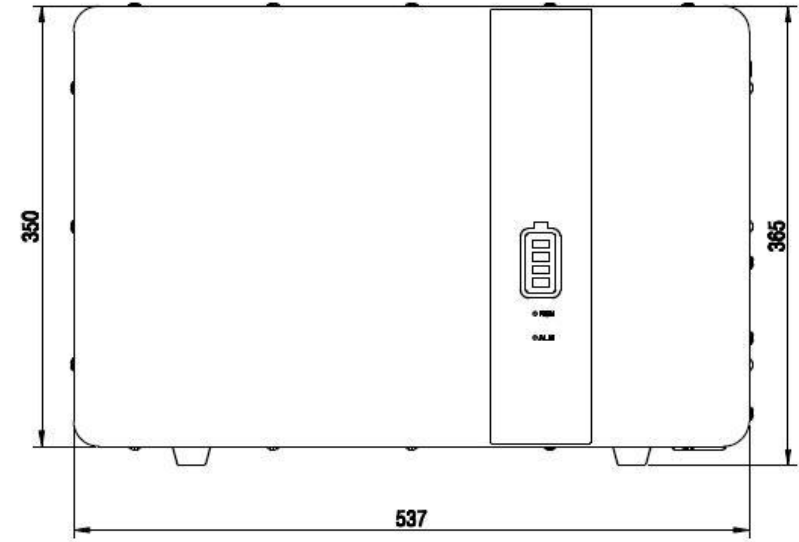
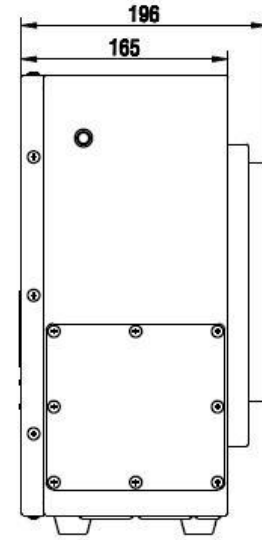
Parallel DIP switch definition: For multi-battery communication when the battery packs are connected in parallel, use the DIP switch to distinguish different pack addresses, and the hardware address can be set by the DIP switch on the panel below.

LFPWall-2500



For Example, blue frame is the settings for 4 batteries.

1.4 Dimensions



1.5 Capacity Options

The battery can be parallelly connected for extending power(kW) and energy(kWh).



- The maximum power(kW) is limited by main cables from master battery to inverter.
- The maximum 8 battery packs can be parallelly communicated.

1.5 Capacity Options

For example, ONE PACK is 5.12kWh,

2.56kWh



5.12kWh



10.24kWh

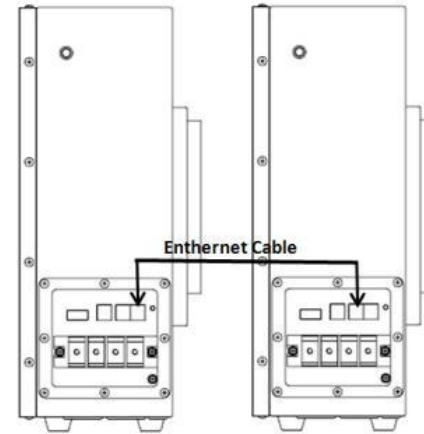


AND MORE

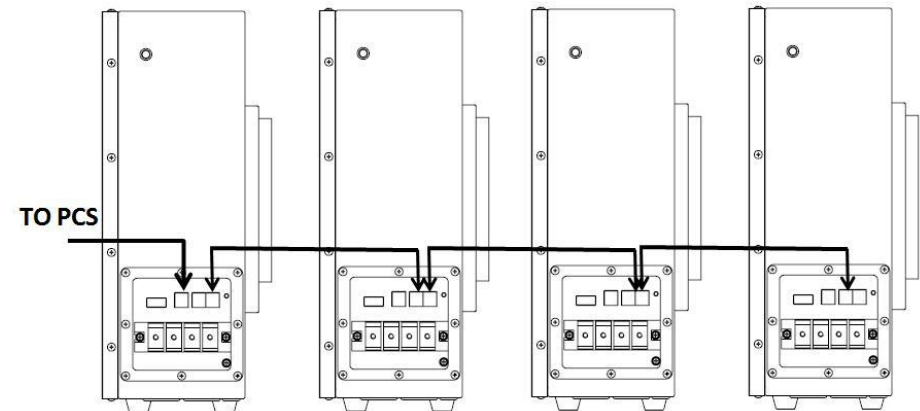
1.6 Parallel Communication

When multiple packs are connected in parallel, the RS485 interface is used as the parallel communication interface. The master pack can read the sum of the slave battery data of all parallel packs through the RS485 communication.

