

RUiXU Lithi2-16

Rechargeable LiFePO4 Battery

Operation and Maintenance Manual

UL 9540 (DC ESS) · UL 1973 · UL 9540A · IEC 62619 · CE · CEC
MSDS · IEC 61000 · SGIP · UN38.3

Version: V2.1

Description

This manual describes in detail the requirements and procedures for safe installation and operation of the RUiXU lithium battery system. Please read this manual carefully. Only qualified persons are allowed to install, operate and maintain the system. Failure to follow these requirements may cause product damage or pose a risk to personal safety.

Any actions that violate safe operating practices or fail to follow the rules in this manual and the limited warranty letter will void the warranty and qualification of this product. Meanwhile, the manufacturer will not be responsible for the product damage, property damage, personal injury or even death.

The information contained in this manual is accurate at the time of issue. RUiXU reserves the right to change specifications (for example, through optimization, upgrades or other changes) without prior notice. Please always view the latest document via the QR code on the label.

In addition, please note that the diagrams/schematics in this document help explain the system configuration and installation instructions and may differ from the actual equipment at the installation site.

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1. Information

This document applies to the RUiXU Lithi2-16 battery system. Before transporting, storing, installing, operating or maintaining the equipment, please read this manual and strictly follow all safety precautions marked on the equipment and in the manual.

1.1 Disclaimer

The "Caution", "Warning", "Statement" and "Danger" items in the manual do not represent all safety matters to be observed. These items only supplement the full set of safety precautions. RUiXU does not assume any liability for violations of general safety requirements or violations of safety standards for the design, manufacture and use of the equipment.

RUiXU ("the Seller") warrants each RUiXU branded battery ("the Product"), as listed below, sold by RUiXU or any of its authorized distributors or dealers, to be free of defects for the period as listed in the table below ("the Warranty Period"), from the date of sale as determined by either the customer's sales receipt, the shipping invoice and/or the battery serial number, with proof of purchase. Within the Warranty Period, subject to the exclusions listed below, the Manufacturer will credit, replace or repair, if serviceable, the Product and/or parts of the Product, if the components in question are determined to be defective in material or workmanship.

The Warranty Period for Physical Goods purchased from RUiXU Battery is 10 years. RUiXU Battery will replace or repair the product at no charge, using new or refurbished replacement parts.

The Seller has no obligation under this limited warranty for a Product subjected to conditions including, but not limited to, the following:

- Damage caused during shipping or mishandling of the Product
- Damage due to improper installation: loose terminal connections, under-sized cabling, incorrect series (cannot be used in series) or parallel connections, reverse polarity connections, or insufficient space for airflow
- Environmental damage such as inappropriate storage conditions as defined by the Manufacturer, exposure to extremely hot or cold temperatures, fire or freezing, or water damage, impact, or collision

- Damage due to improper operation or maintenance such as under- or over-charging the Product, cold temperature charging, lack of cleaning resulting in corroded terminal connections or build-up of dirt, debris, organic matter, fossil fuels, or chemicals on the Product casing
- Improper use of CAN cables such as improper connections or not connecting them
- Installing CAN communication devices that do not follow the appropriate CANbus guidelines as defined by the Manufacturer
- Product that has been opened, modified, or tampered with, including tampering with or removal of manufacturing date codes.
- Product that was used for applications other than those for which it was designed and intended by the Manufacturer
- Product that was under-sized for the application.

This Limited Warranty does not cover a Product that has reached its normal end of life due to usage, which may occur before the end of the Warranty Period. A battery can deliver only a fixed amount of energy over its life. The time taken to deliver this energy depends on the application. The Manufacturer reserves the right to deny a warranty claim if the Product is determined, upon inspection, to be at its normal end of life even if within the Warranty Period.

Submitting A Warranty Claim

To submit a warranty claim, please contact the original place of purchase. The Product may be required to be shipped back to the Seller for further inspection. The Product must be shipped in compliance with UN38.3. Please note that DOT requires all persons shipping batteries to be Hazmat certified.

Technical Support

If you have technical questions about the Product, please contact the place of purchase or RUiXU Battery directly at techsupport@ruixubattery.com

1.2 Target Group

This document is intended for qualified persons and operators. Only qualified persons are allowed to perform the activities marked in this document with a warning symbol and the caption "Qualified person". Qualified persons must have the following skills:

- Knowledge of how lithium iron phosphate batteries work and are operated.
- Knowledge of how an energy storage system (including PV/battery/hybrid inverter, MPPT, Meter, Distribution box etc.) works and is operated.
- Knowledge of locally applicable connection requirements, standards, and directives.
- Training in the installation and commissioning of electrical devices and batteries.
- Training in how to deal with the dangers and risks associated with installing, repairing and using electrical devices and batteries.

1.3 Levels of warning messages

The following warning levels apply when handling the product:

DANGER
Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
WARNING
Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION
Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury or permanent damage to the product.
NOTICE
Indicates a situation which, if not avoided, can result in property damage, product malfunction or accelerated damage to the product.

1.4 Symbol Description

Symbols on the product label

Label	Definition
	Beware of electrical shock
	Beware of battery leakage
	Beware of heavy objects
	Beware of explosion
	Beware of toppling

	Pay attention to the positive and negative battery terminals
	Keep the battery out of the reach of children and pets.
	Do not place the battery near heat sources or flammable materials.
	Do not expose the battery to direct rain and snow.
	The UL1973 certificate label for Safety by Intertek
	The certificate label for European EMC directives
UN38.3	The certificate label for UN38.3

Other symbols

Label	Definition
	Indicates activities that can only be performed by qualified persons
	Grounding point
	Recycle label
	WEEE designation
	Do not short circuit the battery

1.5 Abbreviation Description

Abbreviation	Definition
Battery/battery pack/battery module	Single RUiXU Lithi2-16 rechargeable lithium iron phosphate battery pack including cells, BMS and enclosure etc.
Battery system/cluster	Multiple RUiXU Lithi2-16 battery packs connected in parallel with power, communication and grounding cables and installation auxiliaries.
BMS	Full name: **Battery Management System** Electronic unit that ensures the safety of lithium cells and displays information or controls the battery's operating mode.
SOC	Full name: **State Of Charge** The battery state of charge refers to the remaining capacity expressed as a percentage of the battery's rated capacity.
SOH	Full name: **State Of Health** The battery state of health refers to the fully charged capacity expressed as a percentage of the battery's rated capacity.

2. Safety

2.1 Safety precautions

⚠ DANGER

Explosion risk
• Do not strike the battery with heavy objects.
• Do not squeeze or pierce the battery system.
• Do not throw the battery system into the fire.

⚠ WARNING

Fire risk
• Do not expose the battery system to temperatures above 80°C (176°F).
• Do not put the battery near a heat source, such as a fireplace.
• Do not expose the battery system to direct sunlight or rain.

⚠ CAUTION

Electric shock risk
• Do not allow unqualified persons to disassemble the battery system.
• Do not touch the battery system with wet hands.
• Do not expose the battery system to moisture or liquids.

⚠ NOTICE

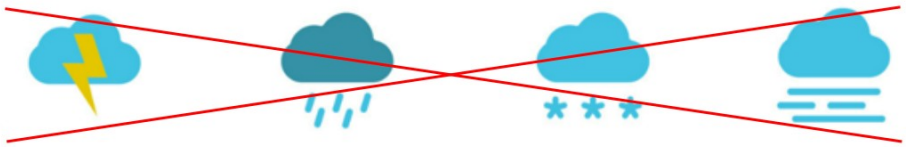
Damage risk
• Do not short-circuit the battery or connect it with reversed polarity.
• Do not use chargers or charging devices unapproved by the manufacturer to charge the battery.
• Do not mix batteries from different manufacturers or of different kinds, types or brands.

The battery has been designed and tested in accordance with international safety requirements (such as UL, IEC and UN38.3). However, due to various factors throughout the battery's lifetime, RUiXU cannot guarantee absolute safety. To prevent personal injury and property damage and ensure long-term operation of the battery, please carefully read and follow the instructions in the section below when operating the battery and handling emergencies.

2.2 Safety instructions

2.2.1 General Requirements

- It is strictly prohibited to install, use and operate outdoor equipment and cables (including but not limited to handling equipment, operating equipment and cables, plugging and unplugging signal interfaces connected to the outdoors, working at height, outdoor installation, etc.) in inclement weather such as lightning, rain, snow and winds exceeding 49 km/h (31 mph).



- It is strictly forbidden to wear watches, bracelets, bangles, rings, necklaces and other easily conductive objects during installation, operation and maintenance to avoid burns caused by electric shock.
- Special protective gear, such as insulated gloves, goggles and safety shoes, must be worn during installation, operation and maintenance, as shown below.



Insulated gloves



Safety Glasses



Safety Shoes

- Installation, operation and maintenance must be performed in the order of the steps in the instruction manual.
- In case of fire, evacuate the building or equipment area and activate the fire alarm or call the fire department. Re-entry into a burning building is strictly prohibited under any circumstances.
- It is strictly prohibited to artificially alter, damage or obscure the logo and nameplate on the equipment. Installation while the equipment is energized is strictly prohibited.
- It is forbidden to use water to clean the battery system.
- In the process of equipment operation, if a fault is found that may lead to personal injury or equipment damage, the operation should be stopped immediately, the fault should be reported to the person in charge, and effective protective measures should be taken.
- To avoid the risk of electric shock, it is prohibited to connect a Safety Extra Low Voltage (SELV) circuit to a Communication Network Voltage (TNV) circuit.
- Do not power up the equipment until installation is complete or without professional confirmation.

2.2.2 Emergency safety measures

⚠ WARNING

In the event of a fire, ensure that the fire extinguisher is suitable for electrical fires before using it.

Water ingress

To ensure safety, disconnect the micro circuit breaker on the right side of the battery system and evacuate to a safe position

Electrolyte or gas leakage

If the battery system leaks electrolyte, avoid contact with the leaking liquid or gas. If one is exposed to the leaked substance, immediately perform the actions described below.

- Gas Inhalation: Evacuate the people in the contaminated area and seek medical aid immediately.
- Eye Contact: Flush your eyes with clean, running water for 15 min and seek medical aid immediately.
- Skin Contact: Thoroughly rinse the exposed area with soap and water to ensure that no chemicals or soap remain on the skin, and seek medical aid immediately.
- Ingestion: Induce vomiting, and seek medical help immediately.

2.2.3 Other Tips

- All products are thoroughly inspected before shipment. Please contact us for a replacement if you notice any defects, such as swelling.
- Do not disassemble batteries or components. The manufacturer will not be responsible for any damage caused by unauthorized disassembly or repair.
- Ensure that the battery is safely grounded before use so that the system operates safely and normally.
- Please ensure that the electrical parameters of the battery and other devices are mutually compatible before connecting them.
- Please carefully consider environmental factors to ensure that the system can operate under suitable conditions, as the environment and storage methods affect the service life and reliability of this product.

2.3 Electrical safety

2.3.1 Grounding requirements

- When installing equipment that requires grounding, the protective grounding wire must be installed first; when dismantling the equipment, the protective grounding wire must be removed in the last step.
- It is forbidden to destroy the grounding conductor.
- It is prohibited to operate the equipment without a grounding conductor installed.
- The equipment should be permanently connected to a protective ground. Before operating the equipment, check the electrical connections to the equipment to ensure that it is reliably grounded.

2.3.2 AC and DC operation requirements

⚠WARNING

It is forbidden to install or remove the power cord while it is energized. The moment the power cord core touches the conductor, it will generate an electric arc or spark, which can lead to fire or personal injury.

- Before installing or removing the power cord, the power switch must be turned off.
- Before connecting the power cord, you must make sure its label is correctly marked.
- If the power cord is damaged, it must be replaced by the manufacturer, business agent or professional to avoid risk.

2.3.3 Wiring requirements

- High temperatures may cause cable insulation to age and crack. Keep cables at least 500 mm (19.69 inches) away from heat-generating devices or the boundaries of heat-source areas.

- The cable should meet the requirements of VW-1 flame retardant grade.

- Cables of the same type should be tied together. Keep different types of cable at least 30 mm (1.18 inches) apart, and do not allow them to become entangled or cross one another.

- At very low temperatures, strong impacts and vibration may cause the cable's plastic outer sheath to become brittle and crack. To ensure construction safety, the following requirements should be followed:

- All cables should be laid and installed above 0°C (32°F). When handling cables, especially in low-temperature environments, they should be handled gently.

