INSTALLATION GUIDE

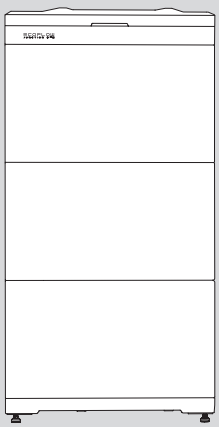
For EF BD-5.1-S1,EF BD-10.2-S1,EFBD-15.3-S1 with 3-phase inverter

V1.1

Issue Date: 2025-09-10

ECOFLOW POWEROCEAN

Home Solar Battery Solution



For the latest documents, please scan the QR code or visit:

https://enterprise.ecoflow.com/eu/documentation

IMPORTANT

- Before installing, operating, and maintaining the equipment, read and follow Installation Guide and Safety Instructions.

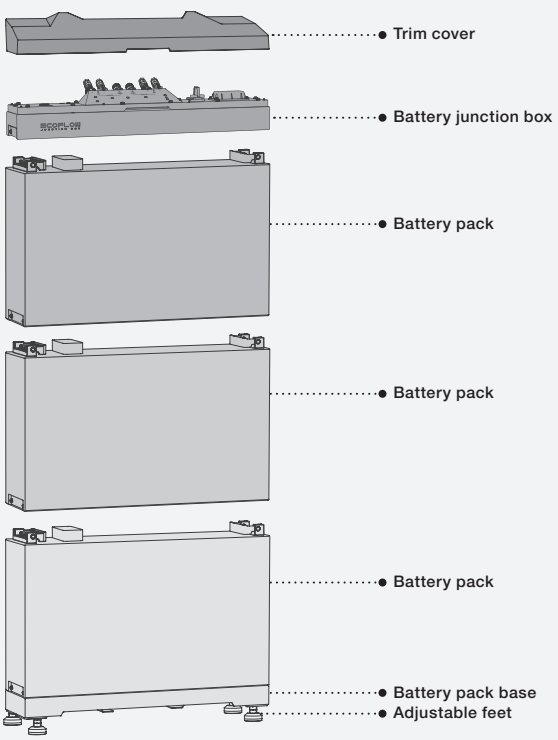
CONTENTS

Safety Instructions

Symbol	Description
DANGER	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
CAUTION	Caution, risk of electric shock.
WARNING	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. **NOTICE** is used to address practices not related to personal injury.

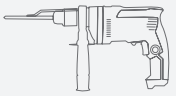
DANGER

- Before installing, operating, and maintaining the equipment, read and follow up Installation Guide and Safety Instructions.
- Personnel who plan to install or maintain EcoFlow equipment must receive thorough training, understand all necessary safety precautions, and be able to correctly perform all operations.
- Personnel who will install, operate, and maintain the equipment, including operators, trained personnel, and professionals, should possess the local national required qualifications in special operations such as high-voltage operations, working at heights, and operations of special equipment.
- Before connecting cables, ensure that the equipment is intact. Otherwise, electric shocks or fire may occur.
- Before installing, operating, and maintaining the equipment, **always disconnect it from all power**.
- Wear proper PPE (Personal protective equipment) before any operations.

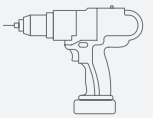


Preparing Tools and Instruments

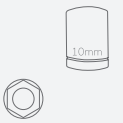
• ESSENTIAL TOOLS



Hammer drill
(with a drill bit of 8mm)

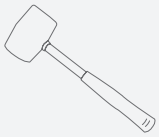


Electrical Screwdriver



Torque socket of 10mm

Multimeter
(DC voltage measurement range ≥ 1000 V DC)

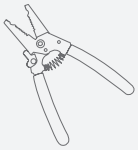


Mallet

Screwdriver
(PH3)

Cable cutter

Crimping tool

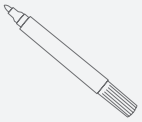


Wire strippers

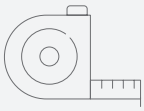
RJ45 Crimping tool

Crimping tool
(for tubular terminal)

Wrench (14mm)



Marker



Steel measuring tape

Cable tie

Network cable tester

Heat gun

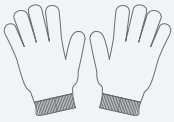
Heat-shrink tubing

• OPTIONAL TOOLS

Vacuum cleaner

Safety goggles

Safety shoes



Safety gloves

Dust mask

Moving the Battery

⚠ CAUTION

Before installation, remove the battery from the packing case and move it to the installation site. Follow the instructions below as you move the battery:

- Always be aware of the weight of the battery.
- When moving the battery by hand, wear protective gloves to prevent injuries.
- Avoid falling or mechanical impact.
- Do not place the battery directly on a hard ground, protective materials such as sponge pad or foam cushion are recommended to be placed underneath the battery, otherwise, it may cause damage to its metal enclosure.
- Lift the battery by holding its handles on the top. Do not hold the bottom by hand.
- Move the battery by two people or using a proper transport tool and lifting tool.
- Move batteries in the correct direction. Do not place a battery upside down or tilt it.

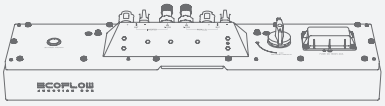
What's In The Box

NOTICE

- Before unpacking , check the outer packing for damage, such as holes and cracks, and check the equipment model. If any damage is found , do not unpack the package and contact the supplier as soon as possible.
- After unpacking, check that the deliverables are intact and complete. If any item is missing or damaged, contact the supplier.
- It is recommended to keep the original package for further needs.

• ECOFLOW POWEROCEAN BATTERY JUNCTION BOX

C1 ×1

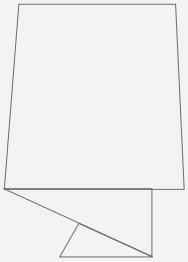


Battery junction box

C3 ×1

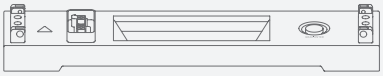
Trim cover

C4 ×1



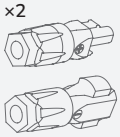
Marking-off template for battery

C2 ×1



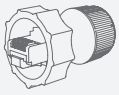
Battery base

C5 ×2



Battery terminals

A6 ×2



Communication terminal

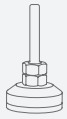
A10 ×2

Expansion bolt(M6*60)

B3 ×4

Screws(M5*12)

C6 ×4



Adjustable feet

A13 ×1

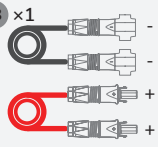
OT terminal

C7 ×1

Termination resistor

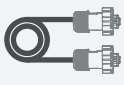
Some battery junction boxes (C1) already have termination resistors installed as delivered, while some do not. The actual deliverables may vary.

C8 ×1



Battery Power Cables (1.5m)

C9 ×1



Battery Communication Cable(1.5m)

System Installation

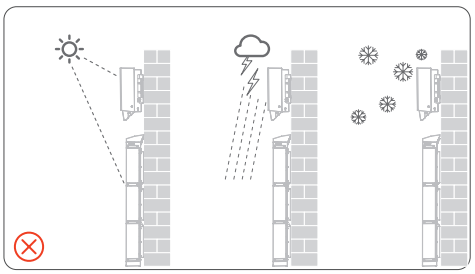
Installation Environment Requirements

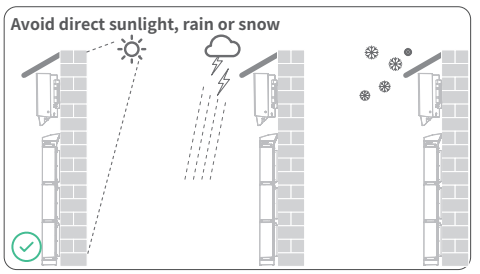
WARNING

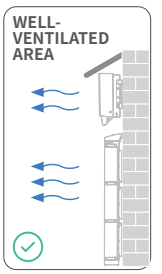
- The installation and use environment must meet relevant international, national, and local standards for lithium batteries, and are in accordance with the local laws and regulations.

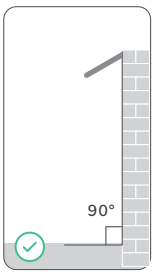
NOTICE

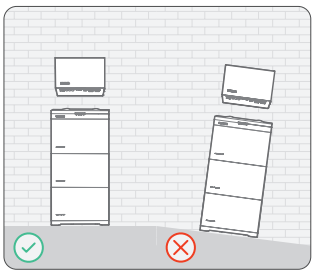
- When installing the equipment in a garage, keep it away from the drive way.
- The mounting structure where the equipment is installed must be fire resistant. Do not install the equipment on flammable building materials.
- Ensure that the installation surface is solid enough to bear the weight of the equipment.
- The battery system can be installed indoor and outdoor

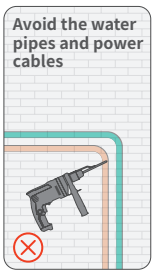


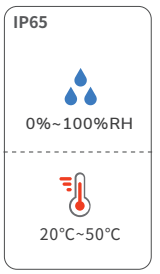


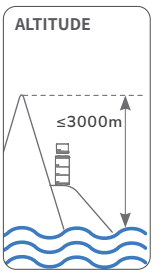


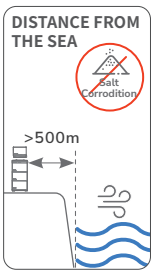


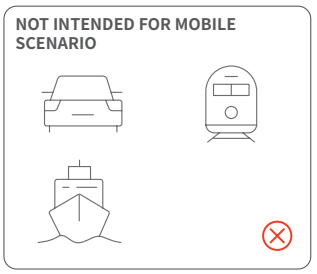


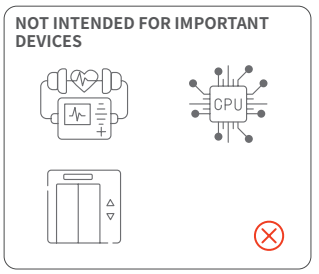


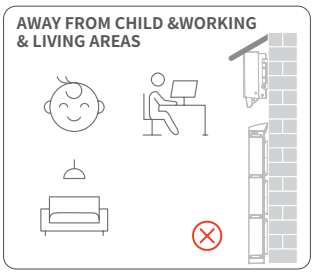












Installation Space Requirements

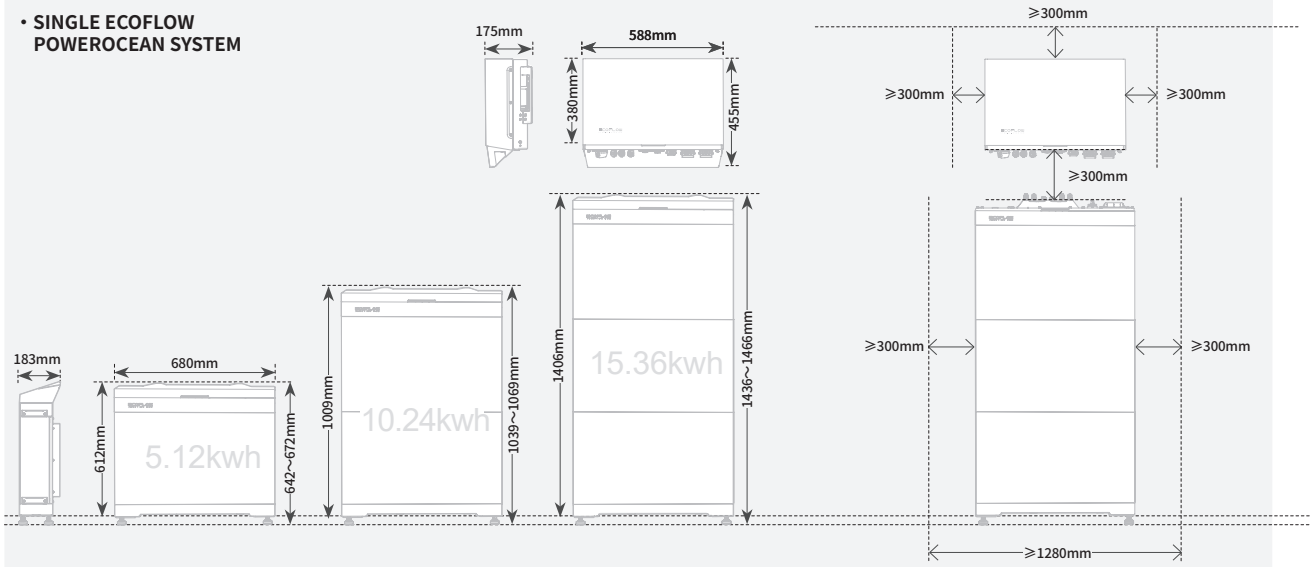
WARNING

- Reserve enough clearance around equipments to ensure sufficient space for installation and heat dissipation.

