Agave-TH
Three Phase Hybrid Inverter
User Manual

WH-TIA 502
WH-TIA 602
WH-TIA 802
WH-TIA 103
WH-TIA 123
WH-TIA 133

CONTENTS

COPYRIGHT STATEMENT

 Please properly store the manual and strictly follow all safety and operating instructions provided. Please do not operate the system before reading through this manual.

NOTICE

The information in this user manual is subject to change due to product updates or other reasons. This guide cannot replace the product labels or the safety precautions in the user manual unless otherwise specified. All descriptions here are for guidance only.

1 NOTE ON THIS MANUAL

1.1 Applicable Model

This manual is valid for product of Agave-TH hybrid inverter which can be installed and work together with Myrtillo series battery system. It describes the information, installation, electrical connection, commissioning, and maintenance and troubleshooting of the product. Please read it carefully before operating.

1.2 Target Group

This manual applies to qualified electricians. The qualified electricians have to be familiar with the product, local standards, and electric systems. The tasks described in this manual should only be performed by qualified electricians.
End users can also use this manual to understand the product and functions.

1.3 Symbols in the Manual

Important instructions contained in this manual should be followed during installation, operation and maintenance.

⚠ DANGER
Indicates a hazard with a high level of risk that, if not avoided, will result in death or serious injury.

⚠ WARNING
Indicates a hazard with a medium level of risk that, if not avoided, could result in death or serious injury.

⚠ CAUTION
Indicates a hazard with a low level of risk that, if not avoided, could result in minoror moderate injury.

NOTICE
Indicates a situation that, if not avoided, could result in equipment or property damage.

1.4 Limitation of Liability

eCactus assumes no direct or indirect liability for any product damage or property losses caused by the following.

- Product modifications, design changes, or parts replaced without eCactus's authorization;
- Modifications or attempted repairs or removal of serial numbers or seals by non-eCactus technicians;

- System designs and installations not in compliance with standards or regulations;
- Failure to comply with the local safety regulations (VDE in DE, SAA in AU, MEA and PEA in Thailand);
- Damage caused during transportation (including scratched paint caused by the product rubbing against the packaging during shipping). Any claims for damage during shipping should be made directly with the shipping or insurance company as the container/packaging is unloaded and damage is identified;
- Failure to follow any/all of the user manual, installation guide, or maintenance guidelines;
- Improper use or misuse of the device;
- Insufficient ventilation around the device;
- Product maintenance not done to acceptable standards;
- Force majeure (including severe or stormy weather, lightning, and fires).

1.5 Version

The latest document contains all the updates made in previous versions.

V1.0 01/07/2024:

- First Issue.

2 SAFETY

Please strictly follow these important instructions in the manual and the label on the products during the Installation, communication, operation and maintenance.

2.1 Symbols on the Product

The follow types of warning and safety symbols appearing on the product are described below:

Potential risks exist.
Wear proper PPE before any operations.

Danger to life due to electric shock
The product operates at high voltages. All work on the product must be carried out by qualified persons only.

Risk of burns due to hot surfaces
The product can get hot during operation. Avoid contact during operation. Allow the product to cool down sufficiently before carrying out any work.

Heavy objects. Life with care.

Keep the battery from open fire or ignition sources.

Wait at least 5 minutes after turning off the inverter before touching or using it to prevent electrical shocks or injuries.

Recyclable product components.

This side up. The package must always be transported, handled, and stored upright, with the arrows pointing upwards.

Do not stack more than five identical packages on top of each other.

WEEE designation

Do not dispose of the product together with the household waste but in accordance with the locally applicable disposal regulations for electronic waste.

Handle the package/product with care, and do not tip it over or throw it.

Observe the documentation
Observe all documentation supplied with the product.

Keep dry
The package/product must be protected from excessive humidity and stored covered.

CE marking
The product complies with the requirements of the applicable EU directives.

2.2 Safety Warning

- The product must only be installed or operated by qualified electricians in compliance with local grid authority or company standards, wiring rules, and requirements.
- The hybrid inverter has not been tested to AS/NZS 4777.2:2020 for multiple phase inverter combinations so combinations should not be used or external devices should be used in accordance with the requirements of AS/NZS 4777.1.
- Disconnect all batteries and AC power sources from the product for at least 5 minutes before connecting any wires or conducting any electrical work to ensure the product is completely isolated and to avoid electric shocks.
- The surface of the product may exceed temperatures of 60 ℃ during operation. Please make sure it has cooled down before touching it, and make sure that the product is out of the reach of children.
- The product must be used and operated as described in this user manual, or safety features may not work as intended, and the warranty for the product will be voided.
- The warranty will be voided if you open the product cover or change any component without eCactus's authorization.
- Care must be taken to protect the product from static damage. The WEIHENG Limited Warranty does not cover any damage caused by static.
- Neutral continuity is NOT maintained internally and must be achieved through external connections.
- The product features a built-in residual current monitoring unit (RCMU).

  Only use type B external residual current device (RCD) rated for a tripping current of 30 mA or higher.
- This product features active anti-islanding protection, and inverter frequency is shifted away from nominal conditions in the absence of a reference frequency (frequency shift).
- This product is a multimode inverter designed to be used in unconditioned outdoor shaded environments. The maximum operating ambient temperature is 55℃.

- An error message will be sent to the ECOS app in the event of a ground fault, and the status indicator on the product will turn red.

3 INTRODUCTION

3.1 Product Overview

WH-TIA series is a high-quality hybrid inverter which can convert solar energy to AC energy and store energy into battery. The hybrid inverter can be used to optimize self-consumption, store in the battery for future use or feed-in to public grid. Work mode depends on PV energy and user's preference. It can provide power for emergency use during the grid lost by using the energy from battery and hybrid inverter (generated from PV).

WH-TIA series can be used in conjunction with PV modules for pure PV application or in combination with PV modules and Myrtillo BAT for photovoltaic storage systems after the purchase and activation of a license.

