

# **Installation and User Manual**



4K5-Ultra

LOW VOLTAGE & HIGH VOLTAGE

### **ATTENTION**

# THIS MANUAL MUST BE READ ENTIRELY EVEN IF YOU USE THE 4K5 Ultra AS HIGH VOLTAGE YOU MUST READ ALSO THE LOW VOLTAGE SECTION



**ATTENTION:** The battery could explode and/or be severely damaged if dropped or crushed. Never install the battery if the battery appears damaged.



**ATTENTION:** Appropriate mechanical lifting equipment must be used since the Battery Module weighs 99.2Lbs / 45 kg



**ATTENTION:** The battery may explode or catch fire if exposed to open flames or other extreme sources of heat.



**ATTENTION:** The battery terminals must be disconnected before commencing any work on the battery.



**ATTENTION:** This battery can accumulate parasite current. Do not touch the positive and the negative terminals. Always check the terminals with a voltmeter.

Always ensure that there are ZERO volts present on the terminals before performing any operation on the battery, the HV FAST terminals must have their rubber protections in place all the time and remove them only when ready to connect the HV cables.



**ATTENTION:** Always wear Individual protection devices, use insulated tools, and follow the safety plan of this manual.



At end of life, these batteries must be disposed of properly by a certified professional company.



Do not open the battery cover for any reason.

Opening the battery is a prohibited and potentially dangerous operation.

Do not short the battery terminals as this may cause fire or explosion.

Do not use charging devices, cables, connectors, fuses, switches not approved by WeCo.

The battery and its connections such as cables, switches, fuses, bus bars etc. they must be inspected, cleaned, tightened every three months or whenever necessary also in consideration of the environmental conditions and or stress of use of the system.

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#### 1 Statement:

#### 1.1 information acquisition

The information and guidance contained in this manual is related to the WECO 4K5-Ultra Stackable model of battery. This manual contains two sections:

In case of product upgrades or other reasons, this document will be adjusted accordingly. Unless otherwise agreed, this document is intended to be used only as a guide and all statements, information and advice in the documentation shall not constitute any express or implied action in contradiction to local regulations or standards.

For more information, please contact us.

The official information and the latest data sheet are available on www.wecobatteries.com .

#### 1.2 Firmware acquisition

It is essential that the Battery Module is equipped with the latest firmware version available. New batteries are equipped with the latest Firmware Version, however before commissioning please check via Bluetooth or WiFi APP the latest FW release or search it on <a href="https://wecobatteries.com/download-area/">https://wecobatteries.com/download-area/</a>.

From time to time, firmware will be updated to improve the functionalities and battery capabilities.

The latest version of the firmware is always available free of charge and can be updated by your local installer. You can always contact <a href="mailto:service@wecobatteries.com">service@wecobatteries.com</a> for additional information on the upgrade procedure.



#### NOTICE:

This Battery Module is designed to be used indoor and outdoor.

When it installs as outdoors application, it is important not to expose it directly to the open air. It must be protected by a shelter or roof.

The Battery Modules must be stored indoors in a clean, dry, cool location in a limited access area.

DO NOT OPEN THE BATTERY COVERS
DO NOT REPAIR DISMOUNT OR DISASSEMBLE ANY PART OF THE BATTERY
DO NOT OPEN THE BATTERY COVER AS THIS OPERATION FORBIDDEN

#### 2 Preface:

Thank you for choosing our product.

We will provide you with a high-quality product as well as reliable after-sale service. To protect against harm to both personnel and the product, please read this manual carefully.

This manual provides detailed information on operation, maintenance and troubleshooting of the product as well as health and safety advice.

#### **Declaration:**

The manufacturer holds the right of final explanation of any content in this manual.

The Battery Capacity is intended to be 4.5kWh in the range 100-0% of the BMS.

The capacity is not constant at every cycle and may vary based on many factors, the energy degradation is not constant over the time or cycles and is heavily affected by the temperature, C-Rate and DoD (Depth of Discharge).

The performance Limited Warranty Documents sets the parameters to obtain the best performances from the battery. All trademarks shown in this manual belong to their legitimate owners; trademarks of third parties, product names, trade names, corporate names and companies mentioned may be trademarks owned by their respective owners or registered trademarks of other companies and are used purely for explanatory purposes and for the benefit of the owner, without any purpose of violation of the copyright in force.



### **ATTENTION**

The release of "critical updates" implies the mandatory installation of the FW within 60 days in order not to lose the right to the warranty, see Limited Warranty conditions

### 2.1 System Design

System Design is the process of defining the architecture, components, modules, interfaces and load data for a system to satisfy specified requirements.

For a solar energy system, these components are the PV modules, inverter/charge controller & batteries, as well as the different interfaces of those components.

#### 2.2 Battery Operation

There are several factors that affect the operation of the battery that could impact its ability to deliver capacity and life expectancy.

#### 2.3 Storage

Battery Module shall be stored in original packaging, in a clean, level, dry, cool location indoors.

Recommended storage temperature is 77°F / 25°C

The battery can be stored in the range of -4°F to +113°F / -20°C to +45°C but it requires an inspection\* and recharge\*\* every three months (max charging current is 0. 1C to recover from low voltage status during the storage period). Max SoC storage is 50%.

\*Inspection parameters – identify the State of Charge (SOC), look for any alarms and address accordingly, look for physical damage to the Battery Module. 
\*\*Charge at 0.1C and not more than 50% SOC. If shipped by sea, you must refer to the UN38.3 standard, if by road, refer to the local codes.

#### 2.4 Temperature

Many chemical reactions are affected by temperature, and this is true of the reaction that occurs in a storage battery. The chemical reaction of a Li-Ion is slowed down by a lowering of the electrolyte temperature that results in less capacity. A battery that will deliver 100% of rated capacity at 77°F/25°C will only deliver approximately 75% of rated capacity at +50°F/+10°C

At temperatures down to  $+32^{\circ}F$  /0°C the charge current may be limited to 0.1C depending on other factors, however at temperatures below  $+24.8^{\circ}F$  /-4°C charging is restricted by the BMS.

As part of the Performance Warranty, Charge and Discharge shall be in the range  $+50^{\circ}F$  to  $+113^{\circ}F/+10^{\circ}C$  to  $+45^{\circ}C$ . Any usage outside this range is not covered by Performance Warranty.

#### 2.5 Depth of Discharge (DoD)

Depth of discharge is a function of design. The deeper the discharge per cycle, the shorter the life of the battery. A cycle is a discharge and its subsequent recharge regardless of depth of discharge, it considers the energy IN and OUT.

The lower the DOD value, the higher the battery longevity and the capacity retention over the time.

#### 2.6 C-Rate

Value of the Current used to charge and discharge the battery is expressed in C (1C = 90A, 0.1C= 9A in case of the 4K5 90Ah battery).

#### 2.7 Charging (and discharging)

Most battery capacity/life issues can be traced to improper charging. Improper charging settings may lead to an overcharging or undercharging condition, any wrong charging process will affect the life of the battery or its ability to retain energy.

The lower the C-Rate of the charging/discharging process the more the battery will benefit from long term performance.

#### 2.8 Manufacturing Warranty

Although the BMS of the battery allows a wide range of use, both in terms of temperature and charging currents, this should not be construed as an implicit authorization to use the battery at these levels. For the purposes of the Performance Warranty, it is mandatory that the battery is used within the range of temperature and charge/discharge current, and Depth of Discharge indicated in the Performance Warranty. See Limited Warranty Document.

#### 2.9 Performances Warranties

It is an additional Warranty and only apply to batteries connected via BMS line to an approved inverter, the working parameter of the battery must remain within the performance warranty terms.

Any other use, even if permitted by the BMS ranges, is not covered by the Performance Warranty.

See Limited Warranty Document.

#### 3. Product Overview

The WeCo 4K5-Ultra is a Stackable Battery Module with a DUAL VOLTAGE module that can be used in a Low Voltage configuration or in a High Voltage configuration.

For LOW VOLTAGE (48.5-58.4 Vdc)

For HIGH VOLTAGE (400-500 Vdc)

\*Voltage ranges are estimates only as they always depend on interactions with other devices and ambient conditions.

#### 3.1 Information in this Manual

This manual relates only to the 4K5-Ultra Stackable Battery Module. Only trained and authorized personnel should install, troubleshoot, or assist WECO in local repairs of these Battery Modules. This manual should be reviewed in its entirety for proper storage, installation, and operation of the Battery Module.

#### 3.2 Use Range and Voltage Range

This installation guidance applies for the High Voltage and Low Voltage Inverters.

Make sure to use the correct inverter charging parameters before connecting to the battery.

Each WeCo 4K5-Ultra Battery Module has two different circuits and depending on the inverter voltage range, the installer must choose the correct battery configuration for that range.

Low voltage uses fast connectors. High voltage mode requires dedicated DC / DC modules. High voltage mode is output by the DC / DC module. In high-voltage mode, the 4K5-Ultra battery pack supports multiple and single use, and the maximum support of 15 parallel uses.

12 low-voltage batteries are connected in parallel, and 15 high-voltage batteries are connected in parallel.

#### 3.3 Additional Information

Product specifications subject to change without notice.

#### **IMPORTANT NOTICES:**

In high voltage mode, each battery pack provides about 2.5kW of power. When selecting the battery pack according to the preparatory installed capacity, please prepare the allowance to handle the peak power. It is recommended to use at least two 4K5-Ultra battery packs to form a high-voltage system.

If the system is composed of a consistent 4K5-Ultra battery pack, please make sure to set the power of the inverter not to exceed the output power of the battery pack.

#### Symbols meaning



#### **CAUTION:**

CAUTION represents hazardous situations which can cause injuries if not avoided.



#### **NOTICE:**

NOTICE represents the situations which can cause damage to property if not avoided.



#### **INFORMATION:**

INFORMATION provides tips that are valuable for optimum installation and operation of the product

#### 3.4 Safety Warnings and Notifications

Installation environment requirements: The WeCo 4K5-Ultra dual voltage Battery Module is designed for household/commercial purposes. For installation, it must be installed in a location complying with IP54.

Installations in locations that do not comply with IP54 may cause failure and/or damage to the product, in which case the product warranty will become void.