NOTICE

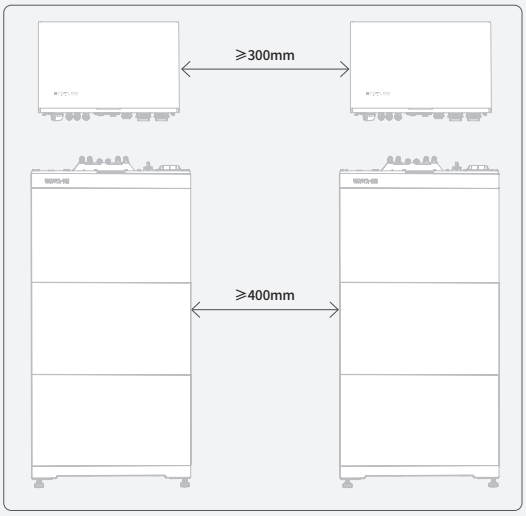
- Ensure there is enough space on both sides of the battery to facilitate the locking operation of the screws on the side of the battery.
- When installing two sets of batteries (number of battery packs ≥ 4), ensure that the minimum clearance between the two sets of batteries is 400mm, while greater clearance is also permitted if it is required by the specific local electrical codes.
- When installing multiple inverters, install them in horizontal mode if sufficient space is available and install them in triangle mode if no sufficient space is available. Stacked installation is not allowed.

• **SINGLE ECOFLOW POWEROCEAN SYSTEM**



• **ECOFLOW POWEROCEAN SYSTEM CASCADING**

- HORIZONTAL INSTALLATION MODE (PREFERRED)



Installing Battery

DANGER

- When drilling holes, avoid the water pipes and power cables buried in the wall and under the floor.
- When drilling holes, protect the battery base from shavings or dust.
- Before installing the battery, make sure that the click-on terminals on the top and bottom of the battery are free of foreign objects or any liquid.

CAUTION

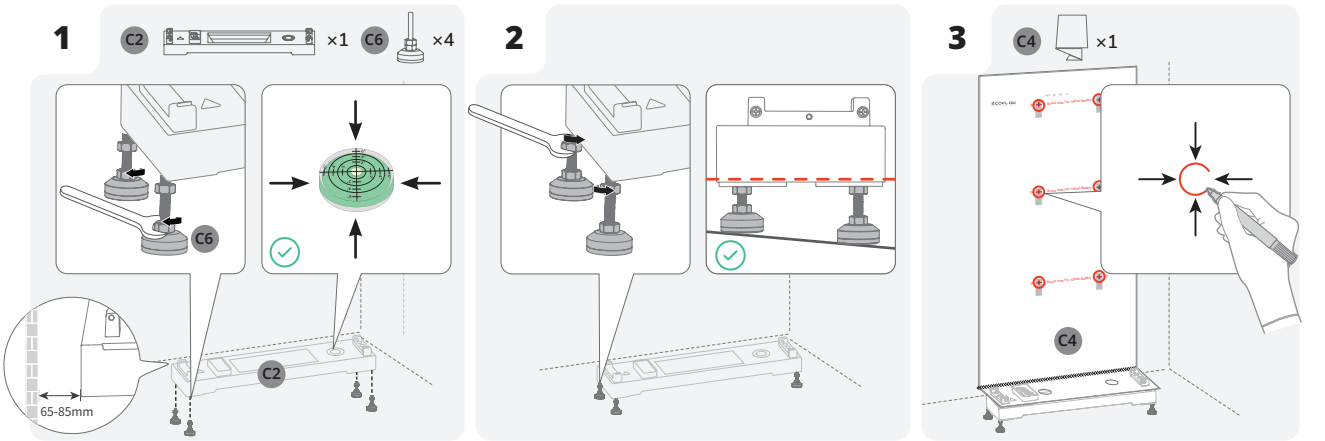
- Assign enough personnel (two or more) to move battery to avoid personal injury and battery damage.
- When moving battery, hold handles on top of the battery module.

NOTICE

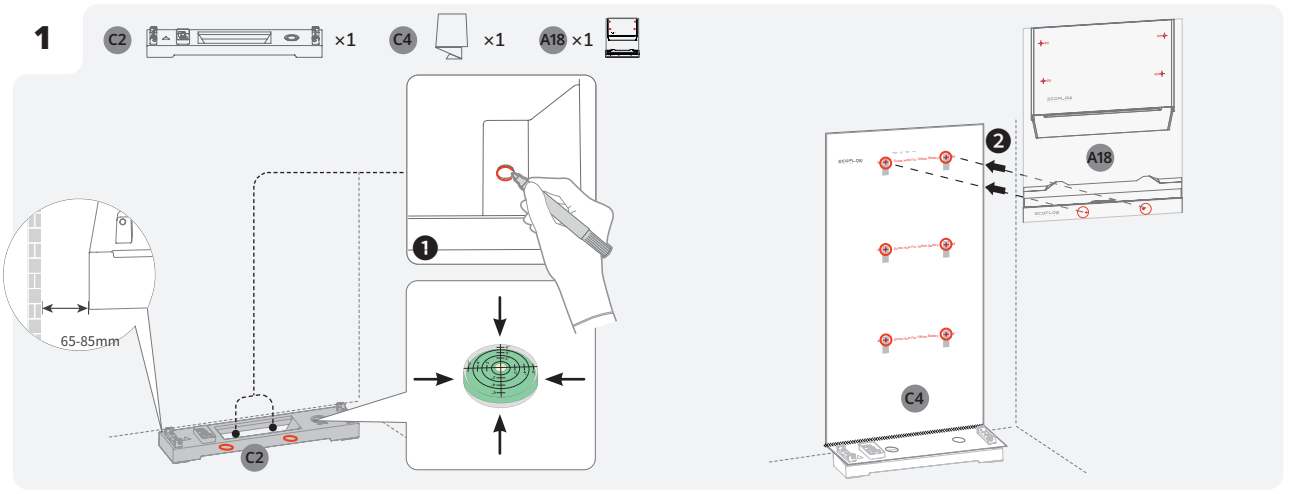
- Sealant is applied underneath the battery base to ensure its resistance against water.
- There will be a gap between the battery junction box and the battery pack before the screws are tightened. This gap is caused by the mechanical design to meet the IP rating, and will normalize after the screws are tightened.
- **(Optional) Install the provided adjustable feet to the base if needed.** Then you can adjust the feet and check the level on the base to ensure that the base is placed horizontally, screw the nuts of the four feet to the top to lock.