- If the cable is stored at an ambient temperature below 0°C (32°F), the cable must be moved to room temperature for more than 24 hours before deployment.

- Cable selection, racking and routing must follow local laws and regulations and specifications.

2.4 Installation environment requirements

- It is strictly prohibited to install, use and operate outdoor equipment and cables (including but not limited to handling equipment, operating equipment and cables, plugging and unplugging signal interfaces connected to the outdoors, working at height, outdoor installation, opening doors, etc.) in inclement weather such as lightning, rain, snow or winds exceeding 49 km/h (31 mph)
- Install the equipment in an area away from liquids. Do not install it beneath water pipes, air outlets or other locations prone to condensation. Do not install it beneath air-conditioning openings, vents, machine-room outlet windows or other locations prone to water leaks. This prevents liquid from entering the equipment and causing equipment failure or a short circuit.
- If liquid is found inside the device, turn off the power immediately and notify the administrator.
- It is forbidden to place the equipment in an environment with flammable or explosive gases or fumes, and to perform any operation in that environment.
- When installing the equipment, make sure that the mounting surface is solid and meets the load-bearing requirements of the equipment.
- It is strictly prohibited to install the equipment in areas with strong vibration, loud noise sources or strong electromagnetic interference.
- Drilling holes in the equipment is strictly prohibited. Drilling will damage the electromagnetic shielding properties of the equipment, internal devices and cables, and metal chips entering the equipment during drilling will cause a short circuit on the circuit board.

2.5 Mechanical safety

⚠WARNING

• Operations carried out at a distance of more than 2 m (6.56 ft) from the ground are aerial work.

• When working at height, you must meet the requirements of local regulations for operating at height.

• You must go through relevant training and obtain the relevant qualification certificate before you can work at height.

- Work at height should be stopped if surfaces are still wet from rain or if other hazardous conditions exist. Once these conditions have passed, the company's safety director and relevant technical personnel must inspect the equipment and approve the resumption of work.

- Before working at height, carefully inspect access equipment and safety gear, such as helmets, safety belts, ladders, springboards, scaffolding and lifting equipment. If they do not meet the requirements, correct the deficiencies immediately or do not proceed with work at height. Use appropriate safety protection, including helmets and safety belts or waist ropes secured to solid structural components. To prevent hooks from slipping off and causing a fall, never attach them to moving or unsecured objects or to metal with sharp edges.

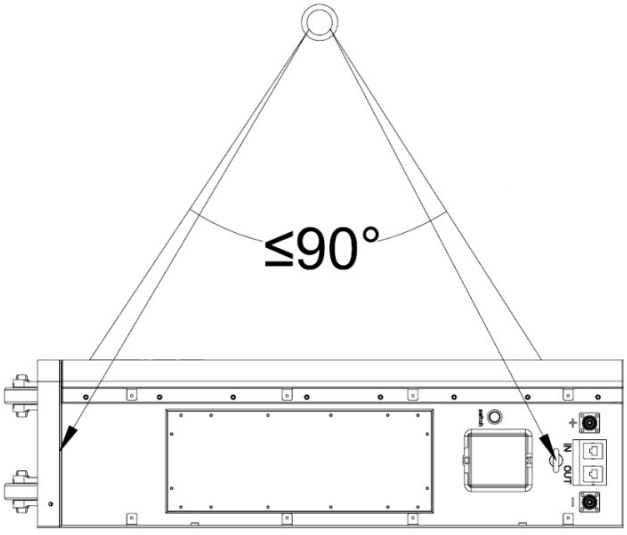
- At sites where work is performed at height, establish a clearly marked exclusion zone and strictly prohibit entry by unauthorized personnel.

- It is strictly forbidden to throw objects from heights to the ground and to throw objects from the ground to heights, and objects should be transmitted using strong ropes, hanging baskets, elevated trucks or cranes.

- Do not stack scaffolding, springboards or other objects on the ground below the work area. Ground personnel must not remain or pass directly below the work area.

2.5.1 Lifting safety

- The foundation where the crane operation is carried out must meet the load-bearing requirements of the crane work.
- When lifting heavy objects, it is strictly forbidden to walk under the boom or suspended objects.
- Personnel who carry out lifting operations need to undergo relevant training and be qualified before they are allowed to work.
- Inspect all lifting tools before use and ensure that they are complete.
- Before lifting operations, ensure that lifting tools are firmly fixed to load-bearing fixtures or walls.
- When lifting, do not drag the wire rope or spreader or strike them with hard objects.
- During the lifting process, ensure that the angle between the two cables is not greater than 90°, as shown in the figure below.
- If only two rings are used for lifting, use lifting belts that meet the load-bearing requirements to avoid deformation of the rings.
- If conditions permit, lift the battery in a horizontal position to prevent damage.



2.5.2 Heavy lifting safety

DANGER

The battery must be moved carefully to avoid any damage to the equipment caused by impacts or drops

- When carrying heavy objects, be prepared to support their weight to avoid crush injuries or sprains.



＜18kg (＜40lb) | 18~32kg (40~70lb) | 32~55kg (70~121lb) | ＞55kg (＞121lb)

- When handling equipment by hand, you should wear protective gloves, shoes and other safety gear to avoid injury.
- When moving or lifting the device, hold the device by the handle or by the bottom edge of the device, and not by the module already installed in the device.
- When handling the equipment, avoid scratching the cabinet surface or damaging its components and cables.
- Before moving, please fasten the equipment to the forklift with ropes; when moving, it needs to be guarded by someone.
- When transporting the equipment, choose rail transport, sea transport or roads in good condition whenever possible to ensure the safety of the equipment. Bumps and tilts should be minimized during transport.
- The cabinet must be moved carefully to avoid any damage to the equipment caused by impacts or drops.

2.6 Equipment safety

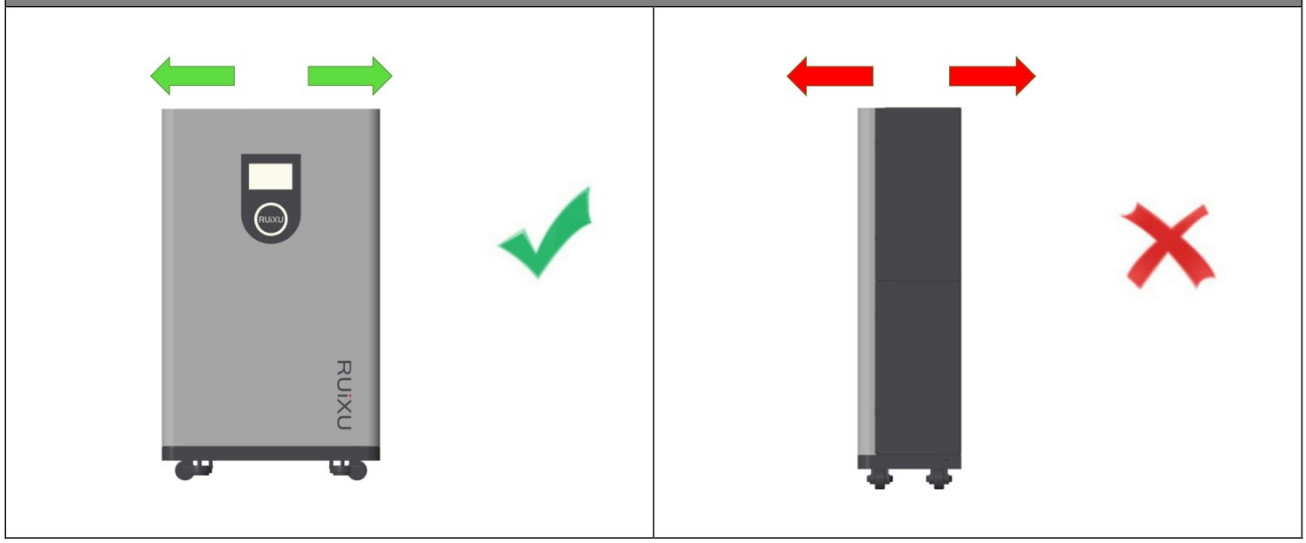
DANGER

• Do not expose the battery to high-temperature environments, direct sunlight or fire, or place it near heat-generating devices such as transformers or heaters.

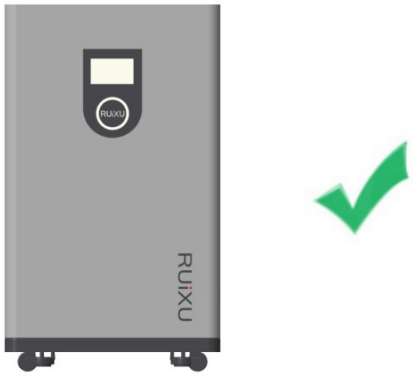
• It is strictly prohibited to disassemble, modify or destroy the battery (such as by inserting foreign objects or immersing the battery in water or other liquids) to avoid causing battery leakage, overheating, fire or explosion.

- Before performing battery work, you must carefully read the safety precautions for the operation and master the correct connection method of the battery.
- Please use specially insulated tools. The battery circuit should be kept disconnected during installation, maintenance and other operations.
- Please use the specified type of battery. Using an incorrect battery model may lead to battery damage.
- Please dispose of used batteries according to local laws and regulations, and do not dispose of batteries as household waste. Improper disposal of batteries may lead to a battery explosion.
- When moving the battery on its wheels, move it in the specified direction. **DO NOT PUSH FROM THE TOP OF THE BATTERY. PUSH FROM THE BOTTOM OF THE BATTERY ONLY.**

Battery transport direction when using the rollers



- Transport the battery system in the specified direction. Do not invert or tilt it.

Battery placement direction during transportation	
	
	
	

2.7 Battery installation specification

NOTICE

Leave a gap of 30 cm (11.81 inches) above the battery for cable routing.

- After removing the packaging, place the battery in the required orientation. Do not place it upside down, on its side, at an angle or in a stack. Avoid impacts or drops that may damage the battery beyond repair.



Vertical installation



Horizontal installation

- Install the battery in a well-ventilated, dry and cool environment, away from heat sources, flammable materials, moisture, organic solvents and corrosive gases. Take appropriate fire-prevention measures. The battery should be placed horizontally and fixed.
- It is strictly forbidden to place installation tools on the battery during the battery installation.

2.8 Personnel requirements

NOTICE

• Professional: A person who has training or experience in operating equipment and is aware of the various sources and magnitudes of potential hazards in the installation, operation, and maintenance of equipment.

• Trained personnel: personnel who have undergone appropriate technical training and have the experience needed to recognize the risks of a particular operation and take measures to minimize risks to themselves and others.

- Only qualified professionals or trained personnel are allowed to install, operate and maintain the equipment.
- Replacement of equipment or parts (including software) must be done by a professional or trained personnel.

2.9 Others

Transportation, storage and maintenance

- During long-term storage, the battery needs to be charged and discharged once every 3 months as specified.
- When loading and unloading the battery during transportation, please be careful not to drop it, do not stack more than 3 layers, turn it over, and make sure the front side is facing up.
- To avoid short-circuiting the battery, the battery is not allowed to be connected for maintenance.

