



# Energetech Solar



## Energetech Solar 51.2Volt 20kWh Energy Storage System

[Energetechsolar.com](http://Energetechsolar.com)

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# 1. Preface

## 1.1 Notes

Please read this specification carefully before using this product.

- ◆ Only qualified personnel can install this product;
- ◆ Before using this product, please read this manual and the inverter instruction manual carefully and understand the relevant precautions and operation instructions, otherwise, this product cannot be installed;
- ◆ The power must be turned off before connecting the wires;
- ◆ It is strictly forbidden to cause short circuit between AC output and DC input. When the DC input is short-circuited, it is forbidden to connect to the mains. Do not disassemble the unit.
- ◆ Please keep the installation site away from flammable and explosive substances.
- ◆ Please select the appropriate cable size. The installed cables must meet the requirements, please do not overload the cables to avoid fire and electric shock accidents;
- ◆ When service or repair is required, please contact the manufacturer. Improper reassembly may result in electric shock or fire hazard;
- ◆ To reduce the risk of electric shock, disconnect all wiring before performing any maintenance or cleaning. Turning off the switch unit does not reduce this risk;
- ◆ Be very careful when using metal tools on or around the battery. If the tool is dropped, it may cause sparks or cause a short circuit to the battery or other electrical components, resulting in an explosion;
- ◆ If the product fails, please contact the supplier if the failure still exists after processing according to the troubleshooting table.

## 1.2 Unpacking Inspection

The product has been strictly inspected before leaving the factory, but it may be damaged during transportation. Therefore, after unpacking, please check whether the following items are complete, and confirm whether the model, capacity, voltage, etc. are the same as those specified when ordering. If there is any abnormality or the content does not match, please contact us as soon as possible.

- ◎ Complete cabinet/racks
- ◎ Complete battery modules
- ◎ Product user manual
- ◎ Related accessories
- ◎ Other accessories specified in the order

## 1.3 Storage Environment

- ◎ Place in a dust-free and dry and ventilated place
- ◎ Ambient temperature: -10°C~40°C

- ◎ Ambient relative humidity:  $\leq 85\%RH$ , no condensation
- ◎ Keep away from corrosive gases and liquids
- ◎ The battery module that is not used for a long time should be powered on once every six months for more than 1 hour, which can effectively prolong the service life of the system.

## 1.4 Handling

During the handling of this product, avoid strong vibrations, falls, and bumps. It is strictly forbidden to turn the packing box upside down. Do not lose accessories and instruction manuals when unpacking and handling. In addition, this product is large and heavy, please pay attention to safety when handling, so as not to hurt your body.

## 2. Product Instruction

### 2.1 Product Features

- Built-in intelligent BMS
- Battery modular design
- Parallel functions between modules/racks and cabinets
- Humanized alarm function and perfect online protection function
- The battery module is equipped with an automatic fire extinguishing device to prevent fire hazards.
- Stable performance, safe and reliable, long service life