Never change or replace HV or LV connectors or cables with parts not approved by WeCo.

Do not change the cables with cables having different length or cross section, under any circumstances.

#### 3.5 Safety Guidelines



#### CAUTION:

Adequately insulated tools as defined by IEC 60900:2012 "Standard Specification for Insulated and Insulating Hand Tools" shall be used at all times to ensure battery terminals are not short circuited.

All electrical connections on the WeCo 4K5-Ultra Battery Module shall be made only by qualified personnel.

When installed and operated in accordance with this manual, the WeCo 4K5-Ultra Battery Module will perform in a safe and reliable manner in accordance with the battery operating specifications.

Subjecting the battery to an unsuitable operating environment or to damage, misuse or abuse may result in health and safety risks such as overheating or electrolyte smoke potential. All personnel must comply with the safety precautions and observe all warnings as detailed in this document. If any of the safety precautions or procedures detailed in this manual are not fully understood by the reader, the reader must not perform any operation on the battery until they have contacted the WeCo technical service representative for clarification and confirmation of understanding of the correct procedure.

The safety guidelines included in this document may not include or consider all the regulations in your area of installation/operation. When installing and operating this product, the installer must review and consider applicable Federal, State and Local laws and regulations in accordance with the industry standards of the product.

Installation personnel shall not wear metallic objects, such as watches, jewelry and other metal items when performing installations. Do not store un-insulated tools in pockets or tool belt while working in vicinity of battery to avoid short circuits and personal injuries.



### **CAUTION:**

The weight of an individual WeCo 4K5-Ultra Battery Module is 99.2 lb /45 kg. Please use original packaging and follow all safety precautions if the Battery Module is to be moved, to avoid damage to the product and personal injury. Relocating a battery to another system is not suggested as the aging and the differences in usage might affect the safety of the system when connected together. Always use new batteries, expansion of existing systems is allowed within 300 cycles or 1 year.



#### **ATTENTION:**

Each stacking unit can stack a maximum of three modules (due to height and stability). A maximum of 15 modules can form a low-or high-voltage stack. Before stacking modules, ensure that the supporting surface is solid enough to support the weight.

### **4.Warning Statements**







### Lithium Iron Phosphate (LiFEP04) Battery or Cell DANGER

#### 4.1 Hazard Statement

The materials contained in this product may only represent a hazard if the integrity of the cell or battery is compromised, physically, thermally, or electrically abused. The below are the hazards anticipated under those conditions: Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. Causes damage to organs (Bone, teeth) through prolonged or repeated exposure. Very toxic to aquatic life. Harmful to aquatic life with long lasting effects.

### **4.2 Precautionary Statement**

#### Prevention

Do not breathe dust. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/ face protection. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment, read the MSDS of the 4K5-Ultramodel before installing.

#### Response

If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before re use. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Get medical advice/attention if you feel unwell. Collect spillage.

#### Storage

Store as indicated in the Storage section of this manual, do not exceed one year without an inspection via Bluetooth debug APP or via PC software to monitor the status of charge. Storage temperature affects the SOC retention, if your storage temperature is not within 15 and 30 degrees the self-discharge might be faster than 1-2% a month. Consider these factors in your storage strategies.

#### Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations. Always contact a professional company to dismount and dispose the battery.

#### 4.3Supplemental information

Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The chemicals are contained in a sealed aluminum housing, while the cells are secured into a steel enclosure. Risk of exposure occurs only if the battery is mechanically, thermally or electrically abused. If this occurs, exposure to the electrolyte solution contained within can occur by inhalation, ingestion, eye contact and skin contact.

Additional Notes: CAUTION: Do not open or disassemble the battery. Do not dispose in fire, mix with other battery types, charge above specified rate, connect improperly, or short circuit, which may result in overheating, explosion or leakage of cell contents. Do not open or disassemble. Do not puncture, deform, incinerate, or heat above 85°C /185°F. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Do not wear metallic ornaments.

Always use protective personal devices and personal protections against electrical shocks, impacts and ejections.

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard. Additional information is given in the Safety Data Sheet.

FOR NORTH AMERICA>Emergency Number USA/Canada: CHEMTREC (800) 424-9300, Outside USA 1 (703) 527-3887 FOR EUROPE> Emergency Number for EUROPE/Africa/ASIA: Emergency: +39 055 0357960

### **5.General Preparation**

Before Installation:

Ensure that all the modules are turned OFF.

Ensure the enclosure is free from damages dents or any deformations caused by impacts.

Battery installation location should be at least 20m away from sources of heat, protected from any source of sparks, free flames and any other sources of extreme temperature.

Battery connecting cables shall be as short as possible to prevent excessive voltage drops.

Battery installation must be away from any GAS, FUEL or any INFLAMMABLE GAS OR LIQUID. The internal electronic devices can cause internal sparks during the normal usage.

Batteries with different capacity, different type/model or design or from different manufacturers shall not be connected together.

- Before connecting the battery, the battery positive and negative poles shall be carefully checked to ensure correct installation.
- 2. The installation location must be on a flat level surface, in a dry, clean and protected room, away from water and humidity.



The mechanical installation method for the WeCo 4K5-Ultra Battery Modules can be considered "conceptually" the same for HV and LV configurations, the operator must read this manual in full.

#### 5.1Necessary installation tools



### 5.2Personal Protective Equipment +1000 Vdc Insulated Tools



### **6.Battery Module Overview**

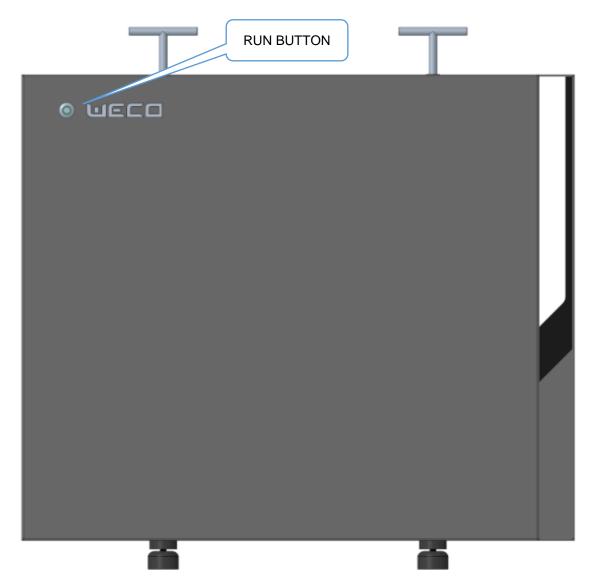
INFORMATION provides tips that are valuable for optimum installation and operation of the product.

#### **ATTENTION:**

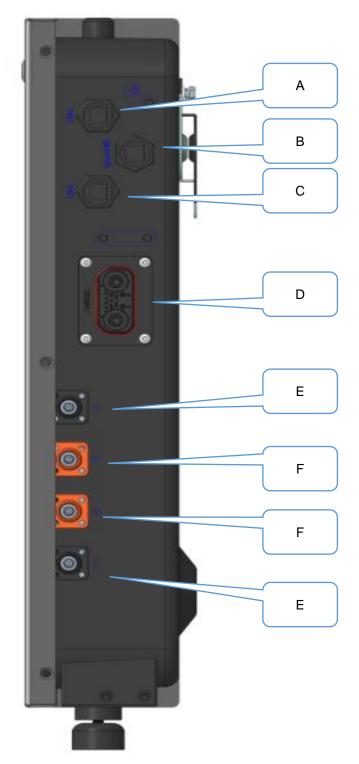
#### THE BATTERY IS DUAL VOLTAGE -

IT CAN BE INSTALLED IN EITHER A HIGH VOLTAGE CONFIGURATION OR A LOW VOLTAGE CONFIGURATION, BUT NEVER AT THE SAME TIME.

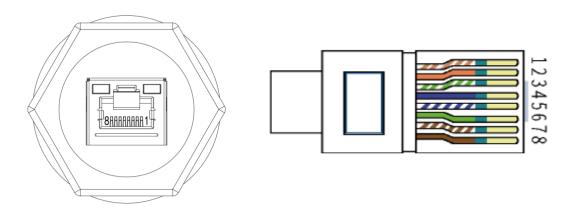
BE AWARE OF THE DIFFERENT CONNECTION METHODS AND THE SPECIFIC USE OF THE TERMINAL CONNECTORS.



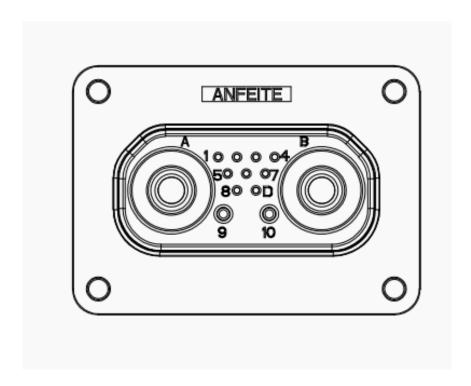
# 6.1Low Voltage Module



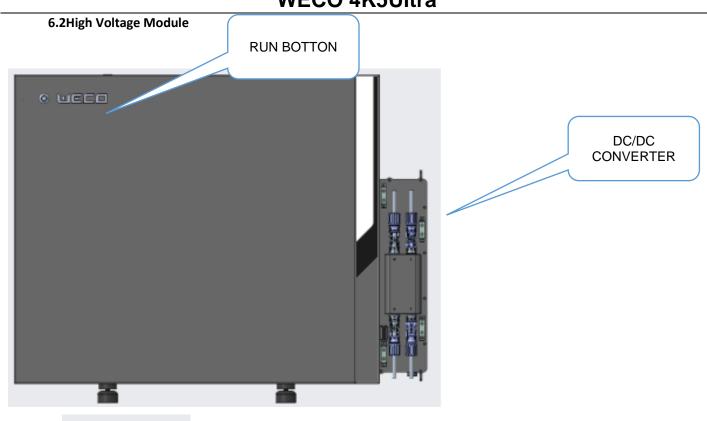
Battery Terminal Wiring Definition Table						
Interface	Name	Function				
Α	CAN A	CAN A to the inverter or the previous CAN B				
В	Operator WIFI	Connect the WIFI module				
С	CAN B	CAN B to the next CAN A				
D	DCDC	Connect the DCDC HV module				
E	LV POLE -	LOW VOLTAGE POSITIVE (-)				
F	LV POLE +	LOW VOLTAGE POSITIVE (+)				