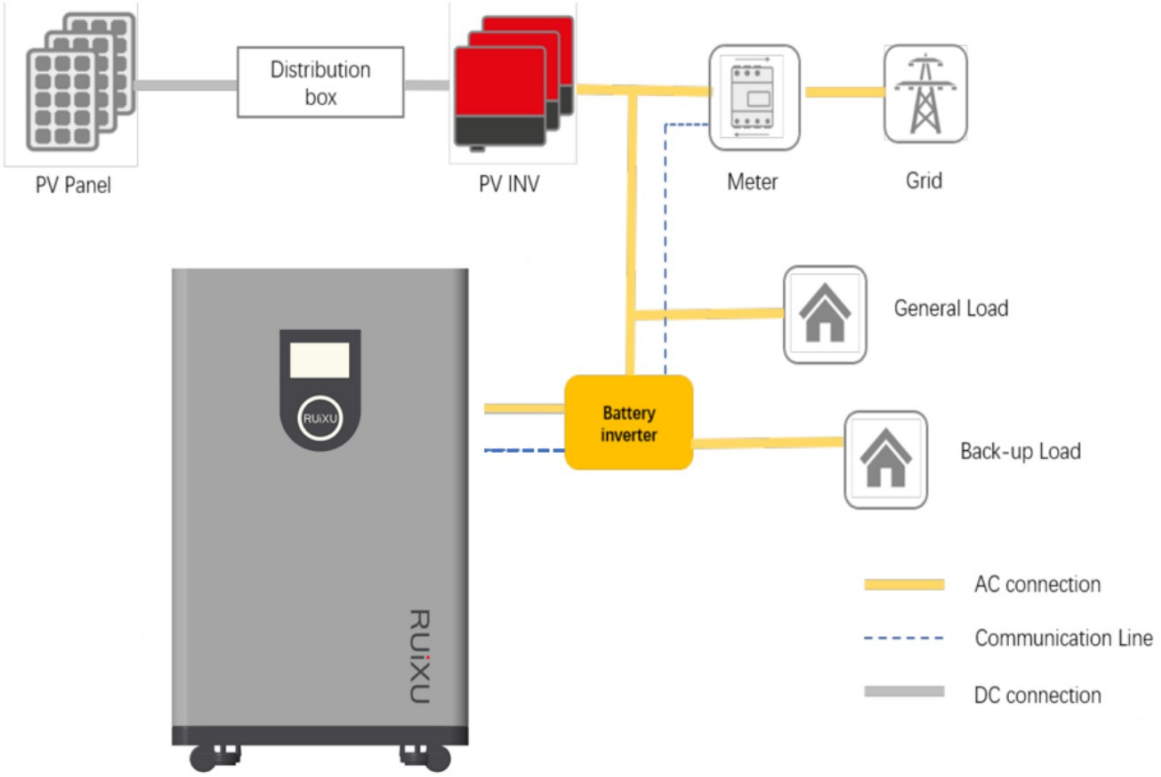
Warnings and precautions

- For the safe use and handling of the battery, please read the specifications, user manual and the warning signs on the surface of the battery box carefully before use. Improper use may cause overheating and damage to the battery. RUiXU Battery is not responsible for accidents caused by failure to follow the correct operating procedures.

3. Product introduction

3.1 Product profile

The RUiXU Lithi2-16 battery is designed for residential applications and works as a storage unit in the photovoltaic system. It is a 48V Li-ion battery storage system, with a built-in BMS. It can be operated in on-grid, backup and off-grid modes with compatible inverters. Below is the general schematic of an ac-coupled system.

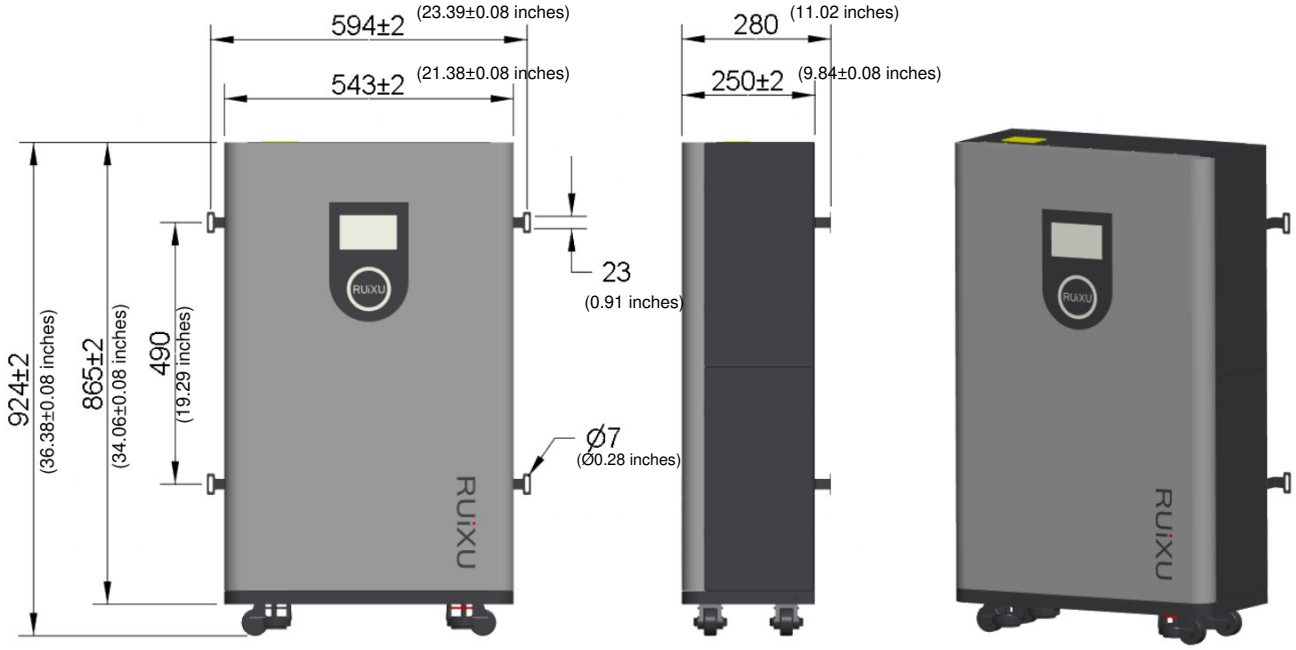


System diagram

CAUTION

The electrical connections in this diagram are for illustration only. Please follow the instructions in the manuals for the related devices and operate in accordance with locally applicable connection requirements, standards, and directives.

3.1.1 Dimension



Product appearance and dimensions(unit: mm)

3.1.2 Parameters

Made in China.

Items	RUiXU Lithi2-16
Rated voltage	51.2V
Max. voltage range	43.2~58.4V, Shipping voltage>51.2V
Charge voltage	58.4V
Low voltage cut-off	43.2V
Nominal energy	16KWh ,DOD:100%
Usable energy [1]	16KWh ,DOD:100%
Nominal capacity	314Ah
Dimension	924*543*250mm (36.38 × 21.38 × 9.84 inches)
Weight	~137kg (302.0lb)
Standard charge current	≤ 140A
Max. charge current	200A(17–35°C (62.6–95°F))
Standard discharge current	≤ 140A
Max. discharge current	200A (10–35°C (50–95°F))
Rated Over Current	220A@15 seconds

<table>
<tr><td>Protection Current</td><td colspan="4"></td></tr>
<tr><td>Input Short Current</td><td colspan="4">360A</td></tr>
<tr><td>Output Short Circuit Current & Duration</td><td colspan="4">2800A/10 milliseconds</td></tr>
<tr><td>Rated DC power</td><td colspan="4">7KW</td></tr>
<tr><td>Maximum continuous DC power</td><td colspan="4">10KW(20–35°C (68–95°F))</td></tr>
<tr><td>Communication</td><td colspan="4">RS485 /CAN</td></tr>
<tr><td>IP rating</td><td colspan="4">IP55</td></tr>
<tr><td>Maximum number of batteries in parallel</td><td colspan="4">32pcs</td></tr>
<tr><td rowspan="3">Max. Charge Current</td><td>Below 0°C (32°F)</td><td>10A</td><td>17–35°C (62.6–95°F)</td><td>200A</td></tr>
<tr><td>0–10°C (32–50°F)</td><td>50A</td><td>35–45°C (95–113°F)</td><td>140A</td></tr>
<tr><td>10–17°C (50–62.6°F)</td><td>100A</td><td>45–55°C (113–131°F)</td><td>50A</td></tr>
<tr><td rowspan="3">Max. Discharge Current</td><td>Below -10°C (14°F)</td><td>10A</td><td>35–45°C (95–113°F)</td><td>140A</td></tr>
<tr><td>-10–10°C (14–50°F)</td><td>50A</td><td>45–55°C (113–131°F)</td><td>50A</td></tr>
<tr><td>10–35°C (50–95°F)</td><td>200A</td><td>/</td><td>/</td></tr>
<tr><td rowspan="3">Storage temperature</td><td colspan="2">0°C (32°F)<T<30°C (86°F)</td><td colspan="2"><6 months</td></tr>
<tr><td colspan="2">-10°C (14°F)<T<45°C (113°F)</td><td colspan="2"><3 months</td></tr>
<tr><td colspan="2">Recommended environment</td><td colspan="2">15–35°C (59–95°F), 5~75%RH</td></tr>
</table>

Note: [1] Usable energy

Test conditions: 100% depth of discharge (DOD), with charging/discharging at a rate of 0.2C at 25°C (77°F). Actual usable energy at the AC output may vary depending on conditions such as inverter efficiency and temperature.

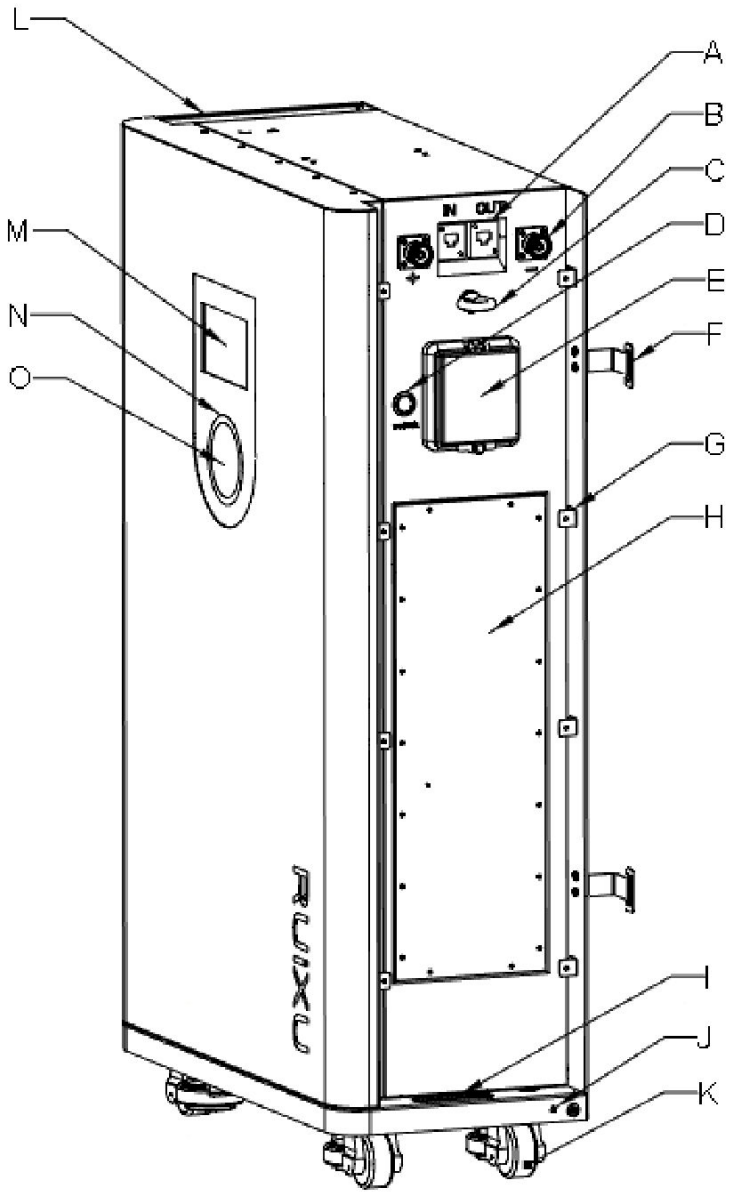
NOTICE

- The optimum operating temperature range is from 15°C (59°F) to 30°C (86°F). Frequent exposure to extreme temperatures may reduce the battery system's performance and cycle life.
- If the battery systems are connected in parallel, please use bus bars.
- Before connecting battery systems in parallel, ensure that their SOC levels are as consistent as possible.

3.2 Features

- The battery uses LiFePO4 chemistry for maximum safety and complies with the highest international safety and transport standards.
- The modular, flexible design supports connecting up to 32 batteries to expand the system's energy capacity.
- A built-in pre-charge circuit prevents inrush current when connecting to different inverters/chargers.
- Automatic dynamic addressing when multiple batteries are connected together.
- Rapid shutdown function for the North American market.
- Supports a maximum of 100% DOD in off-grid and backup applications.
- The built-in BMS provides warnings and protection against overdischarge, overcharge, overcurrent, short circuits and high/low temperatures.
- LiFePO4 cathode material and automatic balancing support a long cycle life.
- The product comes with a roller, which can be adjusted to a fixed mode or attached to the wall using accessories.
- The product comes with a 5-inch display that monitors battery status in real time.
- The product has 4 quickly detachable decorative panels on the side to protect the battery system and give the product a cleaner appearance.
- The product comes with 3 layers of protection to make the battery system even more secure.
- A built-in fire-protection device can also be added to the product.
- The product comes with self-locking quick-plug terminals, which can effectively prevent loose terminals.
- CAN/RS485 port for external communication and BMS firmware upgrades.
- The product is certified to ANSI/CAN/UL 9540A: 2025. A unit-level test report (Report No. CQES240900088201, dated September 29, 2024) is issued by SGS.

