MANUAL

Power Battery 5.0 / 7.5 / 10.0 / 12.5 / 15.0

EN

Table of content

1 Overview

1.1 Scope of this document

This instruction manual is an important part of the battery system Power Battery 5.0 / 7.5 / 10.0 / 12.5 / 15.0. It contains information about working safely and efficiently with the battery system.

Always keep the operating instructions near the battery system.

Persons who carry out maintenance or service work on the battery system must always have access to the instructions and information in this operating manual.

Read the operating instructions before installing the system. Pay particular attention to the safety instructions.

This operating manual contains information on the installation, wiring, commissioning and operation of the battery system.

This document does not replace any laws, regulations, rules, standards or conventions.

1.2 Intended use

The battery systems Power Battery 5.0 / 7.5 / 10.0 / 12.5 / 15.0 are stationary battery systems with lithium-iron-phosphate accumulators (LiFeP04).

A Power Battery in combination with a Power Storage forms a Power Storage System that stores the generated PV energy intelligently and highly efficiently and makes it available to the consumer again according to economic aspects.

The Power Battery has not been developed for other applications or connections to other devices.

Any use that differs from the intended use is considered misuse. RCT Power is not liable for any damage resulting from misuse.

Any misuse will terminate the manufacturer's warranty, guarantee and general liability.

1.3 Explanation of symbols

The following symbols may appear on the type plate and/or on the unit. These symbols must always be observed:

Observe the operating instructions!

Acid traces in the eyes or on the skin clean with lot of clear water.
Then consult a doctor immediately!
Wash contaminated clothing with plenty of water.

Fire- extinguisher for abatement from initial fire.

Warning!
Metal parts of the batteries are always under voltage.
Do not short-circuit the batteries!
In case of a short-circuit, may flow very high currents and cause burns.
By Touching conductive parts can cause cardiac arrhythmia and shock.

Explosion risk!
It is strictly forbidden to clean with synthetic cloths or a feather duster. Otherwise there is the risk of electrostatic charging or discharging.

Electrolyte is highly corrosive!
In normal operation, contact with the electrolyte is not possible.
In the case of destruction of the housing, the liberated bound electrolyte is just as corrosive as liquid electrolyte.

Warning of battery hazards.

Battery must not get wet.

Defective battery must not be operated.

Caution!
Children should be kept away from the battery system.

This product must not be disposed of as normal household waste, → Chapter 7 "Storage, transportation, cleaning and disposal".

CSA certified

1.4 Warranty and liability

The warranty and liability shall be governed by the terms and conditions set out in the contract.

Limits of warranty

Warranty and liability claims of any kind are excluded by one or more of the following causes:

- Improper use or installation of the product.
- - Installing or operating the product in an unauthorised environment.
- - Ignoring relevant safety regulations at the place of use, during installation and commissioning.
- - Ignoring safety notices and instructions in all documents relevant to the product.
- - Installing or operating the product under incorrect safety or protective conditions.
- - Modifying the product or installing software without authorisation.
- - Defects in the product caused by neighbouring devices or devices operated outside the permissible limits.
- - Damage due to force majeure.

Property rights

All rights to drawings, software and other documents as well as any power of disposal, such as copying and passing on rights, are held by RCT Power.

Storage

RCT Power does not accept any warranty for damage caused by incorrect storage, → chapter 7.1 "Storage".

Transport

We would like to point out that improper transport does not entitle the user to any replacement or warranty claims. In any case, please consult RCT Power before transporting the system.

1.5 Declaration of conformity

The company RCT Power hereby declares, that the described battery system in this document is in accordance with the essential requirements and the other relevant provisions of the guidelines below.

- UL 1973
- UL9540A
- IEC 60730-1
- FCC Part 15B
- IEC 62619

For a detailed AU declaration of conformity, please visit: http://www.rct-power.com

1.6 Application Example

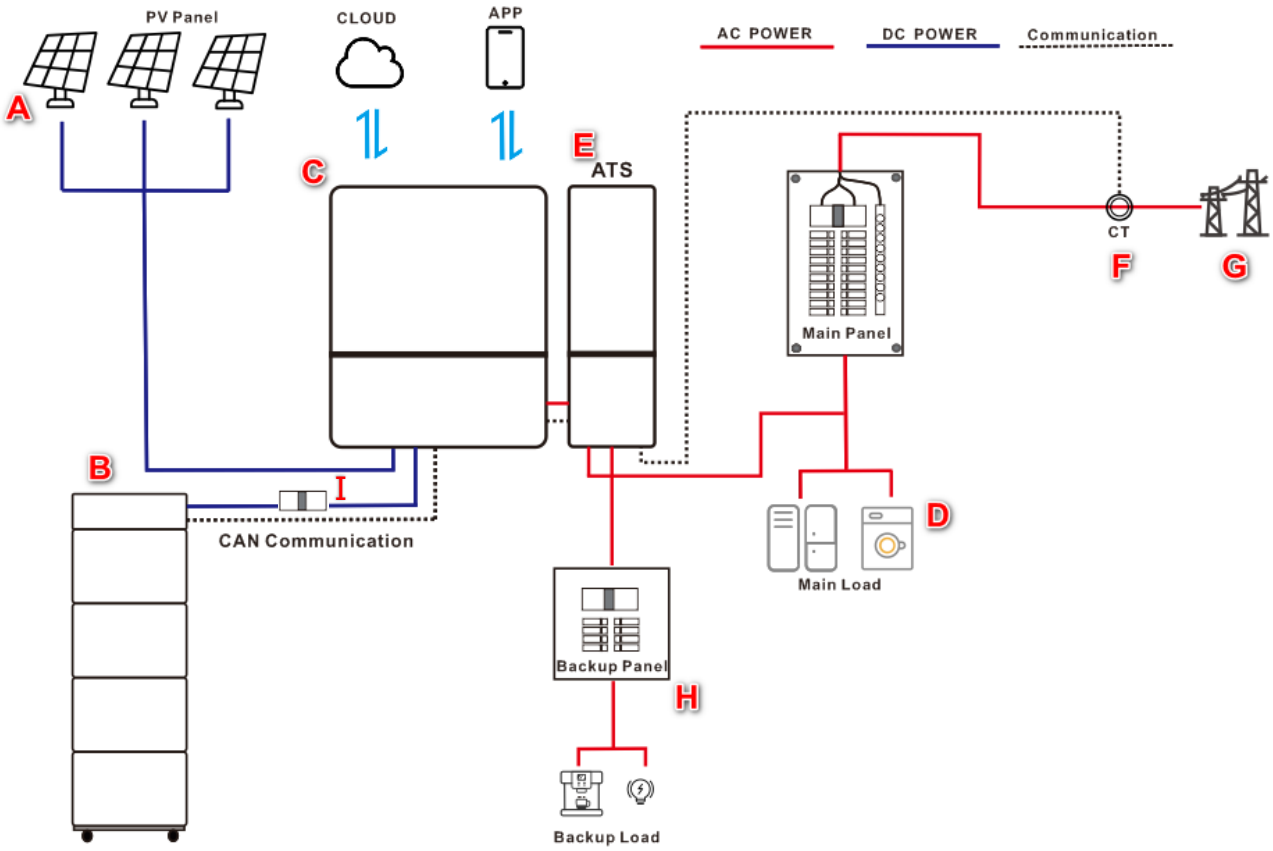


Abb. 1: Example of a PV system with Power Battery, Power Switch and Power Sensor

Item	Description	Comment
A	PV Generator	Monocrystalline silicon; polycrystalline silicon
B	Battery	Power Battery 5.0, 7.5, 10.0, 12.5, 15.0 kwh
C	Inverter	Power Storage DC
D	Dwelling	Domestic electricity consumers
E	Power Switch	In the event of a power failure, the system switches to back-up operation mode
F	Power Sensor	Current sensors to collect AC power measurements
G	Public grid	240V/120V Split phase, 208V, 208V/120V WYE, 240V
H	Back-up	Connect to domestic back-up load
I	Circuit Breaker	(Optional) Circuit breaker between inverter and battery should be installed according to local laws and regulations.

1.7 Scope of delivery

Before shipment our products are checked for proper condition.
Despite careful packaging, transport damage can occur, for which the transport company is generally responsible.

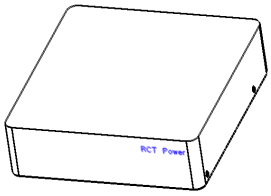
If you notice any damage to the packaging or the PowerBattery, please immediately inform the transport company.

Every Power Battery consists of 1 Power Battery Master and 2 to 6 Power Battery Stacks:

Version Power Battery	number Power Battery Master	number Power Battery Stacks
5.0 kWh	1 Carton	2 Cartons
7.5 kWh	1 Carton	3 Cartons
10.0 kWh	1 Carton	4 Cartons
12.5 kWh	1 Carton	5 Cartons
15.0 kWh	1 Carton	6 Cartons

1.7.1 Power Battery Master

1



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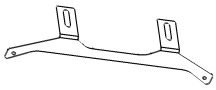

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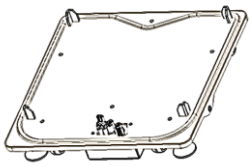

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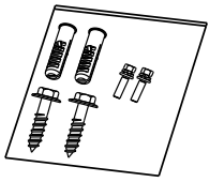

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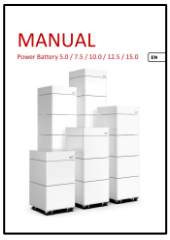

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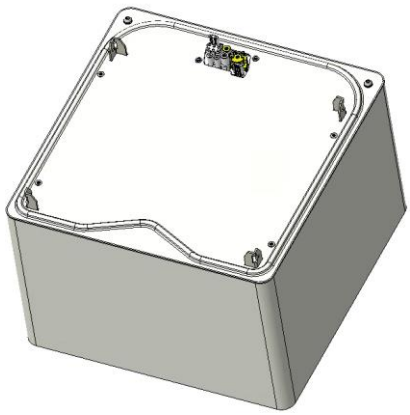
Pos.	Description
1	1x Power Battery Master
2	1x Wall bracket used to fix the upper part of the battery onto the wall
3	2x Handle
4	1x base plate (adjustable), with earth protection connector
5	1x Screw mounting kit
6	1x Manual Power Battery (this document)

Pos.	Description
7	1x Accessory packaging with: - 1x Power Cable + - 1x Power Cable - - 1x Patch cable RJ 45/Cat5e - 3x Ring terminal for grounding - 5x M5 Screws