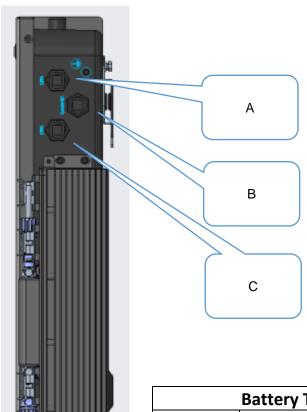


PIN	8	7	6	5	4	3	2	1
CAN A	WIN-	WIN+		CAN2L	CAN2H		CAN3L	CAN3H
CAN B	WDO-	WDO+		CAN2L	CAN2H			
WIFI					+5VI	GNDI	R232-RX	RS232-TX



PIN	1	2	3	4	5	6	7	8	9	10	Α	В
	CAN1L	CAN1H	Inside-	Inside+	Wake_	Wake_	Aux-	Aux+	Precharge+	precharge-	Out+	Out-
					Up+	Up-						





<b>Battery Terminal Wiring Definition Table</b>					
Interface	Name	Function			
А	CAN A	CAN A to the inverter or the previous CAN B			
В	Operator WIFI	Connect the WIFI module			
С	CAN B	CAN B to the next CAN A			



### **ATTENTION:**

THE BATTERY IS DUAL VOLTAGE – IT CAN BE INSTALLED IN EITHER A HIGH VOLTAGE CONFIGURATION OR A LOW VOLTAGE CONFIGURATION, BUT NEVER AT THE SAME TIME. BE AWARE OF THE DIFFERENT CONNECTION METHODS AND THE SPECIFIC USE OF THE TERMINAL CONNECTORS.

Learn about the different connection methods and the specific purpose of the terminal connector.

LV parallel connection

### **LOW VOLTAGE ONLY: FAST CONNECTORS**

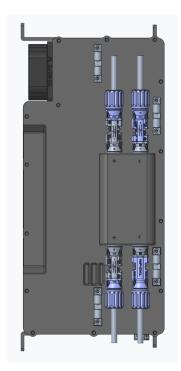








# **HIGH VOLTAGE ONLY: FAST CONNECTORS**





### 7.Storage & Pre-Operational Procedures

#### 7.1 Storage - Transportation - Removing / Relocation of Batteries

- ✓ This Battery is considered DANGEROUS GOODS by the United Nations and must be treated accordingly.
- ✓ Each box comes from the factory with the below labels:





- ✓ This battery can only be transported and stored with the original approved carton box, Certified as per UN CLASS 9 Y80.
- ✓ This Battery must be stored in its original carton box in a dry and cool place. Carton box is marked as below:



- ✓ The transportation and Storage State of Charge (SoC) shall not exceed 50%.
- ✓ The shelf period without recharging is 6 months, and then requires a quick charge up to 50% DoD. Charge at 0.1C and not more than 50% SOC. If shipped by sea, you must refer to the UN38.3 standard. If by road, refer to local codes.
- ✓ To preserve the performance and shelf life, this battery should optimally be stored at 77°F /25°F and @70% humidity.
- ✓ Acceptable storage temperature range of the battery is between +59°F and +95°F /+15°C and +35°C
- ✓ The self-discharge in the range of +59°F to +119°F /+15°C to +35°C is around 1% a month. Anything outside this range could exceed 10% a month.
- ✓ Do not store the batteries near sources of heat, vapor, gas, fuels, sparks or anything that could generate fire or explosion.
- ✓ Store inside and protect from water and moisture.
- ✓ Transportation of new and used or damaged modules must be in accordance with the UN 38.3 Regulation and with the Federal, State and Local regulations.
- ✓ If one or more working Battery Modules need to be removed or relocated, they must be marked as USED BATTERY (follow local rules).
- ✓ If one or more Battery Modules need to be replaced due to damage, they should be marked as **DAMAGED USED BATTERY** and follow any applicable procedures and all Federal, State and Local regulations.



The installer approaching this battery model for the first time must understand the use and operation of its accessories.

### 7.2 Module Unpacking and Handling

The battery is always delivered in WALL mode, and it is therefore necessary for the installer to make simple. Changes to install the STACK kit. Below are the installation phases.



# ATTENTION:

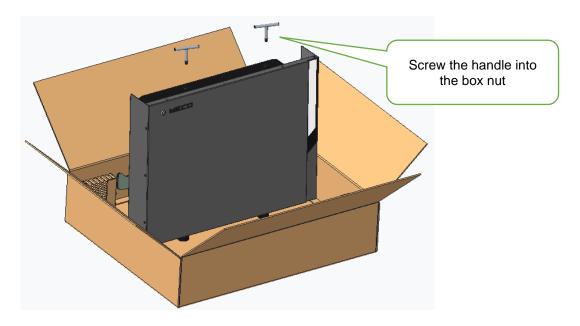
The battery requires two T-shaped handles, which can be moved by two people.

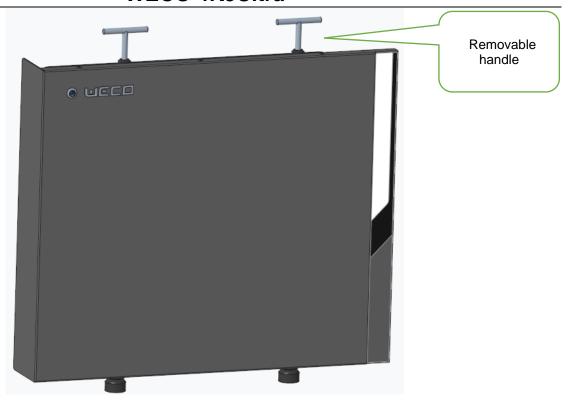
Before starting any operation on the battery, make sure to position the modules in their final position and structurally fix all the modules that make up the system on a previously verified surface.

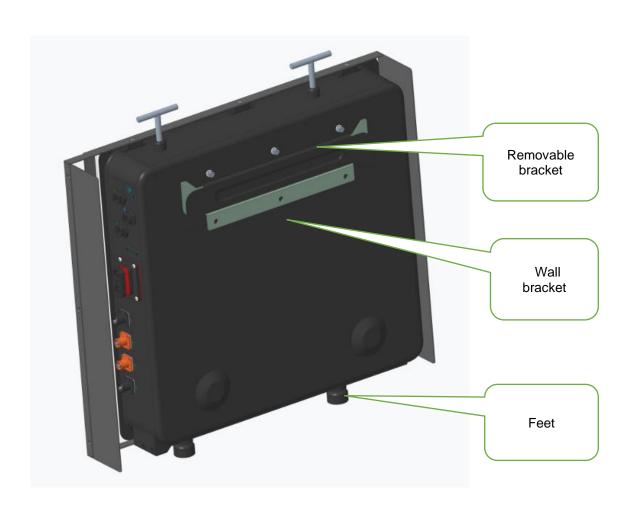


### ATTENTION:

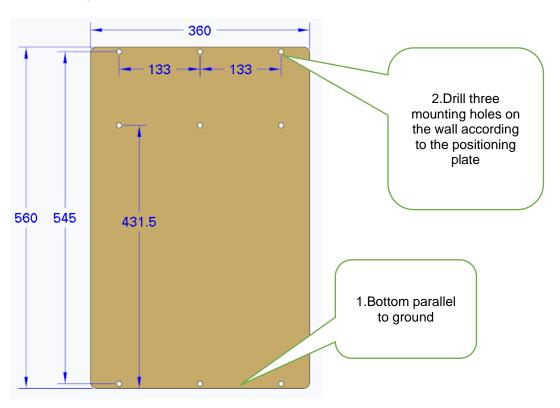
Handle and foot cup used during battery box handling.