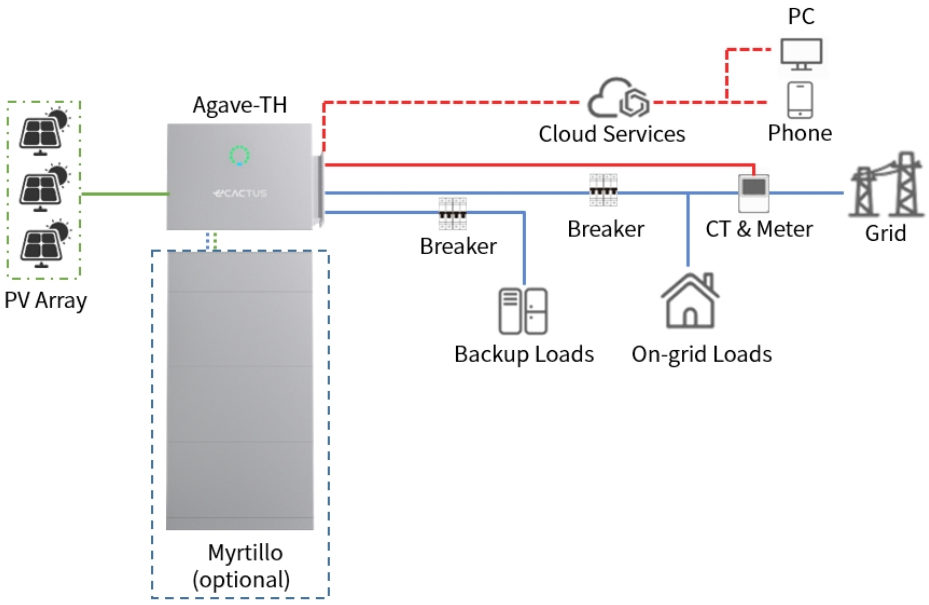
This user manual applies to the following products:

WH-TIA502, WH-TIA602, WH-TIA802, WH-TIA103, WH-TIA123, WH-TIA133.

3.2 Features

PV Input： Max. 2 times PV over-configuration. Max 16/26A DC input current per string, compatible with 210 PV modules. 190-980V wide MPPT operating voltage range.
AC Input: 5-13kW rated output power. 110% unbalanced output.
EPS Output: Max. 16kW peak output apparent power. < 10ms EPS switching time.
Function: VPP, EV and Diesel Generator ready. Remote updates & self-diagnosis.

3.3 Application Scenarios

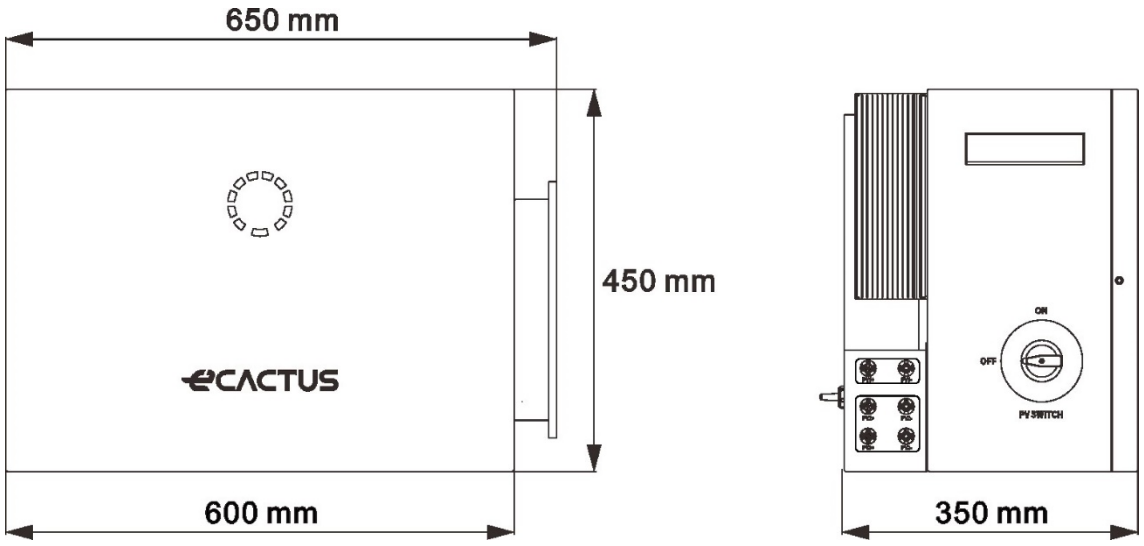


*For AC coupled system, additional PV meter is required to monitor the existed inverter.

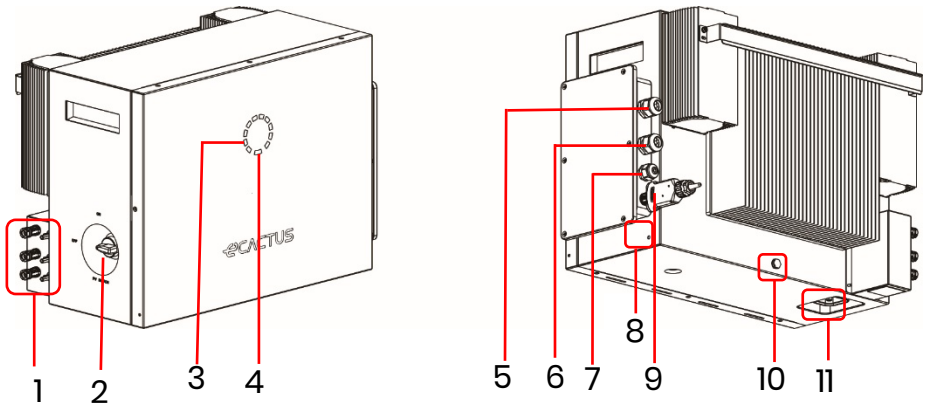
* Agave-TH series inverters are only applicable to Myrtillo series battery system. The battery chemistry is LFP.

* The array is floating.

