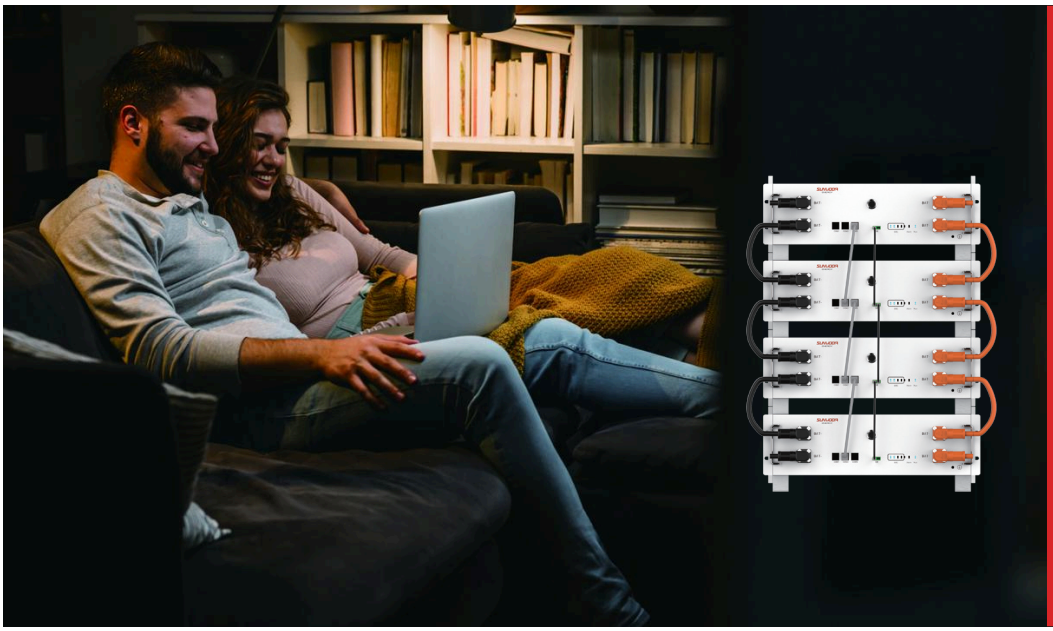


Atrix

Sunwoda Atrix series adopts a flexible modular design, which can be expanded from 5 kWh of a single module to 1MWh of 240 battery modules.

Flexible application

- Optimized for stack and build-in cabinet installation

Easy to install

- Plug and play
- Compact and Light
- 2 persons installation

Excellent performance

- 100% DOD
- Operate at -10℃ without any limitation and attenuation

Battery APP (Optional)

- Real time monitoring
- Remote maintenance and upgrades (Optional)

Specifications

Model	Atrix-5	Atrix-10	Atrix-15	Atrix-20
Nominal energy	5kWh	10kWh	15kWh	20kWh
Usable energy (100% DOD) [1]	5kWh	10kWh	15kWh	20kWh
Rated voltage	51.2V	51.2V	51.2V	51.2V
Charge/discharge cut off voltage	44.8V~55.2V	44.8V~55.2V	44.8V~55.2V	44.8V~55.2V
Rated charge/discharge current [2]	50A/80A	100A/160A	150A/240A	200A/320A
Max. charge/discharge current [2]	100A/100A	180A/180A	240A/240A	320A/320A
Communication interface	CAN 2.0/RS485			
Scalability	Max.240 in parallel (Optional Data Box)			

Operating conditions

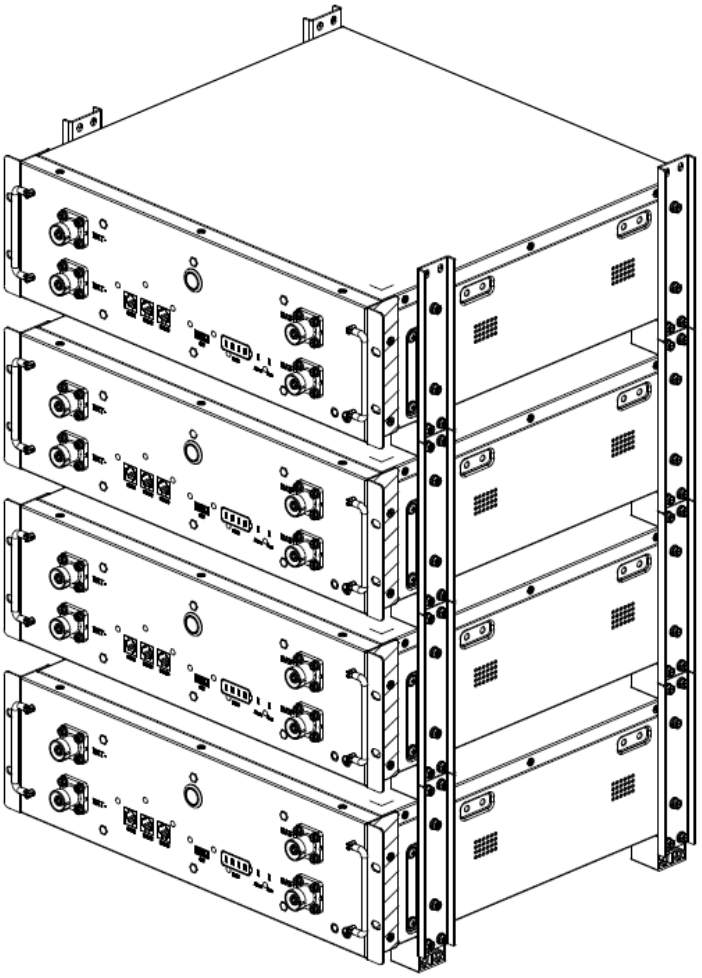
Installation location	Indoor
Operating temperature	Discharging:-4°Fto 122°F (-20°C to 50°C), Charging:14°F to 122°F (-10°C to 50°C)
Humidity	5% to 95%, non-condensation
Dimensions (W*H*D, mm)	440*135*410/PACK
Weight	45kg/90kg/135kg/180kg
Enclosure protection rating	IP20
Altitude	<4000m
Cooling	Natural convection
Warranty	10 years [3]
Certificates	IEC62619/CE/CEI 0-21/UL1973/FCC/UN38.3