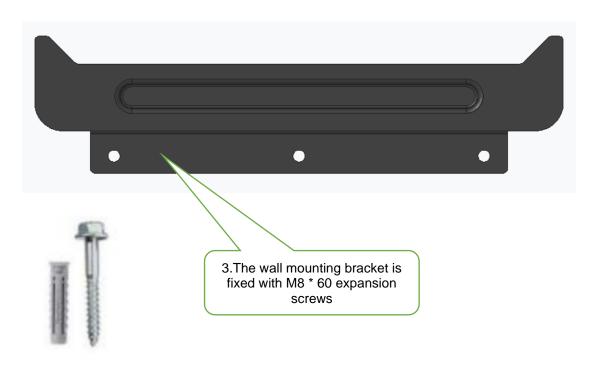


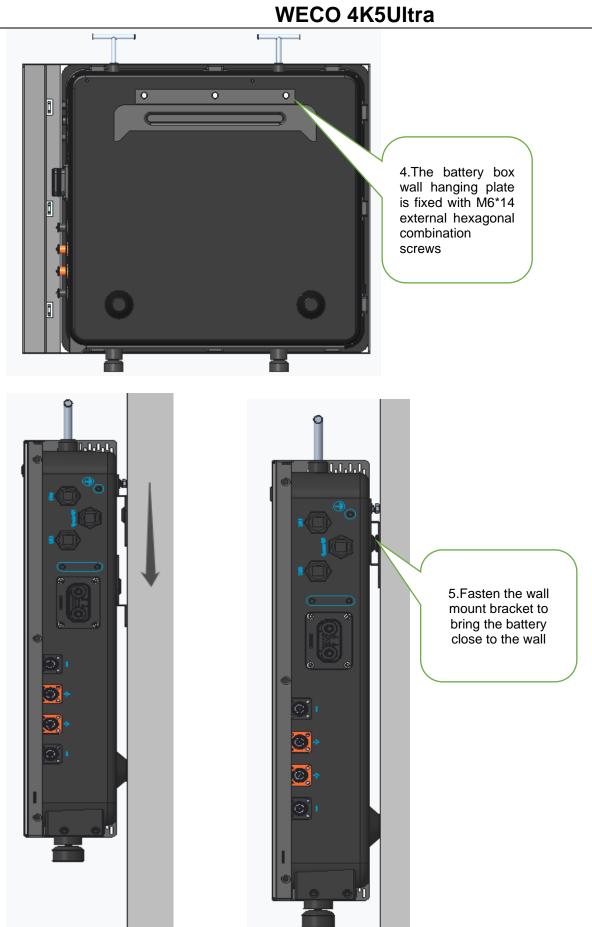




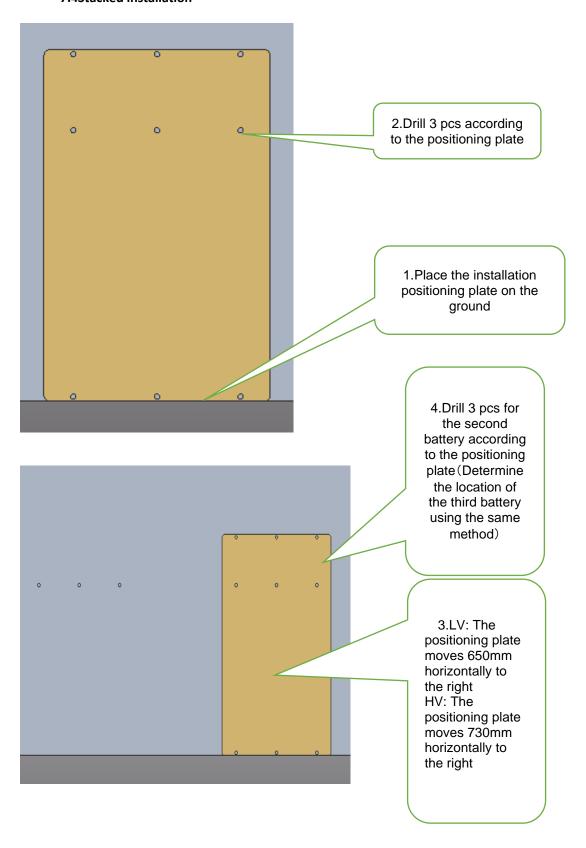
# 7.3Single installation



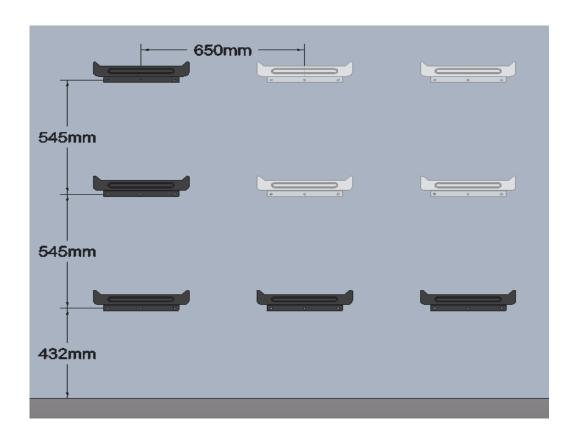


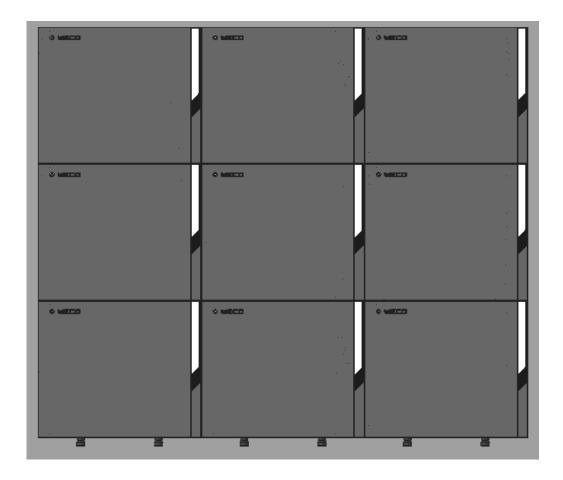


#### 7.4Stacked installation



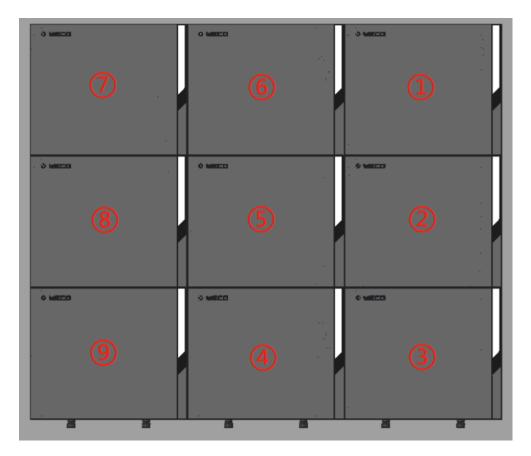
6.Determine the position of the second row of battery wall hanging plates according to the positioning plate





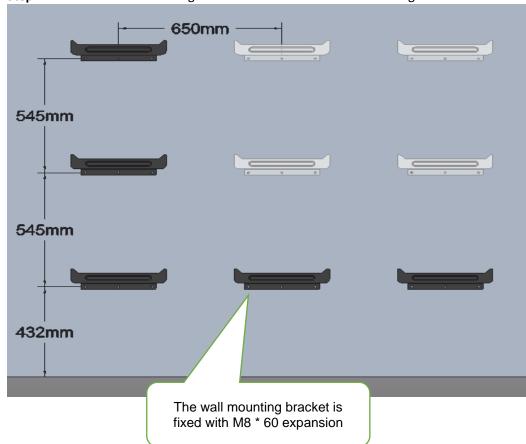
Learn about the different connection methods and the specific purpose of the terminal connector.

### 7.5Low voltage connection



This image is a renderings after installation. Batteries should be placed in the order of this image when installing: the first one is the master, followed by the slaves.

Step1: Follow the schematic diagram below to install the wall mounting bracket



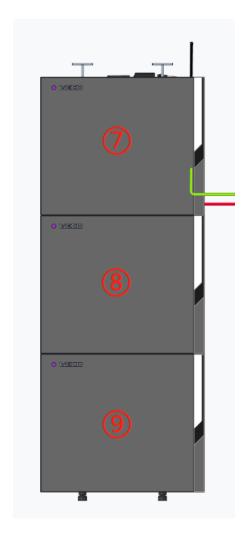


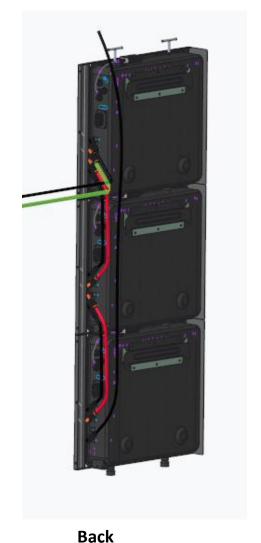
### **ATTENTION**

All the orange connector red cable are connected to the positive terminal, all the black connector black cable are connected to the negative terminal.

Disable the orange connector from connecting the negative terminal or the black connector from connecting the positive terminal.

Step 2: Stack as shown and to connect the power cords and connect parallel comm cable (9 CAN A to 8 CAN B, 8 CAN A to 7 CAN B, 7 CAN A to 6 CAN B), tighten the waterproof cover. and connect PE cable (9 PE to 8 PE to 7 PE to 6 PE), lock the ground lugs with M5 plum hex screws. Terminals that are not in use should be covered with dust covers



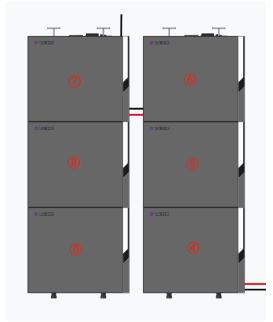




Step 3: Stack as shown and to connect the power cords and connect parallel comm cable

(7) CAN A to 6) CAN B, 6) CAN A to 5) CAN B, 5) CAN A to 4) CAN B, 4) CAN A to 3) CAN B, tighten the waterproof cover and connect PE cable (7) PE to 6) PE to 5) PE to 4) PE to 3) PE)

Lock the ground lugs with M5 plum hex screw. Terminals that are not in use should be covered with dust covers.



Front



**Back** 

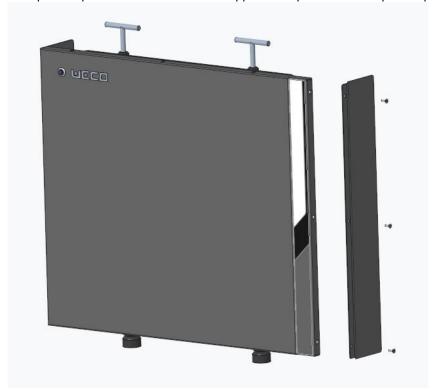
**Step 4:** Stack as shown and to connect the power cords and connect parallel comm cable (4) CAN A to 3) CAN B, 3) CAN A to 2) CAN B, 2) CAN A to 1) CAN B, 1) CAN A to inverter CAN, itighten the waterproof cover and connect PE cable (4) PE to 3) PE to 2) PE to 1) PE to ground PE) Lock the ground lugs with M5 plum hex screws. Terminals that are not in use should be covered with dust covers.





**Step 5:** Install the side panels.

The side panel is placed on the inside of the upper cover plate and the 3 pcs M4 plum Allen screws are locked.