3.3 Component description



No.	Items	Usage description	Remark
A	Link IN / Link OUT	For internal and external communication	
B	Terminal	Used for communication between the battery and the inverter	
C	Hole for hoist	Used to lift the battery	
D	Power switch	Used to turn the battery on or off	
E	MCB	Used to protect the battery system	Micro Circuit Breaker
F	Battery accessories	Used to secure the battery	

G	Decorative panel fixing point	Used for fixing decorative plates	
H	Repair window	Used for inspection and maintenance of the BMS	
I	Hole for hoist	Used to lift the battery	
J	Grounding	Used to connect the battery to ground	
K	Roller	Used to move the battery	
L	Decorative panel	Used to protect the battery system and give the product a cleaner appearance.	Decorative panel(4pcs)
M	Display screen	Displays battery information	5-inch display
N	SOC indicator light	Displays the current battery level	20%/40%/60%/80%/100%
O	Status indicator light	Displays the current battery system status	

3.3.1 Link IN / Link OUT

Port	Pin No.	Definition	Remarks
Link OUT	1	RS485-B1	1. Used to connect with external devices to establish communication. 2. Used to connect to the upper battery system's Link OUT port.
	2	RS485-A1	
	3	SGND	
	4	CAN - H	
	5	CAN - L	
	6	/	
	7	RS485-A1	
	8	RS485-B1	
Link IN	1	RS485-B2	1. Used to connect to the lower battery system's Link OUT port. 2. Pins 3 and 6 are the emergency stop button connection points.
	2	RS485-A2	
	3	Emergency Power OFF	
	4	CAN - H	
	5	CAN - L	
	6	Emergency Power Off +	

	7	RS485-A2	
	8	RS485-B2	

NOTICE

The BMS contains a 120Ω CANBUS resistor and automatically connects or disconnects it as needed. It is not necessary to connect an additional 120Ω resistor when connecting the CANBUS.

3.3.2 Inverter brand

Supported inverter brands

ID	CANBUS Connection	RS485 Connection
1	Victron/SMA/Studer Innotec/Sofar	Voltronic/RCT/ MPP/Alpha Outback
2	RUiXU/Sol-Ark/Solis/Goodwe/Deye/Growatt/SAJ / Megarevo/INVT/Sermatec/ TBB/MUST/Sunsynk/PYLON	SRNE
3	Schneider	PYLON
4	LUXPOWER	/
5	/	Growatt*
6	Reserve-1	Reserve-1
7	Reserve-2	Reserve-2
...	...	...
10	Reserve-5	Reserve-5

Note: Please refer to Appendix I for the communication connection method.

*Please contact the supplier for technical support before using the ID5 Growatt.

3.3.3 Power switch

Power on

When the battery system is in a hibernation state, hold down the switch for 3 seconds to start the battery system.

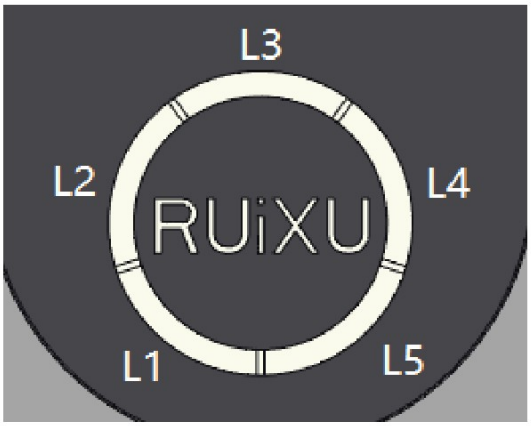
Power off

When the battery system is running, hold down the switch for 3 seconds to shut down the battery system.

Battery system reset

When the battery system is on, hold down the button for 10 seconds to reset the battery system.

3.3.4 Indicator light



SOC indicator light										
Mode	Charge					Discharging				
Indicator light	L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
0~20%	Flash2	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
20~40%	ON	Flash2	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
40~60%	ON	ON	Flash2	OFF	OFF	ON	ON	ON	OFF	OFF
60~80%	ON	ON	ON	Flash2	OFF	ON	ON	ON	ON	OFF
80~100%	ON	ON	ON	ON	Flash2	ON	ON	ON	ON	ON
Sleep mode	OFF					OFF				

Status indicator light								
Mode	Event	Run indicator light		Power indicator light				Description
		●	●	●	●	●	●	
Shutdown	Dormancy	OFF	OFF	OFF	OFF	OFF	OFF	ALL OFF
Standby	Normal	FLASH1	OFF	See section 3.3.4				Standby
	Warning	OFF	OFF					/
Charge	Normal	ON	OFF	See section 3.3.4 (Highest SOC LED: FLASH2)				/
	Warning	OFF	OFF					/
	Full charge protection	ON	OFF	See section 3.3.4				/
	overcurrent protection	FLASH1	OFF	See section 3.3.4				/
Discharge	Normal	FLASH3	OFF	See section 3.3.4				/
	Warning	OFF	OFF	See section 3.3.4				/
	low-voltage protection	OFF	FLASH3	OFF	OFF	OFF	OFF	Stop discharging
	overcurrent protection	OFF	ON	OFF	OFF	OFF	OFF	Stop discharging
Temperature	Protection	OFF	ON	OFF	OFF	OFF	OFF	Stop charging/discharging
Failure	Protection	OFF	ON	OFF	OFF	OFF	OFF	Stop charging/discharging
	Emergency Power Off	OFF	FLASH2	OFF				/

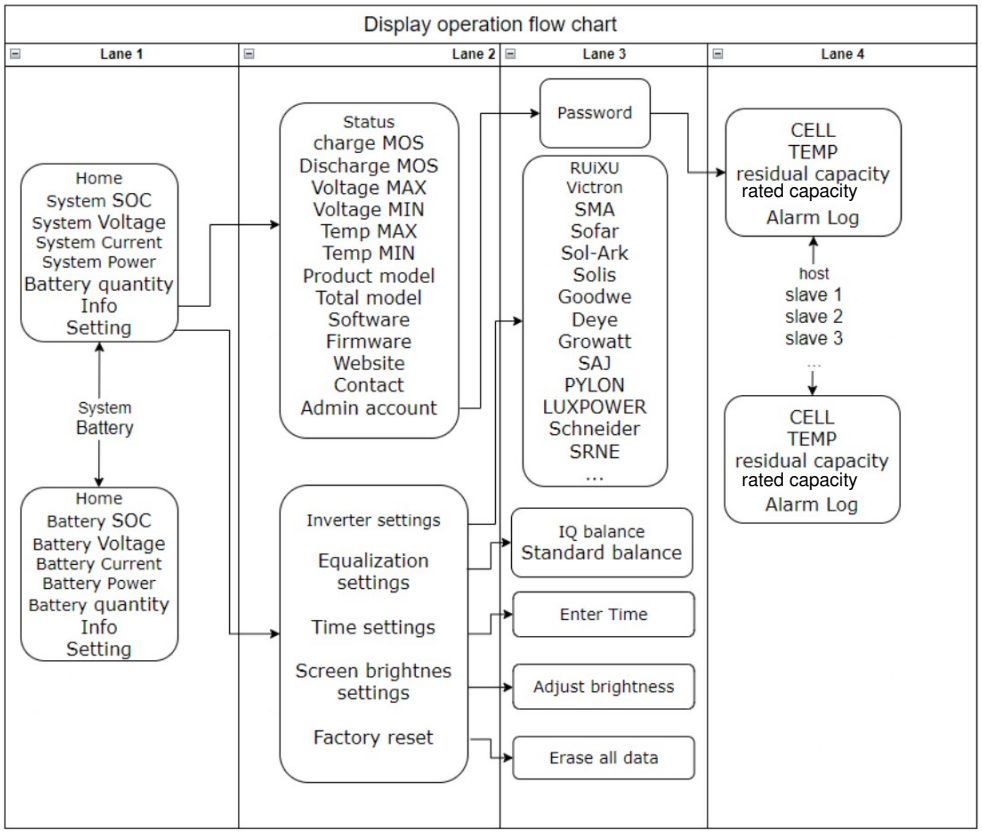
Note: The product logo serves as the run indicator light.

3.3.5 LED flashing description

FLASH Type	ON	OFF
FLASH1	0.25 seconds	3.75 seconds
FLASH2	0.5 seconds	0.5 seconds
FLASH3	0.5 seconds	1.5 seconds

3.3.6 Display screen

Abbreviation	Definition
VOL	Voltage of battery or system
CUR	Electric current of battery or system
Battery QTY	Quantity of online batteries in the system
Info	Detailed battery system information
Charge MOS / Discharge MOS	Charge MOSFET in the BMS / Discharge MOSFET in the BMS
Temp MAX / Temp MIN	Maximum temperature / Minimum temperature
Total dischar energy	Total discharge energy of the battery system
Equalization	Battery system voltage balancing mode





Main screen description

- You can click "Battery/System" in the lower left corner to view the system or host parameters.
- The left side of the display shows the current SOC. The right side shows real-time voltage, current and power, as well as the number of batteries currently online in the system.
- Click "Info" below to view basic battery parameters.
- Click "Setting" below to configure the battery and display.





Details Page description

- On the first page, you can view the current status of the battery system, the status of the charge and discharge MOS transistors, the highest voltage, the lowest voltage, and the highest and lowest temperatures of the battery.
- On the second page, you can view information such as battery model, official website and contact information.



Settings interface details

- On the Settings screen, you can set the inverter brand, balance mode, time, and screen brightness.
- Under "Inverter settings," you can select the current inverter brand. For details about the inverter brands compatible with the battery system, see Section 3.3.2 or Appendix III.

3.4 Protection

⚠ CAUTION

Please recharge the battery using solar power, the grid, a generator or another energy source within 24 hours if the battery is over-discharged.

⚠ NOTICE

Manually short-circuiting the battery or connecting it with reversed polarity will void the warranty.

Items	Description	Remark
Charge End Cell/PACK high-voltage	The BMS will stop charging if any cell voltage or the pack voltage reaches the protection value. Protection will be released automatically only when both the pack and cell voltages return to the release voltage range or there is sufficient discharge current.	
Discharge End Cell/PACK low-voltage	The BMS will stop discharging if any cell voltage or the pack voltage is below the protection value. Protection will be released only when all cell voltages return to the release voltage range or there is sufficient charging current.	Automatic recovery is possible. Please charge promptly; otherwise, the battery may enter low-power mode and become overdischarged.
High temperature	The BMS will stop charging or discharging or both if any cell/environment/MOS temperature is beyond the range.	Automatic recovery
Low temperature	The BMS will stop charging or discharging or both if any cell/environment/MOS temperature is under the range.	Automatic recovery
Charge over-current	The BMS will stop charging when the charging current is higher than the protection value. Protection will be released after the system's delay time has elapsed.	Automatic recovery. If the system is locked after three consecutive protection events, manual intervention is required.

Discharge over-current/ Overload	The BMS will stop discharging when the discharging current is higher than the protection value. Protection will be released after the system's delay time has elapsed.	Automatic recovery. If the system is locked after three consecutive protection events, manual intervention is required.
Short-circuit/Reversed	Short-circuit or reversed-polarity protection has been triggered.	Charge to release Manual reset
Temperature, Voltage, Current sensor failure	The system enters failure mode. Manual intervention is required; charging and discharging are disabled.	Manual intervention
Dormancy mode	The system enters dormancy mode when the specified conditions are met.	Recoverable

3.5 Emergency Power Off

NOTICE

For details about the installation position and installation specifications of the emergency stop button, see local regulations. For details on how to check whether the emergency power off is enabled on the battery pack, see Section 3.3.4. After the emergency stop function is triggered, restart or reset each battery.

The emergency stop function is triggered by a short circuit between pins 3 and 6 of Link-IN.
When wiring the emergency stop button, connect the normally open contact.
If the system is composed of multiple devices, connect the emergency stop button to the battery furthest away from the inverter.



4 Pre-installation preparation

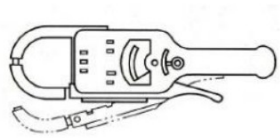
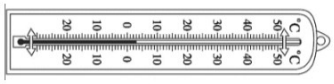
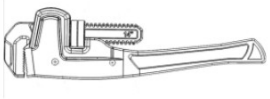
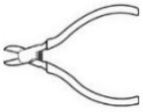
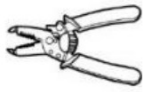
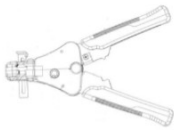
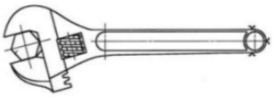
The system must be installed by qualified persons. Throughout the installation process, please strictly follow local safety regulations and related operating procedures.