1.Test conditions: 100% DOD, 0.2C charge & discharge at 25°C.
2.The current is affected by temperature and SOC.
3.For warranty instructions, please refer to the warranty terms.

SUNWODA ENERGY

User Manual

Atrix 5/10/15/20 Series



Version：V1.0

Water damage

Risk of electric shock and internal short-circuit. In case of splash or water spillage, when it is safe to do so, dry the product. If any part of the battery system is submerged, keep away from water. Do not reuse the submerged battery. Contact a service for support.

1 Product Description

This document mainly introduces the product, installation, commissioning, maintenance, troubleshooting, packaging, and transportation of the Atrix energy storage system.

1.1 Product Introduction

• This product is a lithium battery energy storage system based on the chemical composition of Lithium Iron Phosphate (LFP), and adopts a module parallel design.

• A single system consists of a data display box (optional) and multiple battery modules, and supports up to 4 battery modules in parallel.

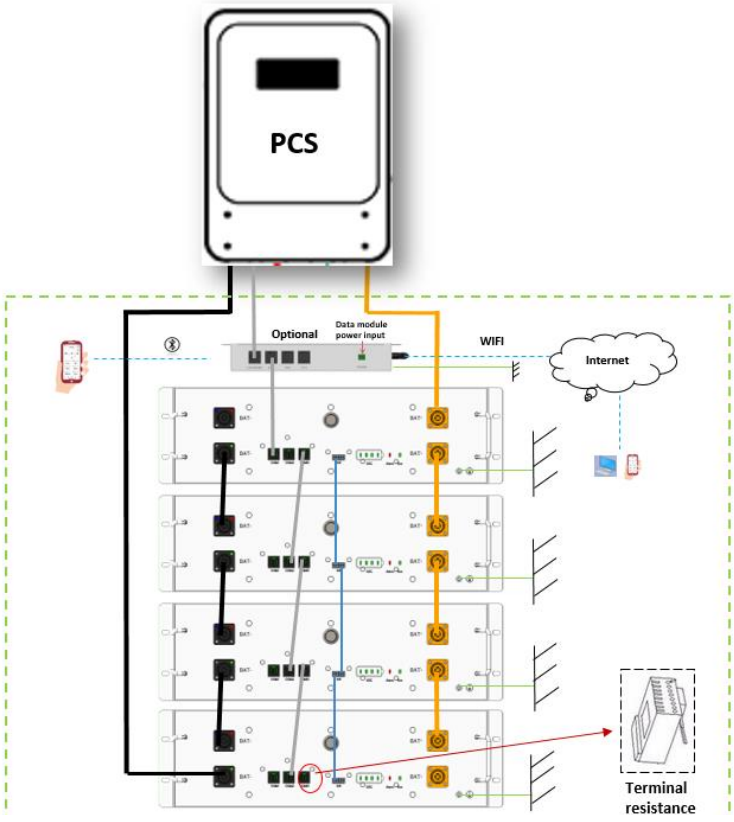
• The battery energy storage system can be used with the inverter, and the communication adopts CAN or RS485.

• The system supports up to 2 single systems connected in parallel, which can be expanded to 40kWh.

• The battery management system provides data collection, status monitoring and control to ensure safe and reliable operation of the system.

• The system adopts IP20 protection design to support indoor use.