3.4 Dimensions

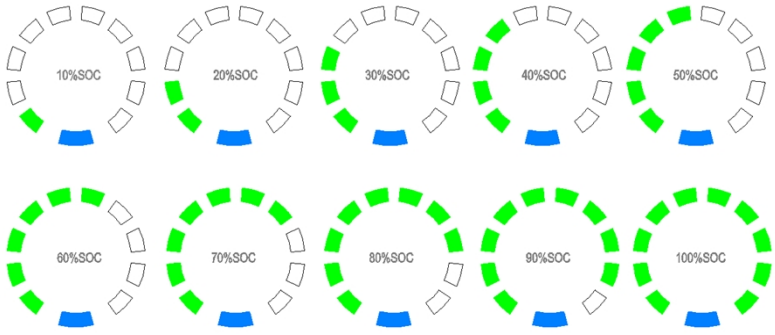


3.5 Indicator Status and Wiring Port



NO.	Parts	NO.	Parts
1	PV connectors	6	Grid port
2	PV switch	7	Communication port
3	Charge indicator	8	PE port
4	Status indicator	9	Wi-Fi dongle
5	EPS port	10	Vent valve
		11	Battery port

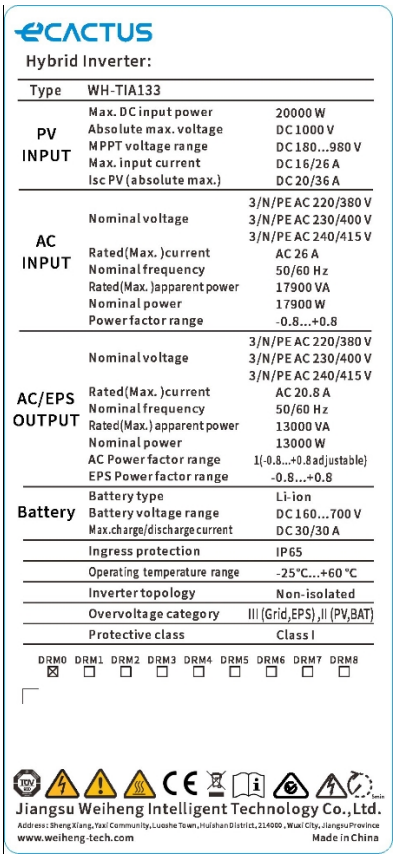
LED INDICATOR

STATUS	LED INDICATOR	
Standby		Flashing blue LED, 2-second intervals
Checking		Flashing blue LED, 0.5-second intervals
Normal		Solid blue LED
DSP fault		Solid red LED
Battery com. fault		Flashing red LED, 2-second intervals
Meter com. fault		Flashing red LED, 0.5-second intervals
Charge indicator		

The Status indicator will be solid blue when everything is ready, and the Charge indicator indicates battery power.

3.6 Product identity definition

Inveryer Nameplate:



3.7 Techincal Data

Model	WH-TIA 502 Series	WH-TIA 602 Series	WH-TIA 802 Series	WH-TIA 103 Series	WH-TIA 123 Series	WH-TIA 133 Series
PV Input						
Absolute max Voltage [d.c.V]	1000					
MPPT Voltage Range [d.c.V]	180...980					
Max. DC Input Power [W]	10000	12000	16000	20000	20000	20000
Start-up Voltage [d.c.V]	145					
Rated Operating Voltage [d.c.V]	620					
Max. Input Current [d.c.A]	16/26					
Max.inverter backfeed current to array [d.c.A]	0					
Isc PV[d.c.A]	20/36					
NO. of MPP Trackers	2					
NO. of Strings per MPP Tracker	1/2					
Battery Model						
Battery Voltage Range [d.c.V]	160...700					
Max. Charge/Discharge Current [d.c.A]	30/30					

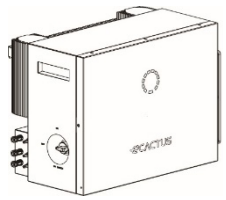
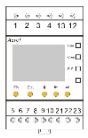
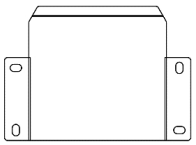
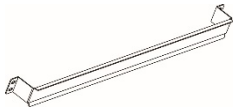
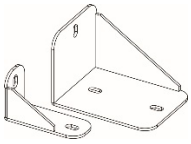
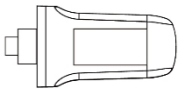
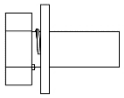
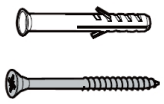
AC Input/Output						
Nominal Output Power [W]	5000	6000	8000	10000	12000	13000
Max. Apparent Power to Grid [VA]	5000	6000	8000	10000	12000	13000
Max. Apparent Power from Grid [VA]	10000	12000	16000	17900	17900	17900
Nominal Voltage [a.c.V]	3/N/PE;220/380 3/N/PE;230/400 3/N/PE;240/415					
Nominal Frequency [Hz]	50/60					
Max. AC Current to Grid[a.c.A]	8.1	9.6	12.8	16.0	19.2	20.8
Max. AC Current from Grid[a.c.A]	16.2	19.2	25.6	26.0	26.0	26.0
Inrush current[a.c.A]	16 a.c.A (peak), 11.3 us (duration)					
Max. output fault current[a.c.A]	52 (peak), 37 (rms)					
AC output Maximum output overcurrent protection[a.c.A]	37					
AC input power factor	-0.8...+0.8					
AC output power factor	1(-0.8...+0.8 adjustable)					
THDi	< 3%					
EPS Output (With Battery)						
Nominal Output Power [W]	5000	6000	8000	10000	12000	13000
Peak Output Apparent Power [VA] @60 sec	10000	12000	16000	16000	16000	16000
Nominal Voltage [a.c.V]	3/N/PE;220/380 3/N/PE;230/400 3/N/PE;240/415					
Nominal Frequency [Hz]	50/60 (±0.2%)					
Max. Output Current [a.c.A]	8.1	9.6	12.8	16.0	19.2	20.8
Max. Inrush current[a.c.A]	16 a.c.A (peak), 11.3 us (duration)					
Max. Output fault current[a.c.A]	52 (peak), 37 (rms)					
EPS output Maximum output overcurrent protection[a.c.A]	37					
Switch time [ms]	< 10					
THDv @ Linear Load [%]	< 2					
Power Factor	-0.8...+0.8					
Efficiency						
PV Max. Efficiency[%]	98					
PV Europe Efficiency[%]	97					
PV Max. MPPT Efficiency[%]	99.9					

