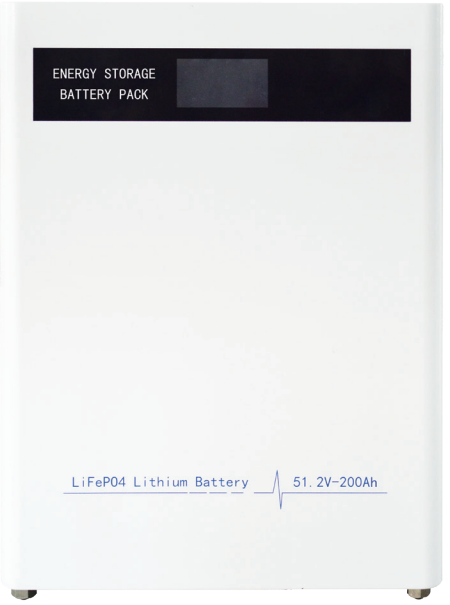
USER MANUAL

LF-WPS-51.2V200AH-A



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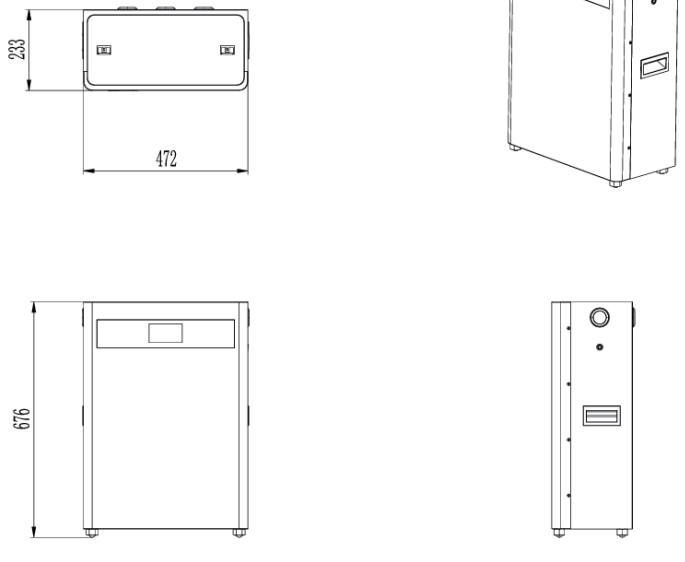
01

TECHNICAL DATA

note

Operating current derating according to cell

Voltage and battery temperature

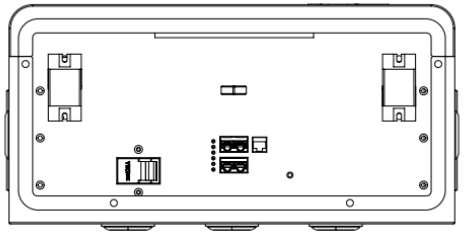


Power supply model	LF-WPS-51.2V200AH-A
Nominal voltage	51.2V
Nominal capacity	10.496KWh/205Ah
Charging protection voltage	56.8V
Discharge protection voltage	46.4V
Recommended charging current	≤50A
Maximum charging current	100A
Recommended discharge current	≤50A
Maximum discharge current	100A
Battery cycle life	≥6000（25°C±2°C，0.5C charge-discharge，DOD≥80%）
Communication mode	RS485/RS232/CAN
Charging temperature	5~55℃
Operating temperature	-20~60℃
IP Grada	IP20
Battery weight	≈91Kg
Battery size	676*472*233mm (adjustable)
certification	MSDS、UN38.3
Adaptable inverter (can customized)	**485:** PYLON、DEYE、GROWATT、VOLTRONIC、PACE、LTW、MUST、SRNE、BAYKEE、SMK、AFORE、VKING、BITTA、STONE、EPEVER **CAN:** PYLON、DEYE、GROWATT、SOLAX、SOFAR、GOODWE、INVT、AFOR、SOLIS、LUXPOWER、VICTRON、SOROTEC、SMA、DONNERGY、MUST、IMEON、SCHNEIDER、GENIXGREEN、INHENERGY、SENERGY、LTW、SUNWAYS、STUDER、SAJ、LIVOLTEK
*Can be customized according to the needs, the final interpretation of this product is owned by the company, subject to change without prior notice	