1.7.2 Power Battery Stack

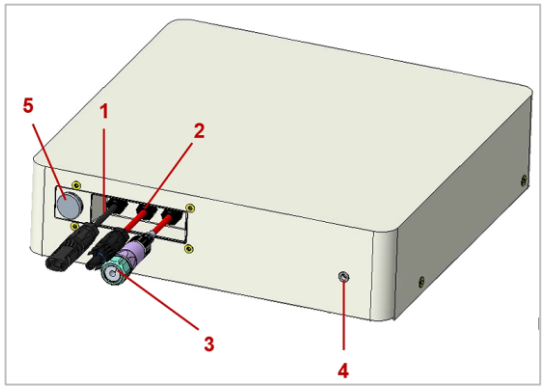
1

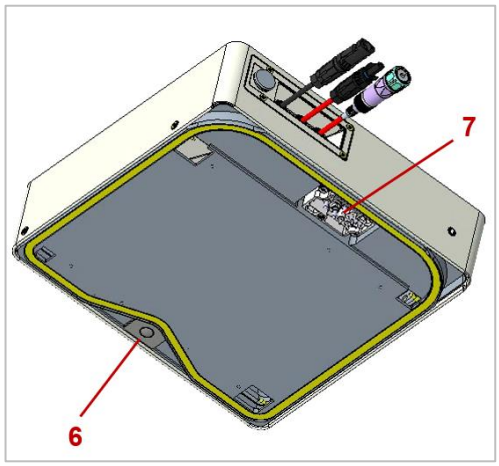


Pos.	Desscription
1	1x Power Battery Stack

1.8 Module description

1.8.1 Power Battery Master

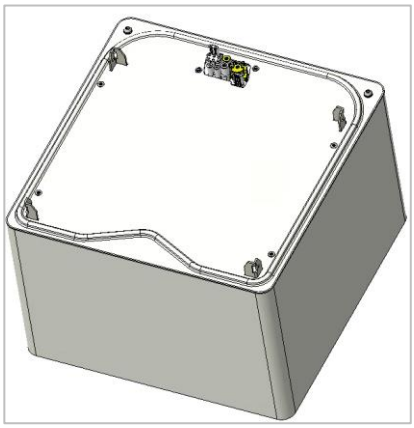




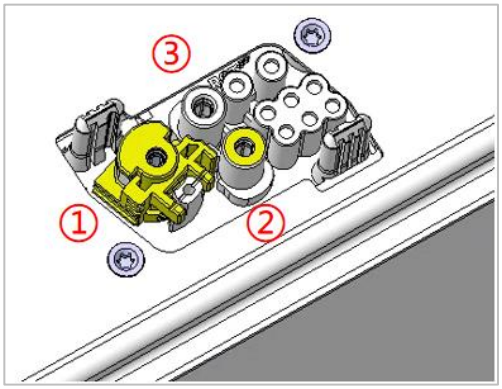
The DC cables to the Inverter are already attached to the master at the factory.

1	DC cable (-) to the Power Storage Inverter
2	DC cable (+) to the Power Storage Inverter
3	RJ45 connector for network cable to Power Storage Inverter
4	PE connection for protective conductor
5	DC switch
6	LED status display
7	Floating connector to stack

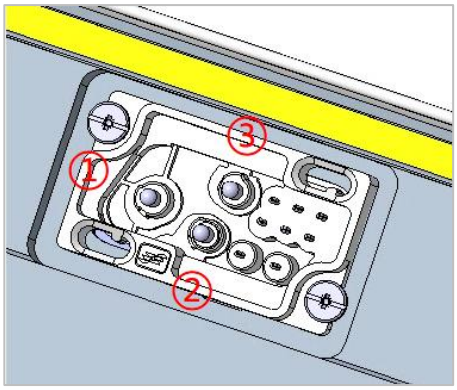
1.8.2 Power Battery Stack



type plate (see section 1.8.4)



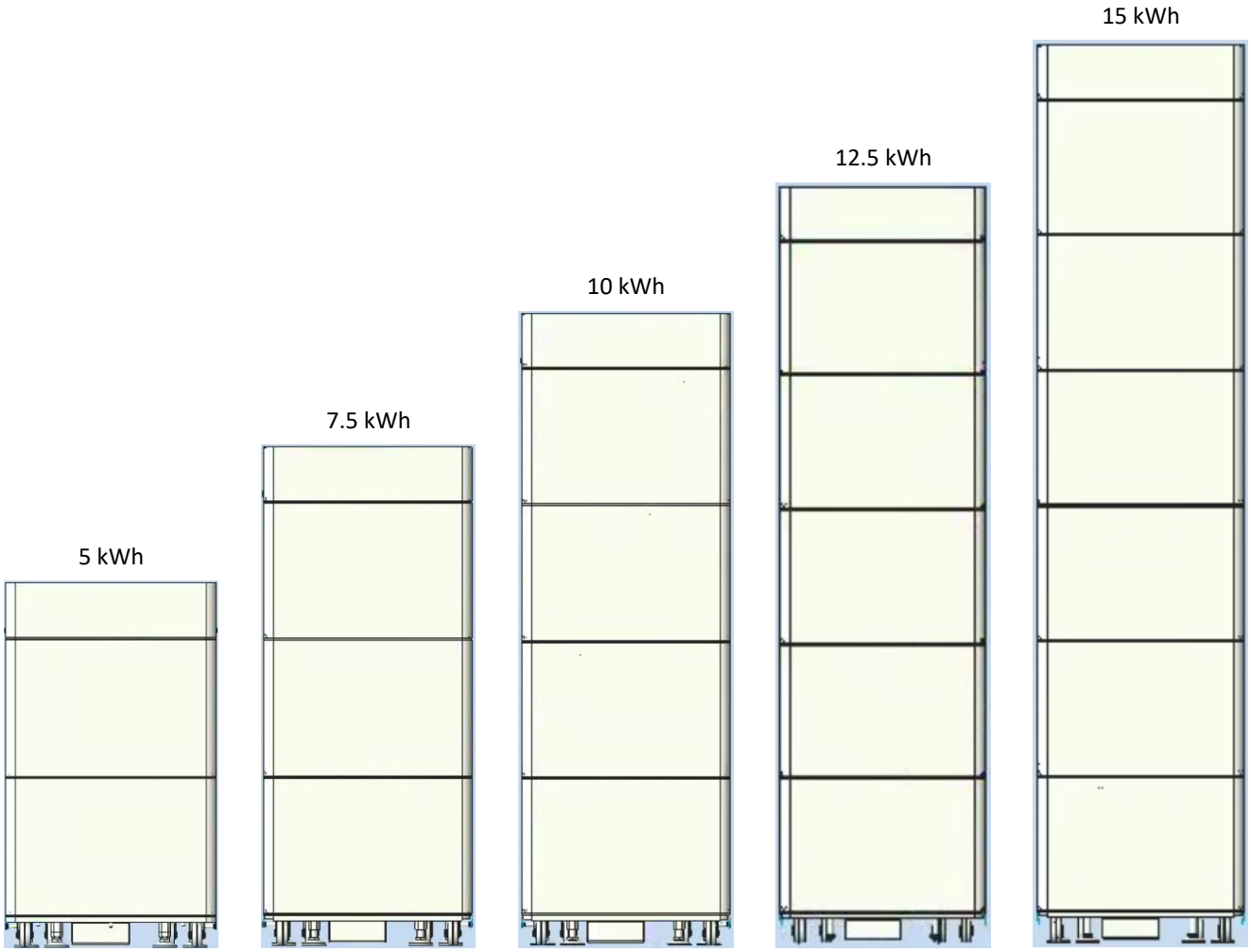
1. To “ + „ for upper battery stack
2. To “ - „ for upper battery stack
3. To “ PE Cable„ for upper battery stack



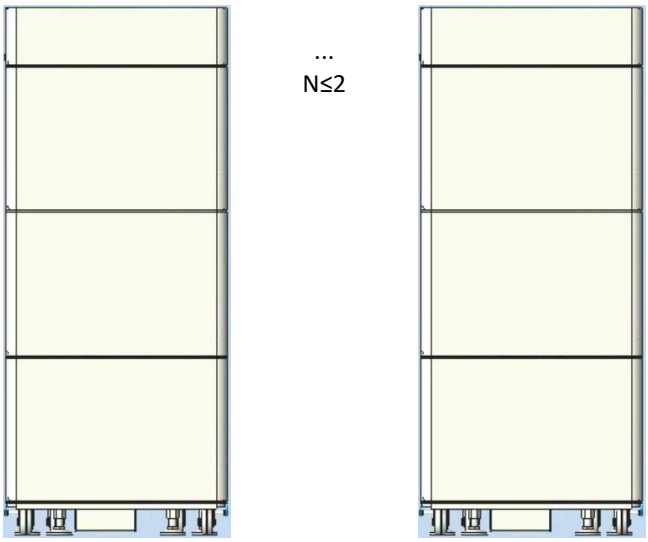
1. To“ + „ for lower battery stack
2. To “ - „ for lower battery stack
3. To “ PE Cable„ for lower battery stack

1.8.3 Energy Storage Capacity

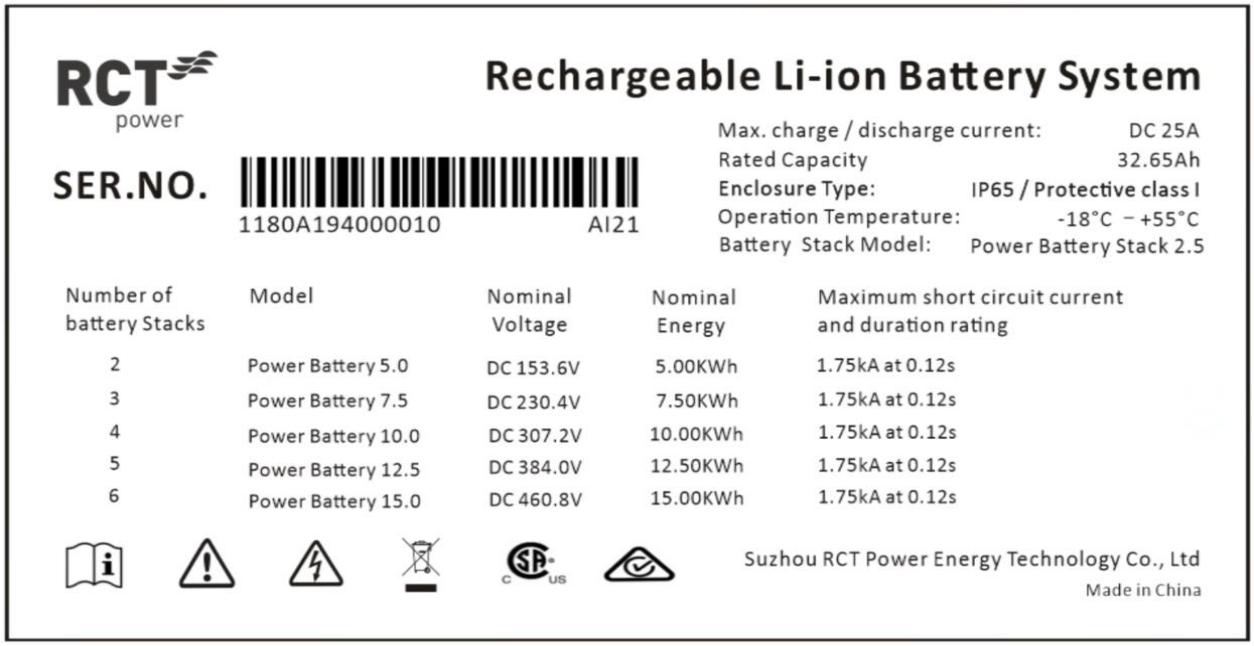
The energy storage system supports capacity expansion, with a battery module capacity of 2.5kWh and up to 6 battery modules can be supported for expansion.

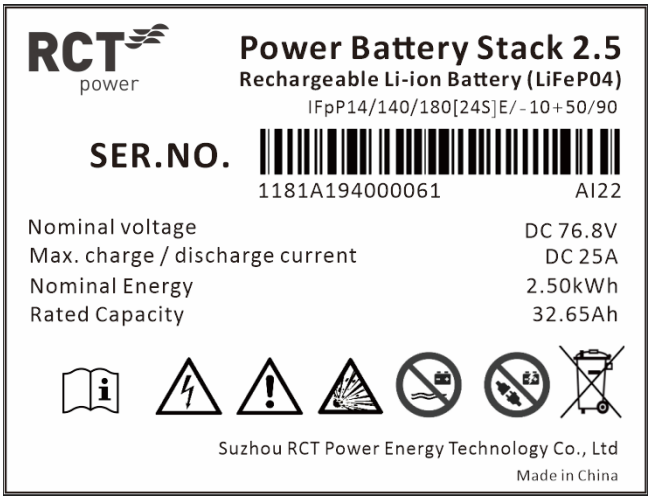


The energy storage system supports parallel expansion, and a maximum of two energy storage systems can be supported simultaneously.