Battery Charge by PV Max. Efficiency[%]	98.5
Battery Discharge Efficiency[%]	97.7
Protection	
Over/Under voltage protection	Yes
DC isolation protection	Yes
DC injection monitoring	Yes
Residual current detection	Yes
Anti-islanding protection	Yes
Over load protection	Yes
Battery Input reverse polarity protection	Yes
PV reverse polarity protection	Yes
Surge protection	Yes
Over heat protection	Yes
General Data	
Dimension (W/D/H)[mm]	600*350*450
Hybrid inverter net weight [kg]	35.5
Operation Temp [°C]	-25...+60
Relative Humidity[%]	0...95
Altitude [m]	<= 3000
Ingress Protection	IP65
Cooling	Natural
Inverter Topology	Non-isolated
Over voltage category	Ⅲ(GRID,EPS), Ⅱ(PV,BAT)
Protective class	Class Ⅰ
Active anti-islanding method	frequency shift
Human Interface	LED/APP
BMS Communication Interface	RS485/CAN
Meter Communication Interface	RS485
Noise Emission [dB]	< 25
Standby Power Consumption [W]	< 10

Made in China

4 INSTALLATION

4.1 Packing List

WH-TIA502/602/802/103/123/133				
				
1 × PCS	1× Meter Three Phase Meter	1*Terminal Accessories 1* Document Accessories	1 × Quick Installation Guide	1 × Locking Bracket
				
1 × Metal Bracket	2 × connection plate	1 × Wi-Fi Module	4 × M4*10 screw 6 × M5*10 screw	4 × φ10*60 Expansion bolt

The three phase meter is used for generation control function. Model: ACR10R.

4.2 Installation Location and Environment

4.2.1 General

The product must be installed on a flat surface or platform with a load-bearing capacity of at least 400 kg. The installation location should be well-ventilated and away from flammable or explosive materials.

This hybrid inverter is rated for outdoor installation and can be installed both indoors and outdoors. The Battery Box is naturally ventilated. The installation location must be clean, dry, and adequately ventilated. Enough space should be left for unrestricted access to the unit for installation and maintenance purposes, and the system panels should not be obstructed.

The hybrid inverter should not be installed in the following locations:

◆Habitable rooms;
◆Ceiling or wall cavities;
◆On roofs not suited for the purpose;
◆Access/exit areas or under stairs/access passages;

- ◆Places where freezing temperatures can occur, such as garages, carports, or other places such as wet rooms;
- ◆Humid or salty environments;
- ◆Seismic-prone areas—additional safety measures are needed;
- ◆Sites higher than 2000 meters above sea level;
- ◆Explosive atmospheres;
- ◆In direct sunlight or places susceptible to significant changes in ambient temperature.

4.2.2 Location Restrictions

The hybrid inverter should not be installed:

(1) Within 600 mm of any heat source, such as hot water units, gas heaters, air conditioning units, or any other similar appliances;
(2) Within 600 mm of any exit;
(3) Within 600 mm of any window or ventilation opening;
(4) Within 900 mm of access to 120/240 VAC connections;
(5) Within 600 mm of the side of any other device.

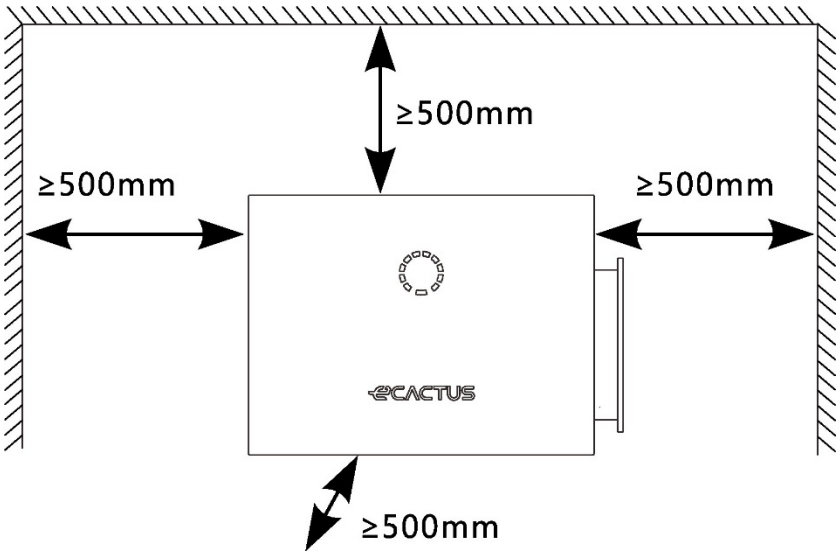
Leave at least 1 meter of clearance between the hybrid inverter and any emergency exits when installing the device in corridors, lobbies, or hallways to ensure a safe exit.

4.2.3 Barriers to Habitable Rooms

Ensure a suitable non-combustible barrier is set up between the hybrid inverter and any installation walls or structures when installing the hybrid inverter on a wall or structure connected to a living space to protect against the spread of fire to living spaces. A non-combustible barrier should be installed between the hybrid inverter and the surface of the wall or structure it is being mounted to if the surface itself is not made out of a suitable non-combustible material. Increase the distance between the hybrid inverter and any other nearby structures or objects if there is less than 30 mm between the hybrid inverter and the wall or structure separating it from living spaces.

The following spaces around the hybrid inverter must remain empty:

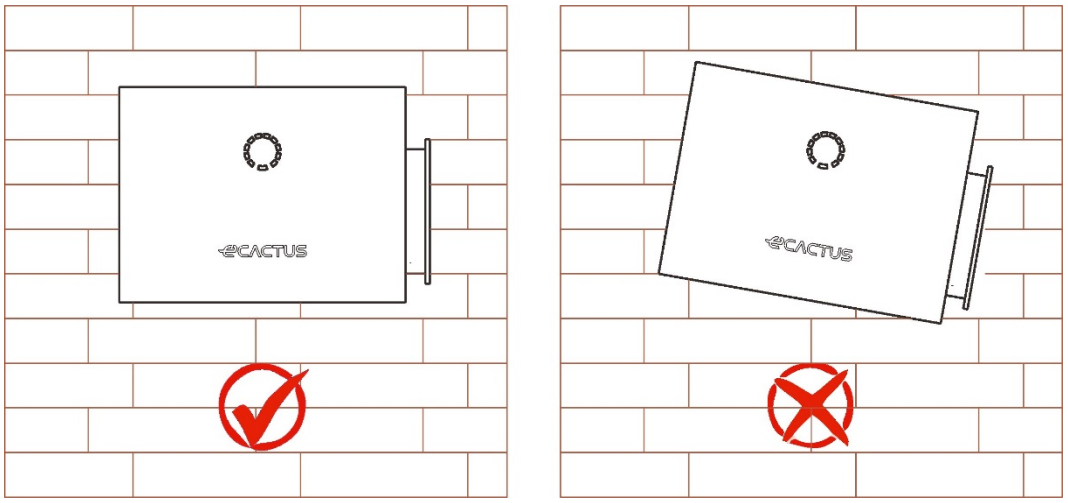
Top	500 mm
Bottom	500 mm
Front	500 mm
Left and right sides	500 mm



4.2.4 Choosing an Installation Location

NOTICE
Carefully select an appropriate installation location based on the following rules to protect the hybrid inverter and facilitate maintenance.