### 2.2 Product Structure

- Cabinet



- Rack



● Photos

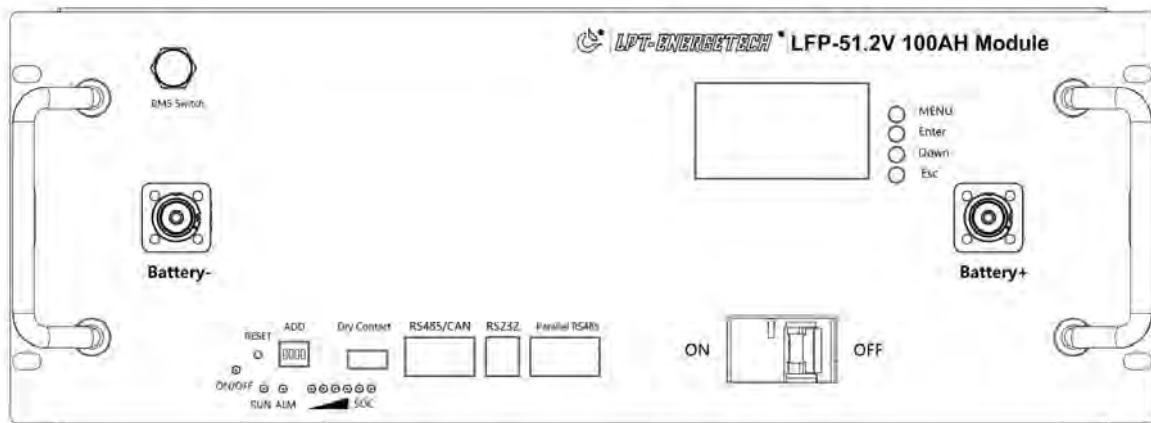



### 2.3 Main Parameters of the System

Battery Part	Number of Battery Modules	4
	Nominal Capacity	400.0Ah (typical)
	Nominal Voltage	51.2V
	Charge Cut-off Voltage	57.6±0.5V adjustable
	Max. Charge Current	75A <sub>dc</sub> max. (each module)
	Discharge Cut-off Voltage	43.2.0±0.5V adjustable
	Discharge Current	standard: 100.0A (each module) max. continuous: 100.0A (each module)
Others	IP Grade	IP54 (indoor)

	Ambient Temp.	temperature : 0°C ~45°C
	Ambient Humidity	humidity: ≤85% RH (no condensing)
	Dimension	600/580/1000 (mm)
	Weight	around 268.0kg
	Appearance	overall color: signal white/RAL9003
Parallel Ability	15 Modules Max. / 4 Cabinets Max.	

## 2.4 Battery Module Instruction

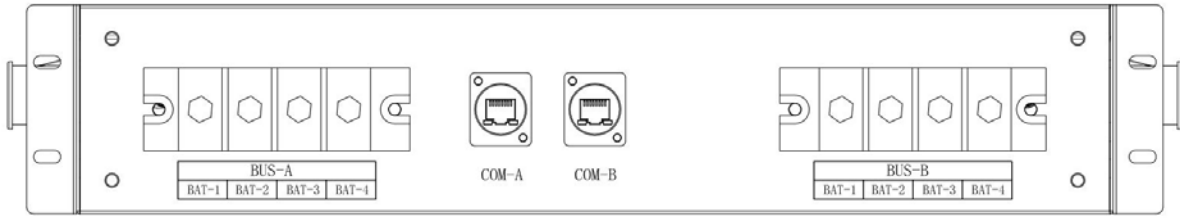


- Press the "BMS Switch" button switch, the module "ON/OFF" and "RUN" indicator lights are always on.
- Turn the main power switch  to "ON", the battery module has voltage output. The battery module operates normally.

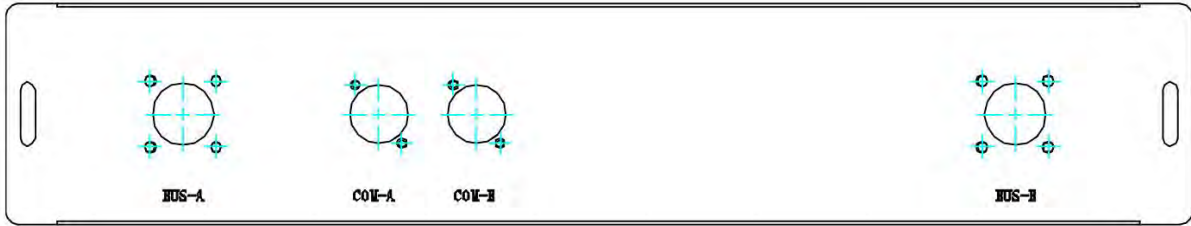
## 2.5 Combiner Box Instruction

The combiner box is used for current confluence, inverter connection and parallel connection between racks/cabinets. The left and right sides of the combiner box are installed with total positive, total negative and communication output ports after confluence, which are used to connect the inverter and parallel to other racks/cabinets. The COM-A and COM-B ports on the panel are respectively connected with the COM-A and COM-B ports on the sides of the rack combiner box/ cabinet. The BUS-A and BUS-B ports on the panel are respectively connected with BUS-A and BUS-B ports on the sides of the rack combiner box/cabinet.