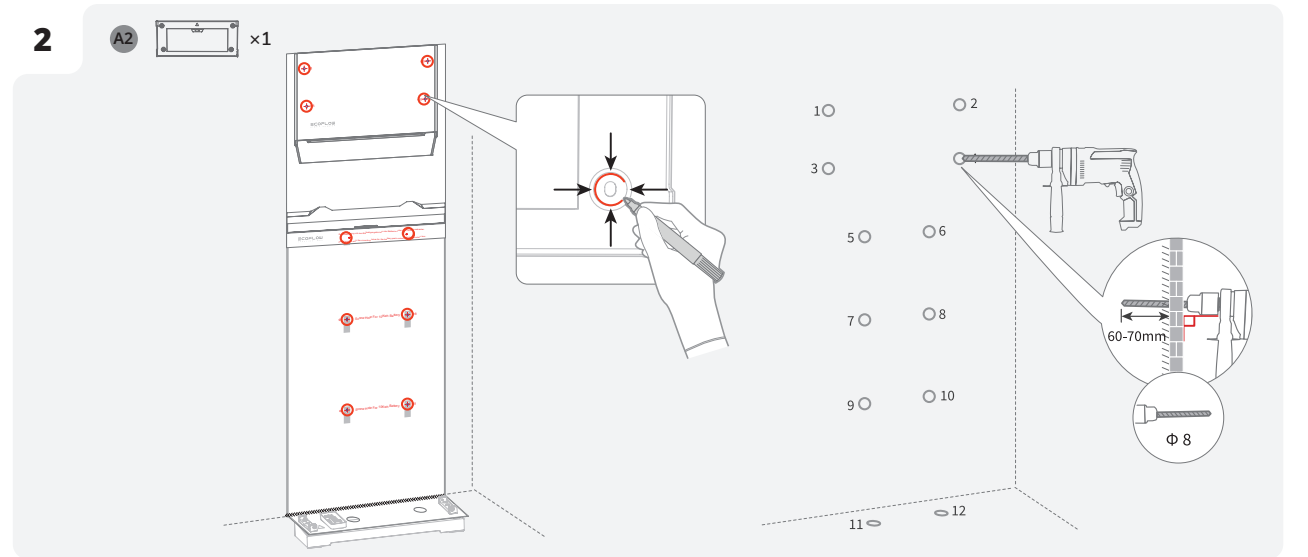
Method 1: Floor Mounted

• WITH ADJUSTABLE FEET



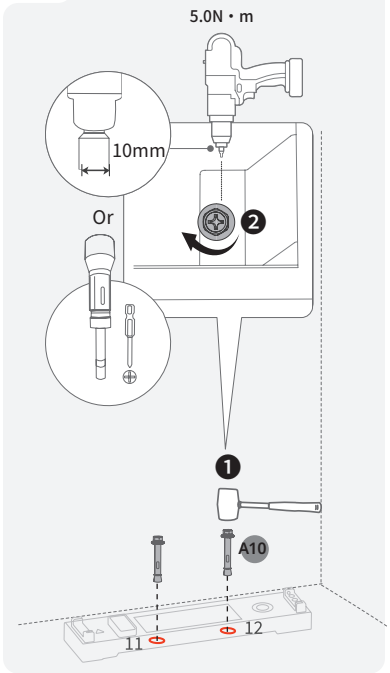
• WITHOUT ADJUSTABLE FEET





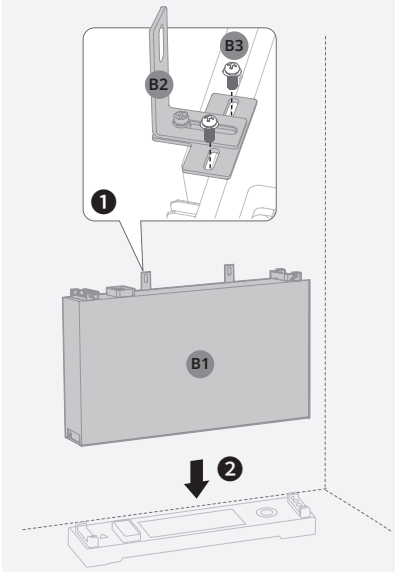
3

A10 ×2



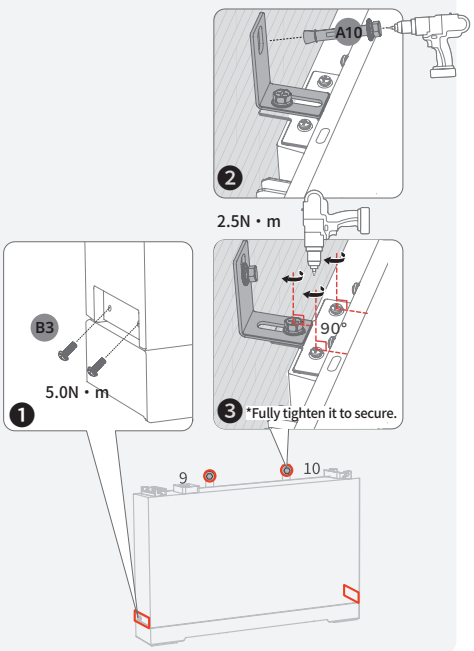
4

B1 ×1 B2 ×2 B3 ×4



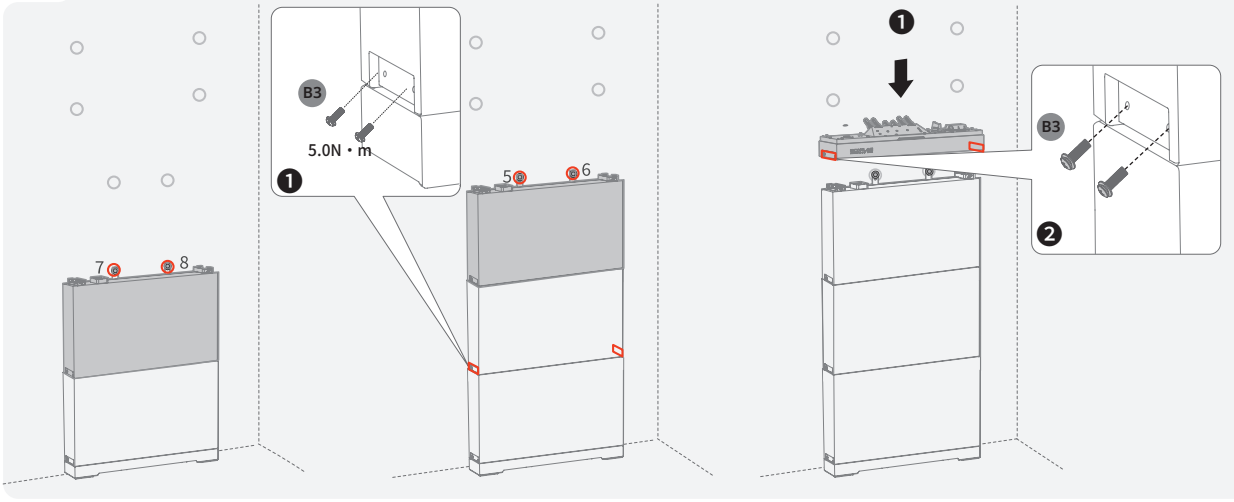
5

A10 ×2 B3 ×4



6

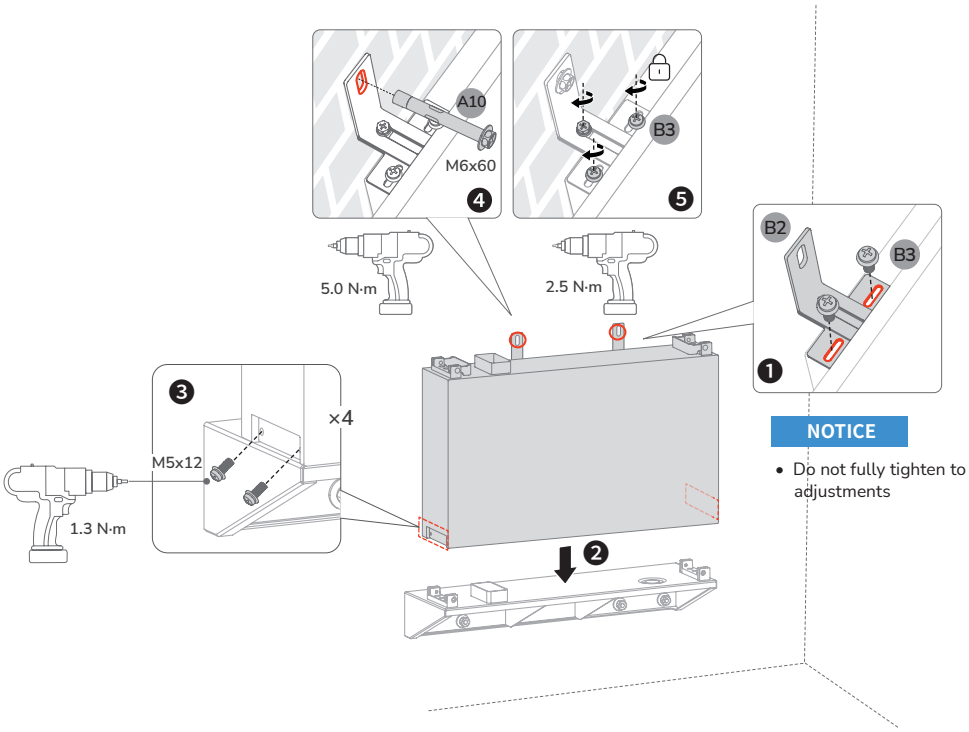
C1 ×1 B3 ×4



Method 2: (Optional) Wall Mounted

NOTICE

- For details about wall mounted installation, see the installation guide that comes together with the EcoFlow PowerOcean Wall-Mounted Battery Base.

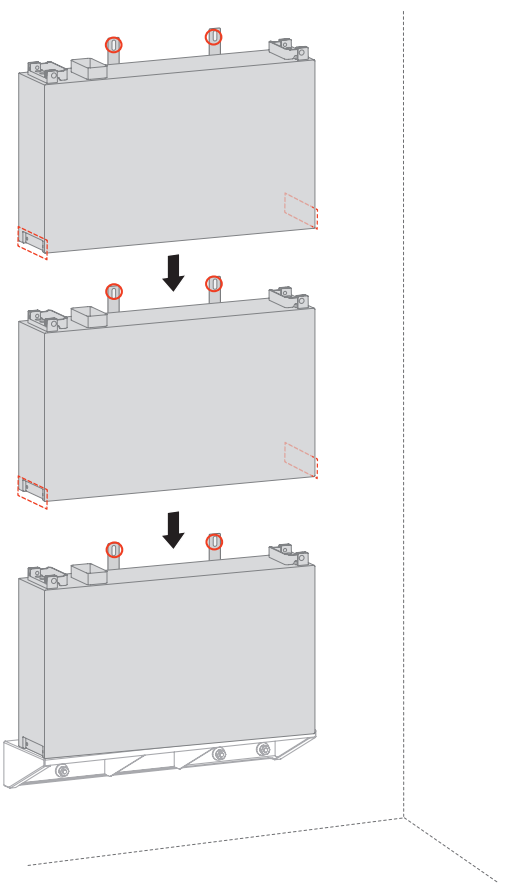


NOTICE

- Do not fully tighten to allow for subsequent adjustments

NOTICE

- Install the remaining batteries and the inverter as shown in the method 1.



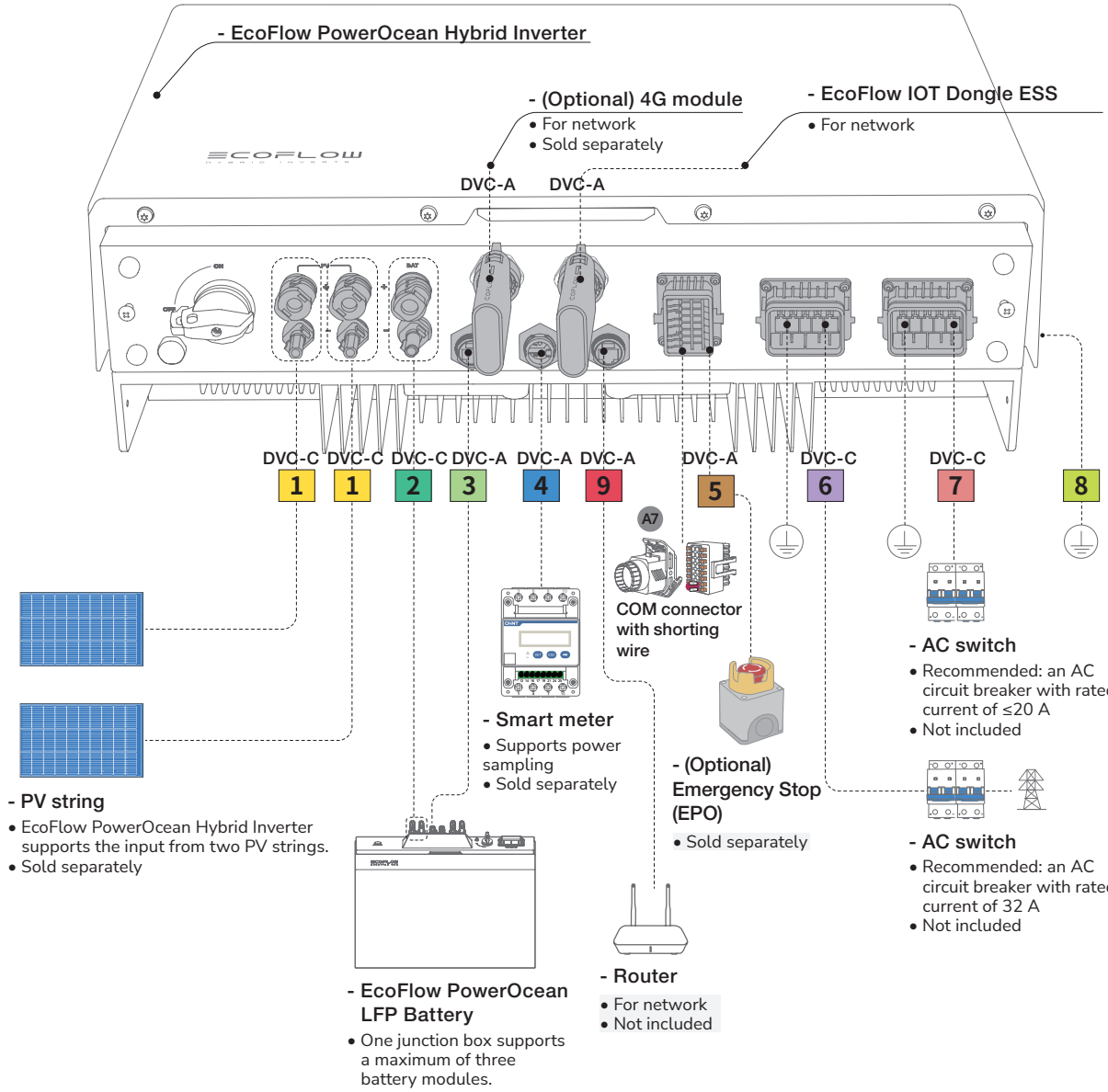
Electrical Connection

CAUTION

- All electrical connections must be carried out by a professionally trained and certified electrician.