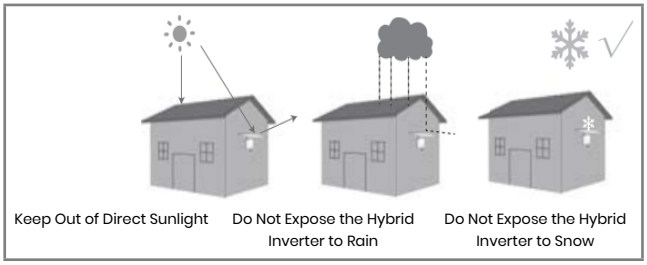
Rule 1. Do not install the hybrid inverter at forward tilted, back tilted, side tilted, horizontal, or upside down positions.

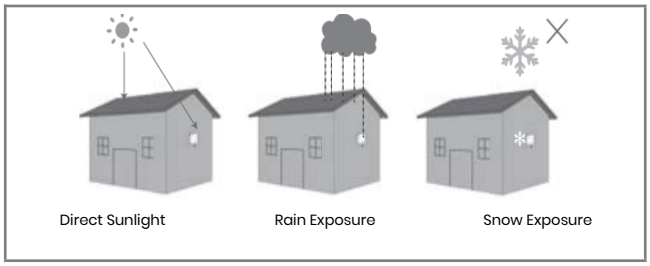


Rule 2. During installation, ensure that there is no other equipment (except related Weiheng equipment and awnings) or flammable or explosive materials around the ESS. Reserve sufficient clearances for heat dissipation and safety isolation.

Rule 3. Mounting the inverter on the wall through the locking bracket only serves as a fixing and limiting function. The inverter needs to be installed together with the myrtillo battery system, and the actual load bearing is borne by the battery box below.

Rule 4. The hybrid inverter installation location should be protected from direct sunlight or bad weather like snow, rain, or lightning.





Rule 5. Installing the hybrid inverter at eye level will make maintenance more convenient.

Rule 6. The hybrid inverter 's product label should be clearly visible after installation.

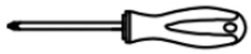
Rule 7. Do not install the hybrid inverter in the snow or rain. If installation in the snow or rain is unavoidable, ensure the hybrid inverter and distribution box are protected and kept dry.

Install the hybrid inverter away from strong magnetic fields to avoid electromagnetic interference. When installing the hybrid inverter next to radio or wireless communication equipment operating below 30 MHz: 1. Install the hybrid inverter at least 30m away from the wireless equipment. 2. Attach a low-pass EMI filter or a multi-winding ferrite core to the hybrid inverter DC input cable or AC output cable.

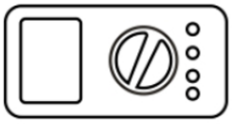
4.3 Wall Mounting Steps

The system should only be installed on concrete or other non-combustible surfaces.

Installation Tools:

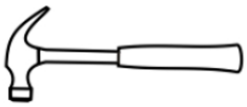


Screwdriver

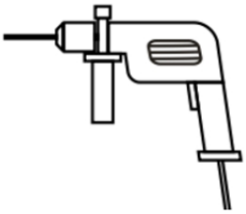


Multimeter

Wire stripper

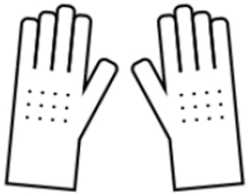


Claw hammer



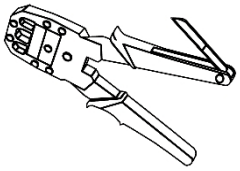
Hammer drill

Diagonal plier



Insulating gloves

Protective gloves

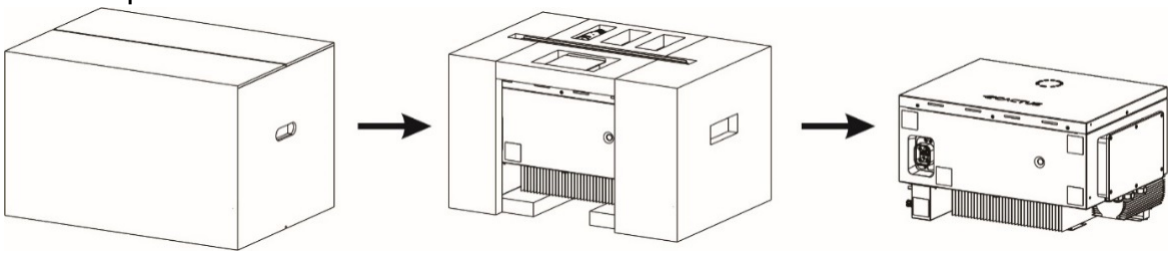


Crimping pliers

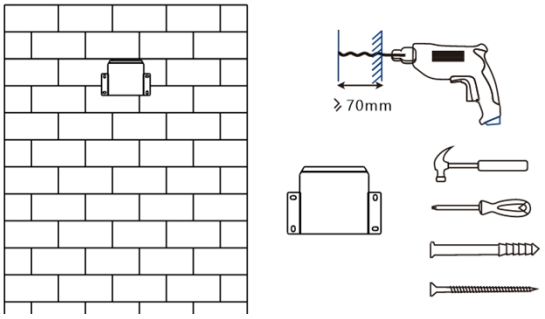
⚠CAUTION

- Follow local electric safety and installation policy, a suitable breaker between battery system and inverter is required.
- All installation and operation must follow local electric standard and requirements.