02

PRODUCT OVERVIEW

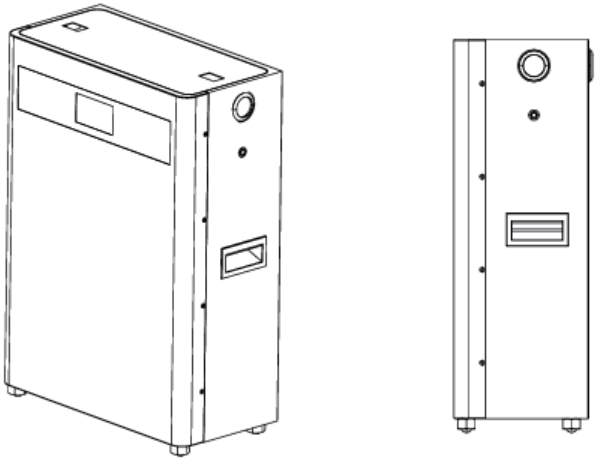
2.1 Brief introduction



This product is made of 16 Iron(III) phosphate lithium battery cells in series,It is an advanced environmentally friendly household energy storage system,Fashionable design with high energy.long service life,Easy to install and expand.

With rich battery management experience and advanced Energy storage,LF-WPS-51.2V200AH-A Equipped with advanced intelligent Battery management system,The system adopts a modular design,ntegrating functions such as collection,monitoring,management,and communication,Achieved high-precision single voltage（10mv）/ Current collection ， Can simultaneously monitor the environment,Temperature changes of battery cells and main heating devices.Extending the lifespan of battery cells and devices,Simultaneously equipped with intelligent charging balance,SOC,Power estimation,Data storage, charging current limiting protection module,LED color light bar display,Pre charging,RS232 communication,CAN communication,RS485 communication and other functions.

2.2 Interface Introduction



2.2.1 Switch ON/OFF

1.SWITCH ON

When used,Connect the load or inverter end wires to the output end of the battery pack first B+/B-,After confirming the wiring is completed,Turn on the power switch of the battery pack,The battery pack begins to supply power to the load for use.

2.SWITCH OFF

After use,Turn off the load and inverter switches first,Then turn off the battery pack switch.

2.2.2 Interface Introduction

System state	Running state	RUN	ALM	Battery indicator LED				illustrate
		●	●	●	●	●	●	
Shutdown	Hibernate	off	off	off	off	off	off	All off
Standby	Normal	flash1	off	Display based on battery level				Position in readiness
	Alarm	flash1	flash3	Display based on battery level				Example: Module undervoltage
Charge	Normal	on	off	off	off	off	flash2	0~25% charge
		on	off	off	off	flash2	on	25%~50% charge
		on	off	off	flash2	on	on	50%~75% charge
		on	off	flash2	on	on	on	75%~100% charge
		on	off	on	on	on	on	Charged
	Alarm	on	flash3	Display based on Normal charging level				/
	Protect	off	on	Display based on Normal charging level				/
Discharge	Normal	flash3	off	on	on	on	on	100%~75% discharge
		flash3	off	off	on	on	on	75%~50% discharge
		flash3	off	off	off	on	on	50%~25% discharge
		flash3	off	off	off	off	on	25%~0% discharge
	Alarm	flash3	flash3	Display based on Normal discharge capacity				/
	Overcurrent, short circuit, reverse connection, failure protection, etc	off	on	off	off	off	off	Stop charging and discharging
Temperature	Normal	Normal indication based on status						/
	Charge Alarm	on	flash3	According to the charging level indicator				Maximum LED flashing 2
	Discharge Alarm	flash3	flash3	According to the charging level indicator				According to the constant light indication of the battery level
	Protect	off	on	off	off	off	off	/

2.2.3 Explanation of LED light changes

State		Charge				Discharge			
Capacity indicator light		**L4●**	**L3●**	**L2●**	**L1●**	**L4●**	**L3●**	**L2●**	**L1●**
Electricity consumption (%)	0~25%	off	off	off	flash2	off	off	off	on
	25~50%	off	off	flash2	on	off	off	on	on
	50~75%	off	flash2	on	on	off	on	on	on
	≥75%	flash2	on	on	on	on	on	on	on
Operation indicator●		on				flash			