System Diagram



1.2 Product appearance description

Product size chart:

The battery module size diagram and effect diagram are shown in the following figure:

Size: W*D*H=443*410*135 mm

Weight: 45kg

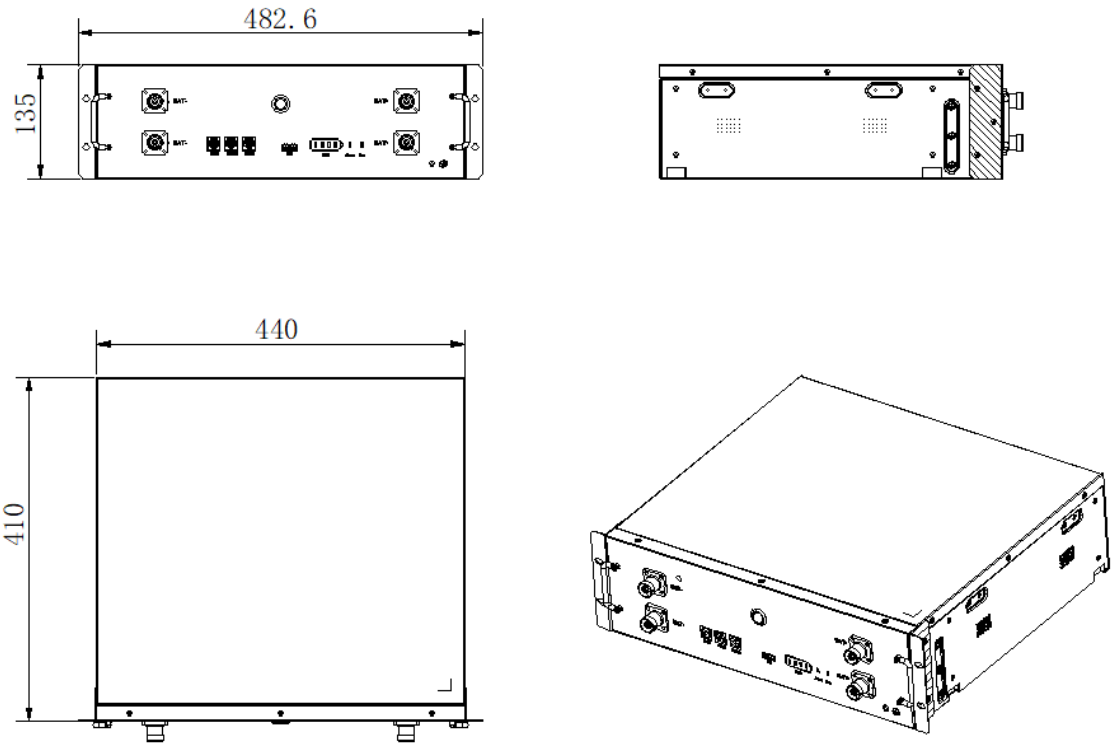
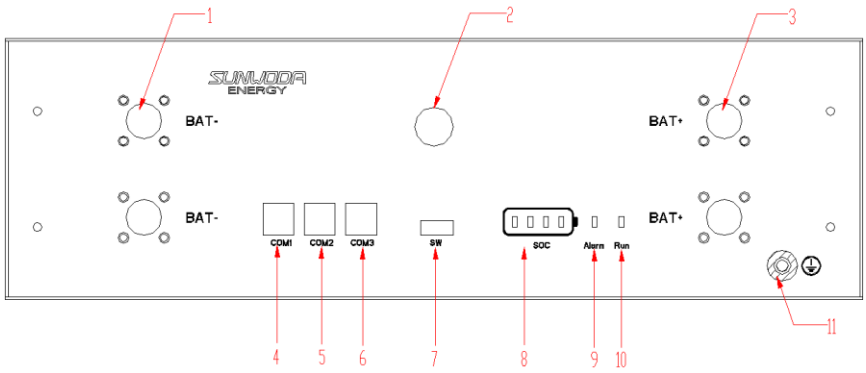


Figure 4.3 Dimensions of module



Figure 4.4 battery module diagram

Product Front Panel Definition：



NO	Item	Function	Note
1	.BAT-	Battery output negative interface	
2	POWER	Battery module switch button	
3	BAT+	Battery output positive interface	
4	COM1	Communication interface with PCS	RS485&CAN
5	COM2	Automatic addressing and internal CAN communication interface	
6	COM3	Automatic addressing and internal CAN communication interface	
7	SW	One-key open interface	
8	SOC	Battery module SOC indicator LED light	
9	Alarm	Battery module fault LED light	
10	Run	Battery module running LED light	
11	PE	Battery module ground hole	