NOTICE

- Please purchase cables that meet local certification standards.
- Do not remove the protective cap of unused terminals. Otherwise, the IP rating of the inverter will be affected.
- The cable colors shown in the figures are for reference only. Select an appropriate cable according to the local standards.



LEGEND

1 **PV Input cable**
Conductor cross-sectional area: 4 mm² to 6 mm² with a rated voltage greater than or equal to 1000V DC

2 **Battery power cable**
Conductor cross-sectional area: 4mm² with a rated voltage greater than or equal to 1000V DC

3 **Battery communication cable with shield**
CAT 5E 8*0.2mm²

4 **Smart meter communication cable**
Shielded Twisted Pair 2*0.5mm²

5 **(Optional) COM terminal communication cable-Emergency Stop Button / Inveter cascading**
Shielded Twisted Pair 2*0.5mm²

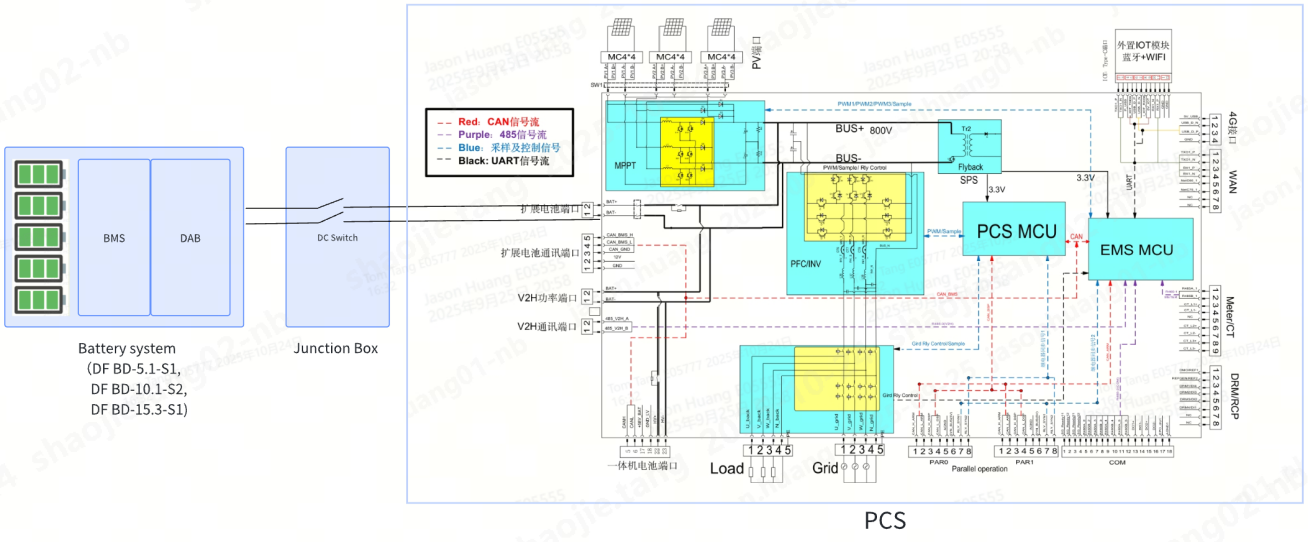
6 **Grid cable**
4 mm² to 6 mm²

7 **Backup cable**
4 mm² to 6 mm²

8 **Ground cable**
6mm²

9 **Ethernet cable (optional)**
Cat 5e or higher shielded network cable

Wiring Diagram



Battery system
(DF BD-5.1-S1,
DF BD-10.1-S2,
DF BD-15.3-S1)

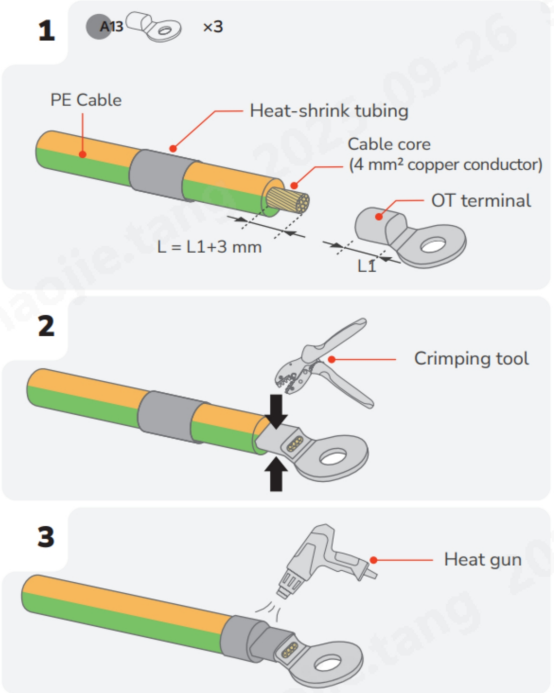
Junction Box

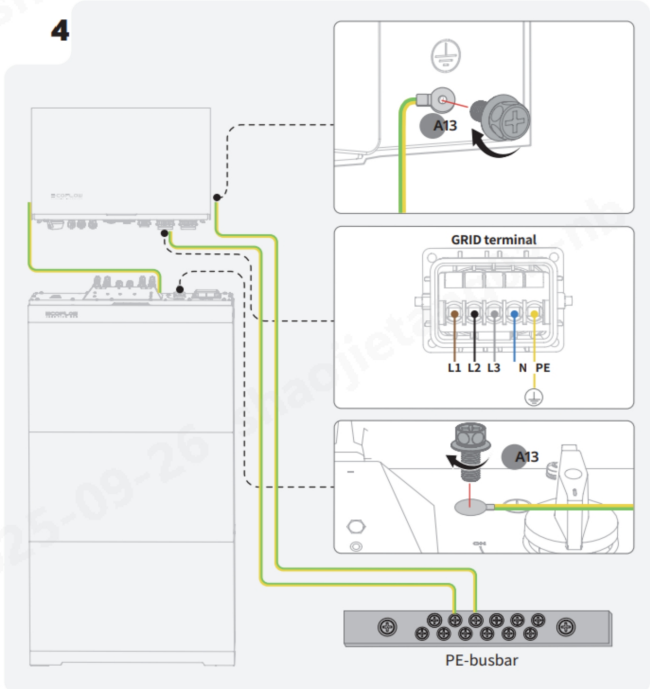
PCS

Connecting PE Cables

NOTICE

- Ensure that the PE cable is connected securely.
- Wrap the wire crimping area with heat shrink tubing or insulation tape. The heat shrink tubing is used as an example.
- When using a heat gun, protect the equipment from being scorched.
- It is recommended that silica gel or paint be used around the ground terminal after the PE cable is connected.





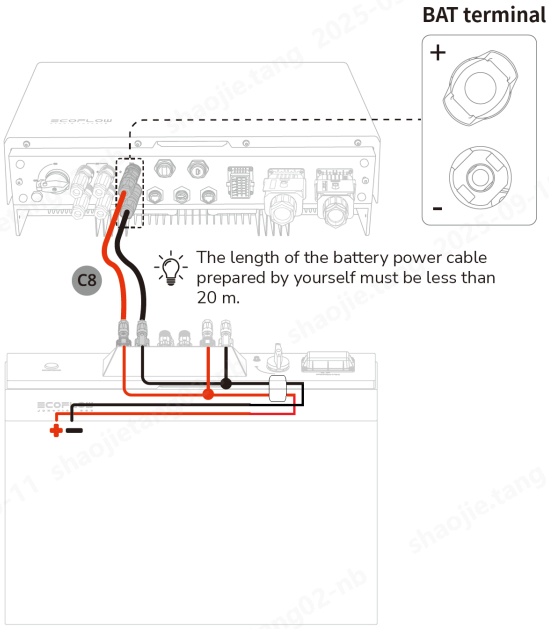
Connecting Battery Power Cables

DANGER

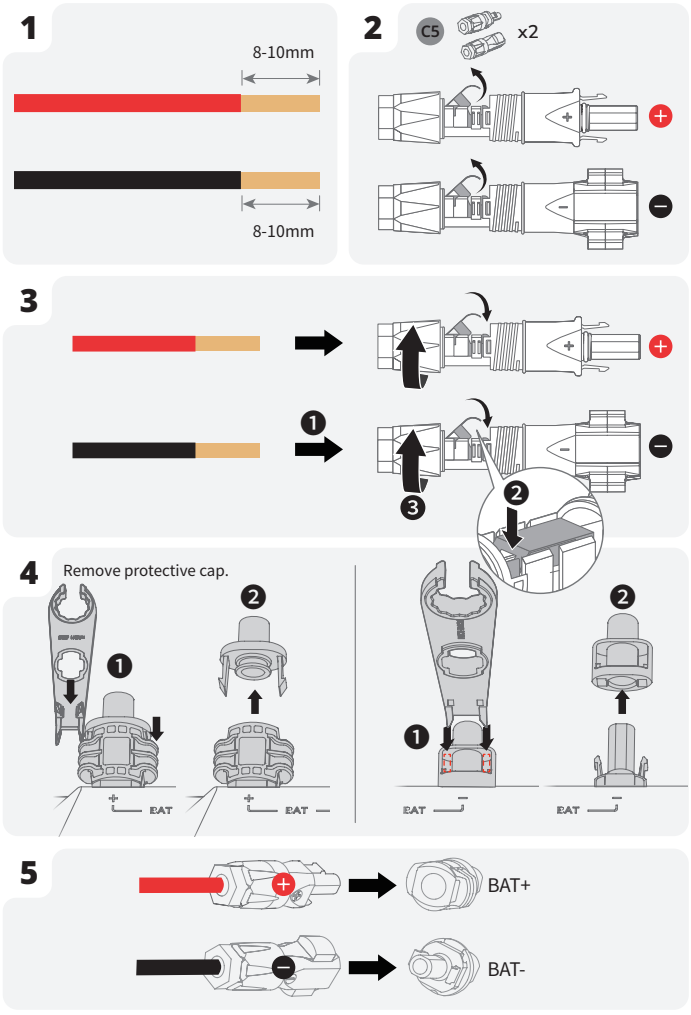
- Before disconnecting the Battery terminals, you MUST set the BATTERY SWITCH on top of the Junction Box to OFF position, then press and hold the BATTERY ON/OFF button on the left side of the junction box for 10 seconds, until the indicator is off.

CAUTION

- Both ends of the positive cable are positive connectors. Both ends of the negative cable are negative connectors.