4.1 Installation environment

The operating environment shall meet the following requirements:

Category	Description
Working temperature	-10–50°C (14–122°F)(maximum operating range) 15–30°C (59–86°F) (optimal temperature)
Relative humidity	5%~90%, No condensation
Altitude	<3000 m (9842.52 ft)
Safety requirement	• Keep the battery out of the reach of children and pets. • Do not place the battery near heat sources or flammable materials. • Do not place the battery in a closed place where the ventilation is not available. • Do not drop, deform, strike, cut or pierce the battery with a sharp object. • Do not put heavy objects on the battery. • Do not disassemble the battery without the manufacturer's permission. • Do not allow conductive dust, water or other liquids to contact the battery. • Follow the emergency procedures if there is water ingress or electrolyte or gas leakage. • Contact your supplier within 24 hours if any product failure happens. • Suitable for Use in Residential Non-Habitable Spaces.

4.2 Tool and instrument preparation

Tools and instruments		
Electric forklift	Manual forklift	Multimeter
		
Clamp meters	Thermometer (observe the installation environment)	Crimping pliers
		
Diagonal pliers	Needle nose pliers	Wire stripper
		
Antistatic gloves	Insulated protective Shoes	Wrench
		
Insulating tape	Screwdriver (slot, cross)	cable ties
		

DANGER

• Use insulated tools to avoid electric shock.

NOTICE

• The tools shown are for reference only. Please refer to the actual tools.

• Because site conditions vary, this list may not include every tool required. The installer and user should prepare the tools needed for the actual site conditions.

4.3 Dismantling of packaging

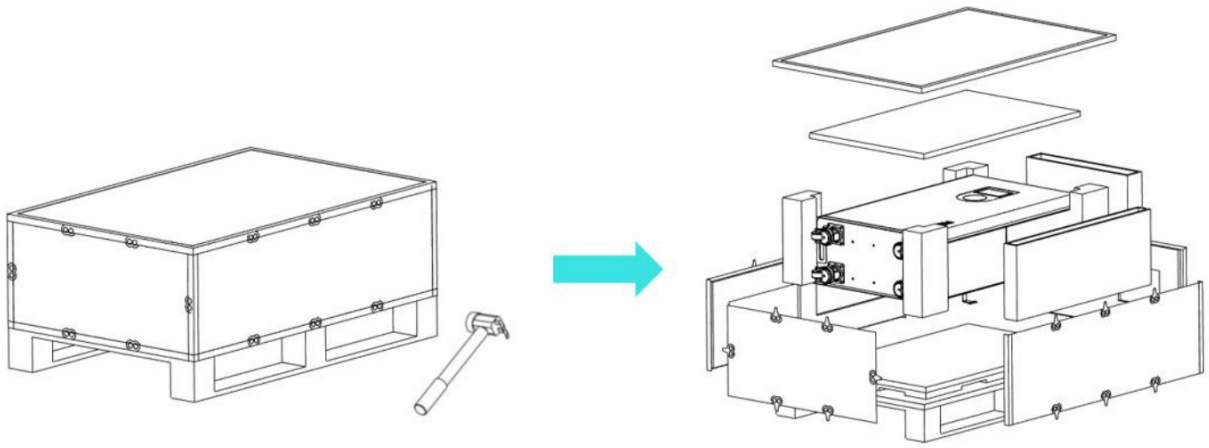
Unpacking precautions

- When you receive the equipment, load and unload it in accordance with the specified requirements and protect it from sun and rain.
- Before unpacking the batteries, check that the packaging is intact. Do not use batteries with damaged packaging. Notify the transporter and manufacturer immediately if damage is found.
- Please check and confirm the goods (such as quantity, appearance, etc.) according to the "scope of delivery " before unpacking.
- Handle the equipment gently during unpacking to protect its surface coating.
- ≥ 4 persons are required to carry the battery module.

Step 1:Use a forklift to transport the product to the designated location.

Step 2:Before unpacking the unit's outer packaging, check the outer packaging for any packaging anomalies or equipment model discrepancies.

Step 3:Use the hammer to open the crate and remove the battery.



4.4 Checking components

4.4.1 Scope of delivery

NOTICE

- Keep the unused cable pins NULL to avoid affecting the closed loop communication.
- Some inverters may require a ground connection for the communication cable. Please follow the inverter manufacturer's instructions.
- If batteries are connected in parallel, please use bus bars.
- For details of the inverter communication pin definitions, please refer to Appendix I.

Standard Accessories



Battery *1 pc



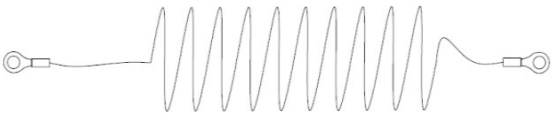
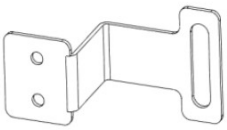
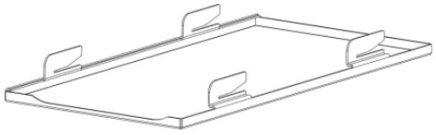
Manual *1 pc

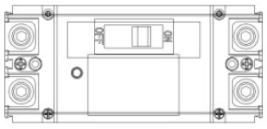


Warranty document *1 pc



Shipment report*1 pc

Type	Material details	Qty.	Optional length
Components	A: Battery grounding cable 	1 pc	/
	B:Accessories for holding batteries in place 	4pcs	/
	C:Decorative panel 	4pcs	/

	D:Battery to battery communication cable(1000 mm (39.37 inches)) 	1 pc	/
	E: Single device / orange / positive pole 	1 pc	1.4 m (4.59 ft) φ10 mm (0.39 inches)
	F:Single device / black / negative pole 	1 pc	1.4 m (4.59 ft) φ10 mm (0.39 inches)
	For Australia only 	1 pc	2-pole MCCB
	Hex screw(M6×12 (0.24×0.47 inches)) / 1PCS / Components A Expansion screw(M6×50 (0.24×1.97 inches)) / 5PCS / Components B pan-head screw(M4×10 (0.16×0.39 inches)) / 10PCS / Components B Hex screw(M8×12 (0.31×0.47 inches)) / 3PCS / External main cable A/B	/	/

4.4.2 External cable kits

Cables used to connect to an inverter or junction box are supplied in external cable kits and are not included in the battery crate. Customers need to purchase these kits separately. Details are provided below.

Type	Material details	Optional
External main cable	A: Single device / orange / positive pole 	2 m (6.56 ft) φ10 mm (0.39 inches)
	B:Single device / black / negative pole 	2 m (6.56 ft) φ10 mm (0.39 inches)

5 Installation

Qualified person

5.1 Matters requiring attention

CAUTION

Injuries may result if the product is lifted incorrectly or dropped while being transported or mounted. Wear suitable personal protective equipment for all work on the product. Ensure that no lines are laid in the wall which could be damaged when drilling holes.

Before installation, check again that the following conditions and equipment meet the requirements:

- Check if there's enough space for installation, and if the load-bearing capacity of the installation site meets the weight requirements.
- Check whether the power cable pairs used meet the maximum current requirement for operation.
- Check whether the overall layout of power supply equipment and batteries at the construction site is reasonable.
- Check whether the installer is wearing an anti-static wristband.
- Check that there are at least two people at the construction site to perform installation work.
- Check whether there are potential risks at the installation site, e.g., flooding, sun exposure, corrosion and salt spray.
- This product is for both indoor and outdoor use. If installed outdoors, it is recommended to add a rain shelter and a sunshade.

5.2 Battery mounting

WARNING

• During the lifting process, ensure that the angle between the two cables is not greater than 90°, as shown in the figure below.

• Before installing the battery, make sure that the power supply switch is turned OFF.

• Do not place installation tools, metal parts, or sundries on the battery during installation. After installation, clean up the battery and its surroundings in a timely manner.

• Do not remove the protective parts of the battery terminals, such as the protective cover or waterproof cap, when handling the battery.

• Do not move or work under the forklift arm.

• If you need to move devices manually, ensure that at least four people move the devices together.

NOTICE

• Leave a gap of 30 cm (11.81 inches) above the battery for cable routing.

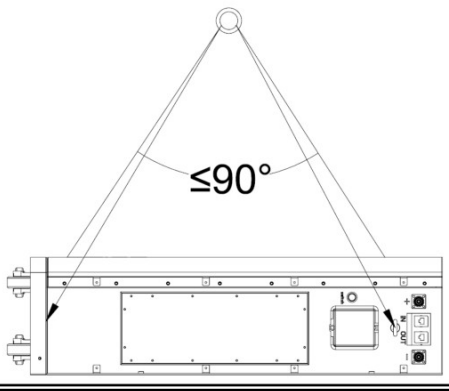
• At least 150 mm (5.91 inches) of spacing should be reserved on both sides and the front of the battery pack to isolate heat sources and retain heat dissipation air ducts.

• Provide a fixing point above the battery to secure the cable harness and prevent damage from long-term stress.

Operational procedure:

Step 1: According to the design requirements, determine the battery's installation position on flat ground and mark it with a line.

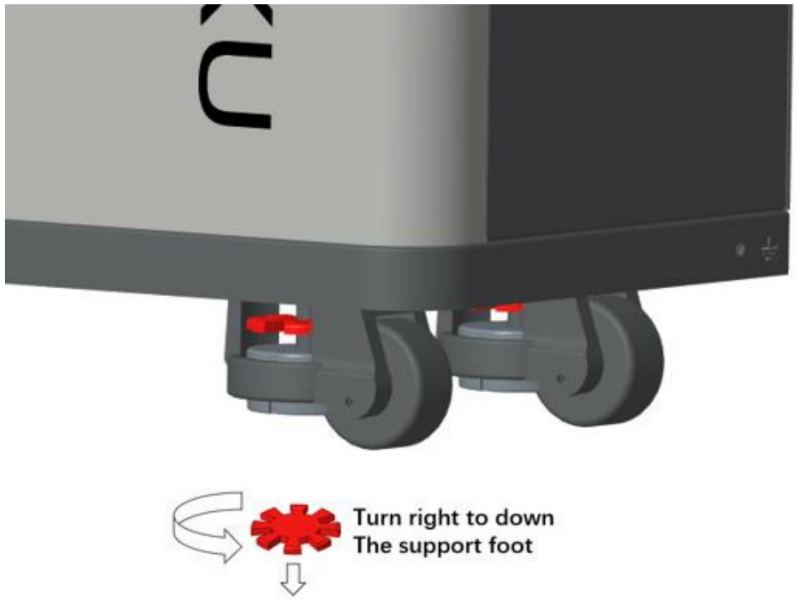
Step 2:Find the hoisting holes, use forklifts, cranes and other transportation tools to transport the battery cabinet to the designated location, and install it at the marked location.