2 Installation Guide

2.1 Installation site requirements

2.1.1 Environmental requirements

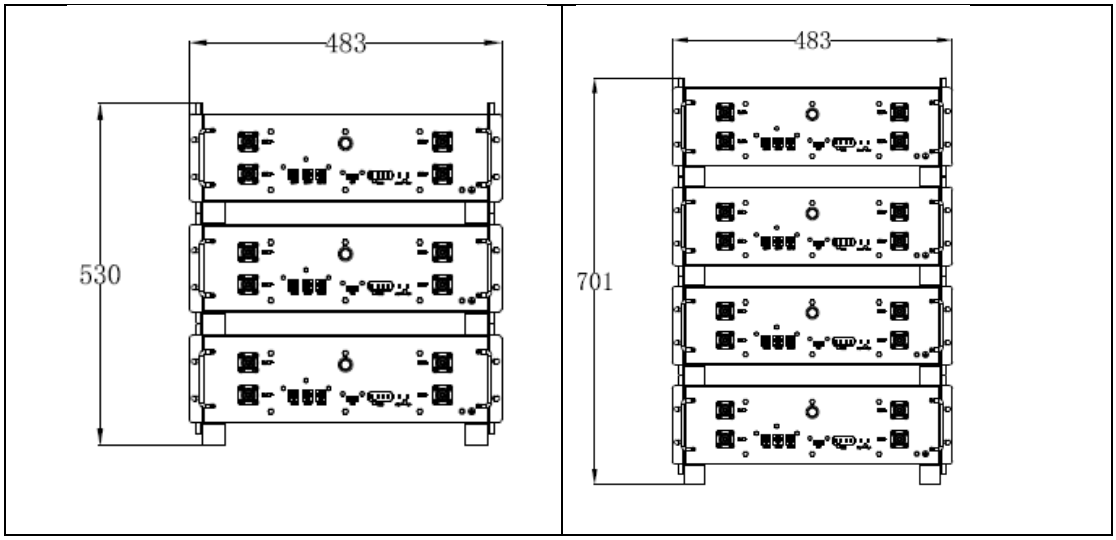
a. Ambient temperature: -10℃～+50℃ (recommended: 10℃～35℃ or 50℉～95℉).

b. Ambient humidity: 10-95%.

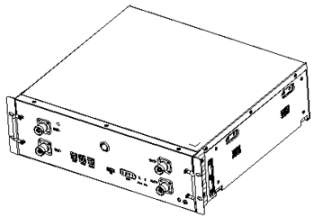
c. Altitude <= 2000 meters.

d. For indoor installation

- Avoid direct sunlight
- Avoid rain and snow
- Avoid flood-prone locations
- Install under shed if possible
- 3 feet of clearance from doors, windows, driveways, or other batteries
- Keep away from heating equipment.



b. Weight





⚠45kg (99.2lbs)

For 2 persons

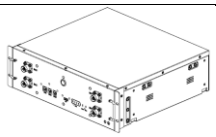
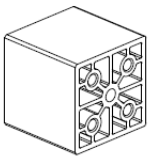
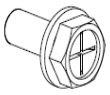
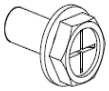
2.1.3 Preparation of installation tools

Tools			
 Electric screwdriver (M5 sleeve)	 Wrench		

Personal Protective Equipment			
 Safety gloves	 safety shoes		

2.1.4 Unboxing guide

Unpacking checklist

Components				
 Battery	 Data display box （Optional accessory	 Feet	 Racks	 M5*10 screw
 M6*14 ground				

Wiring Harness kit Packaging Components Between Battery module			
 Positive wire harness X1	 Negative wire harness X1	 PCS-RS485/CAN communication cable X1	 Power on cable X1

System wiring harness kit Packaging Components		
 Positive wire harness X1	 Negative wire harness X1	 PCS-RS485/CAN communication cable X1

2.2 Installation steps

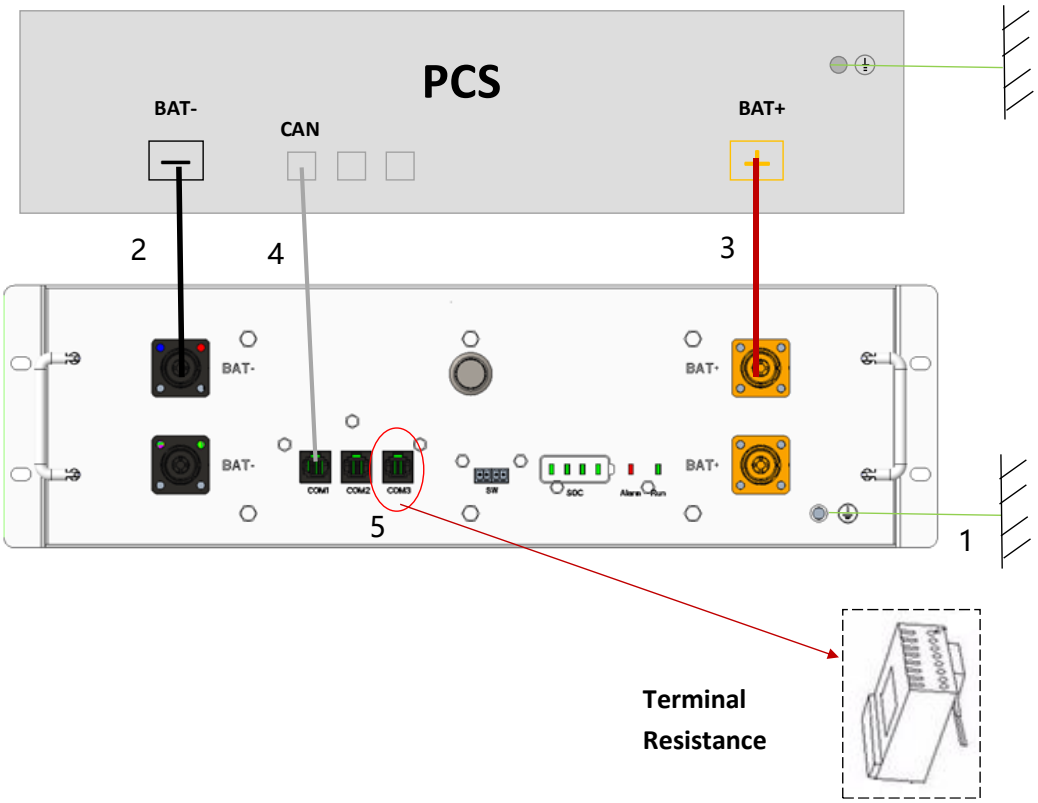
2.2.1 Installation step

1）Feet racket installation

Take out the 4PCS feet and rackets to install.