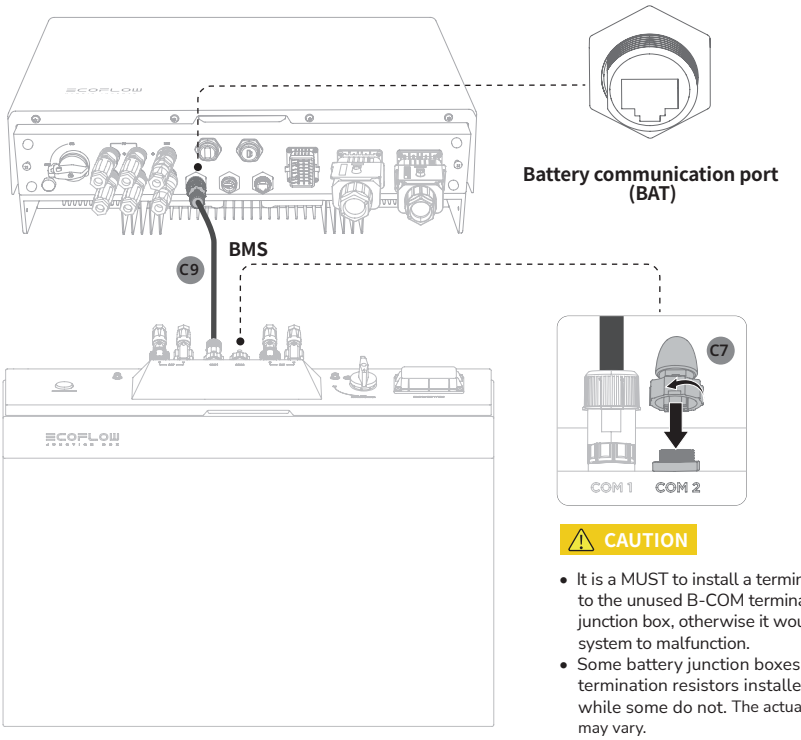
- OPTIONAL



Connecting Battery Communication Cables

NOTICE

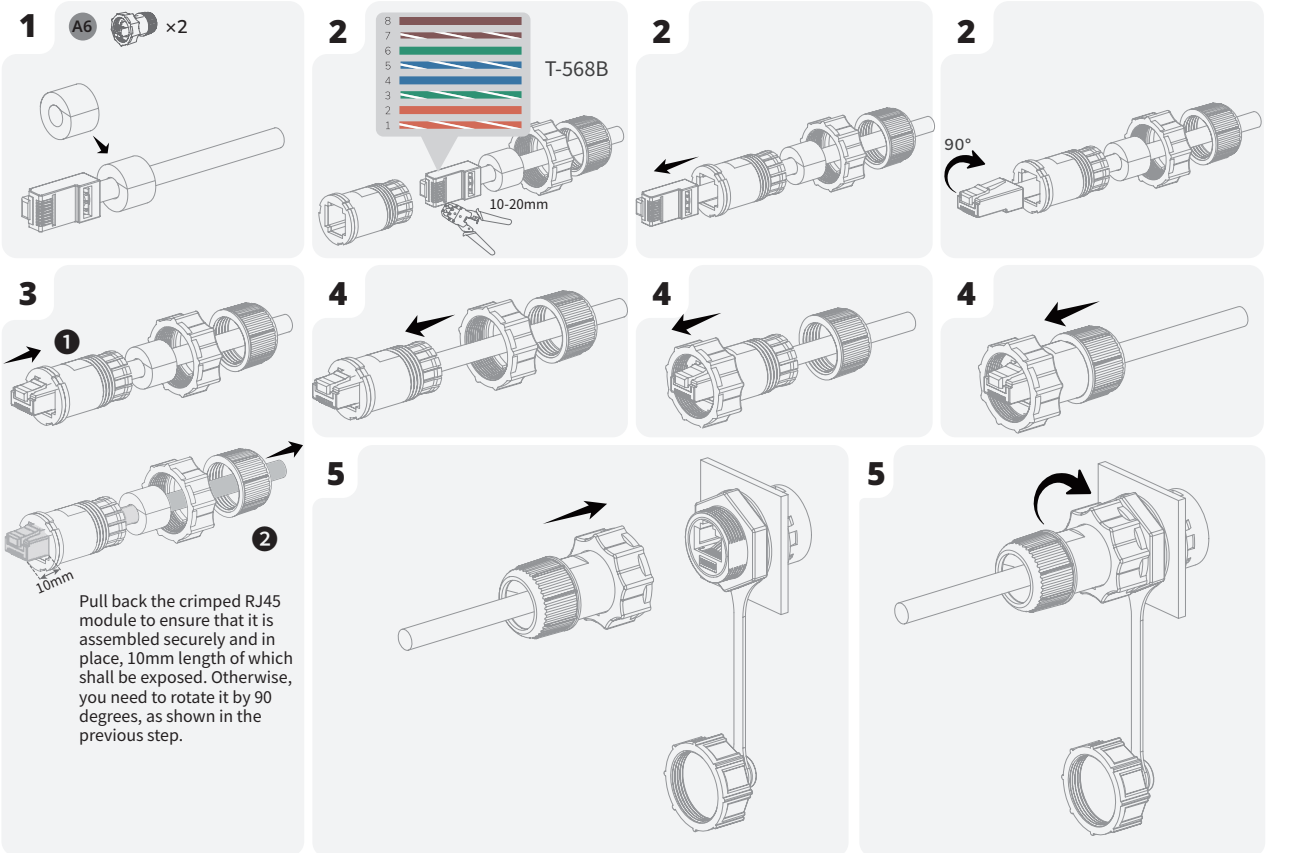
- Connectors are required at both ends of the battery communication cable.
- It is recommended to use COM1 for communication between the inverter and battery, COM2 for battery parallel communication.



CAUTION

- It is a MUST to install a termination resistor to the unused B-COM terminal of the battery junction box, otherwise it would cause the system to malfunction.
- Some battery junction boxes already have termination resistors installed as delivered, while some do not. The actual deliverables may vary.
- As for battery junction boxes already have termination resistors installed as delivered, remove the termination resistor to use the B-COM terminal.

- OPTIONAL

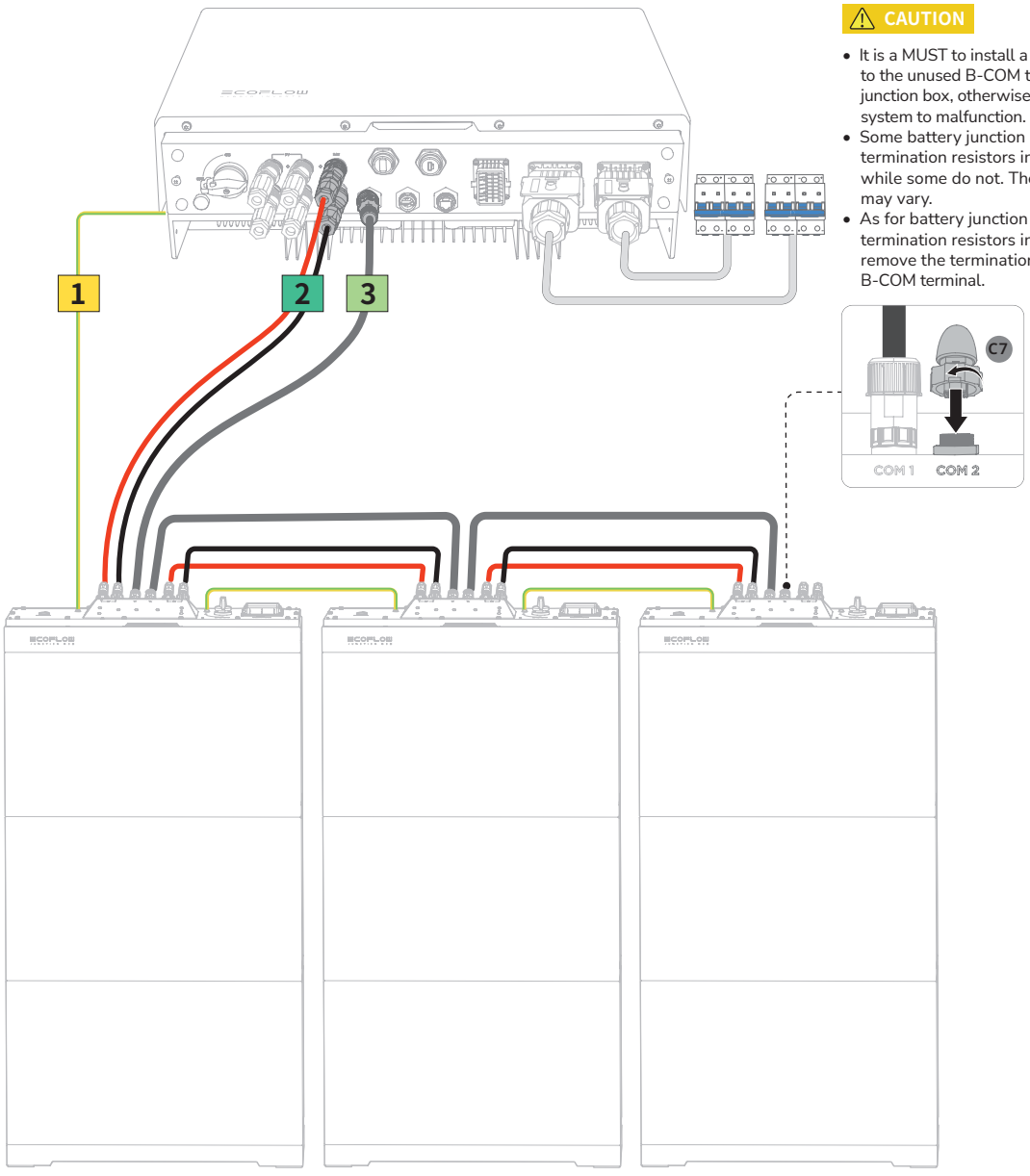


Pull back the crimped RJ45 module to ensure that it is assembled securely and in place, 10mm length of which shall be exposed. Otherwise, you need to rotate it by 90 degrees, as shown in the previous step.

(Optional) Cascading Batteries

NOTICE

- One battery junction box supports a maximum of 3 battery packs.
- Up to 9 battery packs (maximum 45.9 kWh) can be cascaded.
- Do not remove the protective cap of unused DC input terminals. Otherwise, the IP rating of the inverter will be affected.
- When there are two sets of batteries (number of battery packs ≥ 4) installed, please ensure that the minimum clearance between the two sets of batteries is 400mm.



⚠ CAUTION

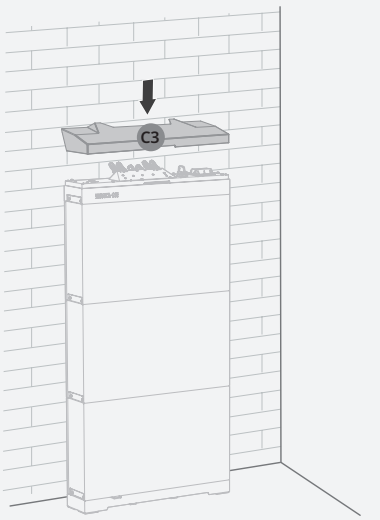
- It is a MUST to install a termination resistor to the unused B-COM terminal of the battery junction box, otherwise it would cause the system to malfunction.
- Some battery junction boxes already have termination resistors installed as delivered, while some do not. The actual deliverables may vary.
- As for battery junction boxes already have termination resistors installed as delivered, remove the termination resistor to use the B-COM terminal.

LEGEND

1. For details about connecting grounding terminals between the battery junction boxes, see the section **Connecting PE Cables** in this guide.
2. For details about connecting DC input terminals (BAT+/-) between the battery junction boxes, see the section **Connecting Battery Power Cables** in this guide.
3. For details about connecting battery communication terminals (B-COM) between the battery junction boxes, see the section **Connecting Battery Communication Cables** in this guide.