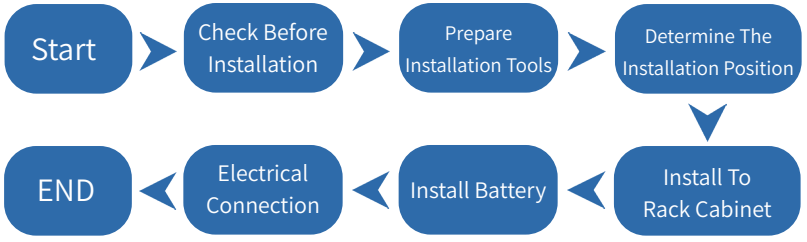
2.2.4 Power indicator light description

Flashing mode	ON	OFF
flash 1	0.25s	3.75s
flash 2	0.5s	0.5s
flash 3	0.5s	1.5s

03

INSTALLATION GUIDE

-In stallation flow chart-



3.1 Checking Before Installation

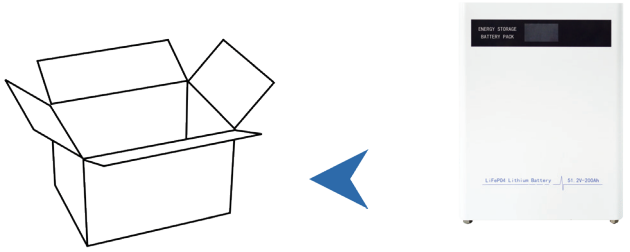
3.1.1 Checking Outer Packing Materials

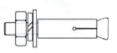
Packing materials and components may be damaged during transportation.Therefore,check the outer packing materials for damage,such as holes and cracks.If any damage is found,do not unpack the battery and contact the dealer as soon as possible.You are advised to remove the packing materials within 24 hours before installing the battery.

3.1.2 Cheeking Deliverables

After unpacking the battery,check whether deliverables are intact and complete.If any damage is found or any component is missed,contact the dealer.

The below table shows the components and mechanical parts that should be delivered.



NO	Picture	Quan ty	Descrip on
1		1PCS	Battery
2		1PCS	Fixed bracket
3		8PCS	Expansion screws
4		1PCS	Positive power cord
5		1PCS	Negative power cord
6		1PCS	485 Communica on cable
7		1PCS	Shipment report
8		1PCS	Manual
9		1PCS	Cer ficate
10		1PCS	Label

3.2 Tools

Model	Tools		
Installation	 Knife	 Measuring tape	 Socket wrench (10/16mm)
	 Rubber mallet	 Cross Screwdriver	 Percussion drill (12mm)
Protection	 ESD gloves	 Safety goggles	 Anti-dust respirator
	 Safety shoes		

3.3 Installation requirements

3.3.1 Installation environment requirements

*Install the battery in the indoor environment.

*Place battery in secure location away from children and animals.

*Do not place the battery near any heat sources and avoid sparks.

*Do not expose the battery to moisture or liquids.

*Do not expose the battery to direct sunlight.

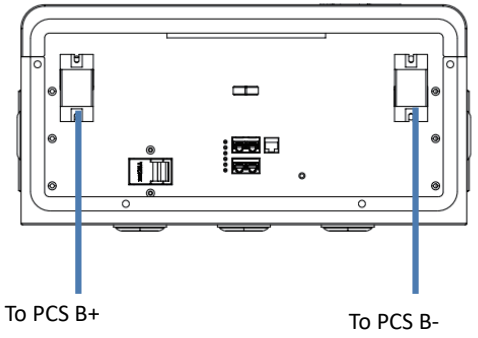
3.3.2 Installation carrier requirements

*Only mount battery on fire resistant building.Do not install batteries on flammable buildings.

*Battery is quite heavy,make sure the wall/ground can meet the load bearing requirements.

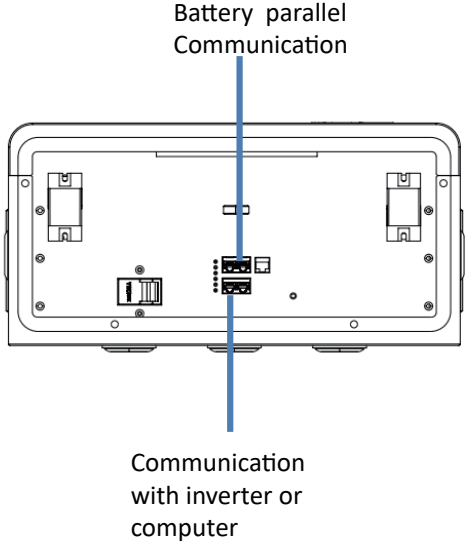
STEP 1

Connect power cable



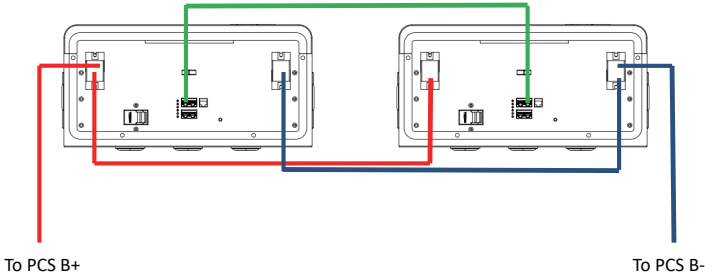
STEP 2

Connect communication cable



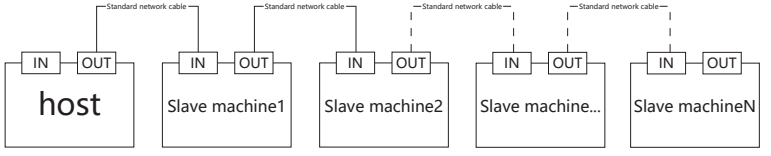
STEP 3

When multiple batteries are connected in parallel,follow the following wiring mode.