1.8.4 Type plates





The type plates show the serial number (1) of the component, as well as information (2) on the voltages occurring in the component and the IP protection class.

Explanation of symbols → Chapter 1.3 "Explanation of symbols".

2 Safety instructions

2.1 Symbols

Safety-relevant instructions are marked in this document with the following symbols and signal words:

Danger to life or danger of serious bodily injury!

Failure to comply **may** result in death or serious bodily injury

- Counter-measure…

Risk of injury!

Failure to comply may result in bodily injury!

- Counter-measure…

Risk of injury!

This symbol indicates an immediate danger with a low level of risk which, if not avoided, could result in minor or moderate injury.

- Counter-measure…

Note

Risk of property damage!

Non-observance may result in material damage (loss of time, loss of data, system defect, etc.)!

2.2 Personnel and qualifications

Qualified personnel eligible to perform the tasks described in this document have following skills and knowledge:

- They are trained in installing electrical devices.
- They understand the functions of a battery system and know how it operates.
- They are familiar with lithium iron phosphate (LiFePO4) batteries.
- They have read and understood the documents shipped with the device.
- They know and use the appropriate tools and equipment to perform the work.
- They are familiar with all applicable laws, regulations, standards and codes for electrical devices.
- They are familiar with safety requirements and safety-related guidelines for electrical devices.
- They are familiar with national work protection laws and regulations.
- They know and use the appropriate personal protective equipment.

2.3 Basic safety instructions

A correctly mounted Power Battery 5.0 / 7.5 / 10.0 / 12.5 / 15.0 is intrinsically safe.

Risk of injury from electric shock!

Inside the components of the Power Battery there are elements under high voltage which can also generate high currents! In the event of a short circuit, very high currents can flow and cause burns. Touching conductive parts can cause cardiac arrhythmia and shock.

- Do not open the housing!
- Only carry out electrical work when the power is off.
- Ensure that cables are not damaged.
- Use only suitable protective and measuring equipment.
- Do not operate defective cables or components with damaged housings.
- Do not short-circuit batteries.
- Ensure that no liquid enters the cables and housing and that the battery system is not exposed to condensing moisture.
- Do not place tools or metal parts on the components.
- Ensure correct earthing when mounting the components.
- Do not subject components to pressure or impact. In particular, ensure that they do not fall over or drop during assembly.
- Carry out all electrical installations in accordance with local and national standards and directives.
- Do not remove the type plate.

Fire hazard due to flammable substances!

The Power Battery is not approved for explosive environments.

- Ensure that no explosive gases, liquids or other substances are stored or used in their vicinity.

3 Mechanical Assembly

3.1 Preparing the installation site

DANGER

Risk of injury due to electric shock and heavy weight!

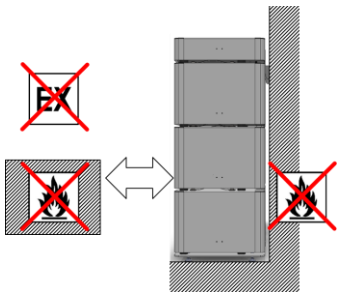
Inside the components of the Power Battery there are elements under high voltage which can also generate high currents! Metal parts of the batteries are always live. In the event of a short circuit, very high currents can flow and cause burns. Touching conductive parts can cause cardiac arrhythmia and shock. If set up improperly, the battery system can tip over and cause injuries. The weight of a stack is more than 18 kg.Montage und elektrischen Anschluss des Batteriesystems nur durch qualifizierte Elektrofachkraft.

- Do not install the Power Battery in rooms where there is a risk of explosion.
- Make sure that the electrically conductive surfaces of the Power Battery are earthed.
- Use a wall bracket to secure the Power Battery against falling over.
- Do not subject components to pressure or impact. In particular, ensure that they do not fall over or drop during installation.
- Carry out all electrical installations in accordance with local and national standards and directives.
- Do not operate a damaged power battery

Note

Possible power reduction of the Power Battery!

- Do not cover the power battery, especially the top.
- Keep clearances to ensure cooling by convection.
- Operating temperature range is between -18°C~55°C, optimum operating temperature range is between 0°C ~45°C.

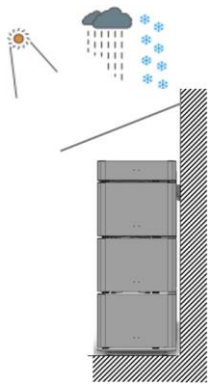


⇨ Ensure that the mounting surface is made of flame-retardant material.

⇨ Do not install the battery system in explosive areas and keep it away from flammable materials.

⇨ Ensure that there are no corrosive gases at the installation site.

- Do not place the device near heat sources or fire sources, such as fireworks, candles, heaters, or other heating equipment. Heat may cause damage to the device or cause a fire.



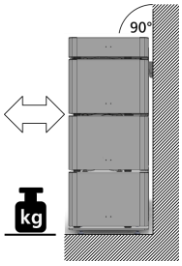
The battery system is permitted for indoor and outdoor use.

⇨ Protect the battery system from direct heat radiation (e.g. sun, heating, etc.).

Following requirements must be fullfilled:

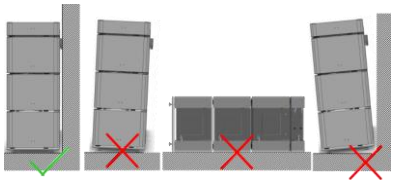
- Enough space installation, air-conditioned.
- It is recommended to be installed in a space with a height of 2 meters and an area of 4 by 4 meters, or at least 30 m^3.
- Operating temperature -18 - 55 °C
- Relative humidity 5 - 85 %, non-condensing

⇨ Protect from dirt, dust and ammonia gases

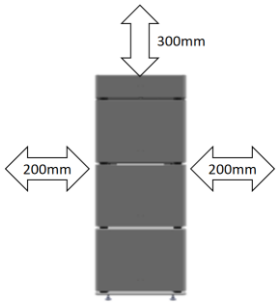


The mounting surface must be firm and able to bear the weight in the long term.

The selected location must be easily and safely accessible at all times without additional aids such as ladders or scaffolding.

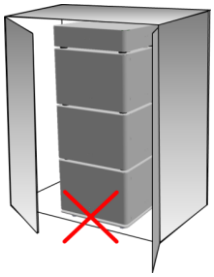


⇨ Install battery system in upright position, and not in rooms and areas where animals are kept.



⇨ Maintain minimum distances to allow sufficient free convection.

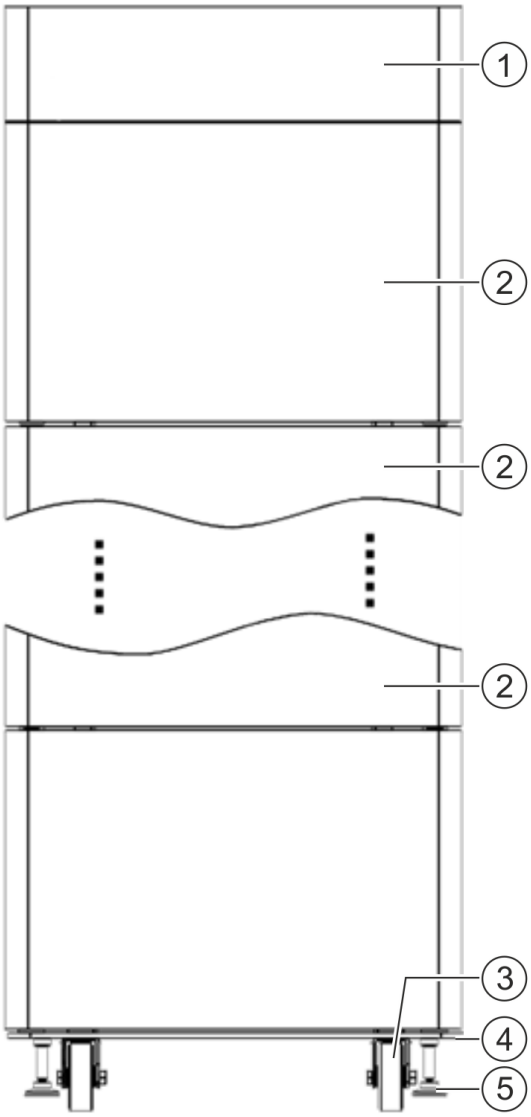
⇨ When a predefined temperature threshold is reached, the charging and discharging power of the battery is automatically reduced linearly.



Installation in a closed cabinet is prohibited.

⇨ Ensure that the system has sufficient convection and is in a suitable installation location.

3.2 Setting up the battery system

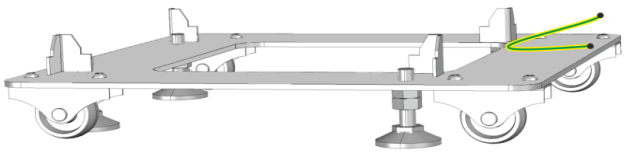


Overview

1	Power Battery Master
2	Power Battery Stack
3	Wheels of base plate
4	Base plate
5	pedestal adjustable

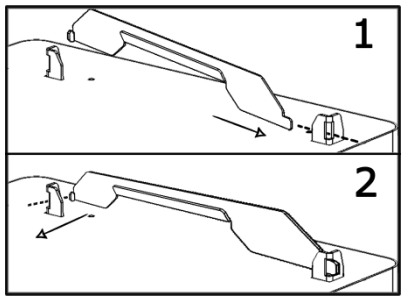
The battery system is subsequently

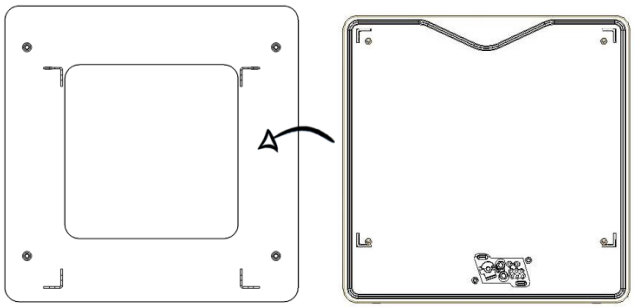
- plugged together on its base plate (④)
- wired
- screwed to the wall



⇨ Place the base plate at the location where the Power Battery is to be placed later. The side with the protective conductor facing the wall.

⇨ Keep sufficient distance to the wall for installation.

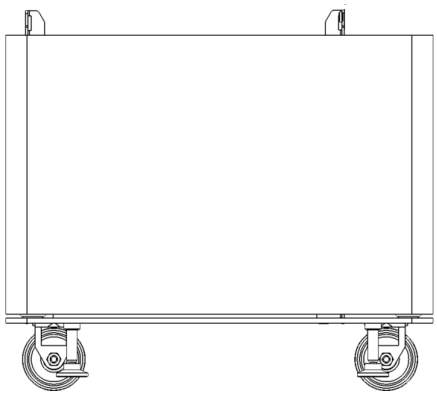




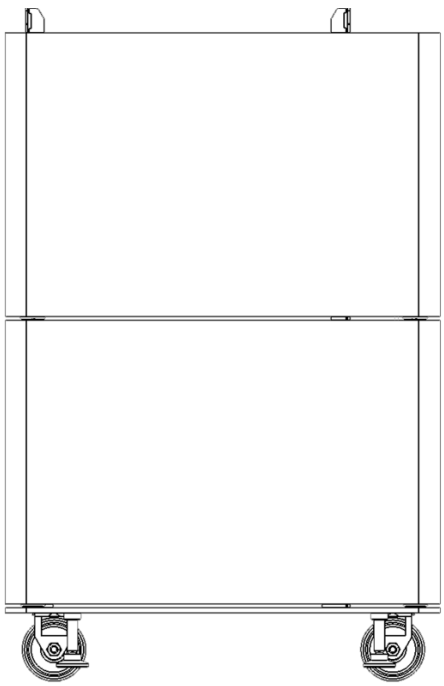
Set up stacks

⇨ Place a power battery stack on the base plate with the enclosed mounting handles so that the connections face the wall.