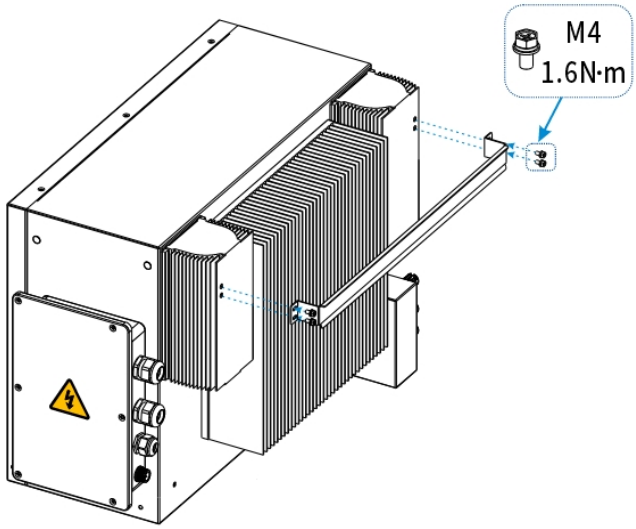
Step1： Take out the inverter from the package. Install the metal bracket and connection plate onto the inverter.



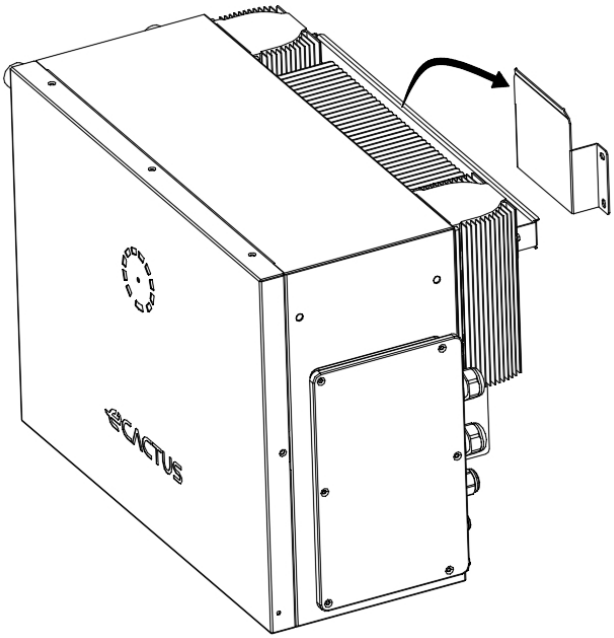
Step2： Drill a hole with a diameter of 10mm at the center of the waist-type hole in the back plate with the electric drill and place the plastic expansion tube, then fix the self-tapping screw with a screwdriver. The electric drill must with a dust cover to prevent dust from falling off.



Step3： Install the metal bracket onto the inverter.



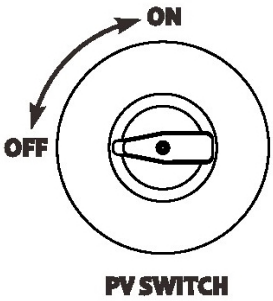
Step4： Put the metal bracket onto the wall-hanging plate.



4.4 Cable Connections

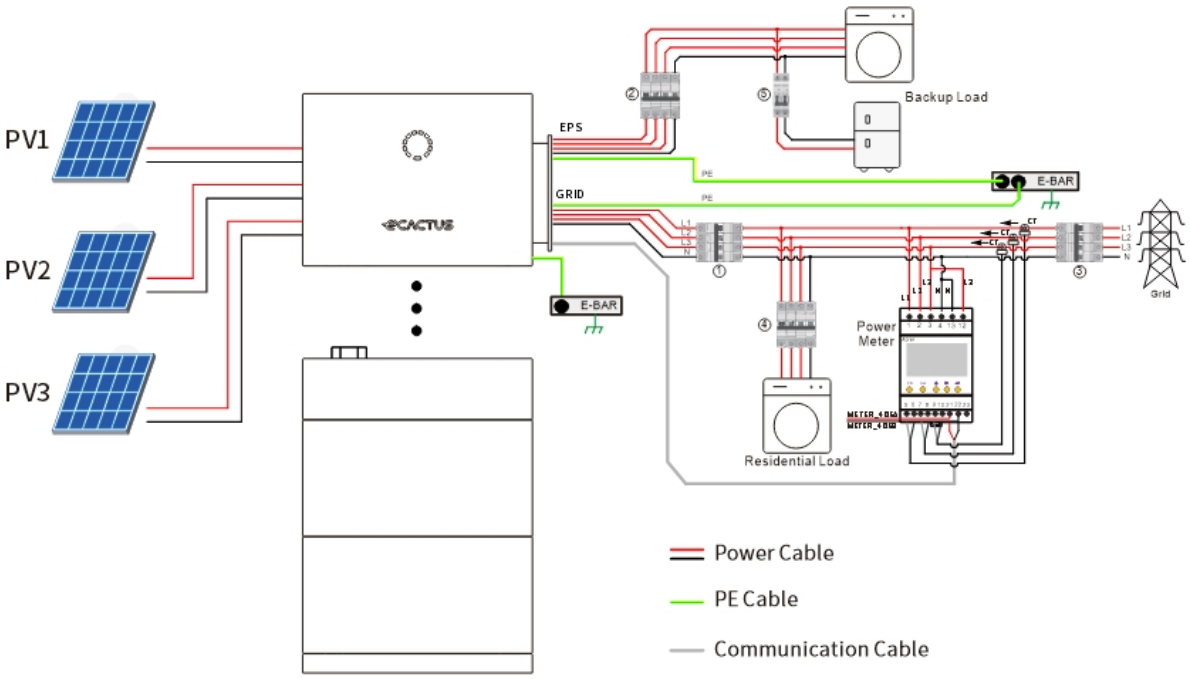
4.4.1 General

Make sure the inverter switches are in the OFF position.



4.4.2 Connect the Inverter Box and Battery Box

System Wiring Diagram



Note:

The breaker (63A/1000V breaker) between the battery and the inverter is integrated in the high voltage box which is specially used in battery connection.