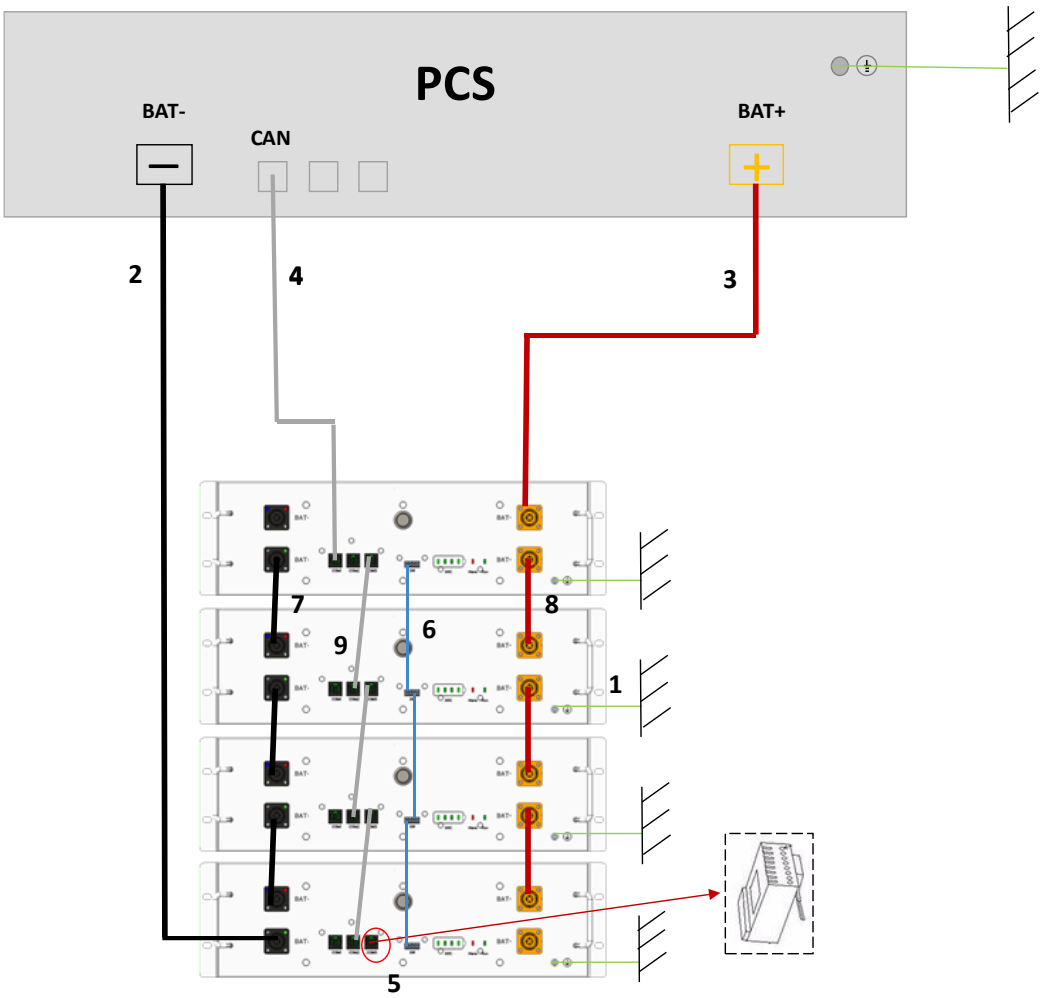
3.1.2 Guide of electrical connection

Electrical connection for single module shown as follows, PCS: 51.2V input



No.	Electrical connection	Wire specifications	Mark
1	Battery module grounding	Non	With grounding terminal
2	Connect the battery negative with PCS negative, typical color BLACK	1/0 AWG,2000mm	PCS- to BAT-
3	Connect the battery positive with PCS positive, typical color ORANGE	1/0 AWG,2000mm	PCS+ to BAT+
4	Connect the battery with PCS-CAN, typical color GRAY	8P8C Type 5 Shielded network cable	BAT-CAN to PCS-CAN
5	Terminal Resistance	120Ω	Optional