STEP 4

Parallel Wiring And Installation



To improve the stability of communication, the software automatically controls the functionality of activating and deactivating the terminal resistors, and the master can automatically calculate the number of terminal resistors that need to be connected based on the number of slaves, as well as control the connection or disconnection of the terminal resistors for specified slaves. After completing the parallel wiring, it is recommended that all devices be powered on simultaneously. If it's not possible to power on the slaves at the same time, the master should be powered on first, followed by turning on all slaves in cascading order (the power-on sequence will affect the continuity of slave address binding, so try to turn on the slaves closest to the master in cascading order first). The default maximum number of slaves is 32.

04

MAINTENANCE

4.1 Recharge Requirements During Normal Storage

Battery should be stored in an environment with temperature range between -10℃~+45℃,and maintained regularly according to following table with 0.5C(25A) current till 40% SOC after long storage time.

Recharge Requirements During Normal Storage

Storage Environment Temperature	Relative Humidity of Storage Environment	Storage Time	SOC
Below-10℃	/	prohibit	/
-10~25℃	5%~70%	≤12 months	30%≤SOC≤60%
25~35℃	5%~70%	≤6 months	30%≤SOC≤60%
35~45℃	5%~70%	≤3 months	30%≤SOC≤60%
Above 45℃	/	prohibit	/

4.2 Recharge Requirements When Over Discharged

Over discharged (90%DOD) battery should be recharged according to following table,otherwise over discharged battery will be damaged.

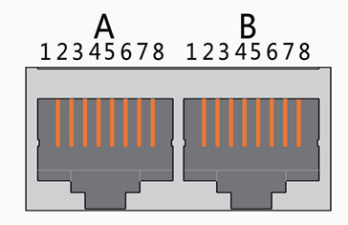
Recharge Requirements During Normal Storage

Storage Environment Temperature	Storage Time	Note
-10~25℃	≤15 days	Battery Pack disconnected from PCS
-25~35℃	≤7 days	
-35~45℃	≤12 hours	Battery Pack connected to PCS

05

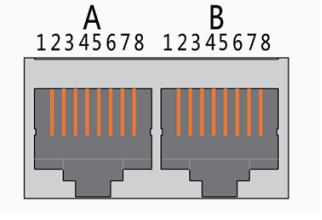
COMMUNICATION INTERFACE DEFINITION

5.1 RS485-1/CAN communication interface definition



interface	Definitions			Definitions		
X1 Communication port definition	Part A CAN interface	PIN 1	NC (empty)	Part B RS-485-1 interface	PIN 1	RS485-B1
		PIN 2	NC (empty)		PIN 2	RS485-A1
		PIN 3	CGND		PIN 3	RS485-GND
		PIN 4	CANH		PIN 4	RS485-B1
		PIN 5	CANL		PIN 5	RS485-A1
		PIN 6	NC (empty)		PIN 6	RS485-GND
		PIN 7	NC (empty)		PIN 7	NC (empty)
		PIN 8	NC (empty)		PIN 8	NC (empty)

5.2 RS485-2 communication interface definition



interface	Definitions			Definitions		
X2 Communication port definition	Part A RS-485-2 interface	PIN 1	RS485-B2	Part B RS-485-2 interface	PIN 1	RS485-B2
		PIN 2	RS485-A2		PIN 2	RS485-A2
		PIN 3	RS485-GND		PIN 3	RS485-GND
		PIN 4	NC (empty)		PIN 4	NC (empty)
		PIN 5	NC (empty)		PIN 5	NC (empty)
		PIN 6	RS485-GND		PIN 6	RS485-GND
		PIN 7	RS485-A2		PIN 7	RS485-A2
		PIN 8	RS485-B2		PIN 8	RS485-B2

5.3 Instructions for correspondence

01

RS485 communication

It has 2 RS485 interfaces, both of which are RJ45 network ports, of which RS485-1 is a single port, which is mainly used for data interaction between the battery pack and the inverter, and RS485-2 is a dual port for the data exchange between the cascade and parallel units of the battery pack. At present, the parallel interface can support 32 sets of batteries for parallel operation.

02

CAN communication

The CAN communication interface of the BMS has the ability to interact with the data between the battery pack and the inverter, of which the baud rate is considered to be 500K, and the communication interface is the RJ45 network port.

5.4 WIFI QR code

QDPower

IOS AppStore

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QDPower

Android App

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