Installing
Trim Cover

INSTALL TRIM COVER ON THE BATTERY JUNCTION BOX



System Commissioning

Checking before Power-On

Check Item	Acceptance criteria
Equipments	Equipments are installed correctly and securely.
Cables routing	Cables are routed properly as required by the customer.
Cable tie	Cable ties are evenly distributed and no burr exists.
Grounding	The PE cable is connected correctly, securely, and reliably.
Switch	All the switches connecting to the system are OFF.
Cable connection	The AC/DC power cable, battery cable, and communication cable are connected correctly, securely, and reliably.
Unused terminal and port	Unused terminals and ports are locked by watertight covers.
Installation environment	The installation space is proper, and the installation environment is clean and tidy.

System Power-On

PROCEDURE (ON-GRID AND PV MODULE CONFIGURED)

1. Set the BATTERY SWITCH on top of the Junction Box to ON position.
2. Turn on the AC switch between the inverter and the power grid.
3. Set the PV SWITCH at the bottom of the inverter to ON position.
4. Observe the LED to check the inverter operating status.

PROCEDURE (OFF-GRID AND NO PV MODULE CONFIGURED)

1. Set the BATTERY SWITCH on top of the Junction Box to ON position.
2. Turn on the AC switch between the inverter and the power grid.
3. Set the PV SWITCH at the bottom of the inverter to ON position.
4. After commissioning, press and hold for three seconds the BATTERY ON/OFF button on top of the battery junction box.
5. Observe the LED to check the inverter operating status.

System Power-Off

Before installing, operating, and maintaining the equipment, always disconnect it from all power.

⚠ WARNING

- After the system powers off, the remaining electricity and heat may still cause electric shocks and body burns. Therefore, put on protective gloves and begin operating the equipment five minutes after the power-off.

1. Send a shutdown command on the App.
2. Turn off the AC switch between the inverter and the power grid.
3. Set the PV SWITCH at the bottom of the inverter to OFF position.
4. (Optional)Secure the PV SWITCH with a lock to prevent accidental startup.The lock is prepared by the customer.
5. Set the BATTERY SWITCH on top of the Junction Box to OFF position.
6. (Optional) Secure the BATTERY SWITCH with a lock to prevent accidental startup. The lock is prepared by the customer.
7. Press and hold the BATTERY ON/OFF button of the junction box for 10 seconds, until the indicator is off.
8. Sequentially disconnect GRID cables, PV input cables, battery cables, communication cables and all modules connecting to the system.

LED Indicators

ECOFLOW POWEROCEAN HYBRID INVERTER

Status	Description
on 1s / off 1s	Standby / Startup / Self-check / Over-the-air updates / Alarm, system is still operating
	Operating in grid-tied/backup mode
	EPO shutdown / Fault, system cannot work

ECOFLOW POWEROCEAN BATTERY JUNCTION BOX

Charge Status	Description
	0-25%
	25-50%
	50-75%
	75-99%
	100%

Discharge Status	Description
	<5%
	5-25%
	25-50%
	50-75%
	75-100%

Over-the-air Updates Status	Description
	Over-the-air update is in progress

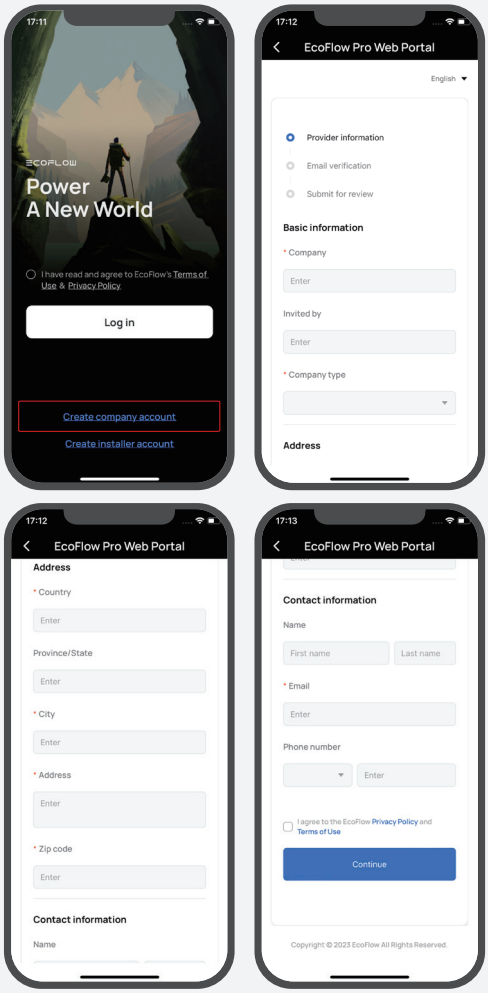
Faulty Status	Description
	Electrical connection is faulty
	Communication is faulty
	Battery is faulty
	Battery junction box is faulty

1 DOWNLOAD AND INSTALL ECOFLOW PRO APP (FOR INSTALLER ONLY)

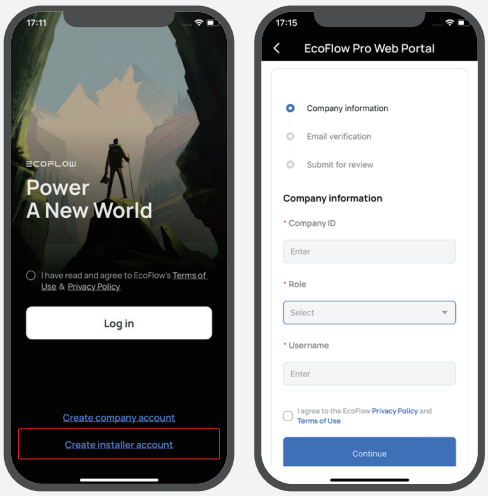
Scan the QR code or download at:
https: //download.ecoflow.com/ecoflowproapp

2 CREATE ACCOUNT

a. Create company account

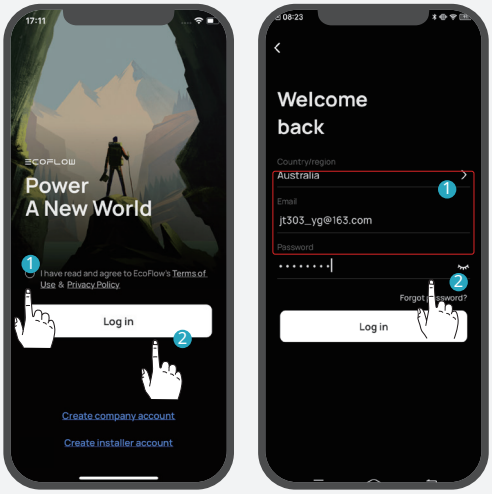


b. Create installer account



3 LOG IN

Enter the country, installer account and password.

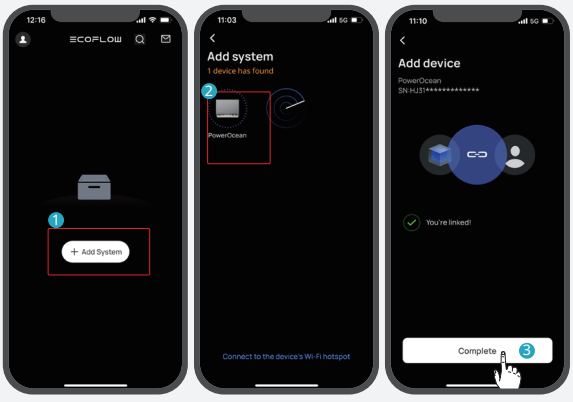


4 ADD DEVICE

You can connect to the system via Bluetooth or Wi-Fi.

a. Connect to the system via Bluetooth.

Click **Add System** to automatically search for bluetooth devices nearby, and click **EcoFlow PowerOcean** to connect, then click **Complete** to proceed.



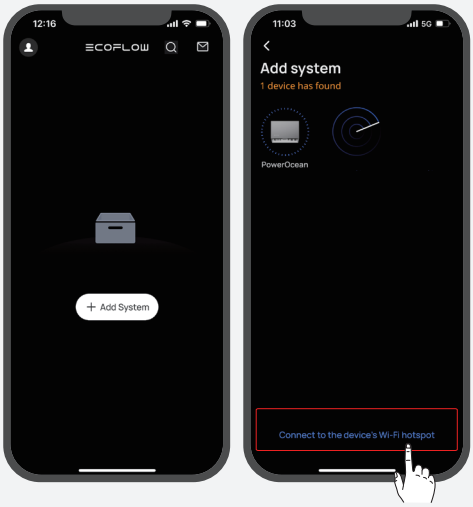
b. Connect to the system via Wi-Fi

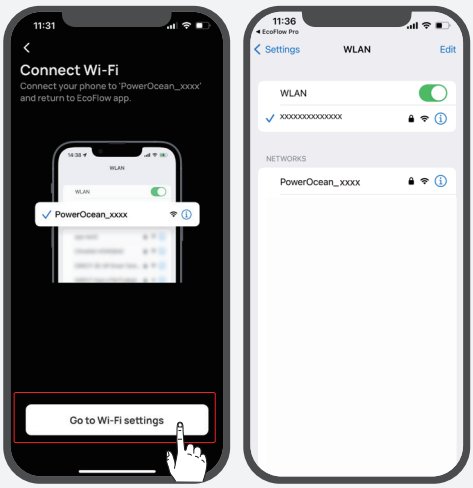
1. Click "Add System" or "+" on the top right corner and then click "Or connect to the system's Wi-Fi" to access to your phone's Wi-Fi settings.

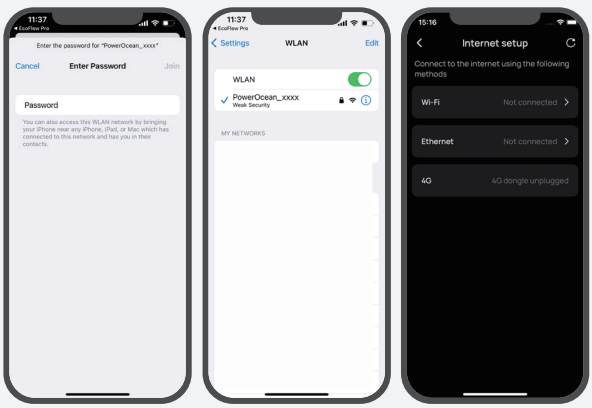
2. Find "PowerOcean_xxxx" and click it to enter the password for the Wifi, then click "Join". The password is the last 8 digits of the serial number of the inverter.

You can find the serial number (S/N) in the product nameplate.

3. After successfully connected your phone to "PowerOcean_xxxx", tap the "EcoFlow Pro" on the top left of your phone's Wi-Fi setting page to shift back and proceed to commissioning.







(Optional) Inverter cascading

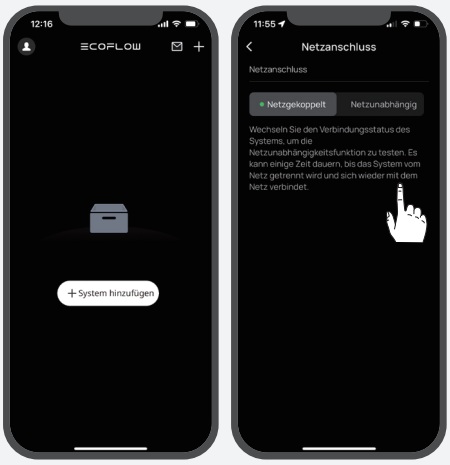
Make sure both systems to be cascaded has been stopped before proceeding.