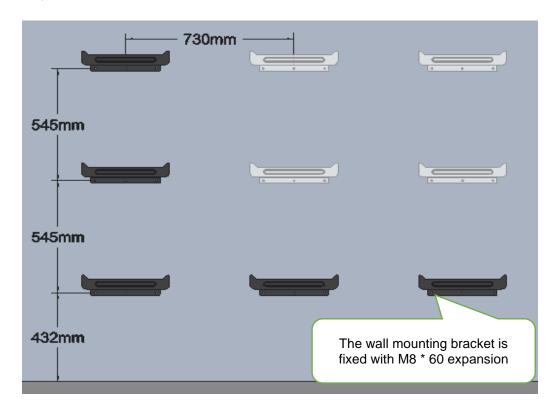


### 7.6High voltage connection

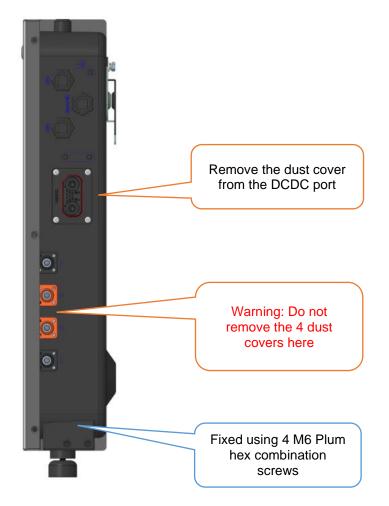


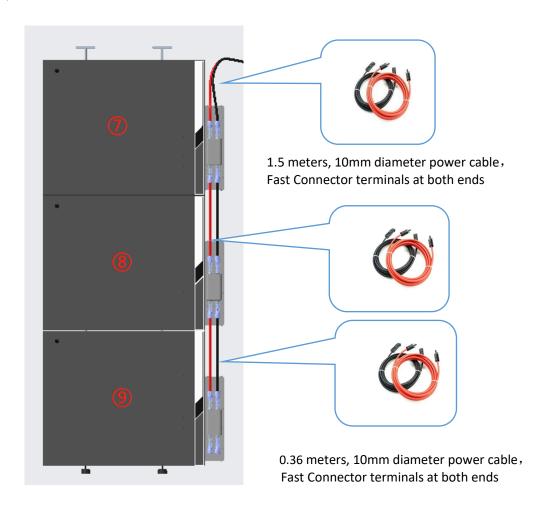
This image is a rendering after installation, and it should be placed in the order of this image when installing. The first one is the master, followed by the slaves.

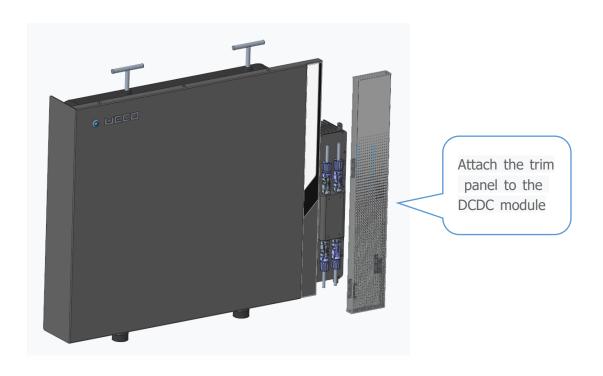
Step1: Follow the schematic diagram below to install the wall mounting bracket



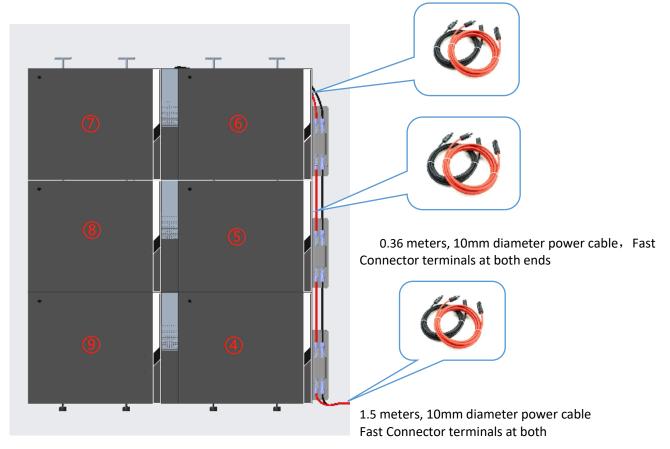
Step 2:Install the DCDC module



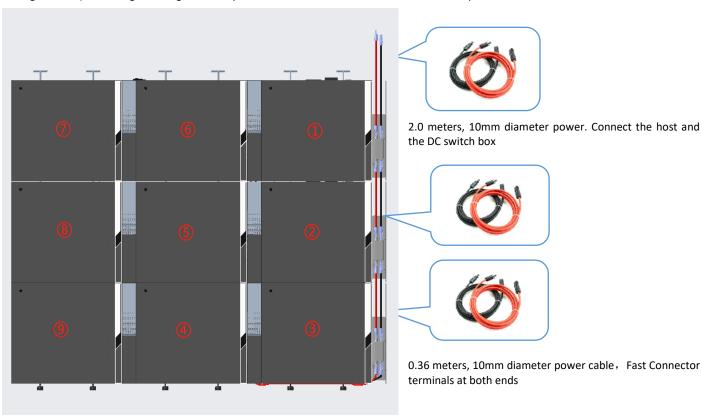




**Step 4:** Stack as shown and to connect the power cords and connect parallel comm cable ( ) CAN A to (6) CAN B, (6) CAN A to (5) CAN B, (5) CAN A to (4) CAN B, (4) CAN A to (3) CAN B) , tighten the waterproof cover and connect PE cable ( 7) PE to (6) PE to (5) PE to (4) PE to (3) PE) Lock the ground lugs with M5 plum hex screws. Terminals that are not in use should be covered with dust covers and then install the decorative panels

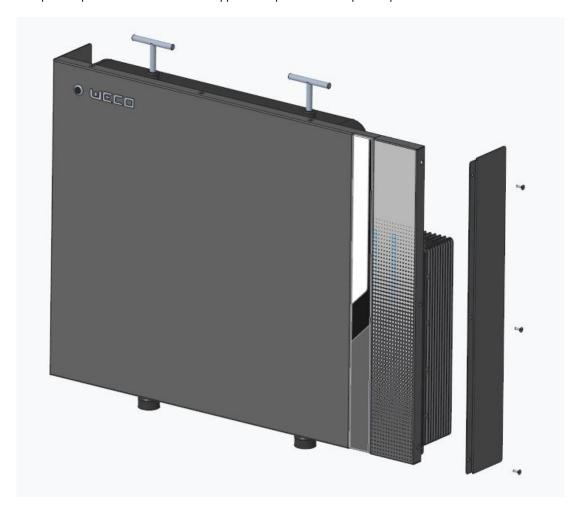


**Step 5:** Stack as shown and to connect the power cords and connect parallel comm cable (4) CAN A to 3 CAN B, 3 CAN A to 2 CAN B, 2 CAN A to 1 CAN B, 1 CAN A to inverter CAN tighten the waterproof cover and connect PE cable (4) PE to 3 PE to 2 PE to 1 PE to ground PE) Lock the ground lugs with M5 plum hex screws and then install the decorative panels



**Step 6:** Install the side panels.

The side panel is placed on the inside of the upper cover plate and the 3 pcs M4 plum Allen screws are locked.



#### 8. Package Information and System Configuration List

The battery Module is packed in cartons with accessories.

Upon receipt, review the configuration list carefully to make sure that the battery module and accessories are received in the correct quantities and type and visually inspect to ensure that they are free from damage.

If battery is damaged and/or components missing, contact your local WeCo representative.

Use of this product other than as described in this document will nullify the product warranty.

The substitution of any components of this Battery Module will nullify the product warranty.

The use of any components contained within or connected to this Battery Module other than the products sold as part of this product or recommended by the manufacturer will nullify the product warranty.

#### 8.1Product Identification and labels

The nameplate label describes the product parameters and is attached to the product. For details, please refer to the nameplate label of the product. For safety reasons, the installer must have a thorough understanding of the contents of this manual before installing the product.

The label data may be different from the manual, always refer to the label of the product you have purchased.

#### WeCo BATTERY MODULE - PRODUCT LABEL



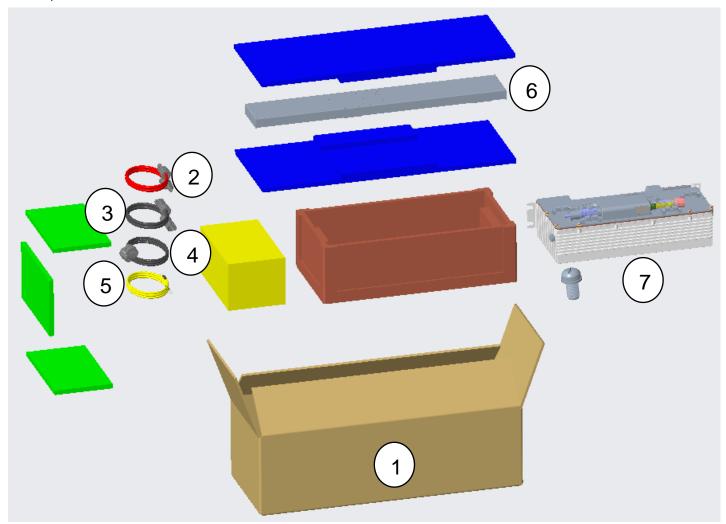
### 8.2 Accessory List

The Battery Module is packed in a carton together with accessories when ordered.

When unpacking the Battery Module, be sure to check that the Battery Module and accessories are free from damage and that the correct quantities of each component are included within the carton in accordance with the purchase agreement in your country.

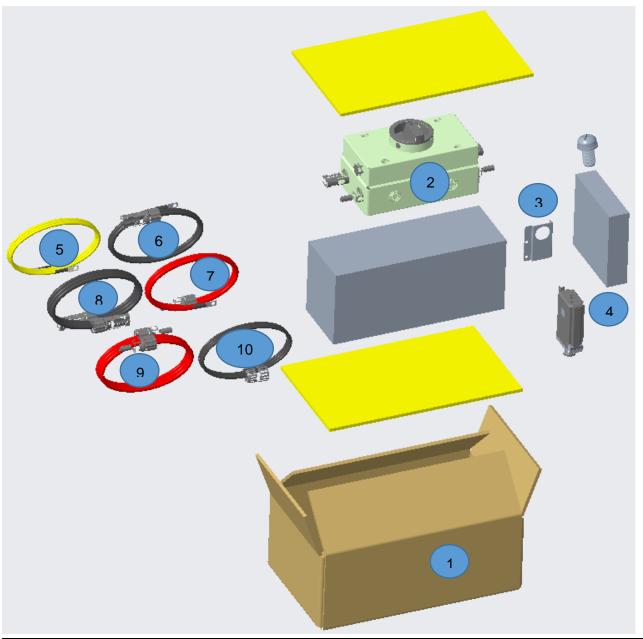
The following list of components can be used as a checklist when unpacking the individual Battery Module and battery kits.