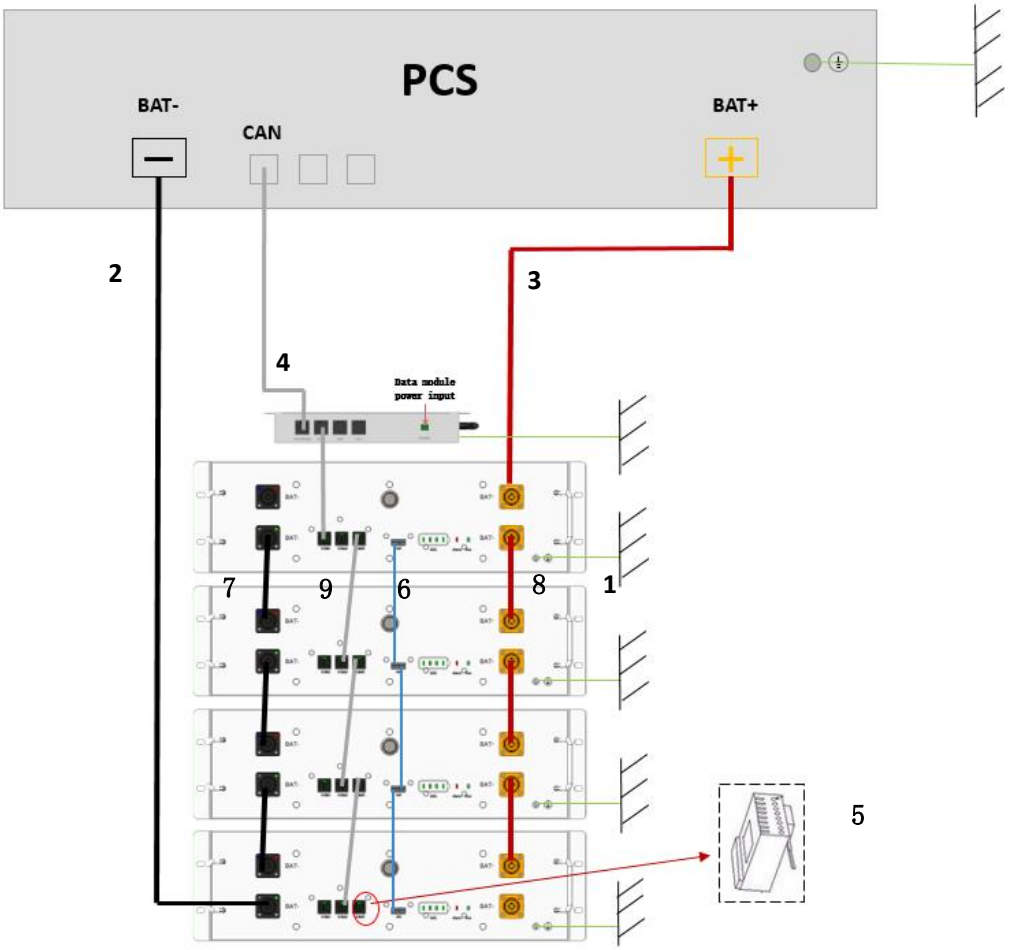
One cluster of parallel connection shown as follows, PCS: 51.2V input



No.	Electrical connection	Wire specifications	Mark
1	Battery module grounding	Non	With grounding terminal
2	Connect the battery negative with PCS negative, typical color BLACK	1/0 AWG,2000mm	PCS- to BAT-
3	Connect the battery positive with PCS positive, typical color ORANGE	1/0 AWG,2000mm	PCS+ to BAT+
4	Connect the battery with PCS-CAN, typical color GRAY	8P8C Type 5 Shielded network cable,2000mm	BAT-CAN to PCS-CAN
5	Terminal Resistance	120Ω	Optional
6	Connection with one-button power on function, paired connection	Power on cable,250mm	/
7	Negative wiring between battery modules, typical color BLACK	1/0 AWG,320mm	BAT- to BAT-

8	Positive wiring between battery modules, typical color ORANGE	1/0 AWG,320mm	BAT+ to BAT+
9	Connect the battery with BAT-CAN, typical color GRAY	8P8C Type 5 Shielded network cable,220mm	BAT-CAN to BAT-CAN

One cluster of parallel connection with data display box shown as follows (Optional for data display box), PCS: 51.2V input



No.	Electrical connection	Wire specifications	Mark
1	Battery module grounding	Non	With grounding terminal
2	Connect the battery negative with PCS negative, typical color BLACK	1/0 AWG,2000mm	PCS- to BAT-
3	Connect the battery positive with PCS positive, typical color ORANGE	1/0 AWG,2000mm	PCS+ to BAT+