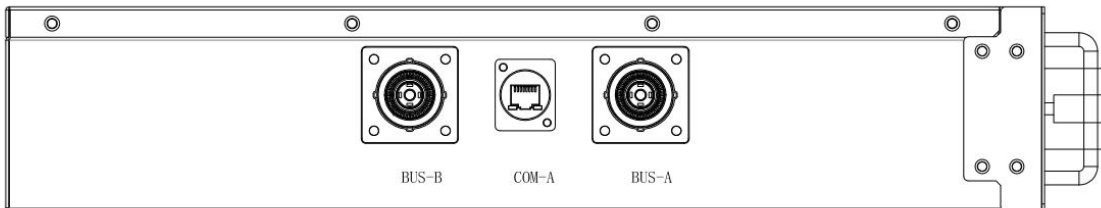
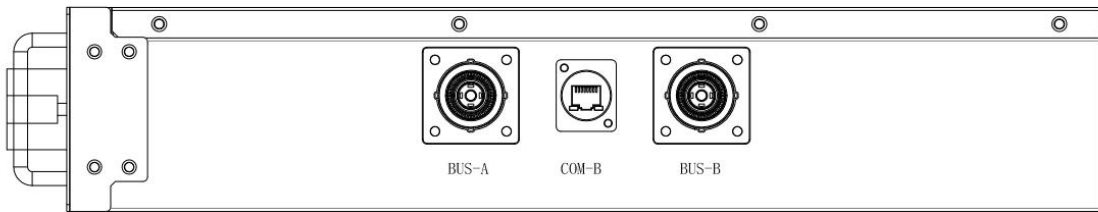
- Rack combiner box panel



● Cabinet combiner panel



● Combiner box/cabinet sides



## 2.6 Parallel Connection Instruction

### 2.6.1 Parallel connection between battery modules

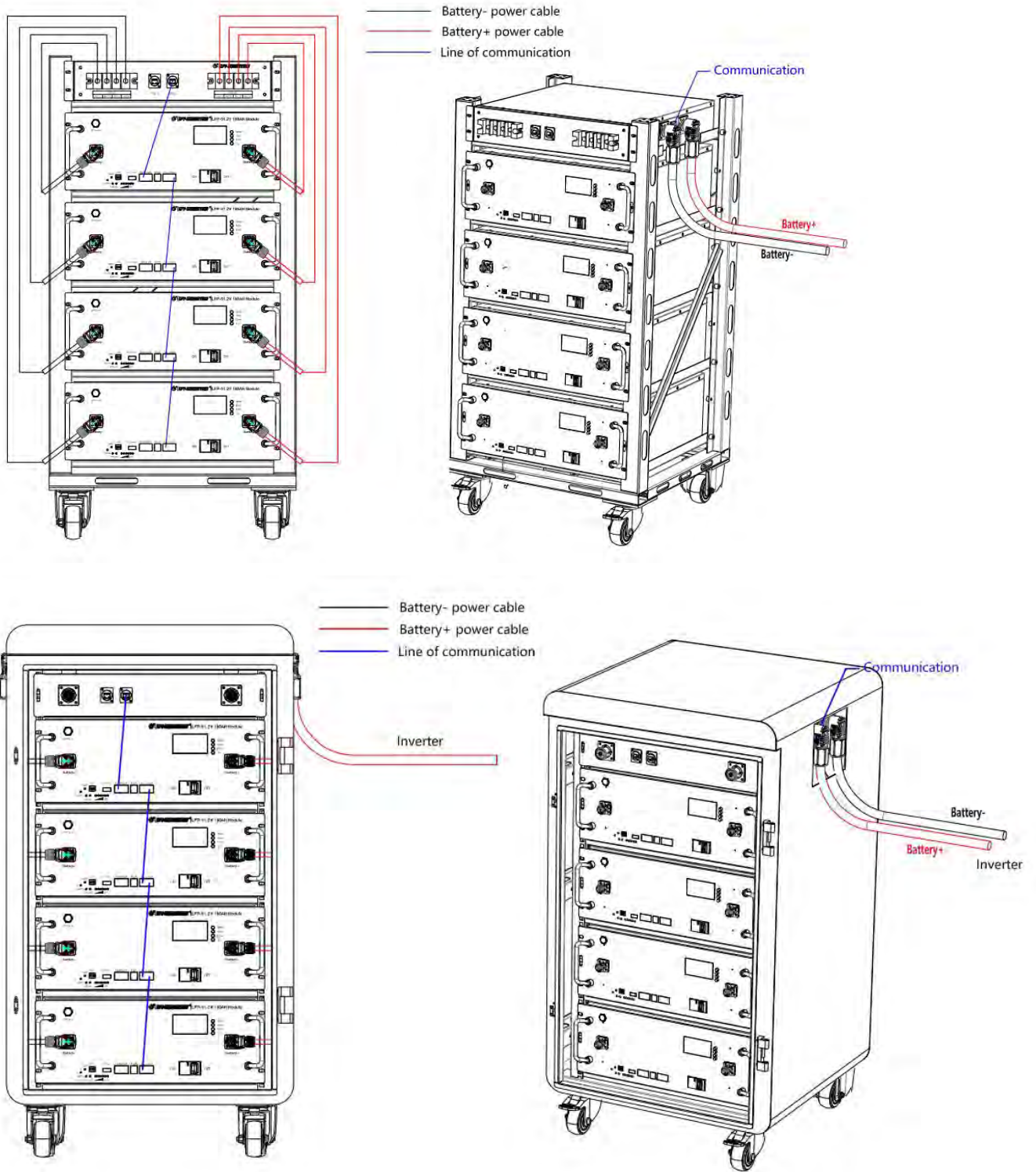
Battery module “-” is connected with BUS-A on the combiner box/combiner panel. Battery “+” is connected with BUS-B on the combiner box/combiner panel.