#### DC/DC Parallel Kit



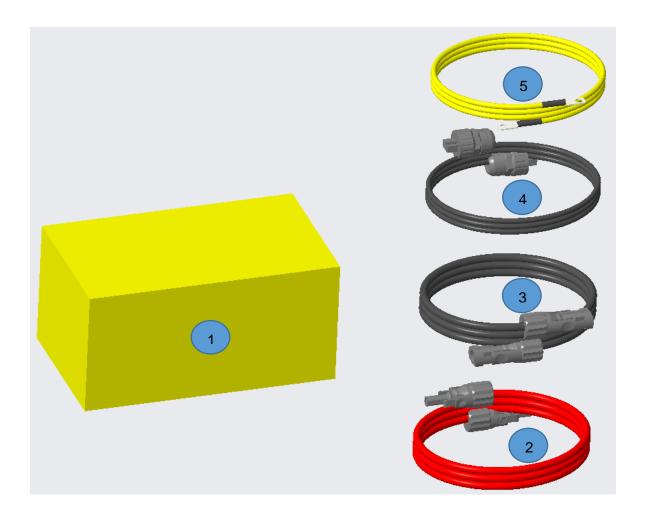
number	describe	specification	quantity"
			0
1	Outer box	570x232x190mm	1
2	Power Cable positive	0.36m 8AWG UL10269 Red	1
3	Power Cable negative	0.36m 8AWG UL10269 Black	1
4	Communication cable	0.7m CAT 5 black cable IP54	1
5	Ground cable	0.7mX6mm2	1
6	Side cover	670*130mm Aluminum cover plate	1
7	DC/DC Converter	580*310mm	1
8	Screws	GB/T 701-2008_M6X12	5

# DC/DCParallel Kit-1



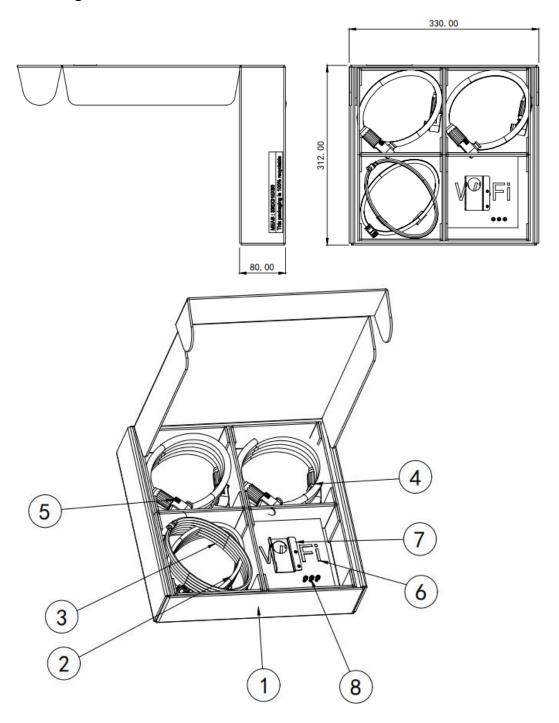
number	describe	specification	quantity"
			0
1	Outer box	320x195x150mm	1
2	High voltage switch	1500VDC_55A 270x100x118mm	1
3	WiFi bracket	100x65mm	1
4	WiFi device	WIFI collector 123x121x32mm	1
5	Ground cable	3mX6mm2	1
6	Power cable	0.5m 8AWG UL10269 Black	1
7	Power cable	0.5m 8AWG UL10269 Red	1
8	Power cable	2m 8AWG UL10269 Black	1
9	Power cable	2m 8AWG UL10269 Red	1
10	Communication cable	3m CAT 5 black cable IP54	1
11	Screws	M3*12 Allen screw round head	

# DC/DCParallel Kit-2



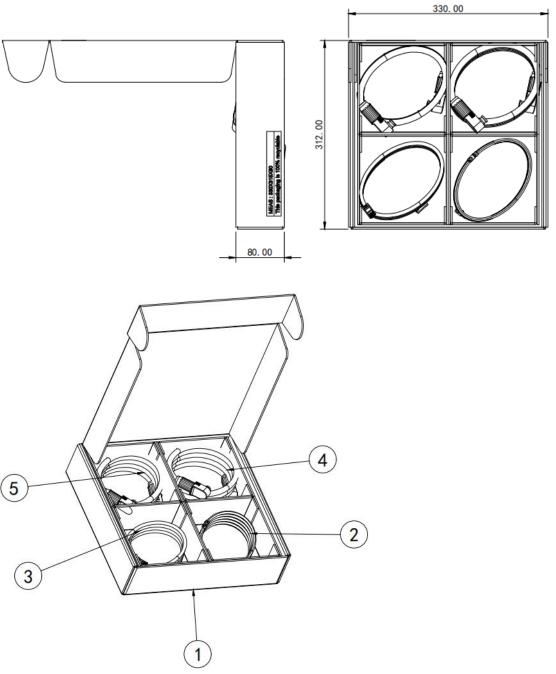
number	describe	specification	quantity"
			0
1	Outer box	215x124x105mm	1
2	Ground cable	1.5mX6mm2	1
3	Power line	1.5m 8AWG UL10269 Black	1
4	Power line	1.5m 8AWG UL10269 Red	1
5	Communication line	1.5m CAT 5 Black Cable IP54	1

# **LOW Voltage Parallel Kit**



number	describe	specification	quantity"
			0
1	Screws	M3*12 Allen screws round head	3
2	WI-FI bracket	100x65mm	1
3	Wi-Fi Device	WIFI collector 123x121x32mm	1
4	LV parallel negative cable	3.5m RV-105 25mm2 black cable fast connectors	1
5	LV parallel positive cable	3.5m RV-105 25mm2 red cable fast connectors	1
6	Ground	3mx6mm2 M6 Lugs	1
7	Communication line	3m CAT 5 black cable IP54	1
8	4k5 - ultra - cables carton box	4k5 - ultra - cables carton box	1

# LOW Voltage Parallel Kit-1



number	describe	specification	quantity"
			0
1	LV parallel negative cable	1.15m RV-105 25mm2 black cable fast connectors	1
2	LV parallel positive cable	1.15m RV-105 25mm2 red cable fast connectors	1
3	Communication line	1.8m CAT 5 black cable IP54	1
4	Ground	1.5m x 6mm2 M6 lugs	1
8	4k5 - ultra - cables carton box	4k5 - ultra - cables carton box	1

### 9 First start and PC Software operations

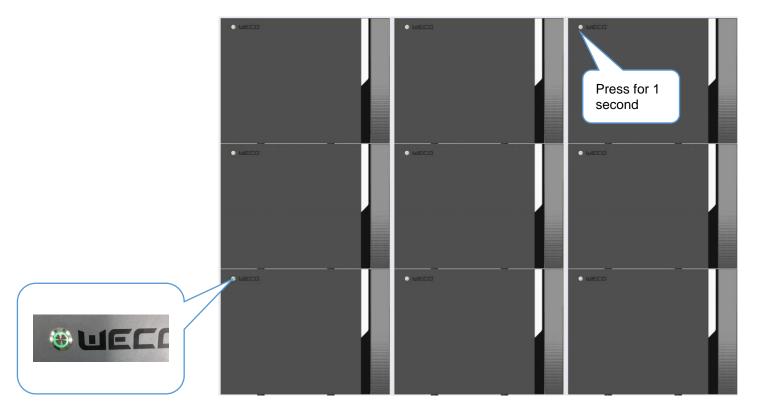
#### 9.1 Boot instructions

Tap the run button of the master battery and hold for 1 second, wait for the green light to turn on and then let it go. At this point, the indicator will enter the breathing state and the master will wake up all the slave batteries.

All battery LEDs will enter in a blinking breathing state, indicating that the system has powered on normally.

Within 1 minute, the battery pack indicator light of the MOS turns steady on if it is open and those that are not open will continue to maintain the breathing light state.

If the led of one battery doesn't turn on, please check the communication cable.



If the system fails to activate at power on, please contact your supplier.

Do not open the battery pack for service. Opening the battery will void the warranty.

### 9.2 PC Connection WeCo Monitoring Quick Guide

For PC operations, a USB-to-serial communication cable with an RJ45 connector and the WeCo Monitor tool for Firmware Upgrade and Protocol Setting.

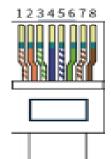
- ◆ PC windows 10/11
- ♦ WeCo MONITOR for 4K5 Ultra
- Windows Net Frame 3.5 or above
- ◆ USB-to-serial communication cable with an RJ45 connector Cable RJ45 232
- ◆ Latest firmware for WeCo Batteries is available online

#### PC MONITOR 232 / USB PC CONNECTION

Screw Terminal Side	Cable 232 / RJ45
PIN1	-
PIN 2 T/R-	RX
PIN 3 RXD+	TX
PIN 4	
PIN 5	GND
PIN 6	625







RJ 45 TO WIRE - PIN DEFINITION-PIN 01 = TX PIN 02 = RX PIN 03 = GND PIN 04 = none PIN 05 = none PIN 06 = none PIN 07 = none PIN 08 = none

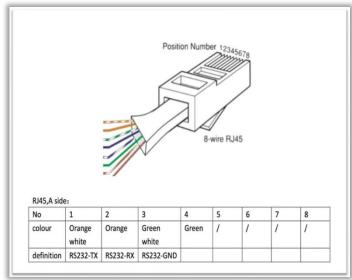






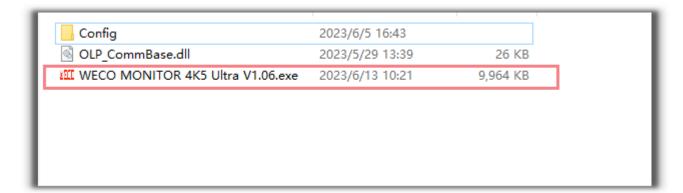
Operator/WiFi





RS 232/USB serial converter

- 1.Standard USB/rs232 Converter (WeCo 232 USB Adapter)
- 2.Screw Terminal DB9: TX RX GND to be connected with the USB-RS232 Converter
- 3.Connect the RJ 45 / RS232 Cable
- 4.Plug the USB terminal of the converter into the PC port
- 5. From Windows Menu, search for DEVICE MANAGER
- 6.From DEVICE MANAGER search for the COM/LPT
- 7. Identify the COM number of the converter by removing and insert the USB plug
- 8. Select it and search any new driver for the converter by following the instructions in the specific section of the Windows Menu
- 9. Open the ZIP file WeCo\_Monitor\_4K5Ultra.
- 10.Drag/drop the folder WeCo\_Monitor\_4K5Ultra into the desktop.
- 11. Open the folder and select WeCo Monitor 4K5Ultra.exe (open it)
  - Select the WeCo monitor File