↳ If the stack is set up correctly, it is automatically centred.



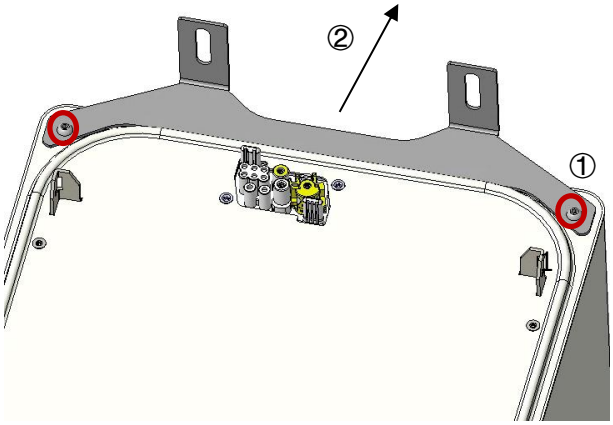
⇨ Ensure that no cables are pinched during installation and that the components of the Power Battery are parallel to the ground.



⇨ Place another power battery stack on top of the previous one so that both are parallel to each other.

↳ If the stack is set up correctly, it is automatically centred.

⇨ Keep adding more stacks until all power battery stacks of the battery system have been built up.



Mark the drill holes for the wall bracket

⇨ Mount the wall bracket on the top Power Battery Stack with the two M5 screws (①).

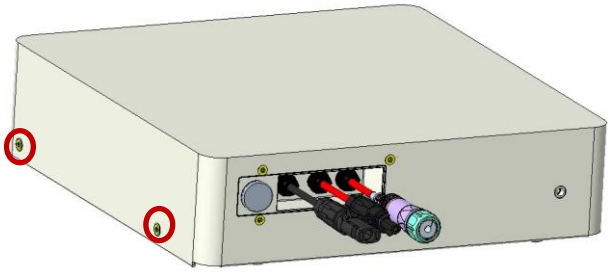
⇨ Carefully push the battery system towards the wall(②).

⇨ Mark the drill holes vertically in the centre of the slotted holes in the wall bracket.

Screwing to the wall is only done after the battery system has been wired, → chapter 4.4 "Aligning the power battery and attaching it to the wall".

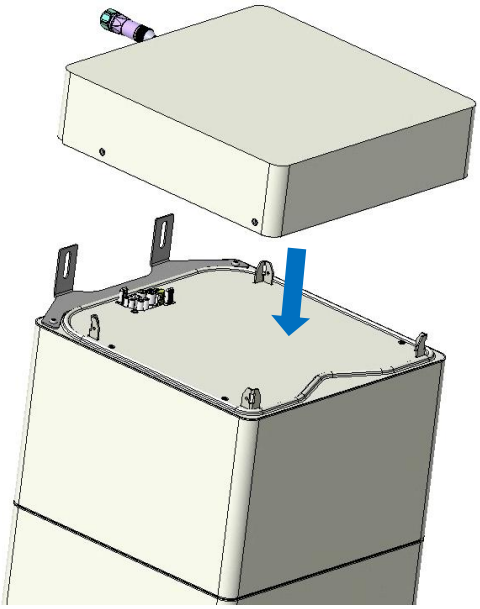
⇨ Place the Power Battery Master on the top Power Battery Stack so that the DC cables (red and black) remain free and are not pinched.

3.3 Power Battery Master Installation



Preparation

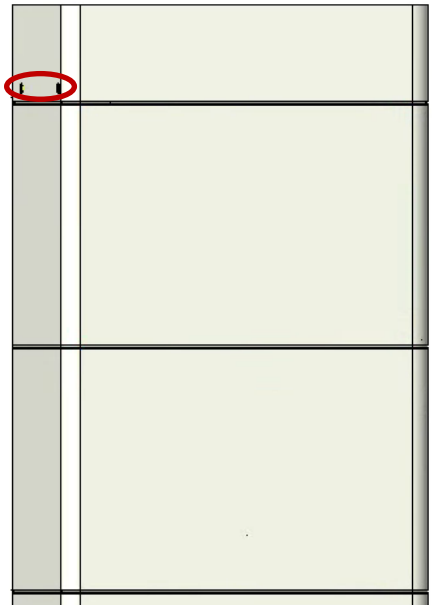
⇨ Remove the four screws on the left and right sides of the battery master.



Procedure

⇨ Place the battery master on the top stack that both are parallel to each other.

↳ If the battery master is set up correctly, it is automatically centred.



⇨ Mount the battery master on the top stack with the four screws.

4 Electrical Installation

4.1 Earthing the components

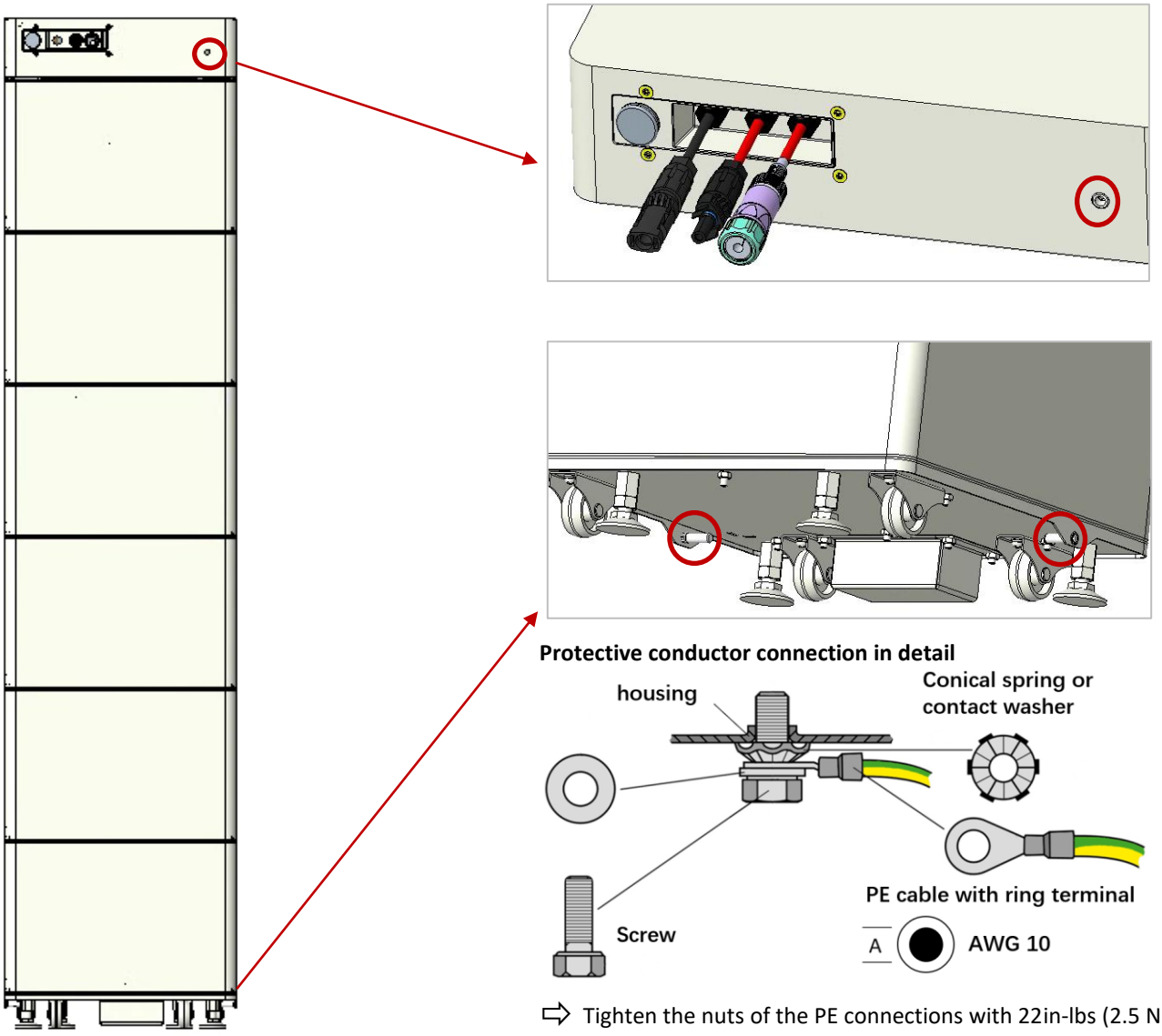
DANGER

Risk of injury from electric shock

Inside the components of the Power Battery there are elements under high voltage which can also generate high currents! Grounding faults can lead to electric shock!

- Assembly and electrical connection of the battery system only by qualified electricians!
- Ensure correct earthing of all metallic components!

There are three earthing positions.



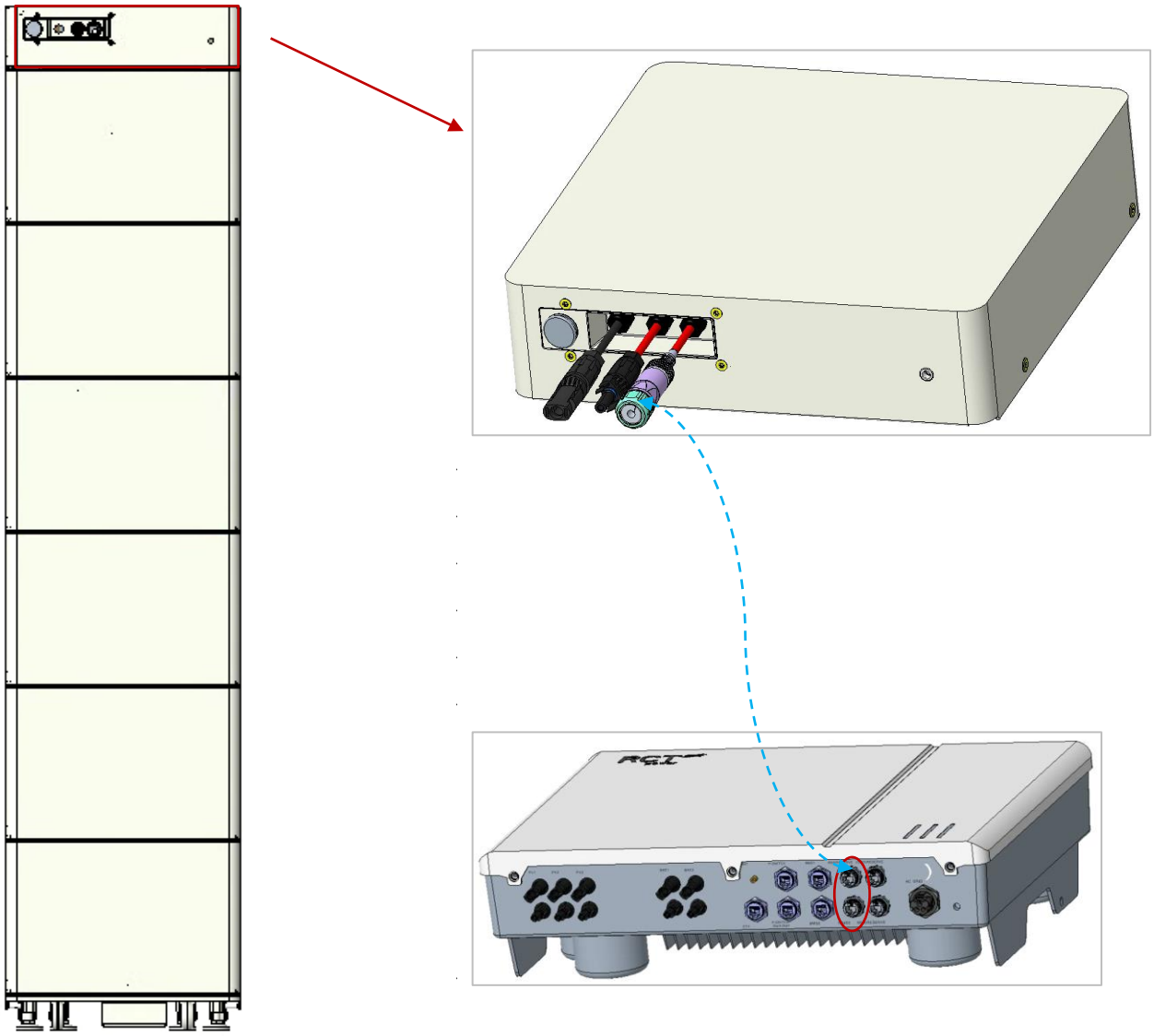
Protective conductor connection in detail

⇨ Tighten the nuts of the PE connections with 22in-lbs (2.5 Nm).