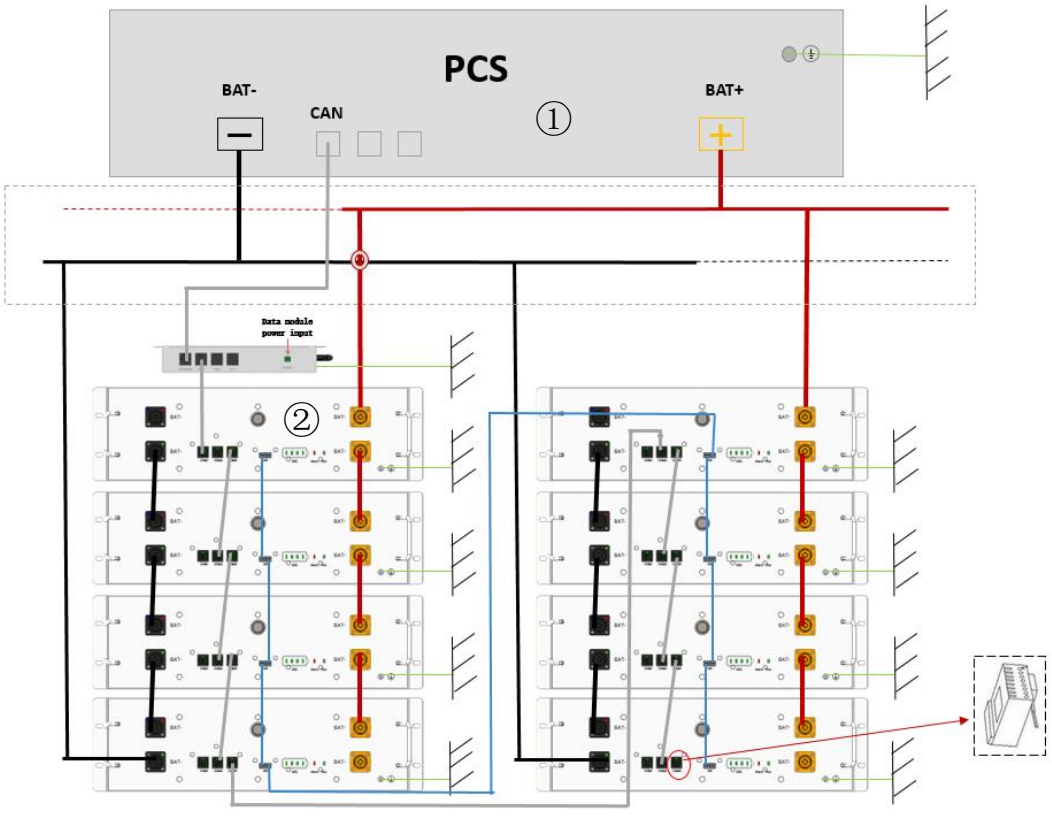
8	Positive wiring between battery modules, typical color ORANGE	1/0 AWG,320mm	BAT+ to BAT+
9	Connect the battery with BAT-CAN, typical color GRAY	8P8C Type 5 Shielded network cable,220mm	BAT-CAN to BAT-CAN
10	Combiner box	/	
11	Connect the combiner box with PCS negative, typical color BLACK	1/0 AWG,2000mm	BAT- to BAT-
12	Connect the combiner box with PCS positive, typical color RED	1/0 AWG,2000mm	BAT+ to BAT+
13	Connect the battery module with display box, typical color GRAY	8P8C Type 5 Shielded network cable	TBOX-CAN to BAT-CAN