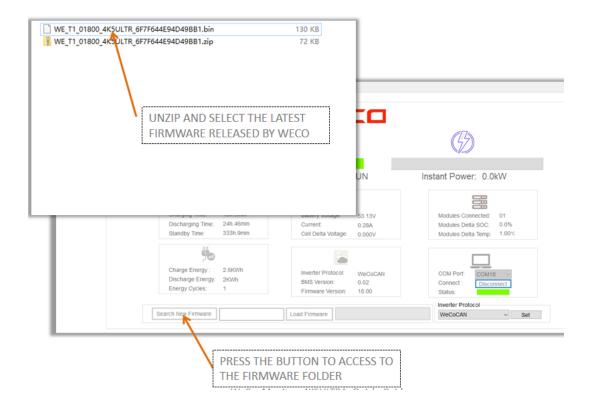
Software Access - OPERATOR ACCESS-



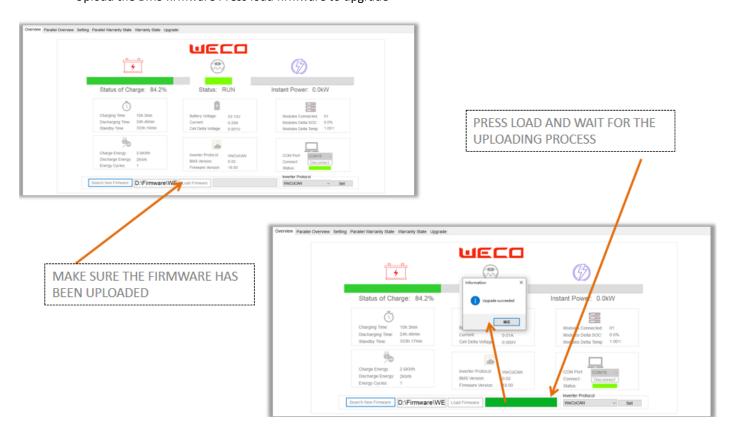
COM selection and Program Start-up



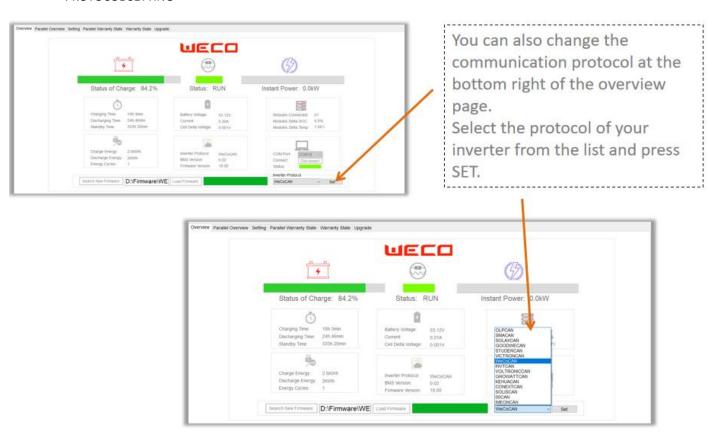
Search for the latest firmware



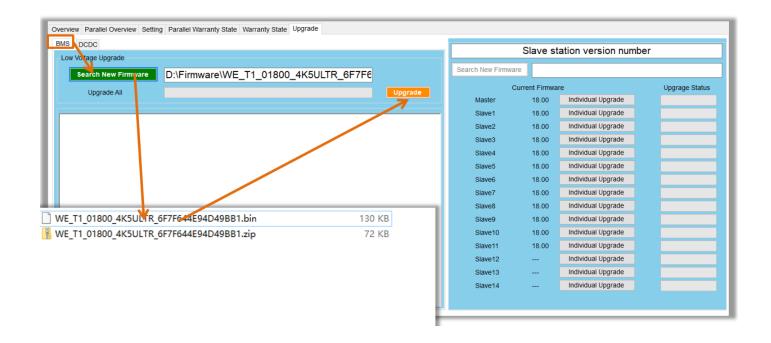
Upload the BMS firmware Press load firmware to upgrade



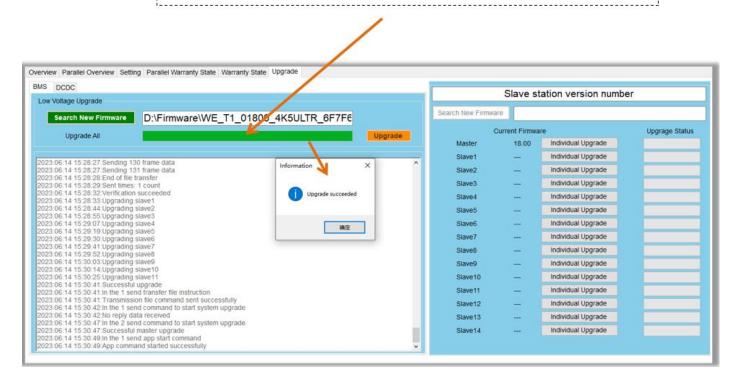
### PROTOCOL SETTING



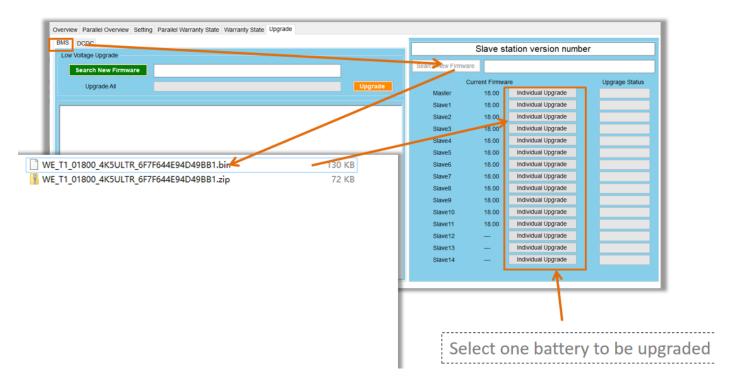
Upgrade all Battery firmware
 Upgrade firmware of all Battery firmware in the system at once



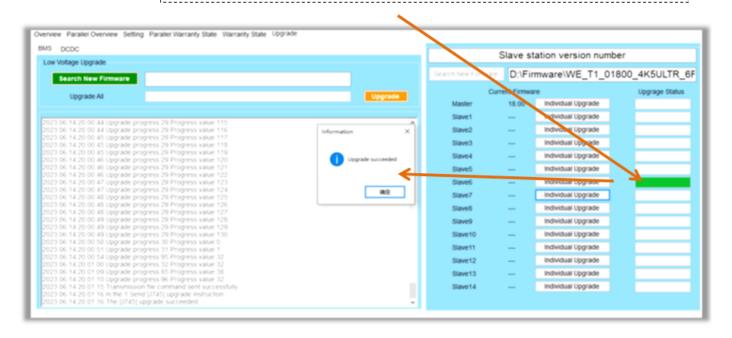
# PRESS LOAD AND WAIT FOR THE UPLOADING PROCESS



• Upgrade the firmware of a single battery in the system

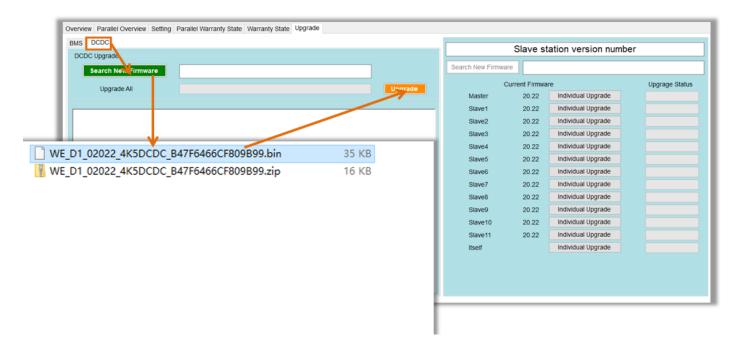


### PRESS LOAD AND WAIT FOR THE UPLOADING PROCESS

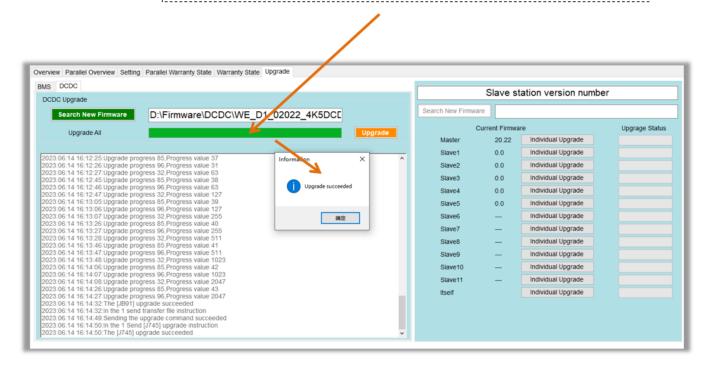


<sup>\*</sup>For reference only, the picture demonstrates upgrading the firmware of the slave 6 battery

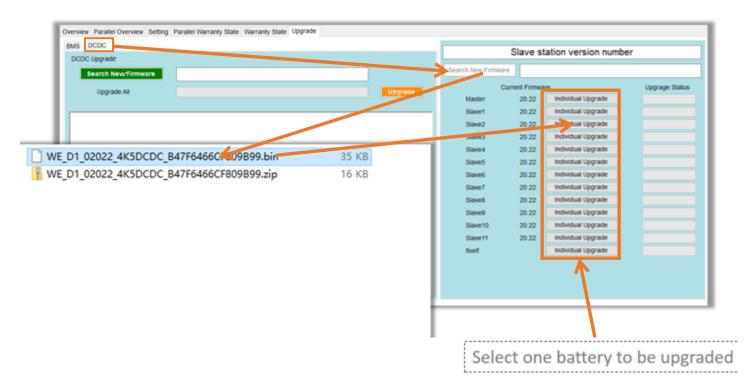
• Upgrade the DCDC firmware of all batteries in the system



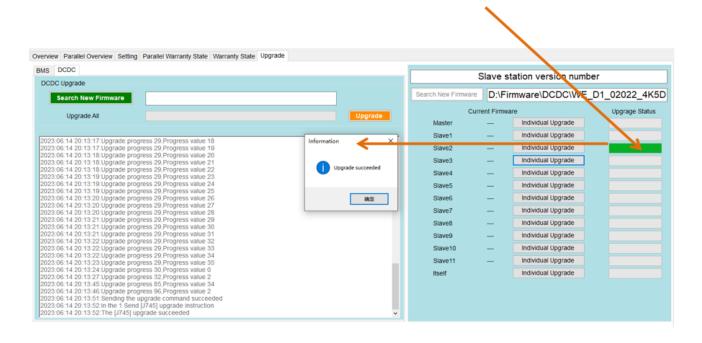




• Upgrade the DCDC firmware of a single batteries in the system



### PRESS LOAD AND WAIT FOR THE UPLOADING PROCESS



<sup>\*</sup>For reference only, the picture demonstrates upgrading the firmware of the DCDC of the slave 2 battery

### 11. Mobile Apps

#### 11.1 Copyright Notice

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WeCo will pursue the infringement to the end.

toWeCo reserves the right of final interpretation of this manual and if the functions/pages of WeCo WiFi App are modified, the latest information of the company shall prevail.