4.2 Establishing a network connection

In the adjacent drawing, the permanently attached DC cables have been omitted for the sake of clarity.

⇨ Plug the network cable to the “COM“ side in the power storage Master, then plug the other side to the BMS port in the Inverter side.



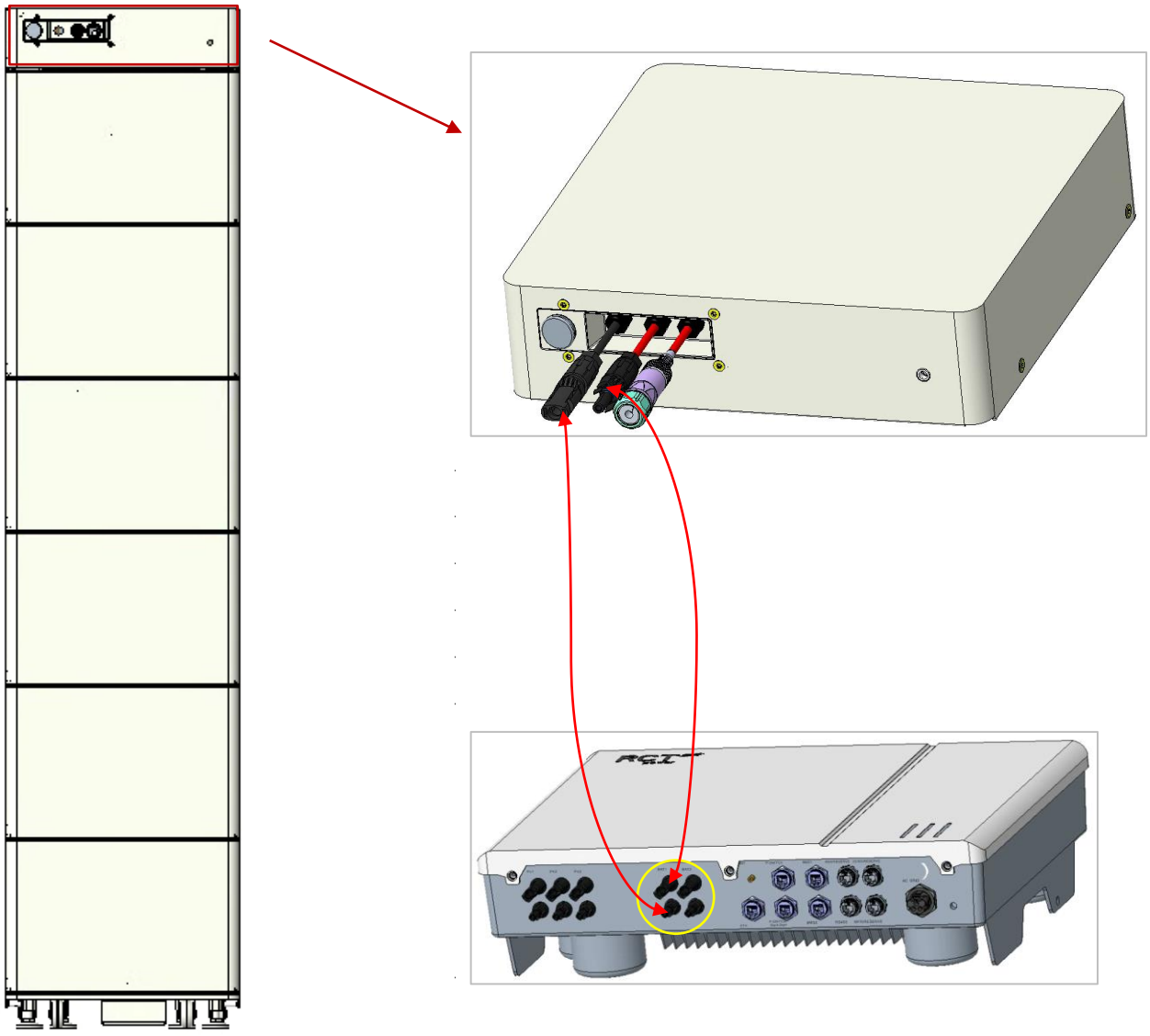
4.3 Establishing the DC connection

The Power Battery Stacks are connected in series.

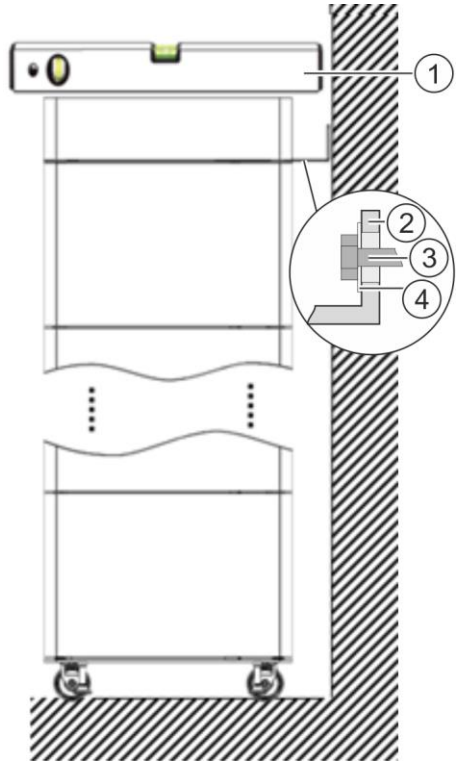
The Power Battery Master is therefore connected to the top and bottom stack.

⇨ Connect the DC cable “+“ of the Power Battery Master to the “BAT +“ Port on the Inverter side.

⇨ Connect the DC cable “-“ of the Power Battery Master to the “ BAT -“ Port on the Inverter side.



4.4 Aligning the Power Battery and attaching it to the wall



To avoid accidental tipping over, you should fix the Power Battery to the wall.

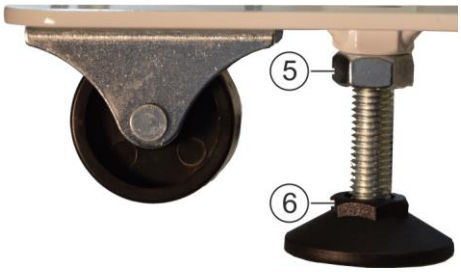
Additional material required (not included):

- 2 hexagon head screws (③) with a diameter of max. 0.31inch (8 mm) and suitable dowels
- Fitting open-end spanner
- Matching washers (④) with an outer diameter of at least 0.59inch (5 mm)

⇨ Use previously made markings and drill holes to match the dowels, → Mark drill holes for wall bracket, page 17.

⇨ Carefully slide the Power Battery onto the wall and screw the 2 screws (③) loosely into the dowels at first so that the wall bracket (②) can still be adjusted vertically.

⇨ Level the Power Battery using the adjustable feet on the base plate and a spirit level (①) so that the rollers are unloaded and the Power Battery stands securely on the feet.



Adjust stand vertically

⇨ Loosen all 4 lock nuts (⑤).

⇨ If necessary, adjust the height by turning the stand (⑥).

⇨ After adjusting all 4 feet (⑥), retighten all lock nuts (⑤).

4.5 Establishing the Power Storage Inverter Connection

4.5.1 Preparing the connection to the Power Storage Inverter

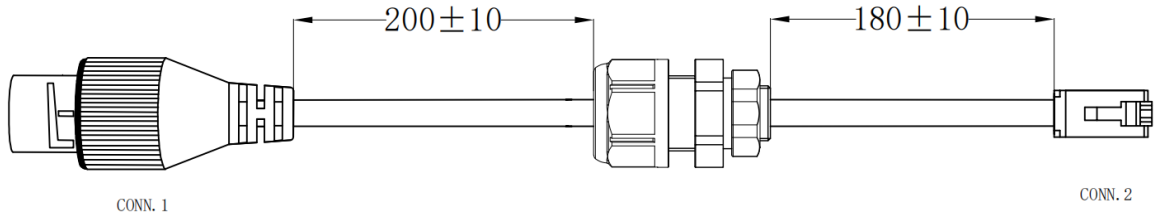
The DC cables to the Power Storage are already mounted on the Power Battery Master at the factory.

Make sure that they are not pinched during the following steps.

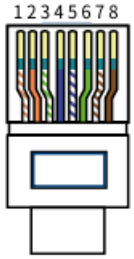
4.5.2 Connection to the Power Storage Inverter

⇨ **Communication connect:**

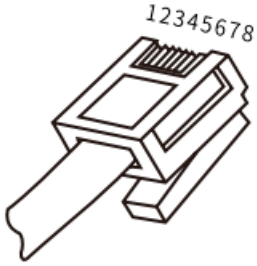
Connect the Cat 5 cable from the Power Battery Master through the cable entry and plug the cable into the RJ45 connector BMS1, BMS2 (CAN).



The CONN.1 connector pin assignment and function definition:

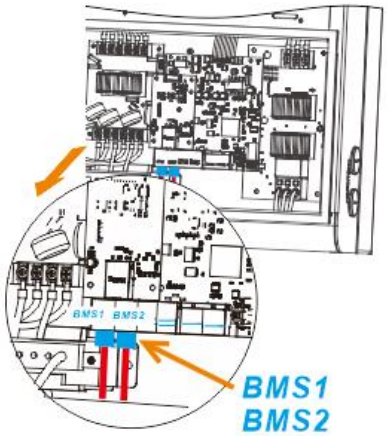
Pin	Definition	Description	
1	CANH-E	CAN Communication with external inverter.	
2	CNAL-E		
3	GND	-	
4	-	-	
5	-	-	
6	+12V-Output	-	
7	GND	Active power provided by external inverter.	
8	+5V-Input		

The CONN.2 connector pin assignment and function definition:

Pin	Definition	Description	
1	CANH-I	CAN communicate with the internal battery pack.	
2	CANL-I		
3	GND	-	
4	-	-	
5	+12V-Output	-	
6	+12V-Output	-	
7	GND	Provide BMS working power to the internal battery pack.	
8	+12V-Output		

Procedure:

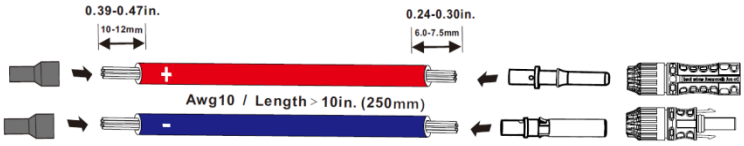
Thread the Cat 5 cable through the conduit at the bottom of the wiring box.