Recommended cables and connectors:

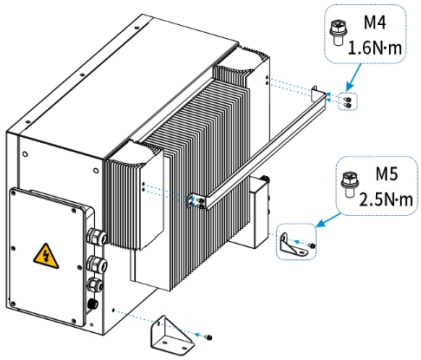
Cable Type	Cable Specification	Terminal Model
PE Cable	10 AWG	OT5-5 (Included in the accessory packet)
PV+ Cable	10 AWG (RED)	Positive DC Connector (Included in the accessory packet)
PV- Cable	10 AWG (BLACK)	Negative DC Connector (Included in the accessory packet)
Grid Cable	10 AWG	SV5-5.5 (Included in the accessory packet)
EPS Cable	10 AWG	SV5-5.5 (Included in the accessory packet)
Communication Cable	20 AWG	

Choose the correct breaker:

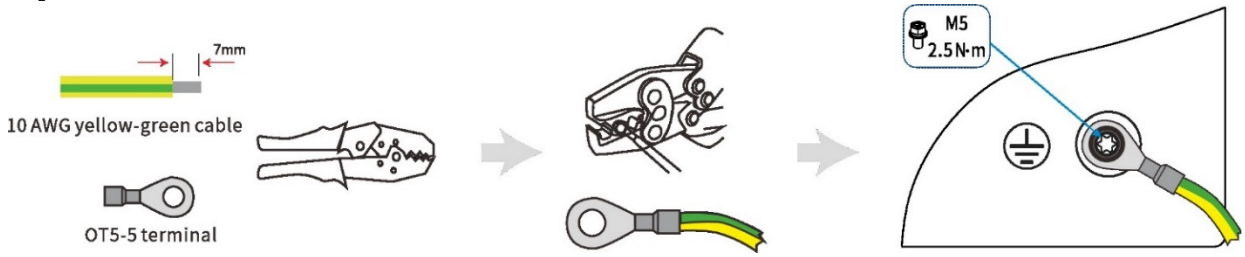
Model	①	② ⑤	③ ④
WH-TIA 502 Series	32 A/230 V AC breaker	16 A/230 V AC breaker	According to residential load (generally already installed in the grid distribution box)
WH-TIA 602 Series	32 A/230 V AC breaker	16 A/230 V AC breaker	
WH-TIA 802 Series	32 A/230 V AC breaker	16 A/230 V AC breaker	
WH-TIA 103 Series	32 A/230 V AC breaker	32 A/230 V AC breaker	
WH-TIA 123 Series	32 A/230 V AC breaker	32 A/230 V AC breaker	
WH-TIA 133 Series	32 A/230 V AC breaker	32 A/230 V AC breaker	

Connect the ground cable, power cable and communication cable, connection process is as below:

Step 1: Install the metal bracket and connection plate onto the inverter.



Step 2: Connect the PE cable.

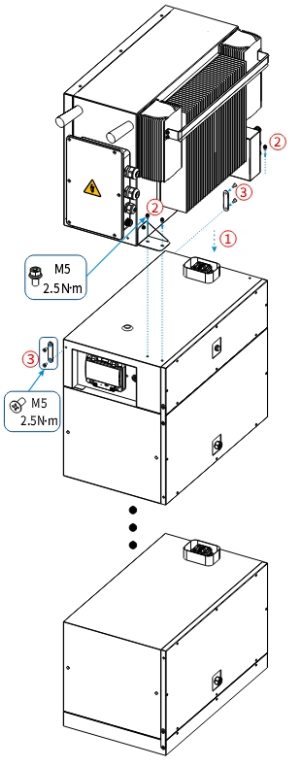


Step 3: Battery connections.

Agave-TH series inverters are only applicable to Myrtillo series battery system.

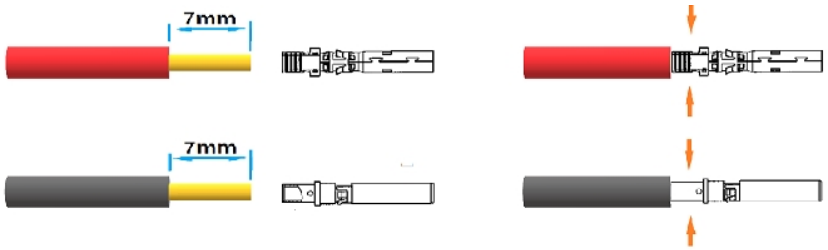
After finishing the installation of the battery system, stack inverter on the high voltage box, the top module of the battery system. Connect ground cable, power cable and communication cable through the battery port.

The battery port uses aguided quick connector that integrates the power cable and communication cable. When the stacking is finished, the power and BMS between inverter and battery are connected. The breaker between battery and inverter has already been integrated in the high voltage box.



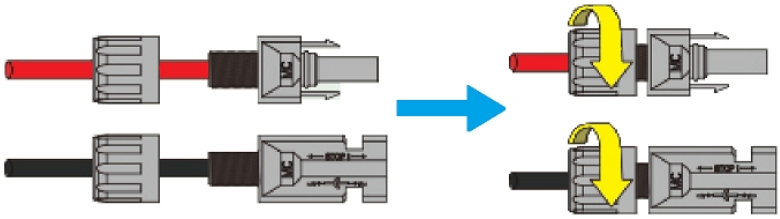
Step 4: Connect the PV cables.

1. Crimp the terminal;

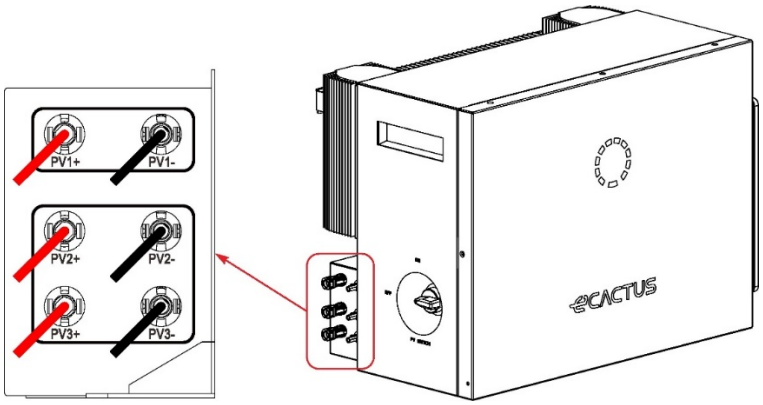


Legend	Description	Value
A	Outer Diameter	5.5–8.0 mm
B	Insulated Cable Length	7 mm
C	Conductor Core	10 AWG