- The battery modules are connected in parallel through “Parallel RS485”, and the “Parallel RS485” interface of each module should be connected in series during wiring. COM-A or COM-B port is connected with “RS485/CAN” port on the first battery module (main module) (RS485 or CAN port is selected according to inverter communication type).

- The address of parallel communication is selected through the DIP switch. If 4 modules are selected, the dial address must be 1, 2, 3, 4 in sequence; if 8 modules are selected, the dial address must be 1, 2, 3, 4, 5, 6, 7, 8 in sequence.

Add	DIP Switch setting			
	#1	#2	#3	#4
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF
8	OFF	OFF	OFF	ON
9	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON
11	ON	ON	OFF	ON
12	OFF	OFF	ON	ON
13	ON	OFF	ON	ON
14	OFF	ON	ON	ON
15	ON	ON	ON	ON

- During parallel communication, the status of different modules/ systems can be monitored through the upper computer.



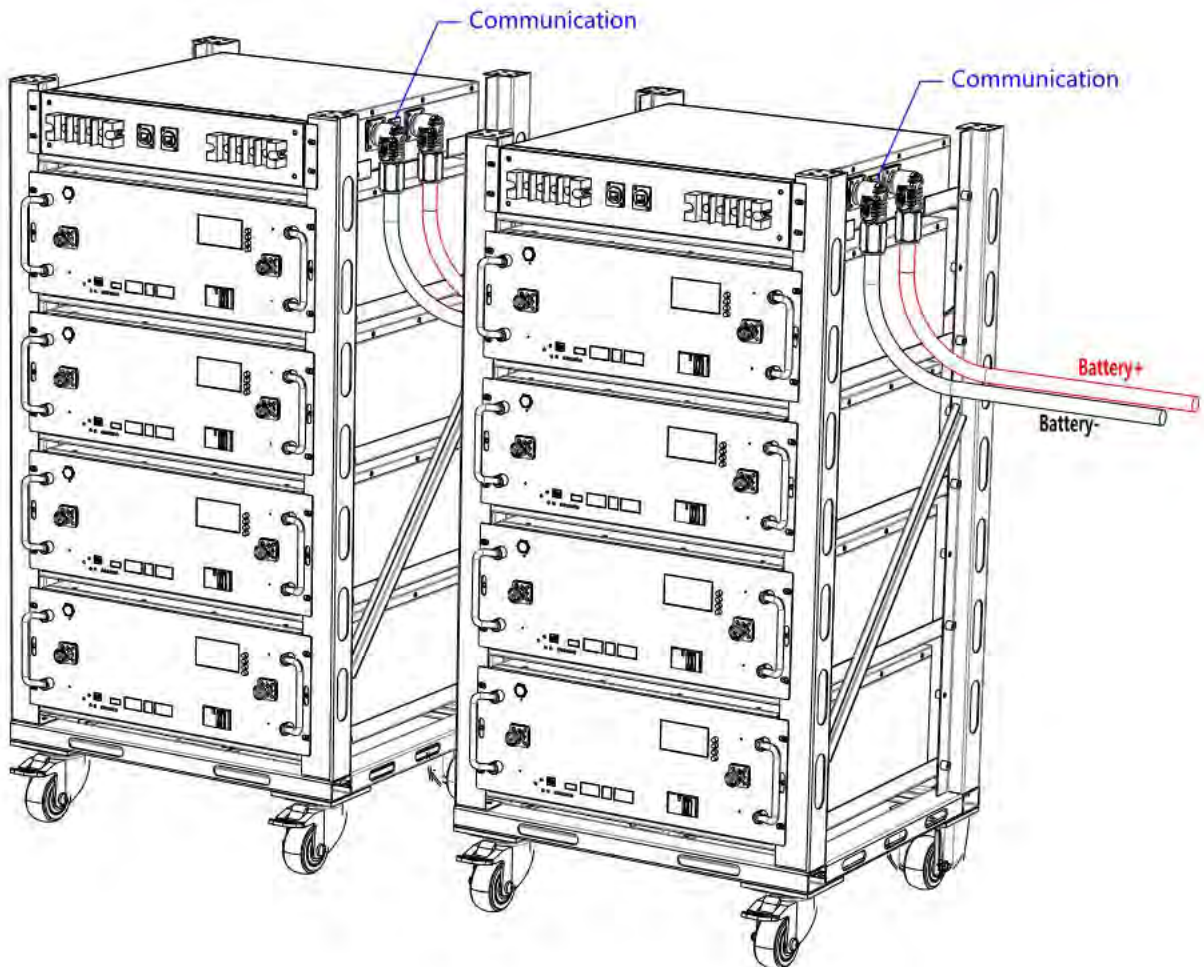
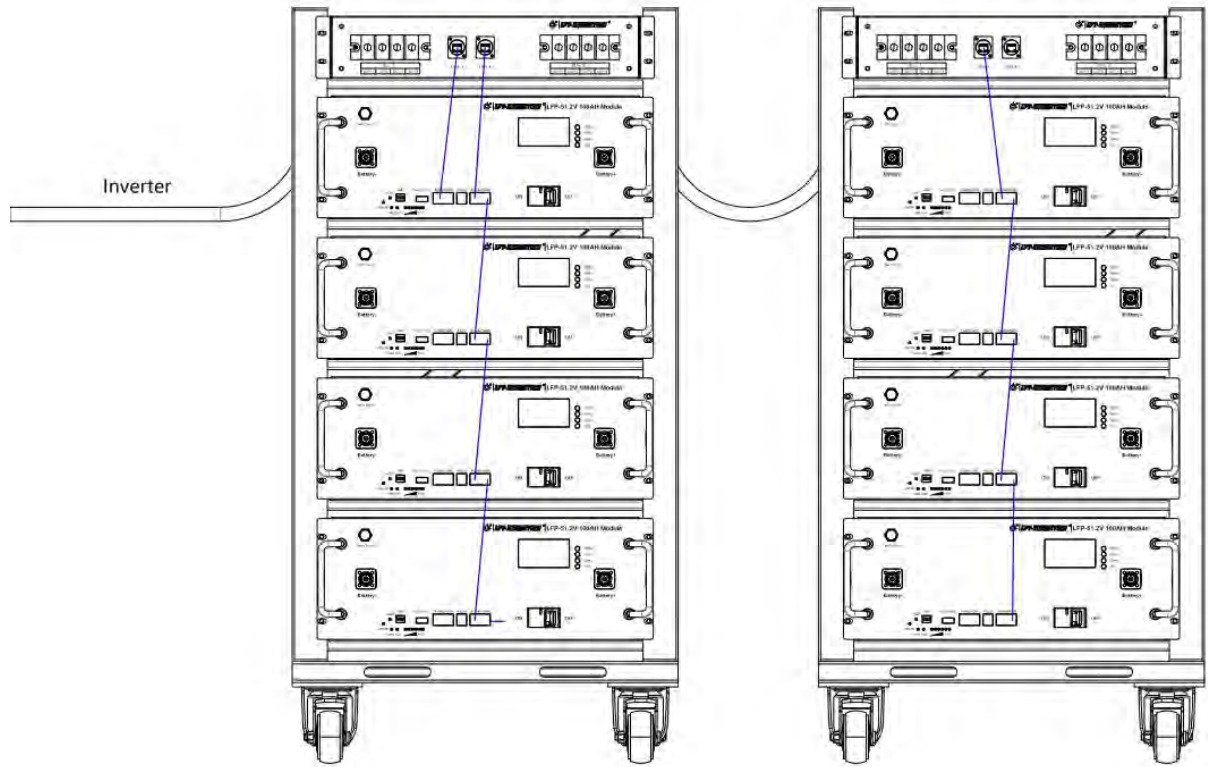
### 2.6.2 Parallel connection between racks/modules

The battery racks/cabinets are connected in parallel through the power output ports and the COM ports on the side of the rack combiner box/cabinet.