- Press the Emergency Stop button (if there is any) to stop the inverters which are running.
- If no Emergency Stop button is configured, you need to access to the EcoFlow App and select “Device setting”->“Stop running” to stop the systems.

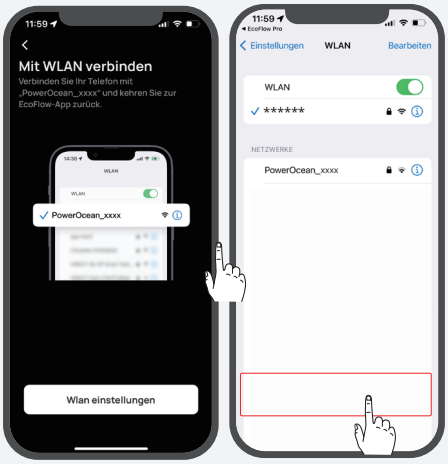
1. Click "**Have more than one PowerOcean? Try inverter cascading**" to setup one of them as the primary inverter, the other one will be the secondary inverter by default. Prefer the inverter as the primary inverter with strong network signal.

If the current firmware of both inverters to be cascaded don't support cascading, you need to add them to the App and update their firmware before proceeding.

2. Verify the information of the inverters that need to be cascaded, then click "**Next**" to proceed to commissioning.



1. See "**Add device**" section of System Commissioning.
2. See "**Internet setup**" section of System Commissioning.
3. See "**Device setting**" section of System Commissioning.



5 COMMISSIONING

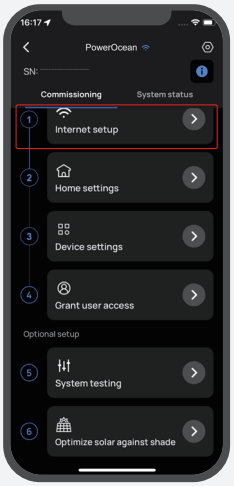
After bound device successfully, the device enters the four-step commissioning process.

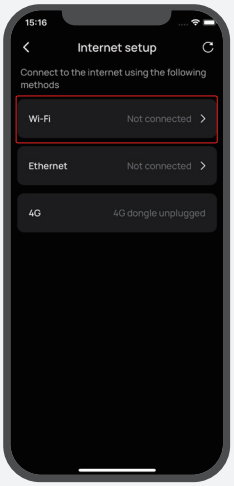
Step1: Internet Setup

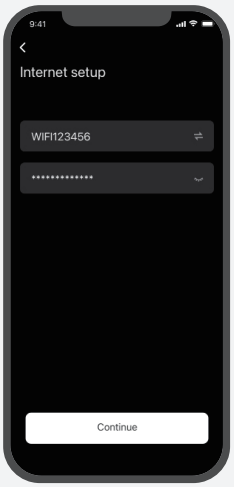
click **Internet Setup** to start the network configuration.

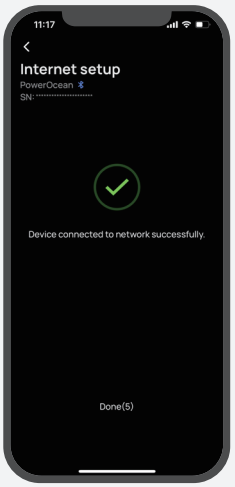
Method 1: Wi-Fi

Click **WiFi**，select the appropriate WiFi name and enter the password and click **continue**.





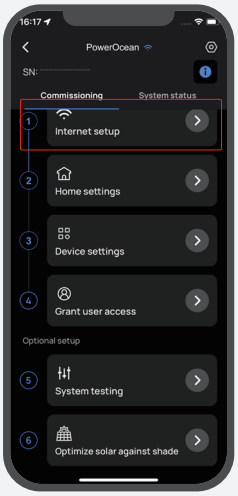


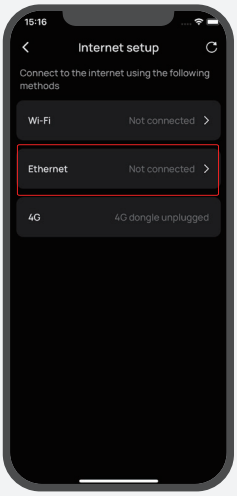


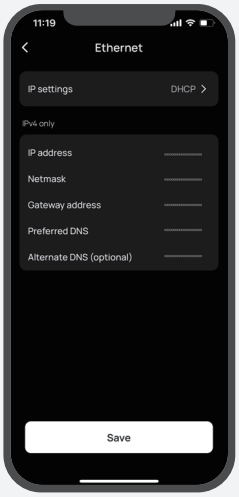
Method 2: Ethernet

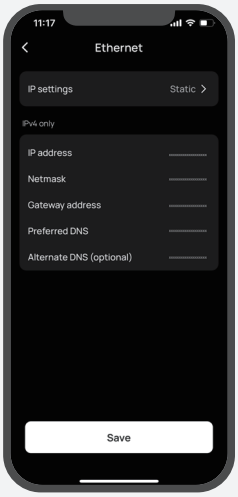
Connect the system to a router using a network cable, wait a minute before proceeding. Then click "Ethernet to set DHCP/Static mode. (Both modes are available)

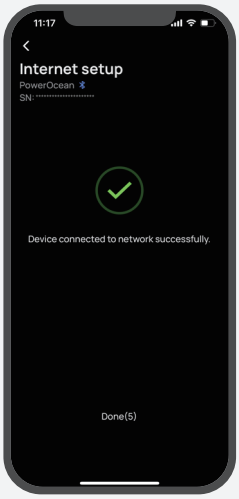
- By default, the IP setting is DHCP mode, which assigns dynamic IP address to the device (recommended).
- Static mode requires manual configuration of the IP address. Please make sure the IP address is not in conflict with other devices, you can visit the router to check the IP addresses of other devices.







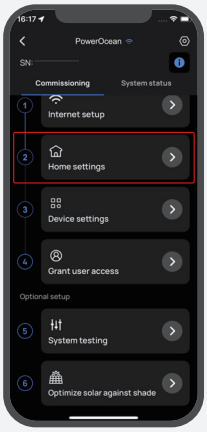


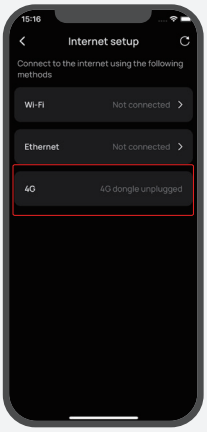


Method 3: 4G

1. Install a nano SIM card to the EcoFlow 4G Dongle ESS(EU).
2. Install the dongle onto the USB port (4G) of the inverter.
3. Activate your SIM card through App.

For more details about EcoFlow 4G Dongle ESS(EU), please refer to the user manual that comes together with.

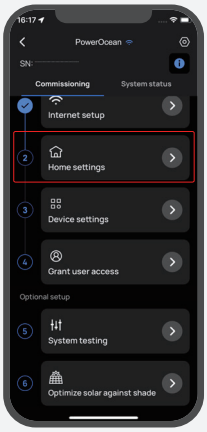


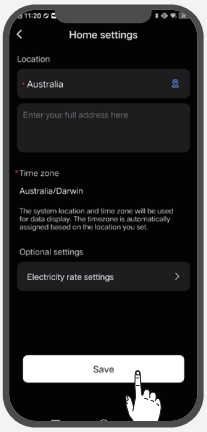


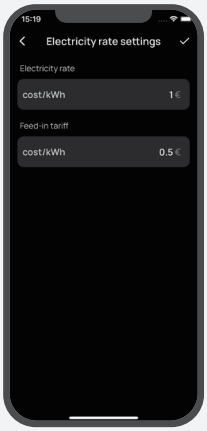
Step2: Home Setting

Click **Home Setting** to enter the corresponding house address.

(Optional) Set the electricity rate.





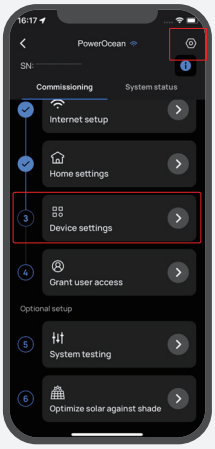


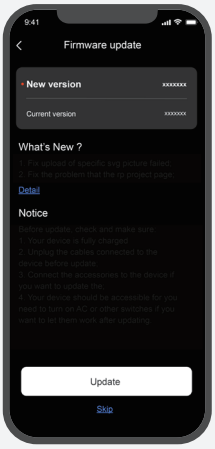
Step3: Device Setting

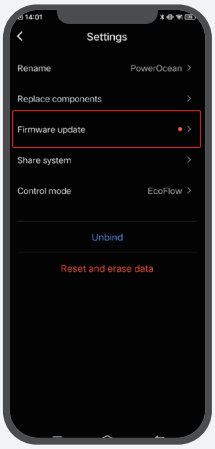
a.Click **Device Setting** to verify that the devices in the device list match the connected devices.

(Optional) Update firmware before carrying out Device Setting.

If there is a firmware update available for the EcoFlow PowerOcean system, the update page will pop up to notify you when proceeding this step. The "Skip" button is available for some update that is not urgent. It is highly recommended that you upgrade your PowerOcean firmware for seamless experience immediately. You can also tap ⬡ to access the **Firmware Update** page to view the Firmware version.

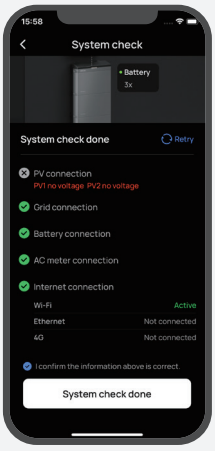




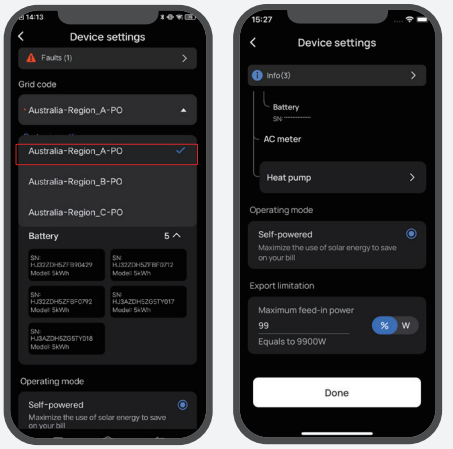


System check before carrying out Device Setting.

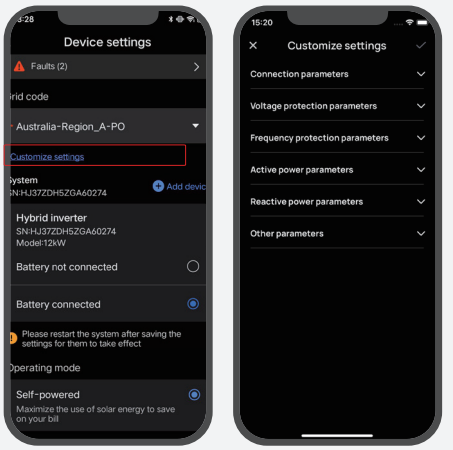
During the initial commissioning, there is a system check available for the EcoFlow PowerOcean system, allowing you to confirm all the system connections are correct.