Step 3:After placing the battery in the designated position, use battery accessories to secure it to the wall and adjust the bottom wheel to fixed mode.(The fixing screws should be made of carbon steel)



Battery fixation diagram(Installation torque: 9 N (2.02 lbf))

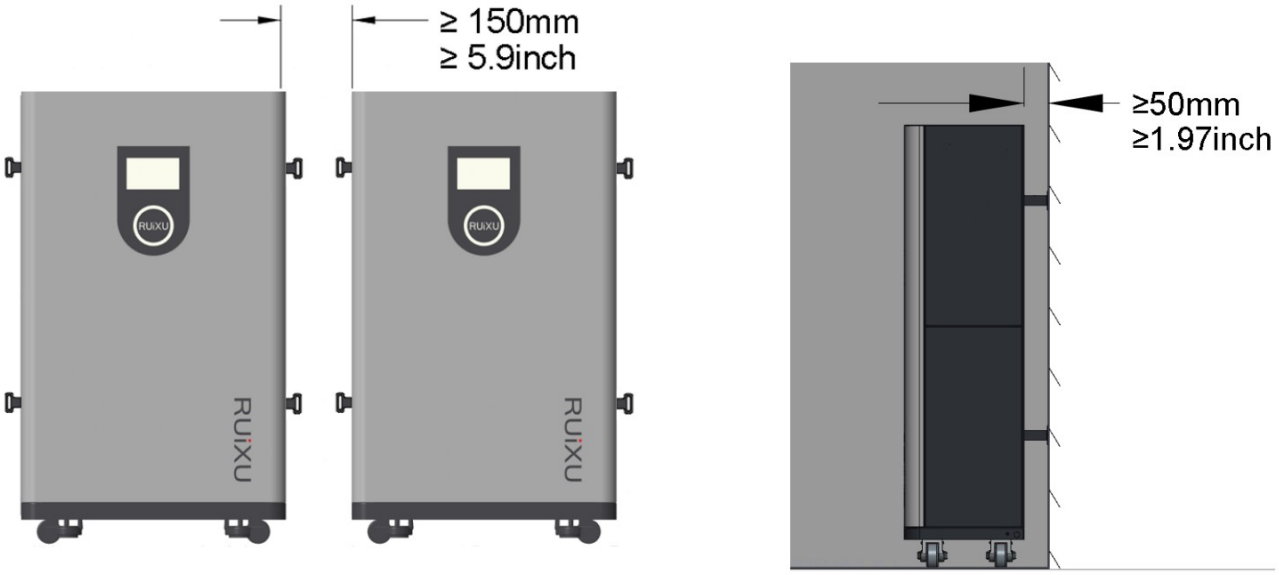


wheel fixing method

Installation of multiple battery systems:

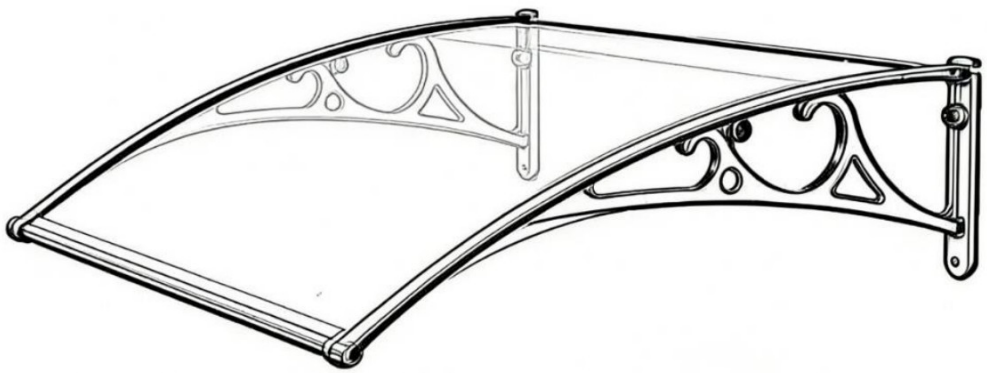
When multiple battery systems are installed in parallel, the spacing between the battery systems must be at least 150 mm (5.91 inches).

Use battery accessories to fix the battery to the wall, or use other items to fix the battery, and keep a gap of no less than 50 mm (1.97 inches) from the wall.



Outdoor installation

When installing outdoors, it is strongly recommended to add additional protective measures such as a sunshade above the battery system to prevent direct sunlight or rain from contacting the battery system. This can effectively alleviate the aging of the battery system caused by environmental factors and increase the product's service life.



6. Cable connection and commissioning

Qualified person

DANGER

• Pay attention to the positive and negative terminals during installation. Connecting the positive and negative terminals directly to each other is strictly prohibited, as this will short-circuit the battery.

• Wear insulated gloves and use insulated tools to avoid electric shock injury or short circuit failure.

• Do not smoke or use an open flame near the battery.

• During the installation or removal of the wiring harness, insulating gloves must be used to prevent contact with live areas.

NOTICE

• The colors of the cables involved in all the electrical connection schematics in this section are for reference only, and the cables should be selected in accordance with local standards.

• If you are making cables yourself, please follow the manufacturer's requirements.

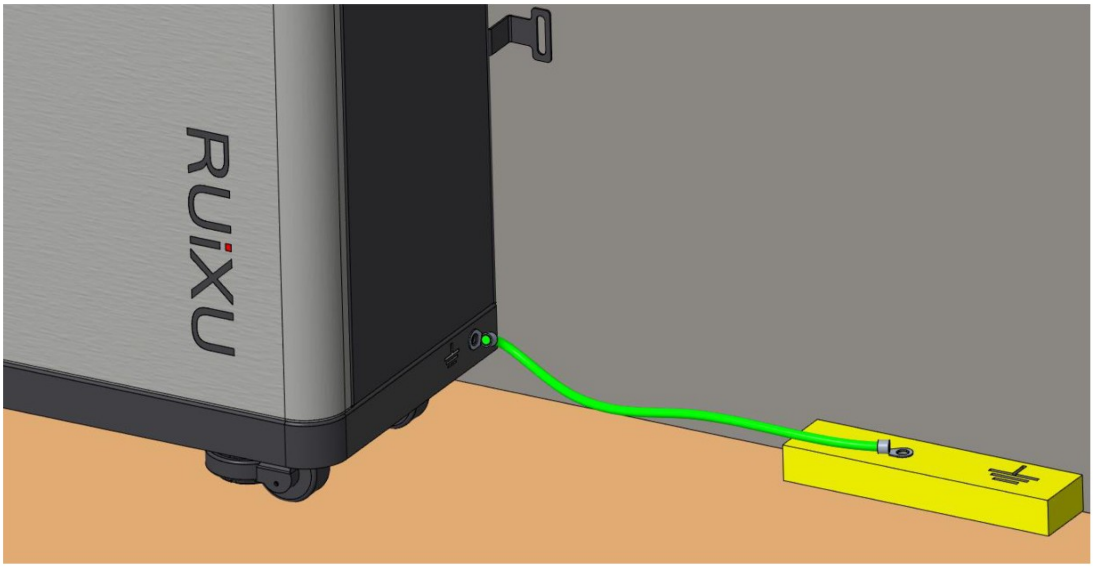
6.1 Cable connection

Step 1: Prepare the battery

- Ensure that the battery is in OFF mode, and confirm that the installation is secure and stable.
- Check that the quantities and specifications of the cable kit accessories match the Scope of delivery section.

Step 2:Grounding cable connection

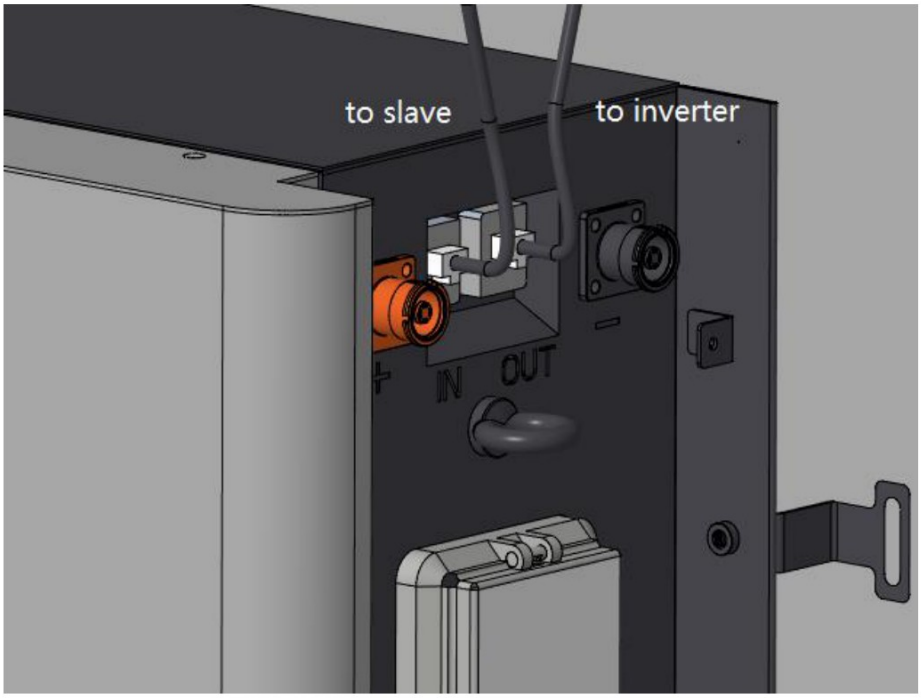
- Take the ground cable and corresponding screw out of the fitting.
- Ground the battery cover using a screwdriver and ground cable. (Installation torque: 9 N (2.02 lbf))



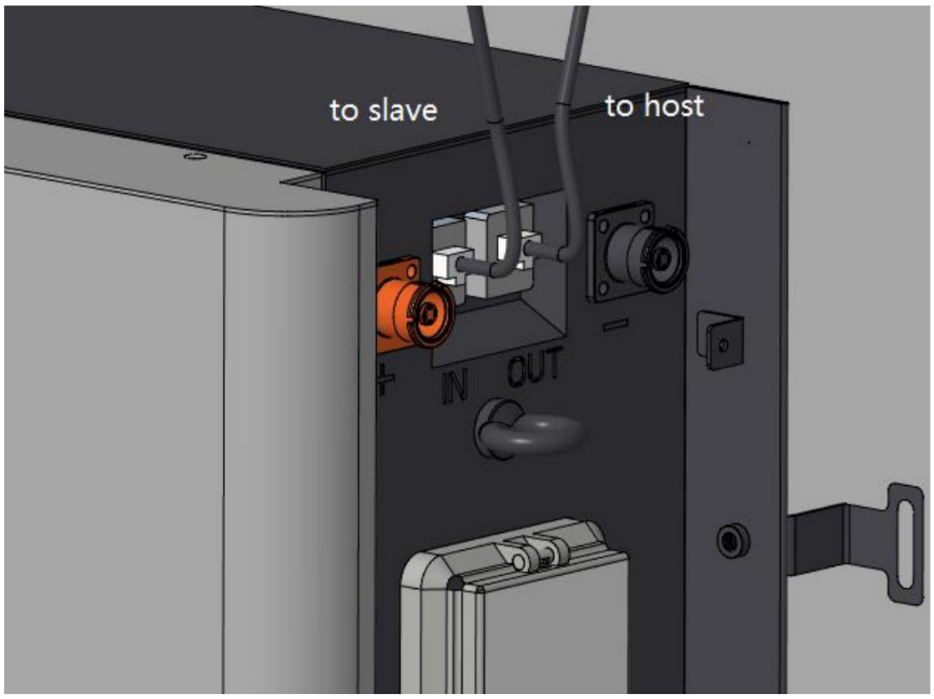
Step 3:Communication cable connection

If the system is used in parallel, connect the communication cable.

- Take out the battery-to-battery communication cable.
- Confirm the location of the master battery. Insert the RJ45 plug into its Link IN port and connect the other end to the next battery's Link Out port. Connect all batteries in a daisy chain.