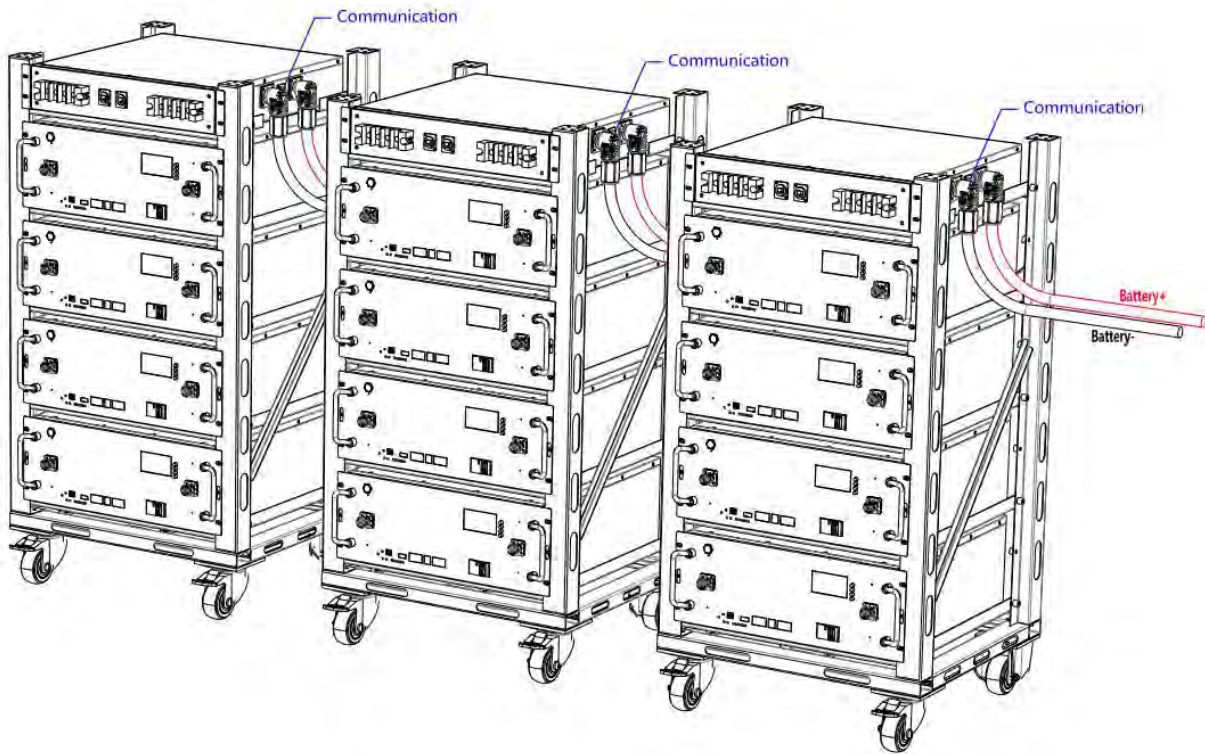
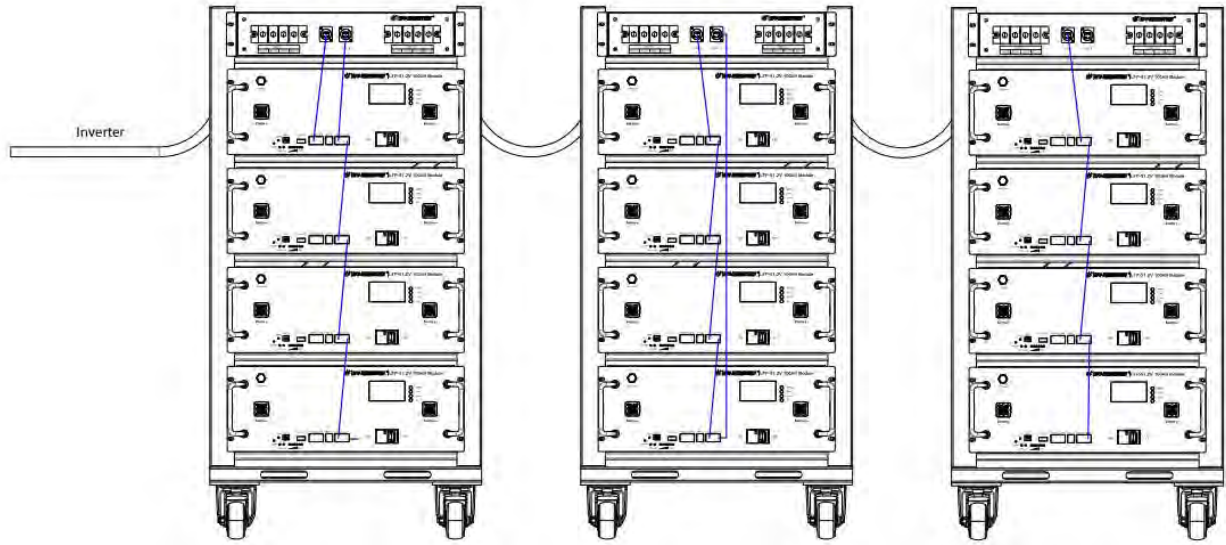
When the battery racks/cabinets are connected in parallel, for the main rack/cabinet, COM-A or COM-B port is connected with “RS485/CAN” port on the first battery module (main module), for other sub-racks/cabinets, COM-A and COM-B should be connected to the “Parallel RS485” ports on the battery modules (as shown in the figure).



