Wall Mounted Lithium Battery Series

Introduction



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1 Safety Information

1.1 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.

In order to ensure human safety and effectively utilize this manual, use the appropriate symbol to emphased outstanding. You must understand and comply with the emphasized information to avoid personal injury and property damage. Relative safety symbols have been listed below.

	DANGER indicates a hazardous situation which, if not avoided will result in serious injury and fire.
	WARNING indicates a hazardous situation which, if not avoided will result in property loss or void warranty.
	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.

1.2 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

Danger

- 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.

1.3 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.
	WEEEtag	Can't leave battery as garbage disposal.
	Recycle	Battery can be recycled

Electrical Safety

Danger

- 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.
- Do not parallel connection with different batteries.
- 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 before operation.

Warning

- 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 80A.
- 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.

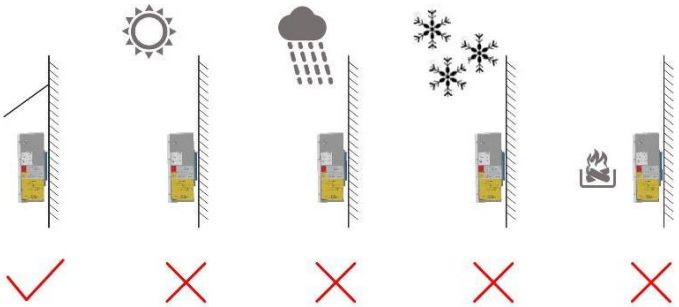
Notice

- 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 ADDR dip switch settings are correctly for single or multiple batteries.
- Please check inverter alarm or SOC reading when there is BMS communication with inverter.

1.4 Environment Safety

Warning

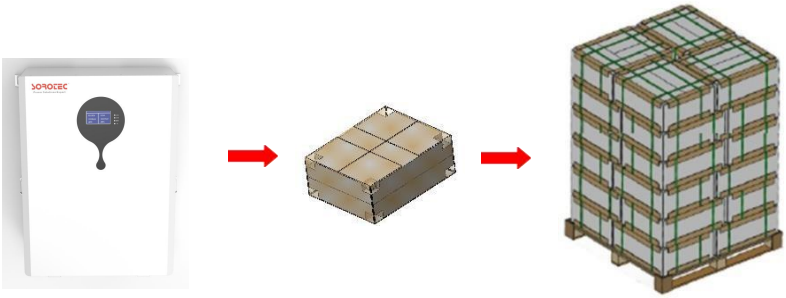
- Ensure that the equipment is installed in a dry and well-ventilated environment.
- The installation position must be away from direct sunlight and rain.
- The installation position must be far away from fire sources.
- The installation position must be far away from water sources such as taps, sewer 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 notperform 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.



1.5 Transportation Safety

Warning

- 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.



24 batteries per pallet (4x6 pcs)

2 Rroduct Information

2.1 Battery Overview

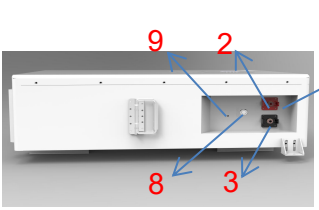
The IVY4800-5120W battery is a wall mounted lithium battery pack which consists of long span LiFePO4 battery cells and functional BMS. It can store and release electric energy based on the requirements of the inverter controller. It is mainly for home energy storage system.

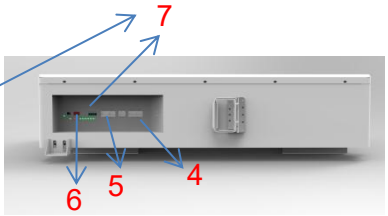
Features

- **LiFePO4 prismatic cell**
- 6000 cycles @0.2C conditions
- Maximum 1C charge and discharge capability
- Wall mounted IP 20 grade
- Scalable up to maximum 24 packs
- Protective and active BMS allows greater reliability and control
- IP 20 grade
- Building in terminal design
- Fully recyclable at the end of life
- Compact

2.2 Appearance

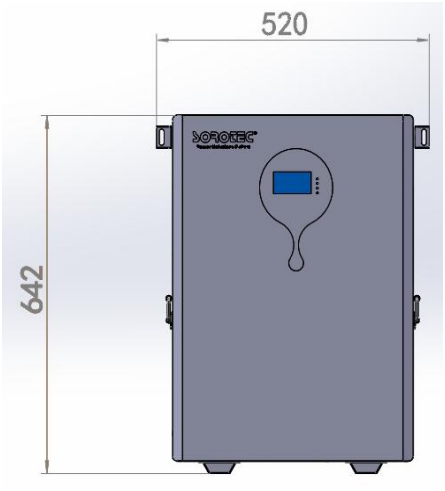


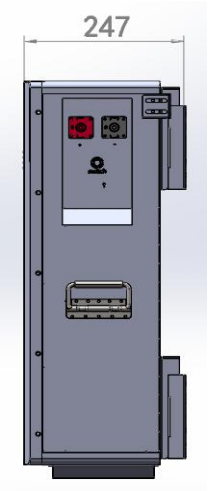




①LED display
②Positive terminal
③Negative terminal
④Battery parallel communication Port
⑤Inverter communication Port
⑥Dial the code switch
⑦Operating area
⑧The power switch
⑨Earthing

2.3 Dimensions





2.4 Capacity Options

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

Warning

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

For example, ONE PACK is 4.8kWh,

4.8kWh



9.6kWh



19.2kWh



AND MORE ……

Alarm

When the red light is on, some parameters of the battery have reached the warning value, or the battery has begun to be protected, BMS will send a warning when the battery is being charged or discharged. But after the battery protection, some functions of the battery can not be used.