Two packs RS485 parallel connection 1:



More than two packs RS485 parallel connection 2:



1.7 Recommended Settings

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

| Setting | LFPWall-2500 |
|---------------------------|--------------|
| Max. Charging Voltage | 58.4V |
| Floating Charging Voltage | 56V |
| Max. Charging Current | 50A*N |
| Max. Discharging Current | 50A*N |
| Cut-off Voltage | 44.8V |

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




2 Safety Information

2.1 General Safety

Please carefully read the manual safety precautions, and observe all the safety instructions on the equipment and in this document.

The "DANGER" , "WARNING", and "NOTICE" statements in this document do not cover all the safety instructions. They are only supplements to the safety instructions.

For user safety and utilization efficiency of this manual, a list of symbols are designed to alert people from danger. You must understand and comply with the emphasized information to avoid personal injury and property damage. Relative safety symbols have been listed below.

| | |
|--|--|
|  Danger | DANGER indicates a hazardous situation which, if not avoided will result in serious injury and fire. |
|  Warning | WARNING indicates a hazardous situation which, if not avoided will result in property loss or void warranty. |
|  Notice | NOTICE indicates normal situation which, if not avoided will result in that battery doesn't work. |

Follow local laws and regulations when installing, operating, or maintaining the equipment. The safety instructions in this document are only supplements to local laws and regulations.

2.2 Personal Safety

Personal Requirements

People who plan to install or maintain battery equipment must be trained, understood all necessary safety precautions, and are able to perform all operations correctly.

Only qualified professionals or trained people are allowed to install, operate, and maintain the equipment.

Personal Safety



- Do not place battery at a children or pet touchable area.
- Do not touch the energized battery, as the enclosure is hot.
- Do not touch the energized battery terminals.
- Do not stand on, lean on, or sit on the battery.

2.3 Electrical Safety

Symbols on Battery

There are some electrical symbols on battery relate to electrical safety. Please make sure you have fully understand them before installation.

| | | |
|--|-------------------------------------|--|
| | Electrical danger | Voltage exits when the battery is powered on. Only qualified engineers are allowed to operate. |
| | Earth connector | Earth connection. |
| | DC positive and negative connectors | Identify positive and negative connectors of DC power source. |
| | CE mark | The product meets CE certification. |
| | WEEE tag | Can't leave battery as garbage disposal. |
| | Recycle | Battery can be recycled. |

2.3 Electrical Safety

Electrical Safety



- Before installation, ensure that the equipment is intact. Otherwise, electric shocks or fire may occur.
- Do not connect or disconnect power cables when battery is power-on. Which may cause electric arcs and sparks more overfire or personal injury. Before connecting a power cable, check the positive or negative connectors are correct.
- Batteries are not allowed in series.
- Different batteries should not be connected in parallel.
- Do not connect battery with AC directly.
- Do not connect battery with PV wiring directly.
- Do not connect batteries in series.
- Do not connect battery to faulty or unqualified inverter or charger.
- Do not create short circuits with the external connection.
- Make sure the grid is cut off and the battery is powered off before maintenance.
- Make sure the earth cable is connected correctly.



- Recharge battery in every six months.
- Recharge battery within 10 days after battery is fully discharged.
- Please engage greater than or equal to two batteries when maximum charge current is more than 50A.
- Make sure battery cable placement is installed correctly.
- When the battery is being installed or repaired, make sure the battery is powered off and using a multimeter to make sure there is no voltage in the positive and negative terminals.