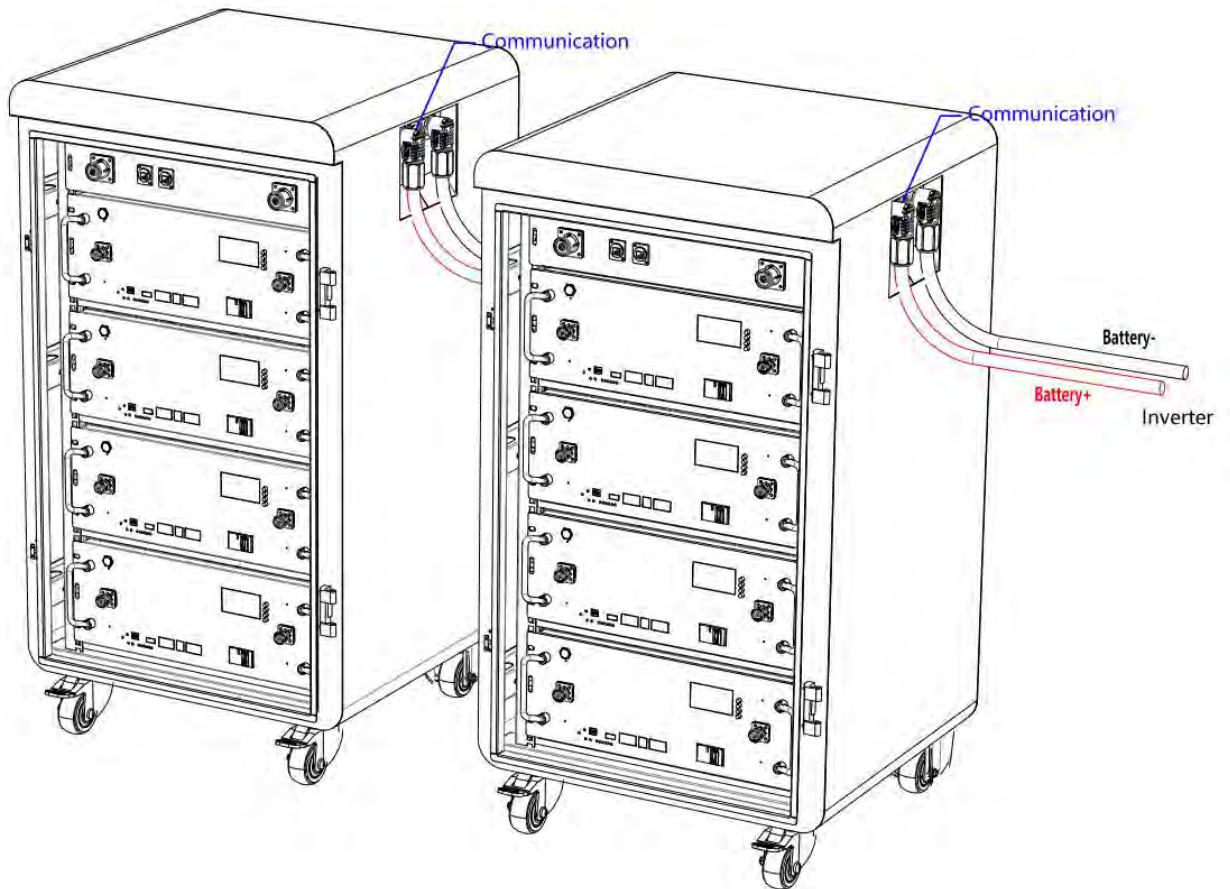
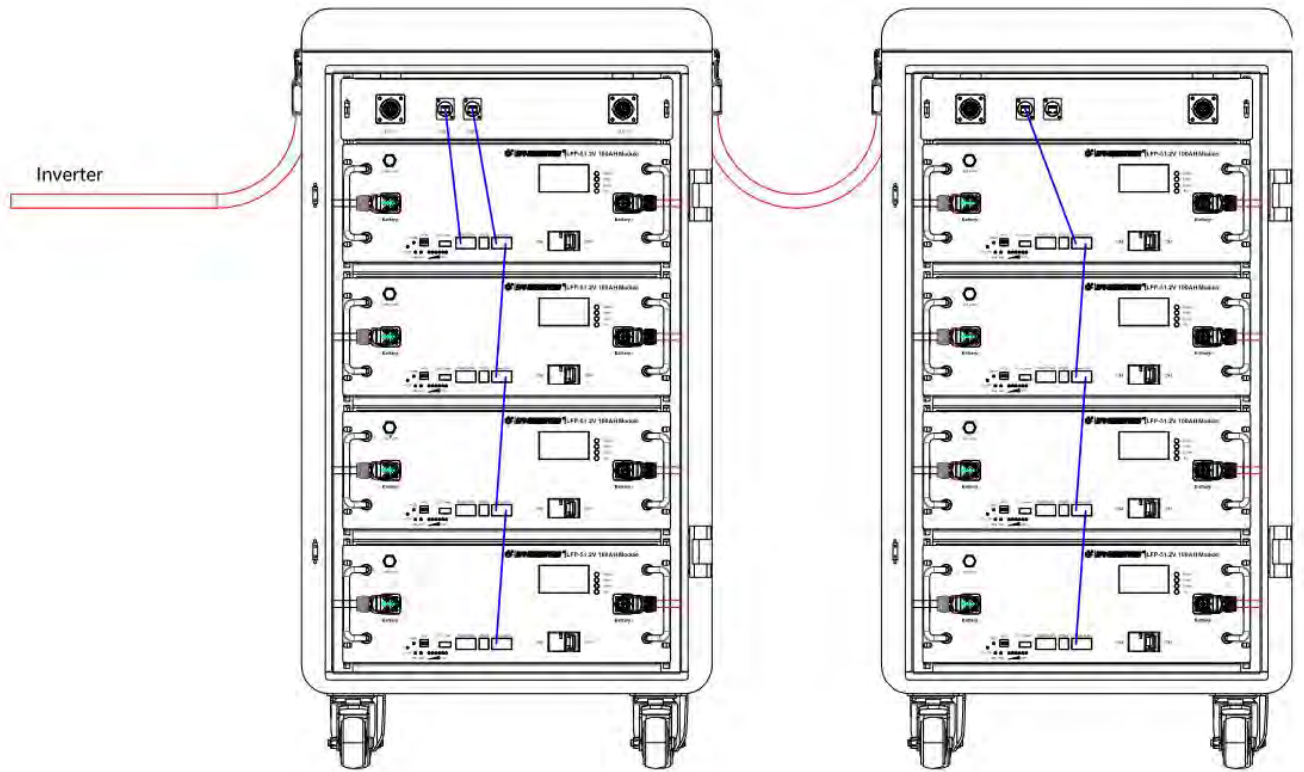
- 2 racks in parallel



- 3 racks in parallel



- 2 cabinets in parallel



- 3 cabinets in parallel