2.5 Operation

Power Switch ON/OFF

To power on the whole battery system, no power output.

Power Connector ⚠ Notice

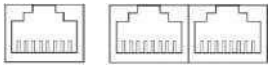


There are two groups of power connectors in the operation area. As shown in the figure, the upper group is positive and the lower group is negative. The same group of power connectors have the same polarity and can be connected to batteries or inverters in parallel.

- Please wire in cables from bottom inlets firstly.
- Please use standard M6 lug to install cable and connectors.

Communication Port

There are three RJ45 ports for BMS to inverter and parallel batteries communication. INVCOM is for updating battery information to compatible inverter or top tier when necessary. It is RS232 communication. BATCOM is RS485 for link to next battery pack to allow parallel batteries to work as one group.



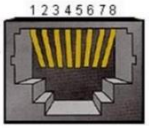
INVCOM BATCOM

INVCOM

The BMS has the RS232 communication function for battery pack data upload, and the baud rate is 2400bps. RS232 upload communication interface. It can communicate with the host computer through the RS232 communication interface.

INVCOM pin interface definition

Pins	Definitions
1、2	NC (empty)
3、6	GND
4	TX
5	RX
7、8	NC (empty)

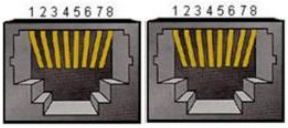


BATCOM

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

BATCOM pin interface definition

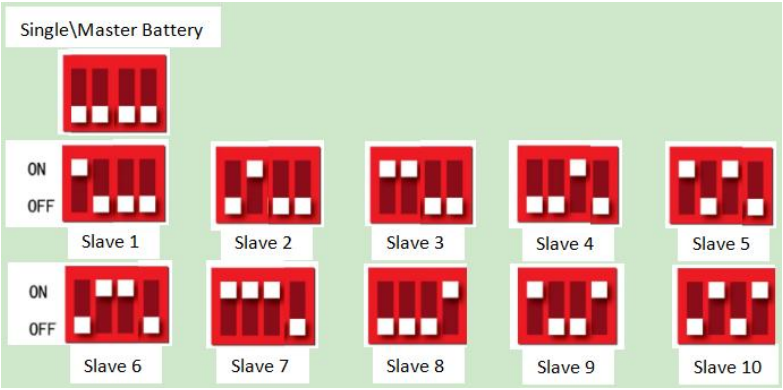
Pins	Definitions
1、8	RS485 -B
2、7	RS485 -A
3、6	Ground
4、5	NC (empty)



Notice

- Please find communication ports in operation area
- RS232 communication baud rate is 2400
- RS485 communication baud rate is 9600
- Please wire in cables from bottom inlets firstly.

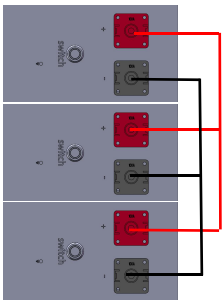
Address switch settings

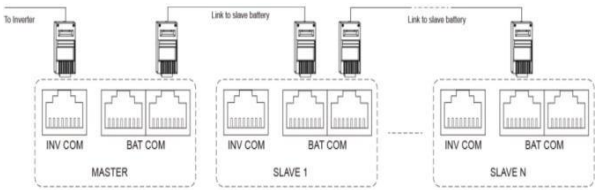


2.6 Multiple Batteries Parallel Connection

Warning

- Please set dip address switches as above.
- Please see communication ports link connection below
- Please see power parallel connection below.
- Please ensure that the equipment is connected permanently to the protective ground individually or parallelly.





3 Pecifications

3.1 48-51.2V Series Battery Specifications

Item	Specifications		remark
	48F100T	51.2F100T	
Battery Type	LiFePO4		
Typical Capacity (Ah)	100Ah	100Ah	
Typical Voltage (V)	54.75V	58.4V	
Connection	15S1P	16S1P	
Voltage Working Range (V)	37.5V-54.75V	40v-58.4v	Single cell: 2.5V-3.65V
Working Temperature(°C)	Charge: 0°C~+45°C, Discharge: -20°C~+65°C		
Storage Temperature(°C)	-20°C~+45°C		
Nominal capacity (kWh)	4.8kWh	5.12kWh	
Max. Charge Current	50A	50A	
Max. DisCharge Current	100A	100A	
Cycle Life	≥6000		25°C 0.2C 90%DOD
SOC Accuracy	<8%		
Weight(kg)	45kg	48kg	
Dimensions(mm)	642x520x247mm		L x W x H
IP Grade	IP20		
Transportation SOC	70%		
Cooling	Nature		

Wall Mounted Lithium Battery Series
User Manual