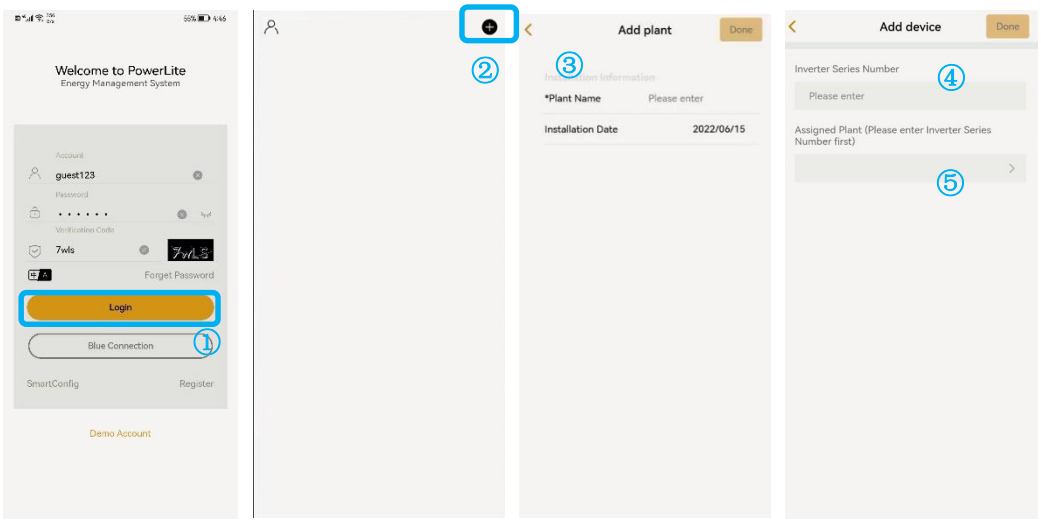
4 System commissioning

All cables shall be connected properly

4.1 System power on

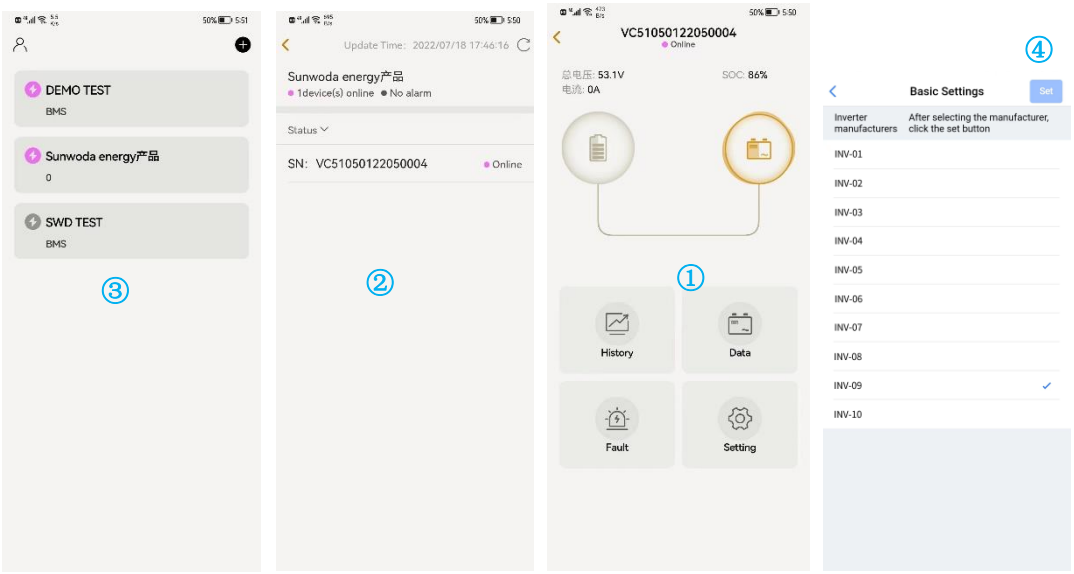
① Switch on the inverter (if inverter has the switch button)
② Press POWER button for more than 3s, the system start up and have output voltage, screen and POWER button is light up.





d. Select inverter manufacturer

After the site/device is added successfully, ①Click to enter the corresponding site, ②Click the Bluetooth SN code of the battery device to enter the battery interface, and you can view the device data, ③Click "Setting" to enter the inverter manufacturer interface for selecting the battery system configuration, ④Select After the inverter manufacturer is successfully set, the system configuration is completed.



Please refer to the table below to set inverter manufacturer parameters.

Inverter manufactures	APP setting
Default	INV-01
Sacolar	INV-02
Goodwe	INV-03
Deye	INV-04
SMA	INV-05
Victron	INV-06
Solis	INV-07

Selectronic	INV-08
MEGAREVO	INV-09
LUXPOWER	INV-10

5 Maintenance and troubleshooting

5.1 Routine maintenance

- Maintenance charge every 6 months

From the date of manufacturer shipment, the battery shall be maintained every 6 months. Action must be taken in case SOC reaches 0% according to,

Ambient temperature	**Must be recharged within**
(45, 50] °C	7 days
(35, 45] °C	15 days
≤35°C	30 days

- Disconnect the battery if not being used

  BMS consumes power even when the battery is not being used. Disconnect the battery output to prevent the battery from becoming empty. For store-away, make sure the SOC is between 45% and 55% before disconnect.

- Check the battery system regularly. Contact your support if any anomaly detected.

5.2 Fault checklist

Fault	**Cause**	**Solution**
POWER button no response	Damaged POWER button Damaged cable or poor contact	Repair or replace the control module Please contact the supplier
Short discharge time	battery SOC is low	Keep the product charged continuously and keep the energy storage battery system fully charged
	low ambient temperature	Guarantee the product to work within the recommended suitable temperature range
	Product overload	Check load status and remove non-essential loads
	Batteries age and capacity decreases	To replace the battery, please contact the supplier for the battery and its components
Unable to charge and discharge	Internal failure	Log in to the PowerLite APP to view the fault information and contact the supplier
	Battery report charging or discharging protection failure	Log in to the PowerLite APP to view the fault information and contact the supplier
	After the battery is discharged to the SOC protection value, it needs to be charged for a period of time	The battery is charged to the SOC value set by the restart

8 Detailed parameter

System parameter

Item	Parameter				Note
Pack Model	B051100P02				
Cell type	LFP				
Rated voltage	51.2V				
Connection	1P16S				
Rated energy	5kWh				
System Model	Atrix-5	Atrix-10	Atrix-15	Atrix-20	
Parallel No.	1	2	3	4	
Rated energy	5kWh	10kWh	15kWh	20kWh	
Rated charging and discharging current	50A	100A	150A	200A	
Max. charging and discharging current	100A	180A	200A	200A	
Rated voltage	51.2V				
Working voltage range	44.8V~55.2V				
Communication	CAN/RS485/WiFi				
Protection function	Charging over voltage, discharging under voltage, over current, over temperature, short circuit protection				
Cycle life	6000 cycles (25℃, 0.5C/0.5C, 90%DOD, residual capacity 70%)				
Scalability	24 modules in parallel, max. 120kWh				
Protection level	Simple rack IP20				
Working ambient temperature	Charging: (-10,50)℃				
	Discharging: (-20,50)℃				
Working ambient humidity	10%~95%RH				
Working altitude	<4000m				Derating above 2000m
Certificate	IEC62619,CE,UL1973,FCC,CEI 0-21				