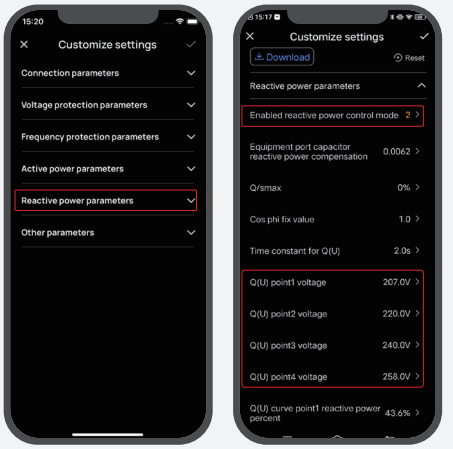
- Set grid code, system work mode and feed-in power limitation.



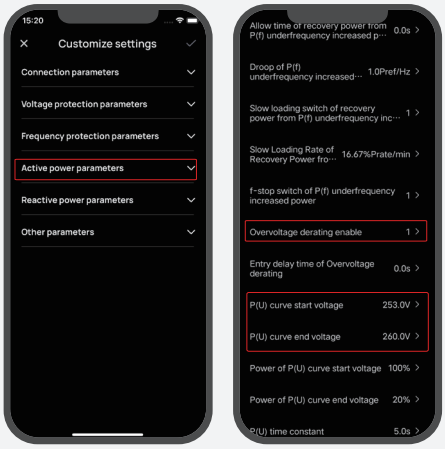
- (Optional) You can also tap **Customize Settings** to set Connection parameters, Voltage Protection parameters, Frequency Protection parameters, Reactive Power parameters and other parameters. (Please follow local regulations, if you need to change any of these parameters, please contact your local power organization first.)



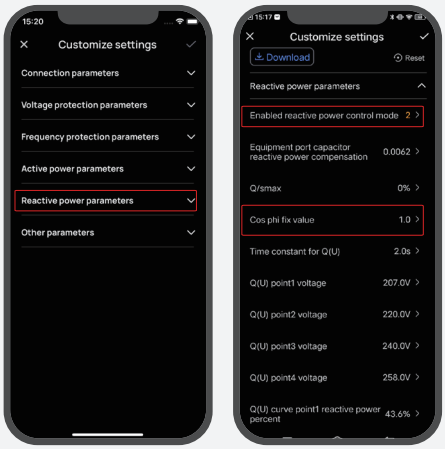
- Set power quality response modes: Volt-var.



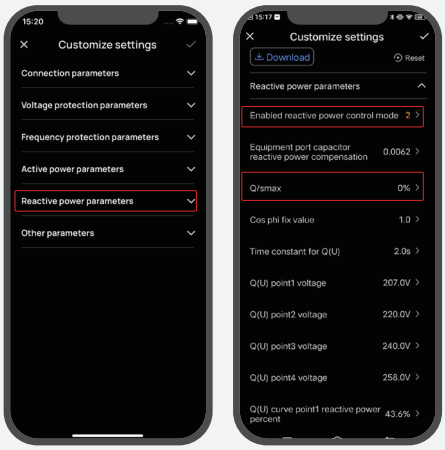
- Set power quality response modes: Volf-waff



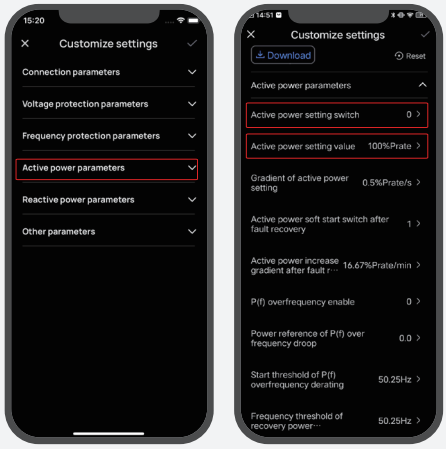
- Set fixed power factor.



- Set reactive power mode.



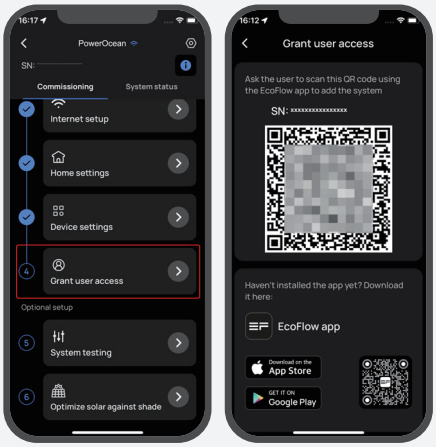
- Set power rate limit.



6 GRANT USER ACCESS

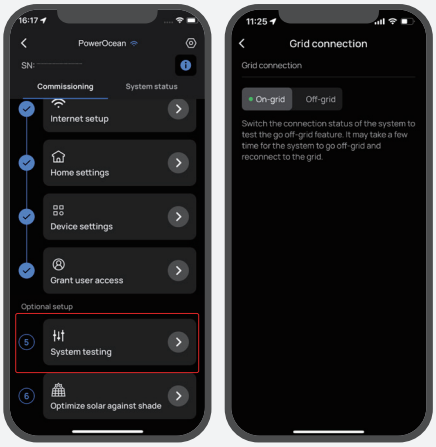
Click **Grant User Access** for a home owner access QR code to allow users to scan it.

- After manually adding device **EcoFlow PowerOcean** using the EcoFlow User App, users scan the home owner access QR code to bind it.



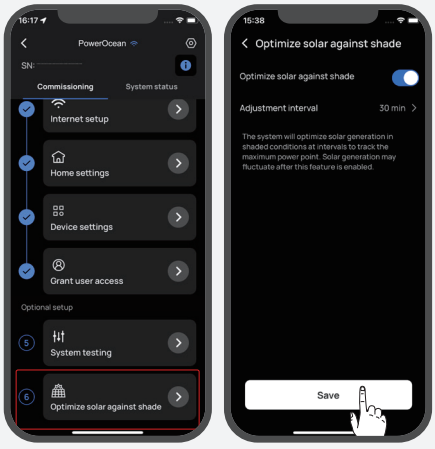
7 (OPTIONAL) SYSTEM TESTING

To test the go off-grid feature, you can toggle the button to switch the connection status of the system.



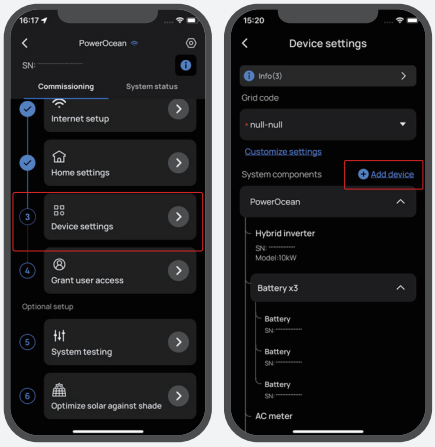
8 (OPTIONAL) OPTIMIZE SOLAR AGAINST SHADE

If this feature is enabled, the system will optimize solar generation in shaded conditions at your setup intervals to track the maximum power point. Solar generation may fluctuate.



(OPTIONAL) ADD DEVICE TO THE SYSTEM

(Optional) Tap "Add Device" to integrate devices into this system, such as SG READY certified Heat Pump or charging pile etc., and setup relevant parameters.

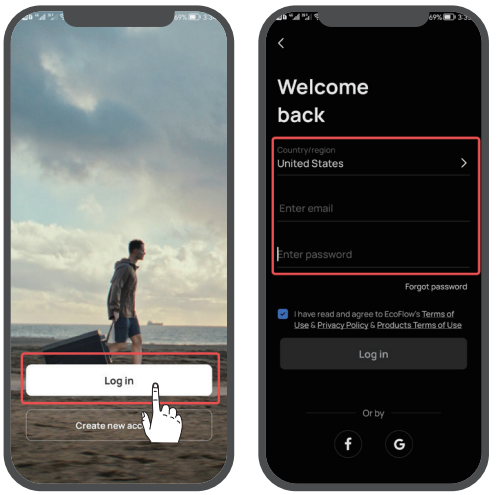


How Users Add Devices

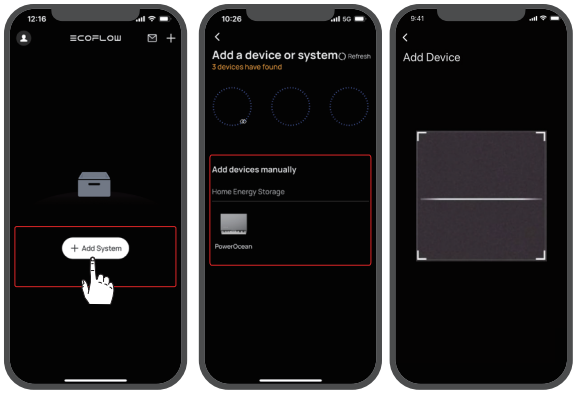
1. DOWN AND INSTALL ECOFLOW USER APP (FOR USER ONLY)

Scan the QR code or download at:
https://download.ecoflow.com/app

2. CREATE NEW ACCOUNT AND LOG IN.



3. ADD DEVICE MANUALLY.



4. THE ECOFLOW APP CAN ESTABLISH COMMUNICATION CONNECTION TO THE INVERTER VIA THE WLAN,PROVIDING REMOTE MONITORING, DATA LOGGING AND NEAR-END MAINTENANCE ON THE INVERTER. USERS CAN ALSO VIEW INVERTER INFORMATION AND SET PARAMETERS THROUGH THE APP.

Technical Specifications

		EF BD-5.1-S1	EF BD-10.2-S1	EF BD-15.3-S1
Performance	Battery Nominal Capacity (kWh)	5.12	10.24	15.36
	Battery Usable Capacity (95% Depth of Discharge)* (kWh)	4.8	9.7	14.5
	Max. Output Power (kW)	3.3	6.6	9.9
	Max. Input Power (kW)	2.5	5.0	7.5
	Nominal Voltage (V)	800		
	Operating Voltage Range (V)	720-960		
	Battery Short Circuit current (A)	200A for 300 us	400A for 300 us	600A for 300 us
	Battery Maximum Charge Current (A)	50	50	50
	Battery Maximum Discharge Current (A)	80	80	80
	Rated DC Power (kW)	Discharge: 3.3 Charge: 2.5	Discharge: 6.6 Charge: 5.0	Discharge: 9.9 Charge: 7.5
	Battery Cell Type	LFP		
Compliance	Certificates	CE MARK		
	Safety Standard	EN62619, EN62040-1, EN62477-1, ISO13849, VDE-AR-E-2510-50		
	Delivery Standard	UN38.3		
	EMC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4		
General	Dimension (W×D×H) (Without Adjustable Feet) (mm)	680×183×612 (±1)	680×183×1009 (±1)	680×183×1406 (±1)
	Weight (kg)	65.6	120.9	176.2
	Installation	Floor stand / wall mounted		
	Operating Temperature (°C)	-20 to 50		
	Max. Operating Altitude (m)	3000		
	Communication Method	CAN		
	Cooling Method	Natural convection		
	Noise Level (dB)	≤35		
	Relative Humidity	0%-100% (Condensing)		
	Active Aerosol Fire Prevention Module	Integrated		
	Protection Level	IP65		
	Protective Class	I		
	Environmental Category	Indoor/Outdoor		

* To maintain optimal battery performance in low-temperature environments, the depth of discharge (DoD) may vary with actual temperature. This is a normal fluctuation.

Raccolta carta