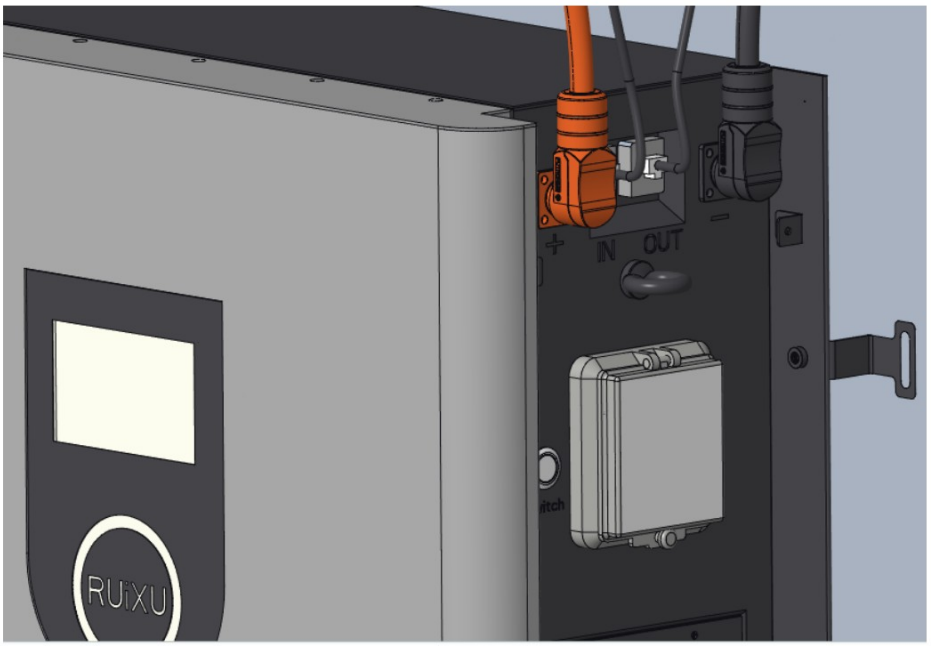
Host connection mode



Slave connection mode

Step 4:DC power cable connection

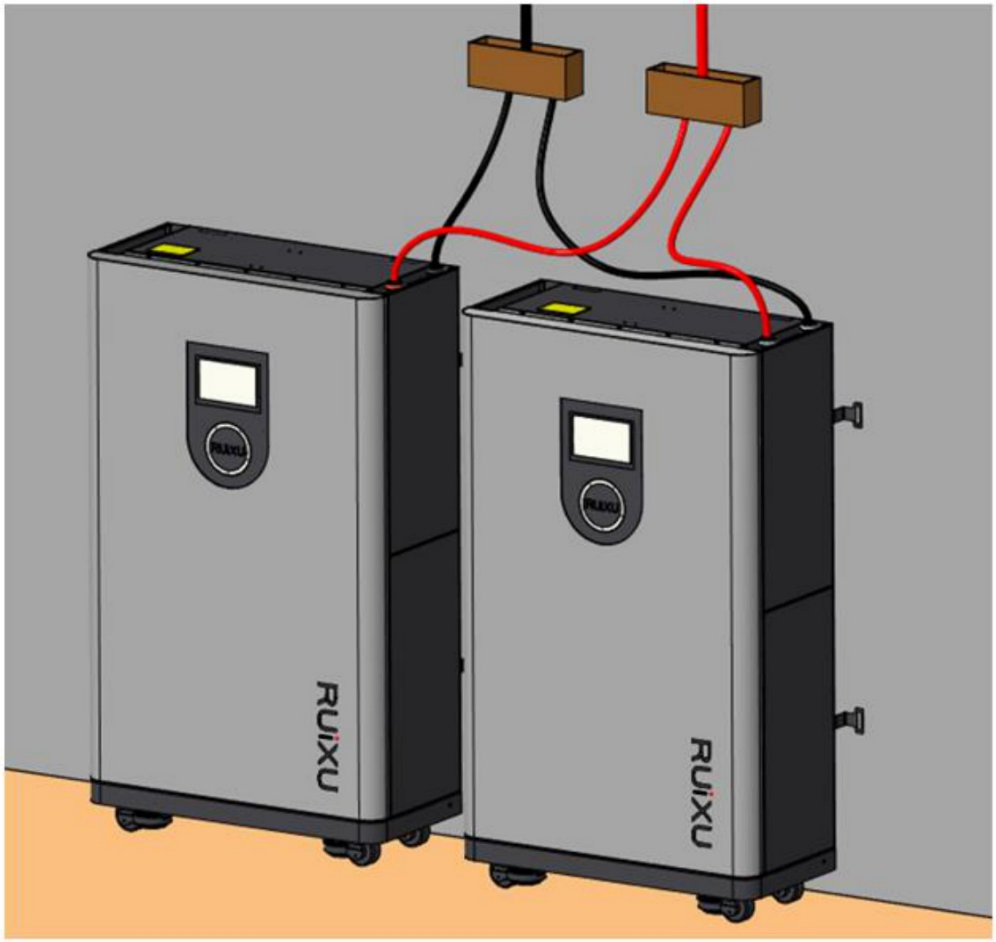
- Take out the battery-to-battery power cable.
- Insert the Plug into the power socket until you hear the snapping sound.



Power line connection

If batteries are connected in parallel, please use bus bars. Suggestions for parallel busbars are as follows.

- The bus bar's carrying capacity must meet the inverter's peak power requirements. The conductor must resist oxidation and corrosion, and the bus bar must have insulating protection.
- The inverter's connection point on the bus bar must be the same distance from each connected battery's connection point.
- The bus bar has an M8 (0.31-inch nominal diameter) fixing hole and is secured with screws that resist loosening, such as flange screws or screws with a combination of spring and flat washers.



NOTICE

• Before connecting battery systems in parallel, ensure that their SOC levels are as consistent as possible.

Step 5: Connecting to the inverter

DANGER

• During the installation or removal of the wiring harness, insulating gloves must be used to prevent contact with live areas.

• MCCB must use 2-pole isolation (positive and negative wire isolation).

• Before connecting the wiring, confirm that the inverter's AC and PV inputs are disconnected and that the inverter/charger's DC/signal switch is in the OFF position.

CAUTION

• The maximum permissible current of each power cable and terminal is 240A. The continuous allowable current is 200A.

• Please use the appropriate number of power cable pairs for the site configuration and local connection requirements, standards, and directives.

NOTICE

• The communication cable between the inverter/charger and the battery must be less than 15 m (49.21 ft) long.

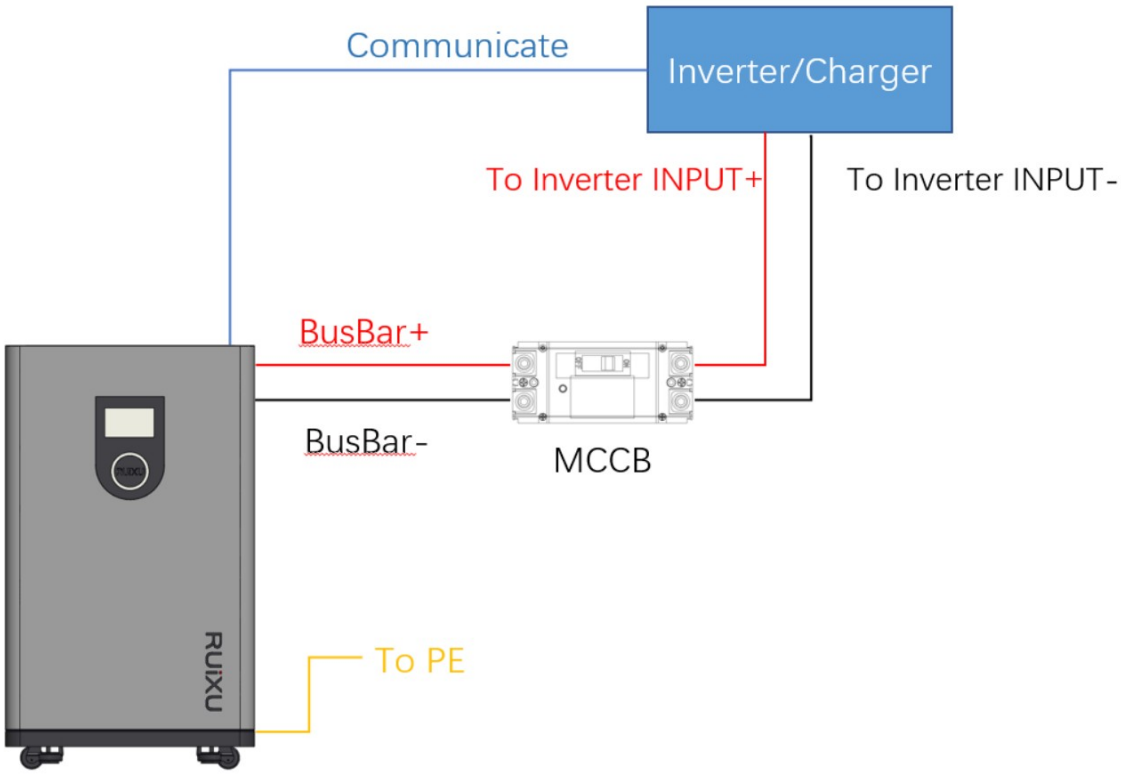
• The recommended power cable length between the inverter/charger and the battery is less than 10 m (32.81 ft).

• When the battery is used in parallel, use a bus bar to connect the battery to the inverter.

• Please refer to Appendix I for the communication connection method

• Connect the master battery's Link Out port to the inverter's CAN or RS485 communication port using the inverter communication cable.

• Choose the appropriate power cable pair and connect battery OUTPUT (+) to inverter battery INPUT (+) and battery OUTPUT (-) to inverter battery INPUT (-). It should be noted that between the battery and the inverter, a 2-pole circuit breaker from the accessories is required for connection.



6.2 Commissioning

CAUTION

If your system is a backup or off-grid system, make sure its configuration can accommodate the worst-case conditions to prevent the battery from being over-discharged.

Step 1:Turn on the breaker in the battery, then turn on the inverter/charger isolator.

Step 2:Turn on the 2-pole circuit breaker between the battery and the inverter.

Step 3:Hold down the switch button of the battery for 3 seconds to start the battery.

Step 4:Set the corresponding inverter brand on the battery display.

Step 5:Complete the settings on the inverter/charger or any other control devices. If everything is correct, the system is ready for use.

6.3 Switching off the battery

Step 1:Turn off the inverter.

Step 2:Hold down the switch button on the battery for 3 seconds to turn off the battery.

Step 3:Turn off the 2-pole circuit breaker between the battery and the inverter.

Step 4:Turn off the breaker in the battery.

6.4. Troubleshooting

Items	Solution	Measure
Unable to start	Switch on the battery and hold RESET for 10 seconds to check whether the battery starts. 2. Charge the battery using a charger or inverter that provides 54~57.6V, and check whether the battery starts.	If the abnormal condition persists after completing the steps above, please contact your supplier. If any other condition not listed in this table occurs, turn off the faulty battery and contact your supplier.
Unable to charge	Check whether the cable connection between the battery and the inverter/charger is correct. 2. Check whether the inverter/charger setting is correct. 3. Check whether the battery is in charge protection mode. If so, try to discharge the battery.	
Unable to discharge	Check whether the cable connection between the battery and the inverter/charger is correct 2. Check whether a short circuit, reversed connection, pre-charge failure or other fault occurs when connecting the battery to the inverter. 3. Check whether the battery is in discharge protection mode. If so, try to charge the battery.	
High/Low temperature	Stop the battery system for a while. Check whether the temperature at the installation location meets the requirements. 2. Avoid continuous full charging and discharging	
High current	Check that the configuration and parameter settings on the inverter/charger are correct.	
ALM always on	Turn off all the batteries, and remove the faulty battery from the system.	
Communication failure	Check that the communication cable is the correct type and is securely connected. 2. Check that the inverter's protocol settings are correct. 3. Check both battery and inverter are working properly.	

NOTICE

Please restart the system after a software upgrade.

6.5. Fuse replacement

Fuse parameters:

70VDC ≤ Voltage;

250A ≤ Current ≤ 300A;

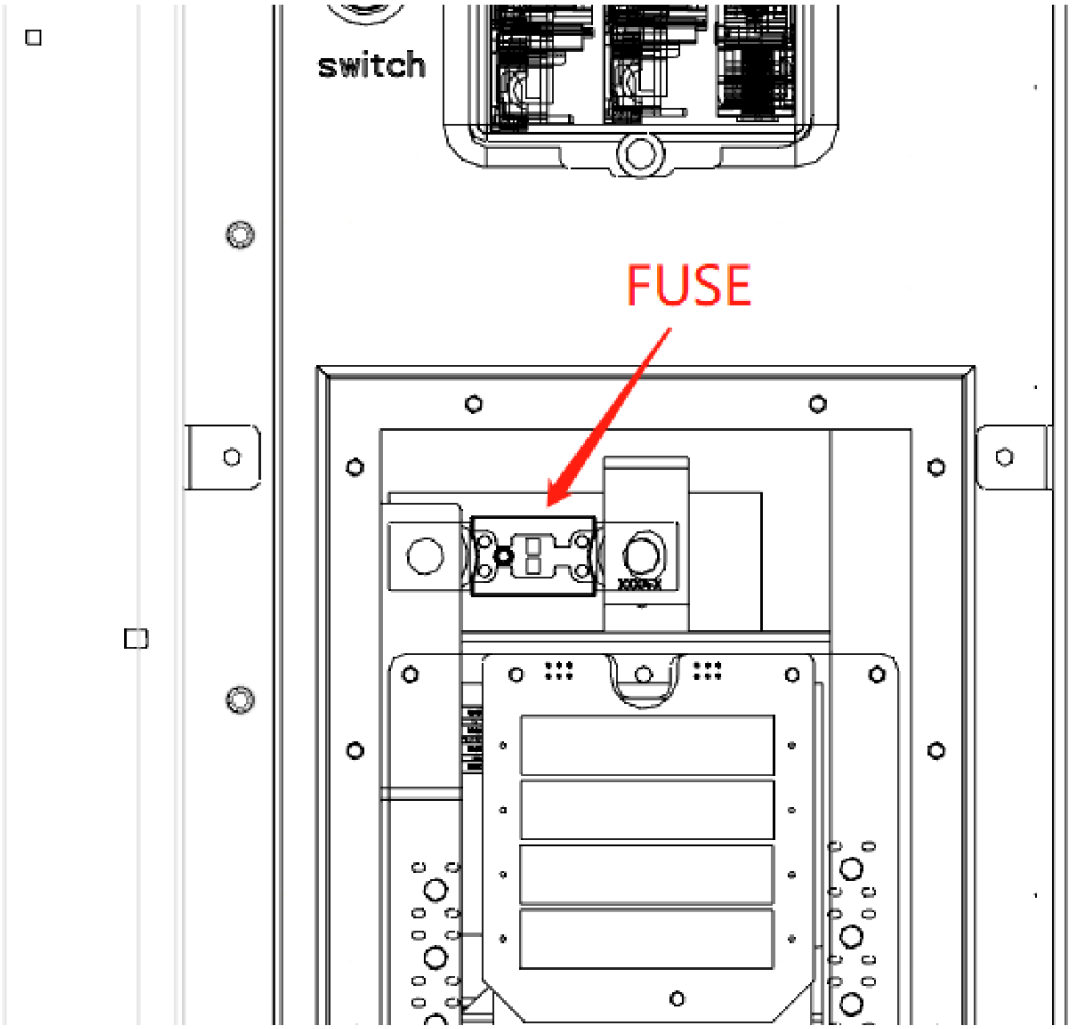
When the current is greater than 3000A, the fuse's operating time is less than or equal to 500 microseconds.