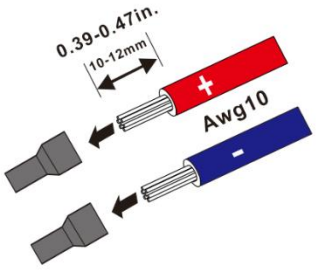
Plug the cable into the RJ45 connector BMS1, BMS2 (CAN).

⇨ **Cable Connect**

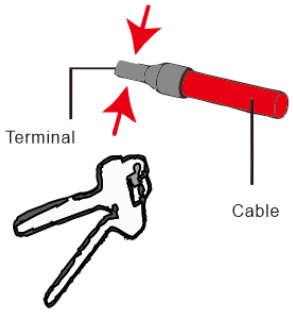
Procedure:



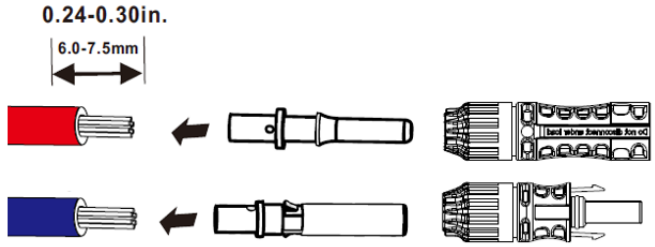
Required cable: AWG 10
Length>10in. (250mm)



This side is connected to the main inverter BAT terminal (see section 5.2).
Remove the cable insulation carefully.
Stripping length: 0.39-0.47inch (10-12mm)

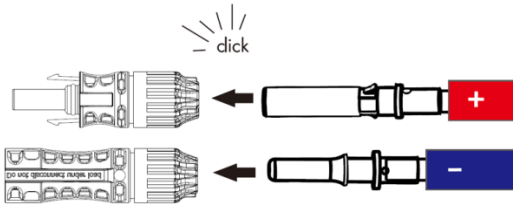


Insert the conductor into a suitable terminal (RCT provided) and crimp the contact firmly.



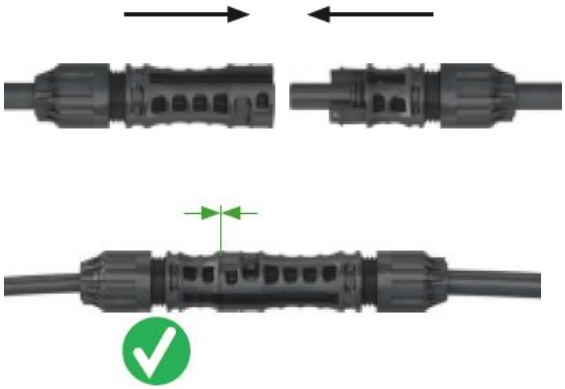
This side is connected to Power Battery Master (see section 5.2).
Remove the cable insulation carefully.
Stripping length: 0.24-0.30inch (6-7.5mm)

Insert the cable into the corresponding metal pin and crimp it firmly.
Recommended tool: PV-CZM-41100

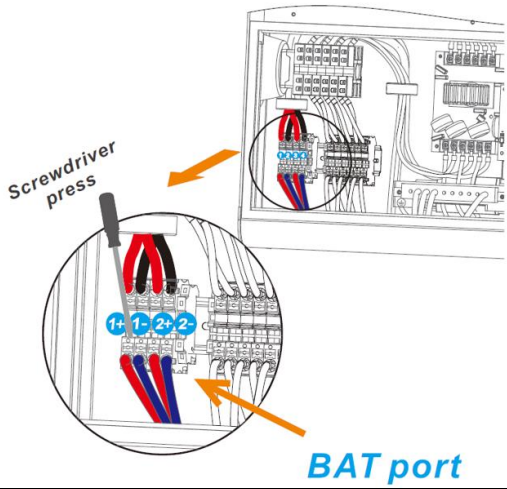


Connect the cable assembly to the appropriate DC plug connector.
A "click" should be heard or felt when the metal pin is properly fastened.

Tighten the swivel nut.

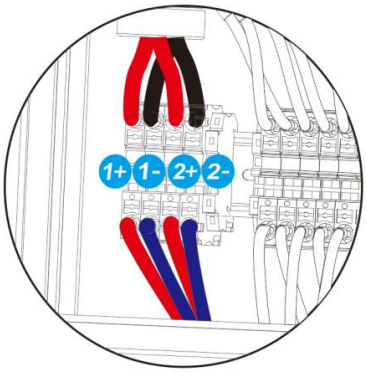


Connect the cable to the Power Battery Master. A “Click“ should be heard or felt when the connector is locked correctly.



- Thread the Power cable through the conduit at the bottom of the wiring box.
- Check the cables for correct polarity. Ensure the polarity of the DC terminals are all correct.
- To open the terminals press them down with an insulated screwdriver.
- Plug the cable into correct polarity BAT terminals.

Inner wire Length：≥ 4.72inch (12 cm)



Pay attention to the positive and negative poles.

Port 1+ BAT1 Positive Terminal
Port 1- BAT1 Negative Terminal
Port 2+ BAT2 Positive Terminal
Port 2- BAT2 Negative Terminal

5 Commissioning

5.1 Inspection before powering on

When powering on the battery system, ensure that the following items are checked to prevent system damage.

⇨ The inverter is firmly installed, the installation position is convenient for operation and maintenance, the installation space is convenient for ventilation and heat dissipation, and the installation environment is clean and tidy.

⇨ Check if all cables are properly connected.

⇨ Cables are bundled according to cable routing requirements, properly distributed, and without damage.

⇨ The unused port is blocked.

5.2 Power on Battery system

Note: Circuit breakers between inverters and batteries must be installed according to local laws and regulations.

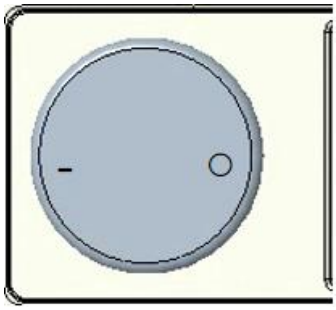
⇨ Close the circuit breaker between inverter and battery.

⇨ Power on the inverters in the system. For details, see the inverter user manual of the corresponding model.

⇨ Press switch button to“I“ position. Observe the LED indication on panel.

Note

- **The inverter is powered by PV modules. The power supply unit can only be switched on to start and complete the commissioning tasks if the PV array is exposed to sufficient solar radiation.**
- **We do DC isolation through relays, which function as DC switches. The working principle is: the initial state contactors are disconnected, the positive and negative extreme ports have no power, when push the activation switch button, the BMS will be powered, and the contactor can be action for external pre-charging until the power connection is successful, and the external output power supply.**



5.3 Setting Battery parameters

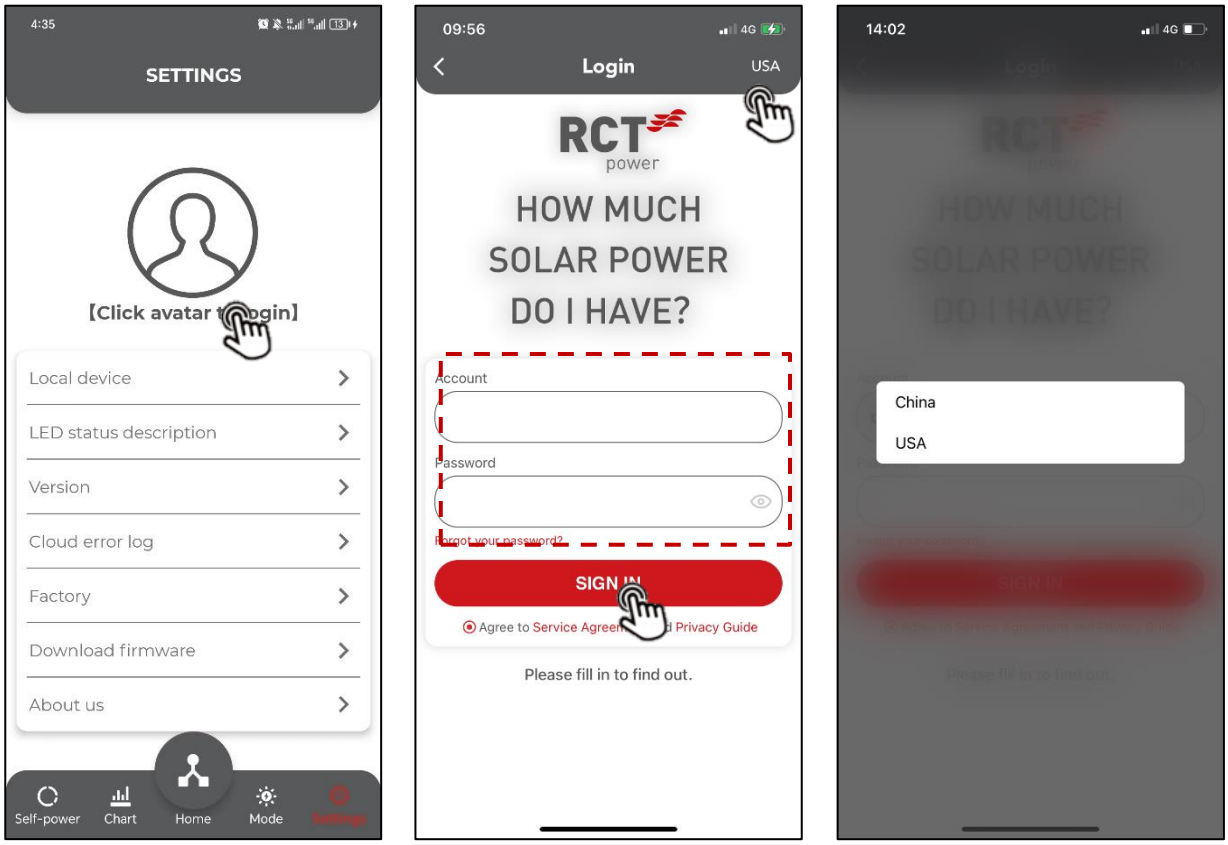
After the battery is successfully connected to the inverter communication, select the correct battery option on **RCT RESS APP**:

⇨ Download and install the **RCT RESS APP**.

iOS App Store

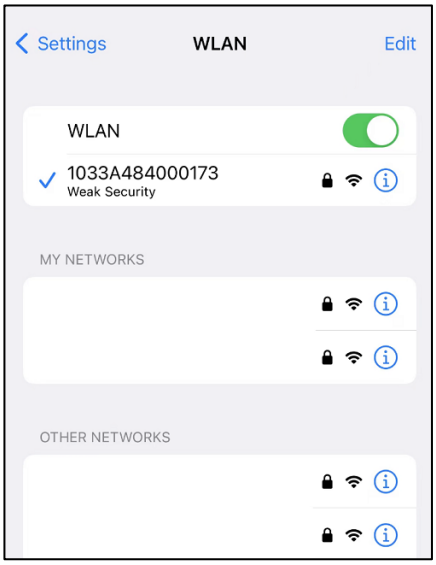
Google Play Store

⇨ Enter the account and password and click "Agree to Service Agreement and Privacy Guide" to login. Then, tap "SIGN IN" to enter the **RCT RESS APP.**



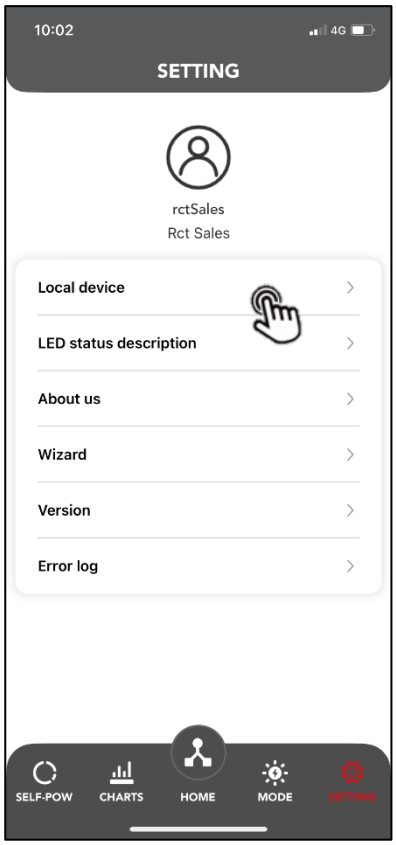
⇨ Connect the phone to the inverter.