#### 11.1.1 Manual content

This manual introduces the function introduction and operation process of WeCo WiFi App, to facilitate users to operate and manage WeCo WiFi App and meet the needs of users.

#### 11.1.2 Manual instructions

Dear users, thank you very much for using WECO's intelligent monitoring APP, we sincerely hope that this product meets your needs.

The purpose of this manual is to provide users with detailed product information and operating instructions.

#### 11.1.3 Usage requirements

Download method: Google play, App Store app market search for "WeCo WiFi".



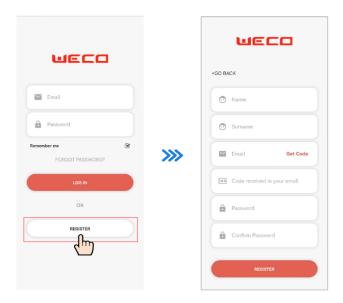


# Apple wifi Android wifi

### 11.1.4. Register a WeCo WiFi APP account

If you do not have a WeCo WiFi App user account, please follow the steps below to register.

- On the WeCo WiFi App login page, click "REGISTER".
- 2. Follow the prompts on the page to complete the registration of the user account.
- 3. After the account is successfully registered, the user can log in to the WeCo WiFi App with the registered account and password.



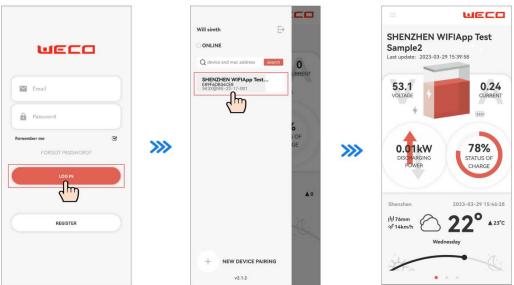
### 11.2. Log in and out of the app

### 11.2.1 Log in to the APP

After the app is properly installed on your phone, log in to the app to use it.

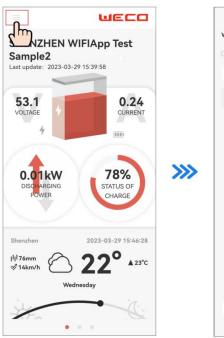
#### Procedure:

- 1. On the mobile client desktop, click the WeCo WiFi App application icon to enter the login page.
- 2. On the app login page, enter the account number and password, and click "Login".



### 11.2.2 Exit the app

- 1. In the upper-left area of the home page, click " icon to pop up the page on the left.
- 2. Click " "icon and you will logout the app.

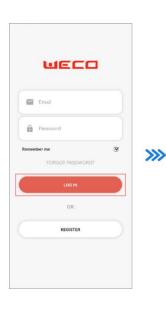




#### 11.3. Add a new device

#### 11.3.1 The new user signs in for the first time to add the device

- 1. After logging in to the APP, click "ADD NEW DEVICE".
- 2. Go to the add device page, here you can click "SCAN" to scan the QR code on the device or click "DEVICE LIST "to select the device for Bluetooth connection.
- 3. Enter to the "Configure Wi-Fi" page, select 2.4G WiFi, enter the password and click "CONFIGURE" to configure the network.
- 4. After successful network configuration, enter the "Device Info" page, fill in the information according to the page prompts, click "Save settings" to save the information and automatically return to the home page.

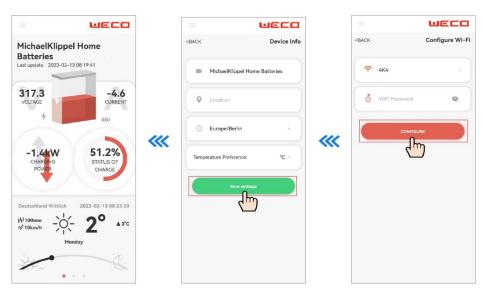










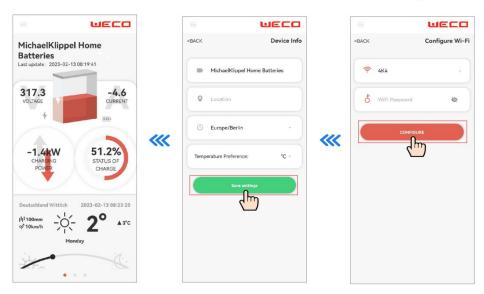


#### 11.4. Add a new device

- 1. In the upper-left area of the home page, click " icon to pop up the page on the left.
- 2. Click " " button icon to go to the Add Device page.
- 3. Go to the add device page, here you can click "SCAN" to scan the QR code on the device or click "DEVICE LIST "to select the device for Bluetooth connection.
- 4. Enter to the "Configure Wi-Fi" page, select 2.4G WiFi, enter the password and click "CONFIGURE" to configure the network.
- 5. After successful network configuration, enter the "Device Info" page, fill in the information according to the page prompts, click "Save settings" to save the information and automatically return to the home page.







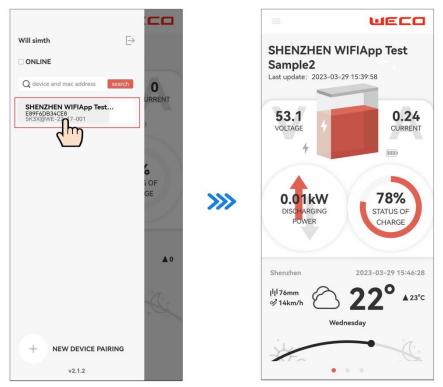
#### 11.4.1 View the device

After logging in to the app, you can select the device you want to view on the pop-up page on the left.

### 11.4.2 View the main parameters of the device

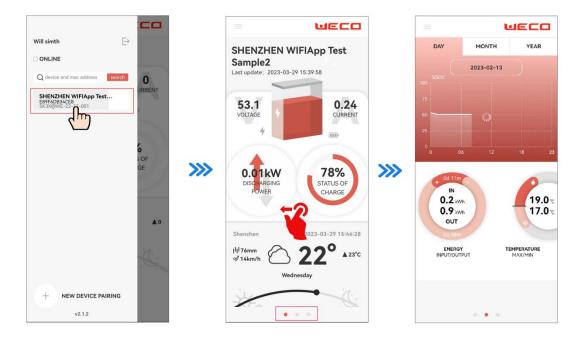
#### Procedure:

1. After logging in to the app, select the device you want to view on the left.



#### 11.4.3 View trend charts

- 1. After logging in to the app, select the device you want to view on the left.
- 2. After entering the main parameters page, "swipe left" to enter the trend chart page.



#### 11.4.4 View the detailed parameters of the device

#### Procedure:

- 1. After logging in to the app, select the device you want to view on the left.
- 2. After entering the main parameters page, "swipe left" to enter the trend chart page.
- 3. Swipe left again to enter the device details page.



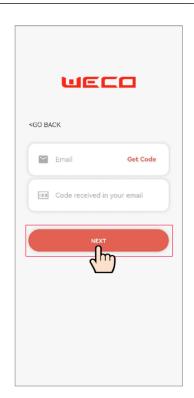
#### 11.5. FAQ

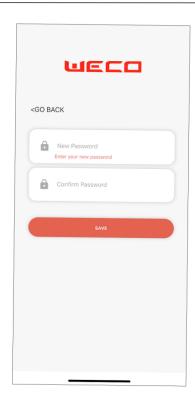
### 11.5.1 How to reset your password via email if you forgot it

Prerequisite: The user's email address can receive the verification code.

- 1. On the app login page, click "Forgot your password?" "Go to the Forgot Password page.
- 2. Enter your email account.
- 3. Click "Get verification code" and enter the verification code to verify the email account.
- 4. When prompted to enter a new password and enter your new password again, click "Confirm".







### 11.5.2 Reset the user's password

When users is unable to reset the forgotten password he can authorize his administrator to reset it.

#### 11.5.3 When the user logs in to the app, he prompts how to solve the network abnormality?

#### Workaround:

- Check whether the Wi-Fi or mobile network connection is working.
- Check whether the network permission is enabled for the app.

### 11.5.4 Device does not appear after adding

After the device is added, it is not displayed in the device list.

#### Workaround:

- Please check whether the device communication or network connection is normal, if it is normal, please wait a few minutes.
- If there is an abnormality in the check, please contact the service provider.

#### 11.5.5 Network changes: how to reconfigure the device network

Prerequisite: The user's email address can receive the verification code.

- 1. On the Device Details page, click parameters " " icon
- 2. After entering the WiFi Setting page, click "Change WiFi" to enter the Configure Wi-Fi page.
- 3. Select 2.4G WiFi according to the prompts on the page, enter the password and click "CONFIGURE" to configure the network.



WeCo Srl Viale Kennedy 113-121 Scarperia e San Piero Firenze www.wecobatteries.com

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