Replacement steps:

Step 1:Open the battery system repair window.

Step 2:Remove the old fuse.

Step 3:Install new fuses.



7. Transport and storage

- Do not violently shake, strike or squeeze the battery, and protect it from sun and rain during transportation.
- Handle the battery gently and prevent it from falling, rolling or being subjected to heavy pressure during loading and unloading.
- The battery should be placed in a dry, clean, dark, and well-ventilated indoor environment for long-term storage, and the recommended storage temperature range is 15–30°C (59–86°F).
- The storage location must be free of harmful gases, flammable or explosive products, and corrosive chemicals.
- The batteries should be stored and transported at approximately 50% SOC. Do not store them above 80% SOC for extended periods.
- Do not bump or stack the batteries. Keep them upright or face up.
- No items are allowed to be placed above the battery.

8. Maintenance

⚠ CAUTION

The battery system should not be left idle continuously for 12 months or more; otherwise, it will cause irreversible capacity decline of the battery system.

- The battery system should be checked at least once a month to see if the voltage and temperature of the battery cells are normal. Review historical data to check whether a critical fault has occurred. This information can be viewed on the battery's built-in display or by connecting to the host computer.
- It is recommended to perform a charge and discharge cycle at 100% DOD on the battery every three months.
- If the battery pack is not used for a long time, it needs to be charged once every six months to ensure that the battery power is between 50% and 60%.

9. Disposal of the battery

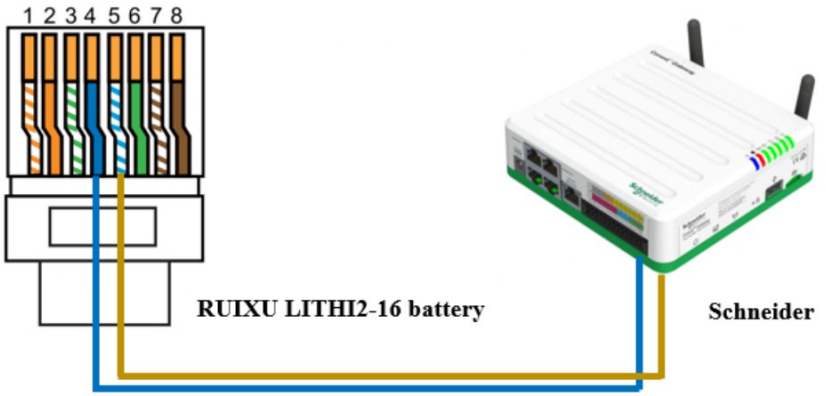
Disposal of the battery must comply with locally applicable regulations for electronic waste and used batteries. Please review your local battery recycling or management regulations, or contact RUiXU for more information.

Appendix I

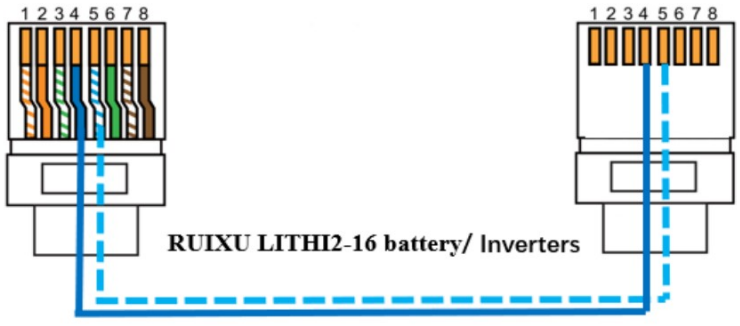
NOTICE

• The communication connection method is for reference only. If the connection definitions differ from those specified by the inverter manufacturer, follow the inverter manufacturer's connection instructions.

• For the connection methods of some inverter brands, refer to Appendix II.



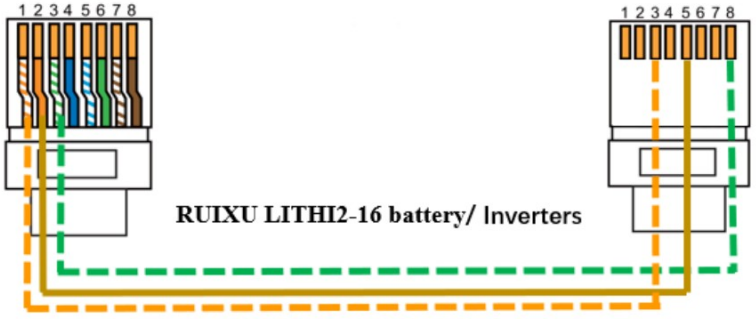
Battery Link IN port	Conext Gateway	Recommended cable
Pin4	Pin14	customized
Pin5	Pin12	
Pin6 (optional)	Pin10 (optional)	



Definition	Battery Link IN port	Inverter communication	Recommended cable
CAN H	Pin4	Pin4	Version-I(CAN)
CAN L	Pin5	Pin5	



Definition	Battery Link IN port	Inveter communication	Recommended cable
CAN H	Pin4	Pin7	Version-II (CAN)
CAN L	Pin5	Pin8	
GND	Pin6	Pin3	



Definition	Battery Link IN port	Inverter communication	Recommended cable
RS485-B	Pin1	Pin3	Version-III (RS485)
RS485-A	Pin2	Pin5	
GND	Pin3	Pin8	

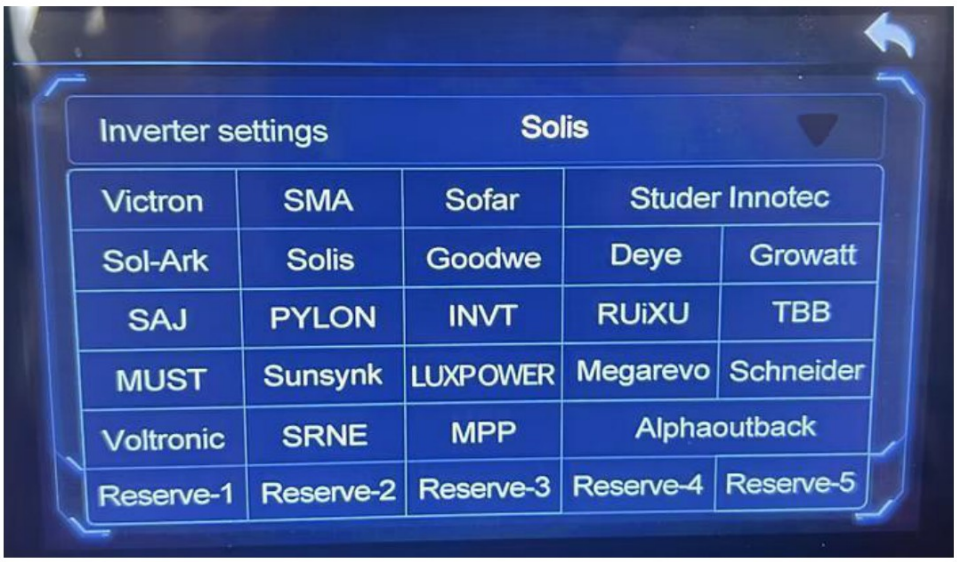
Appendix II

ID	Inverter brand	Recommended cable
1	Sol-Ark/Solis/ Goodwe/ Deye/ Megarevo/ LUXPOWER/	Version-I(CAN)
2	Victron	Version-II(CAN)
3	Voltronic/ MPP	Version-III (RS485)
4	Schneider	Appendix I
5	SRNE	Ethernet cable

Appendix III

1. Battery Selection

On the master battery display, click 'Setting', then select the corresponding inverter brand in 'Inverter settings'.



2. Compatible UL 1741 Compliant Inverters Models and Settings

Inverter Brand	Applicable Models	Battery Settings	Inverter Settings
Sol-Ark	5K-2P-N, 8K-2P-N, 12K-2P-N, Limitless 15K-2P-LV, Limitless 18K-2P-LV	Sol-Ark	BMS Lithium Batt = 00; see Appendix III, Section 3 for the remaining parameters.
Deye	SUN-5K-SG01LP1-US, SUN-6K-SG01LP1-US, SUN-7.6K-SG01LP1-US, SUN-8K-SG01LP1-US	Deye	BMS Lithium Batt = 00; see Appendix III, Section 3 for the remaining parameters.
EG4	18KPV, 6000XP, 12000XP	Luxpower	Battery Type = Lithium; Lithium Brand = 6
EG4	FlexBOSS21	Pylon	Battery Type = Lithium; Lithium Brand = Type1; battery firmware must be RX03 or later
Victron	MultiPlus-II 48/3000/35-50 120V UL, Quattro 48/5000 UL, Quattro 48/10000 UL	Victron	GX device: CAN-bus Profile = CAN-bus BMS; CAN Rate = 500 kbit/second
Solis	S6-EH2P(9.6-16)K03-SV-YD-L-US, S6-EH2P(9.6-16)K03-SV-YD-L-E, S6-EH2P(10-18)K03-SV-YD-L-US	Solis/Pylon	In the SolisCloud app, select Battery Model = Lithium LV / RUIXU
Ruixu	RX-12K	RUIXU	Battery Setting = RUIXU
Ruixu	SUNON7.2, SUNON12	RUIXU	Battery Type = LFP16; BMS Select = CAN-BMS; BMS Protocol = Pylon-CAN
Schneider Electric	XW Pro 6848 NA 120/240V, P/N 865-6848- 21	Schneider	Setup > BMS Setup > Battery Type = Undefined
Senergy	SE 5KHB-130-D2/UL, SE 6KHB-130-D2/UL, SE 7K6HB-180-T2/UL, SE 10KHB- 210-T2/UL, SE 11K4HB-210-T2/UL	PYLON	Battery Brand = Pylon
SMA	SI4548-US, SI5048U, SI6048-US, SI6048- US-10	SMA	Battery Type = Li-ion
LuxpowerTek	LXP-LB-US 8K, 10K, 11.4K, 12K; SNA-US 6000	Pylon	Battery Type = Lithium; Lithium Brand = 2
Voltronic	InfiniSolar WP LV 6kW	Voltronic	In Program 05, set Battery Type = LIB; some versions use Program 04
MPP Solar	LVX6048WP, LVX 12KW WP, LV6548V 500V	MPP	In Program 05, set Battery Type = LIB; some versions use Program 04

3. Recommended Parameters for Sol-Ark and Deye

Let N represent the number of Lithi2-16 batteries connected in parallel. Calculate the following values based on the actual number of parallel batteries.

Parameter	Setting Value
Battery capacity	314 Ah × N
Maximum charge current	210 A × N
Maximum discharge current	210 A × N
Maximum grid charge current	78 A × N
Temperature compensation	0
Float voltage	54.6 V
Absorption voltage	56.0 V
Equalization voltage	56.0 V
Equalization interval and duration	Every 30 days for 1 hour
Recommended shutdown voltage and SOC	50.2 V / 20%
Recommended low-battery voltage and SOC	50.6 V / 30%
Recommended restart voltage and SOC	51.0 V / 40%
Battery internal resistance	8 mΩ ÷ N
Charge efficiency	0.99
Fully discharged battery voltage	47.0 V