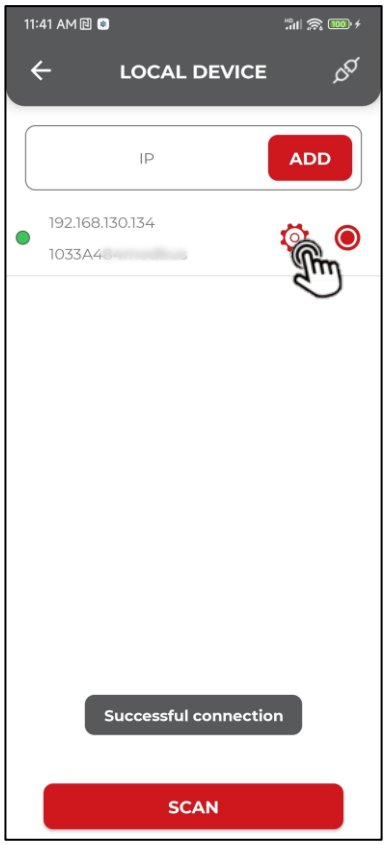
- Enable WLAN function on mobile devices and connect to the WLAN network of the current inverter.

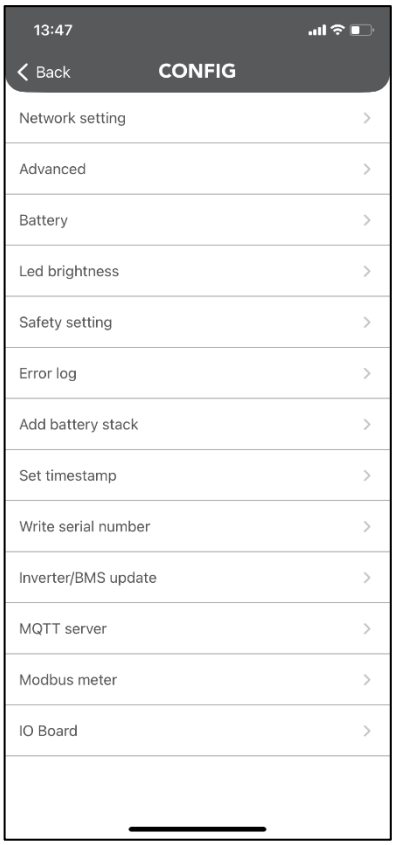


- Click the "Local device" button to enter the Local device screen.

- Connect the device hotspot (password is the device serial number), click "Scan" button or enter 10.10.100.254 in the IP field and click "Add" button.
- Tap  button behind the device to be connected to enter the config screen, user can read and write to the inverter.







⇨ Tap "**Battery**" to enter the screen, as shown in the following figure:

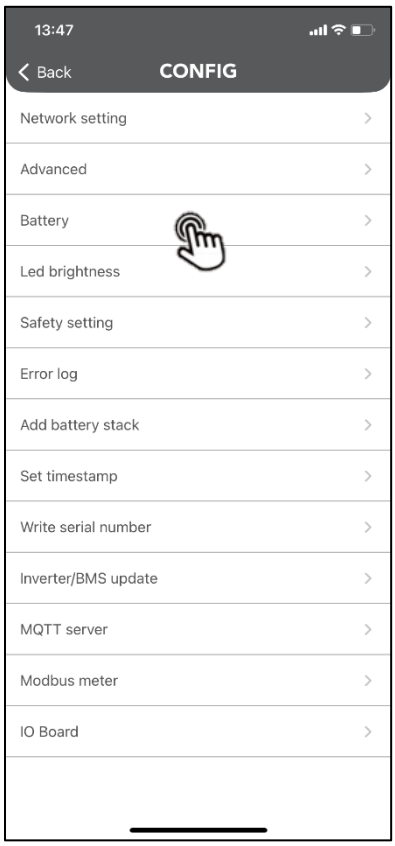


Fig 1: Config

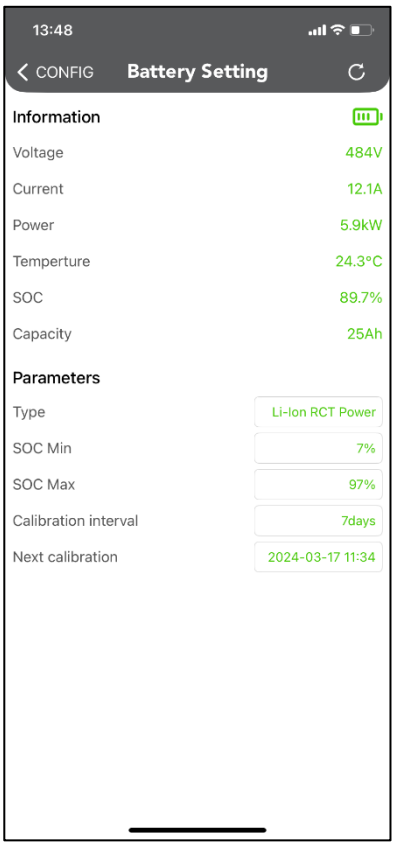


Fig 2: Connect a set of batteries

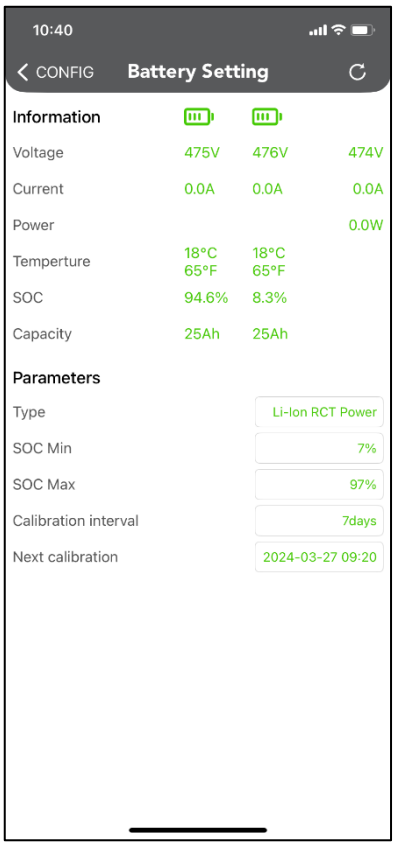
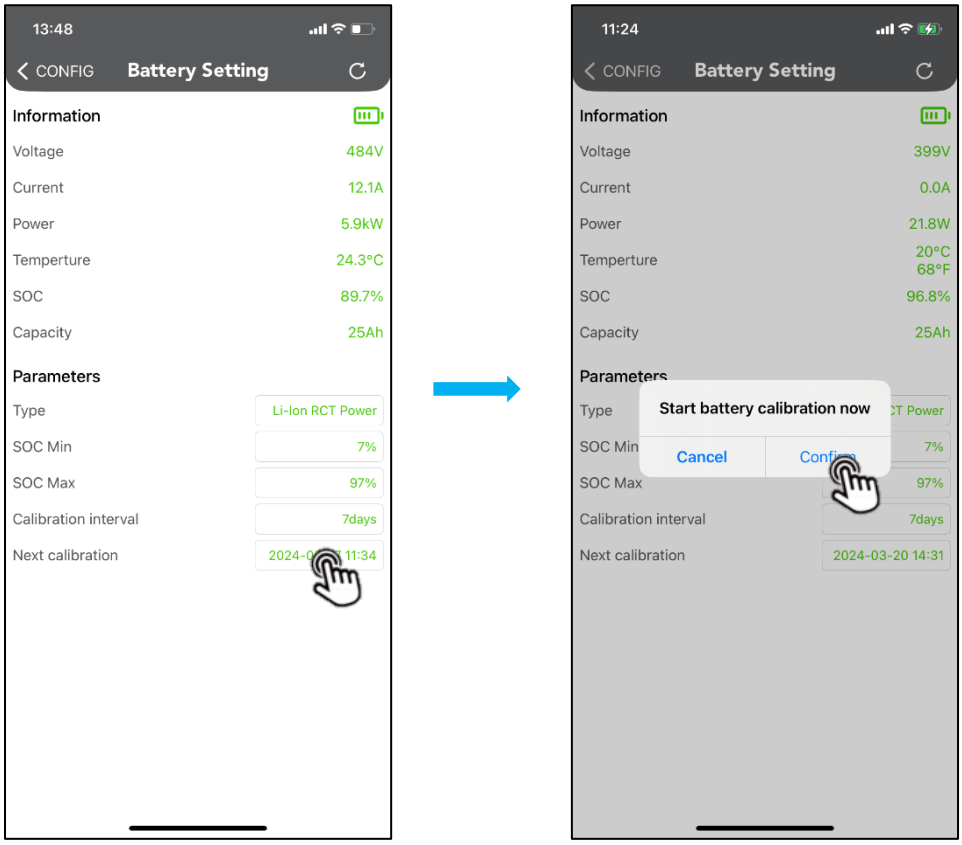


Fig 3:Connect two batteries in parallel

5.3.1 Battery Calibration

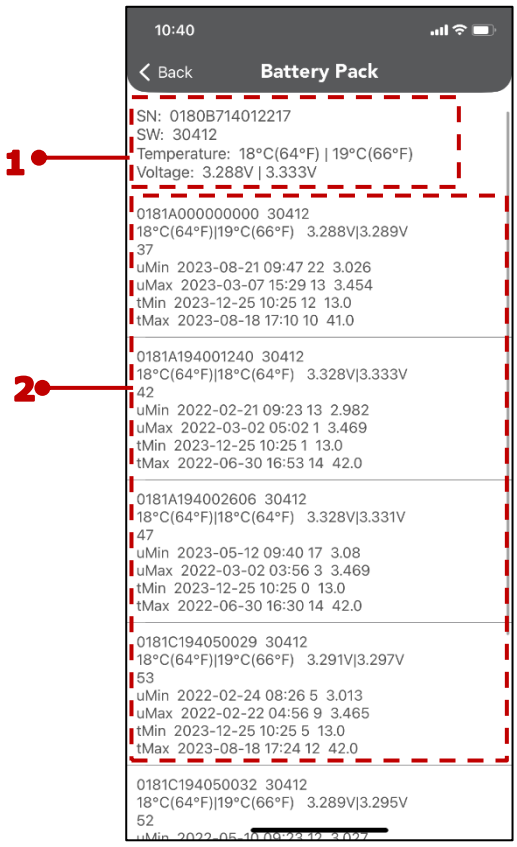
⇨ Click “Next calibration“ for the battery calibration.