2.3 Electrical Safety



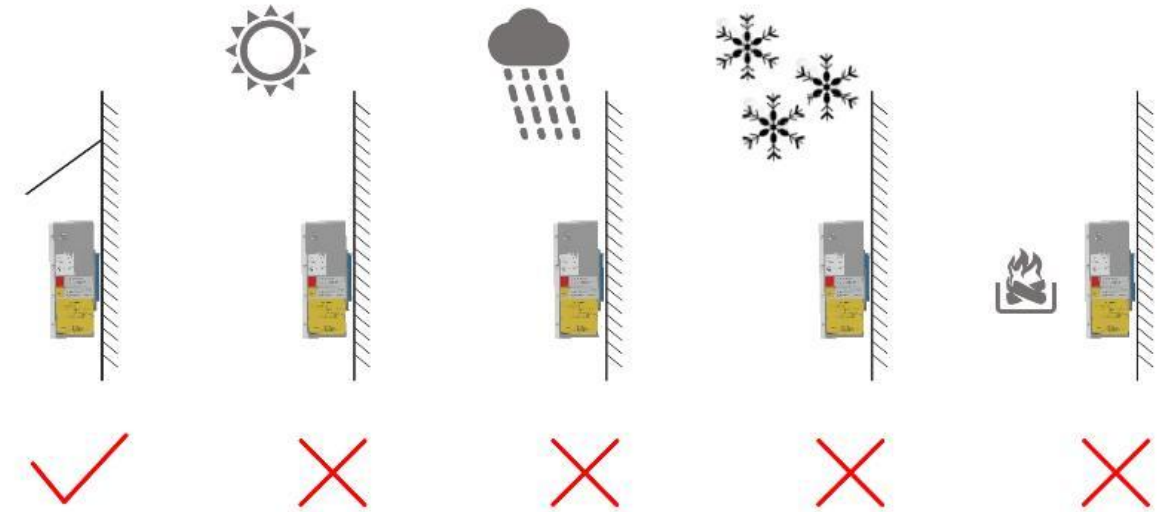
- Please use dedicated insulated tools for install and maintenance.
- Please make sure all batteries are power-off when multiple parallel connection.
- Please check lights on sequence when battery power-on.
- Please make sure communication connection connect correctly with battery and inverter.
- Please make sure ADDS dip switch settings are correctly for single or multiple batteries.
- Please check inverter alarm or SOC reading when there is BMS communicated with inverter.

Environment Safety



- Ensure that the equipment is installed in a dry and well-ventilated environment.
- The installation position must be away from direct sunlight and rain.
- The installation position must be far away from fire sources.
- The installation position must be far away from water sources such as taps, sewer pipes, and sprinklers to prevent water seepage.
- The bracket must be installed solidly and horizontally.
- Do not expose the equipment to flammable or explosive gas or smoke.
- Do not perform any operation on the equipment in such environments.
- The operation and service life of the battery depends on the operating temperature. Operate the battery at a temperature equal to or better than the ambient temperature. The recommended operating temperature range is from 0°C to 30°C.

2.3 Electrical Safety



2.4 Transportation Safety



- The products passed certification UN38.3.
- The products have MSDS.
- The products belong to class 9 dangerous goods.
- Please protect the packing case from the below situations.
- Being dampened by rains, snows, or falling into water.
- Falling or mechanical impact.
- Being upside-down or tilted.

3 Attentions

- Before using the battery pack, please read the manual carefully to understand the usage and precautions;
- Non-professionals shall not disassemble the battery without authorization;
- Be sure to use the original special charger for charging or the charger agreed by both parties;
- During use or storage, if you find abnormal heating, discoloration, deformation or other abnormalities in the battery, please stop using the battery;
- The working temperature of the battery is -10~55°C;
- The storage temperature of the battery is -10~35°C, please place the battery in a dry and cool environment;
- Do not bump, apply external force or make the battery fall from high altitude during use;
- If the battery is not used for a long time, the battery pack needs to be charged to more than 80%, turn off the power switch, and store it in a ventilated and dry environment.

4 Specifications

| | |
|-------------------------------|---|
| Model | LFP Wall-2500 |
| Usable Capacity | 2.56kWh |
| Nominal Voltage | 51.2V |
| Nominal Capacity | 50Ah |
| Discharge Voltage Range | 44.8-58.4V |
| Max. Charging Current | 50A |
| Recommended charging Current | 25A |
| Max. Discharging Current | 50A |
| Recommended discharge Current | 25A |
| Max. Output Power | 2560W |
| Charge Voltage | 58.4V |
| Modules Connection | 1-8 in parallel |
| Communication | CAN OR RS485 |
| Cycle Life | > 6000 (85%DOD 0.5C 25°C) |
| Working Temp. Range | Charge: 0°C~+55°C Discharge: -10°C~+55°C |
| Storage Temperature | -10°C~+35°C |
| Net Weight | 30kg(66.1lb) |
| Product Dimension | 536*365*196mm |