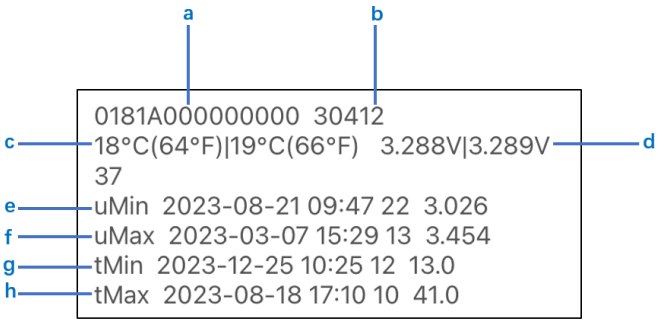
⇨ Click “Confirm“ button.



5.3.2 Battery Rack

⇨ Click button to enter the battery Rack interface. A battery rack contains up to six battery packs.





No.	Name	Description
1	Battery rack information	SN: Battery rack serial number
		SW: Battery rack software version
		Temperature: Current minimum | maximum temperature of the battery cell in the battery rack
		Voltage: Current minimum | maximum voltage of the battery cell in the battery rack
2	Battery pack information	a: Battery pack serial number
		b: Battery pack version number
		c: Current minimum | maximum temperature of the battery cell in the battery pack
		d: Current minimum | maximum voltage of the battery cell in the battery pack
		e: The historical minimum voltage of the cell in the battery pack. The minimum voltage of the 16th cell at 2022.12.20 17:01:42 is 2.597 V.
		f: The historical maximum voltage of the cell in the battery pack. The highest voltage of the first cell at 2022.12.13 13:46:28 is 3.455V.
		g: The historical minimum temperature of the cell in the battery pack. The minimum temperature of the 23rd cell at 2023.01.28 06:33:16 is 14°C.
		h: The historical maximum temperature of the cell in the battery pack. The minimum temperature of the 23rd cell at 2022.11.11 16:39:59 is 38°C.

5.3.3 Cell

Click battery pack information to enter the cell interface, as shown in the following figure:

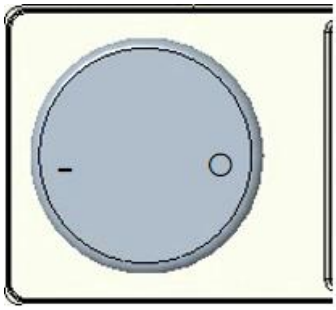
For example: The selection section means the current temperature and voltage of the second cell.

5.4 Power off Battery system

When turning off the battery system, follow the sequence of steps below to prevent damage to the system:

⇨ Press switch button to“O“ position. Observe the LED indication on panel.

⇨ Check that the LED indicator of the battery is off.



6 Operation

6.1 Normal operation

The Power Battery itself requires no operation.

The LED status indicator at the bottom of the Power Battery Master can reflect the following states:

LED indication	Status	Status Power Battery
Green		In operation (battery is connected to the Power Storage).
Red		Fault (battery is not connected to the Power Storage).
Orange		Initialisation (battery is not connected to the Power Storage).
Red/Orange (blinking)		CAN connection to the Power Storage is interrupted.
Red/Green (blinking)		Software update (battery is not connected to the Power Storage).

6.2 CAN-communication

Two LEDs are installed on the Ethernet interface to enable the Power Battery Stack to be diagnosed.

LED	LED indication	Status	Status Power Battery
1. Supply voltage	Green		Voltage supply of stack CAN interface works properly
2. CAN communication	Orange blinking		CAN communication ongoing

6.3 Troubleshooting

If a fault occurs (LED status indicator does not light up green), warnings appear on the display of the Power Storage. They can also be called up via the **RCT Power App**.

In the event of a malfunction:

⇨ Switch off the power battery at the on/off switch, → chapter 1.8.1 "Power battery master".

⇨ Consult the manufacturer's customer service.

6.4 Periodic maintenance

The Power Battery does not contain any serviceable parts.

In case of malfunctions, please contact the RCT Power service department.

7 Storage, transportation, cleaning and disposal

7.1 Storage

⇨ Store the Power Battery Stacks in a clean, dry, cool, frost-free room on non-flammable and non-conductive surfaces.

Too high storage temperature leads to faster self-discharge and premature ageing.

⇨ To avoid damage, store the Power Battery Stacks in an environment with relative humidity <85%, no corrosive gas and storage temperature from -20 °C to 45 °C.

⇨ For long-term storage longer than 3 months, store the Power Battery Stacks in an environment with relative humidity < 65%, no corrosive gas and a storage temperature of 0°C to 45°C.

⇨ After 6 months of storage at the latest, carry out a voltage measurement on the power battery stacks and contact the manufacturer if a voltage of <67V is measured.

7.2 Transportation

Battery pack has been certified in UN38.3 (Section 38.3 of the sixth Revised Edition of the Recommendations on theTransport of Dangerous Goods: Manual of Tests and Criteria) and SN/T 0370.2-2009 (Part 2: Performance Test of the Rules for the Inspection of Packaging for Exporting Dangerous Goods). Battery pack is classified as category 9 dangerous goods.

⇨ The battery pack shall not be transported with other inflammable, explosive or toxic substances.

⇨ Ensure the original Package and label complete and recognizable.

⇨ Prohibit direct exposure to sunlight, rain, condensing water caused by temperature difference and mechanical damages.

⇨ Prohibit to pile up more than six battery pack.

⇨ There will be a drop in capacity during transportation and storage.

⇨ Transportation temperature is between 14°F to 104°F (-10 °C to 40 °C), relative humidity: <85%RH.

7.3 Cleaning

⇨ Clean the surfaces with a slightly damp cotton cloth.

Risk of injury from electric shock!

Inside the components of the Power Battery there are elements under high voltage which can also generate high currents! In the event of a short circuit, very high currents can flow and cause burns. Touching conductive parts can cause cardiac arrhythmia and shock.

- Do not open the housing!
- Ensure that the housing and cable are not damaged!
- Ensure that no liquid penetrates into the cable and housing!

7.4 Disposal

This symbol indicates that the appliance must not be disposed of with household waste at the end of its service life, but as electronic waste.

Observe local regulations!

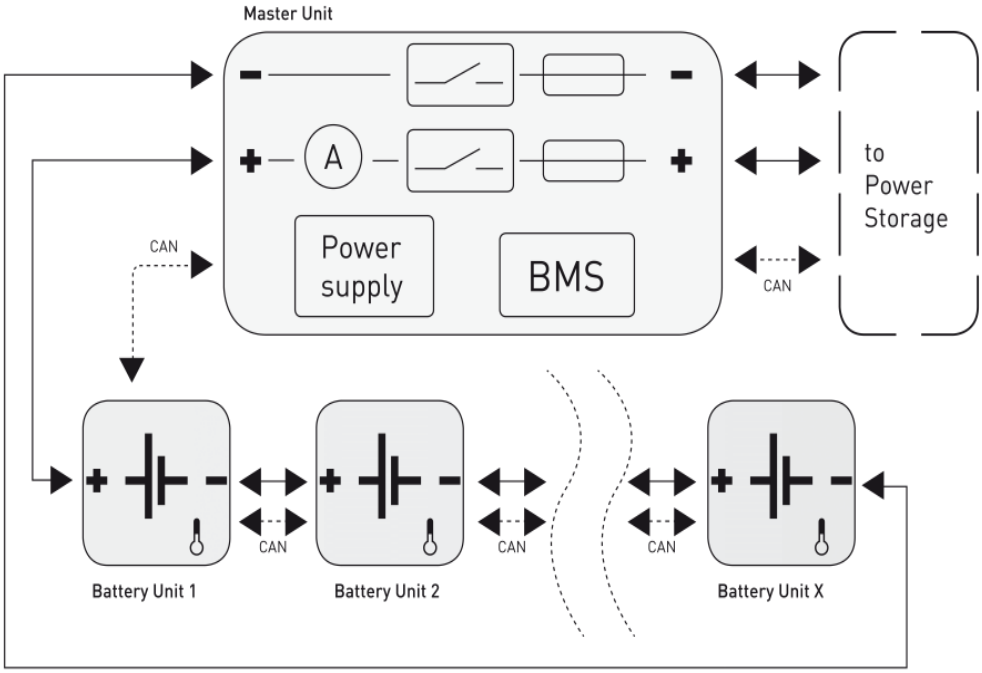
Note on data protection: If the device contains data memories with possibly personal data, please ensure in your own interest that these are reliably deleted before disposing of the device.

8 Technical Data

Power Battery	5.0	7.5	10.0	12.5	15.0
ELECTRICAL PARAMETER					
Nominal capacity*1	5.0 kWh	7.5 kWh	10.0 kWh	12.5kWh	15.0 kWh
Usable Capacity(90%DOD)	4.5 kWh	6.75 kWh	9.0 kWh	11.25kWh	13.5 kWh
Voltage range*2	145.4 V ... 165.6 V	218.2 V ... 248.4 V	290.9 V ... 331.2 V	363.6 V ... 414.0 V	436.3 V ... 496.8 V
Nominal voltage	153.6 V	230.4 V	307.2 V	384 V	460.8 V
Maximum charge/ discharge current*3	25A/25A	25A/25A	25A/25A	25A/25A	25A/25A
Max. Charge power	3840 W	5760 W	7680 W	9600 W	11520 W
Max. Discharge power	3840 W	5760 W	7680 W	9600 W	11520 W
Depth of discharge	Max. 100% DOD settable				
Standby consumption	< 5 W				
Interface					
Power Storage interface	CAN				
General					
Battery technology	LiFeP04				
Dimensions (H*W*D)	598*345*345mm (1.96'x1.13'x1.13')	828*345*345mm (2.72'x1.13'x1.13')	1058*345*345mm (3.47'x1.13'x1.13')	1288*345*345mm (4.23'x1.13'x1.13')	1518*345*345mm (4.98'x1.13'x1.13')
Weight (single stack 25.2 kg(55.5 lb))	56.4kg (124.3 lb)	81.6kg (179.9 lb)	106.8kg (235.5 lb)	132kg (291.0 lb)	157.2kg (346.6 lb)
Number battery stacks	2	3	4	5	6
Enclosure type	IP65				
Type of installation	Floor stand / Indoor or Outdoor				
Operating temperature range*4	-18°C ~ +55°C (-0.4 °F ~ 131 °F)				
Optimum operating temperature Range	0°C ~ + 45°C (32 °F ~ 113 °F)				
Storage Temperature Range *5	-20°C ~ + 45°C (-4 °F ~ 113 °F)				
Connector type	Quick Connector				
Warranty	10 years				
Country of manufacture	China				
SAFETY /STANDARDS *6					
EMC	EN61000-6-1, EN61000-6-3, FCC Part 15B				
Safety	UL1973, UL9540A, EN/IEC 62619, IEC 60730, IEC63056				
Certificates	CE, EN/IEC 62040, IEC 62477, UN 38.3				

* 1: Nominal Energy, test conditions: 0.3C charge & discharge at +25 °C.
* 2: When the temperature is -18℃ to 0℃, the cell protection voltage is 2.55V.
* 3: Depend on the max. battery charge/discharge current of the inverter.
* 4: When the ambient temperature is 50℃, the current will be 7.5A. When the ambient temperature is 55℃, the current will be 2A.
* 5: Storage Temperature Range: -20°C to + 45°C, within 6 months; -30°C to + 60°C, within 7 days.
* 6: Further certificates: www.rct.power.com.

Block diagram



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