2. Insert the terminal into the connector and lock the nut;



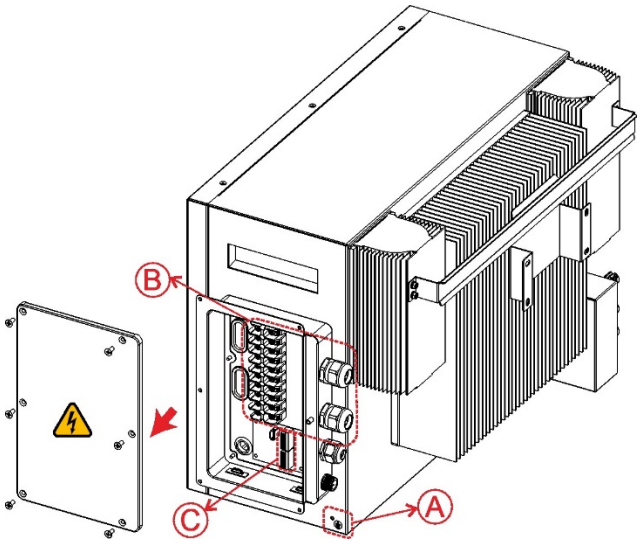
3. Complete the connection.



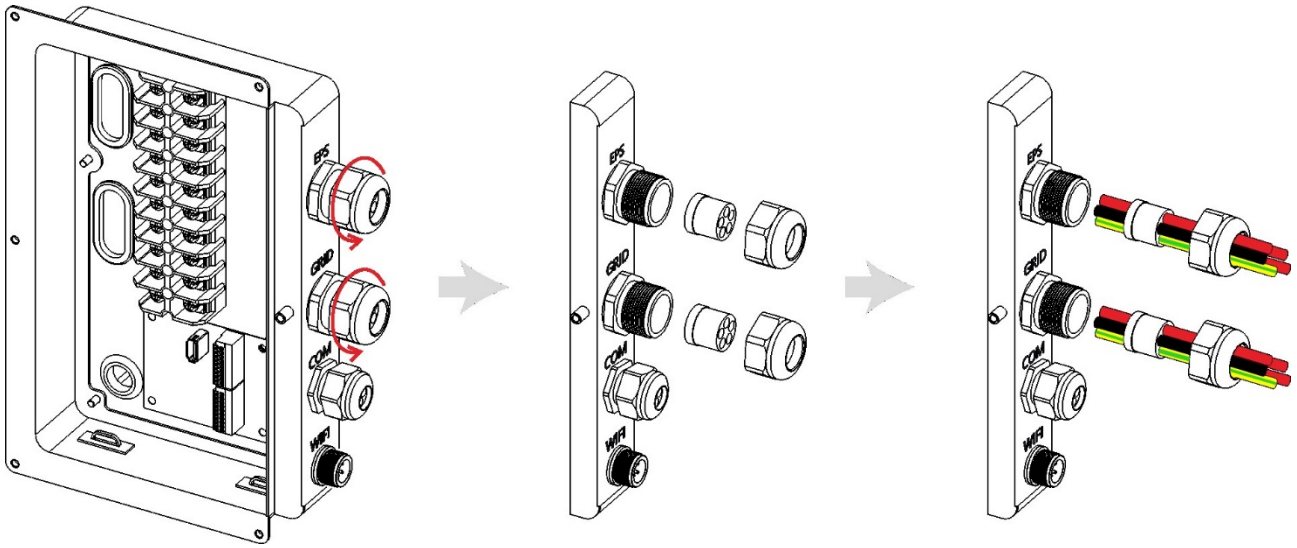
⚠ CAUTION

- For the best use of PV power, PV2 and PV3 should be the same in PV string structure, including the type, number, tilt, and orientation of the PV modules.
- Pay attention to PV string polarity, and do not connect them in reverse order. Otherwise, the inverter might be damaged.

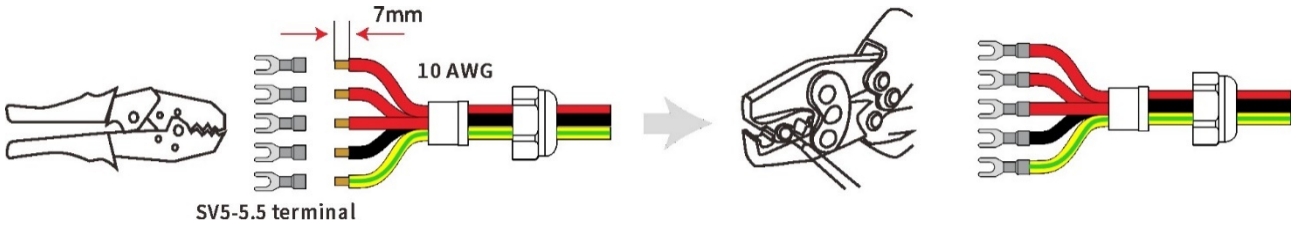
Step 5: Connect GRID and EPS cables (B)



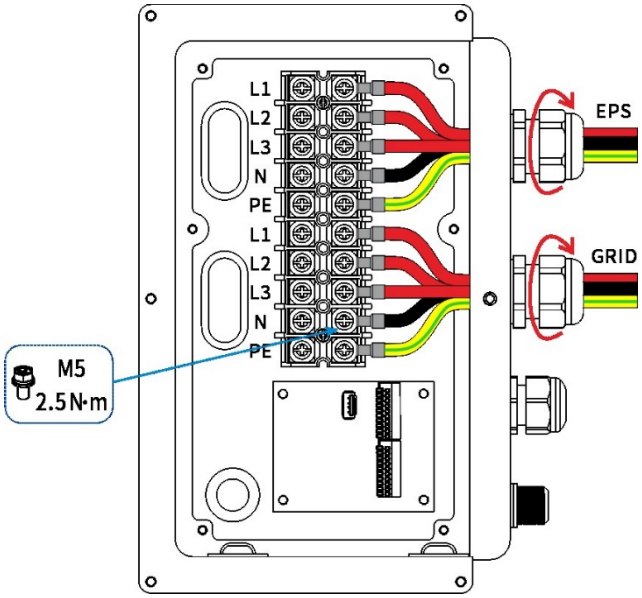
1、Loosen the waterproof connector's press nut and remove the seal. Then, insert the cable into the hole.



2、Peel off a 7 mm length of the L/N/PE cable end. Place the SV5-5.5 terminal onto the cable and crimp it tightly using pressure line clamps.

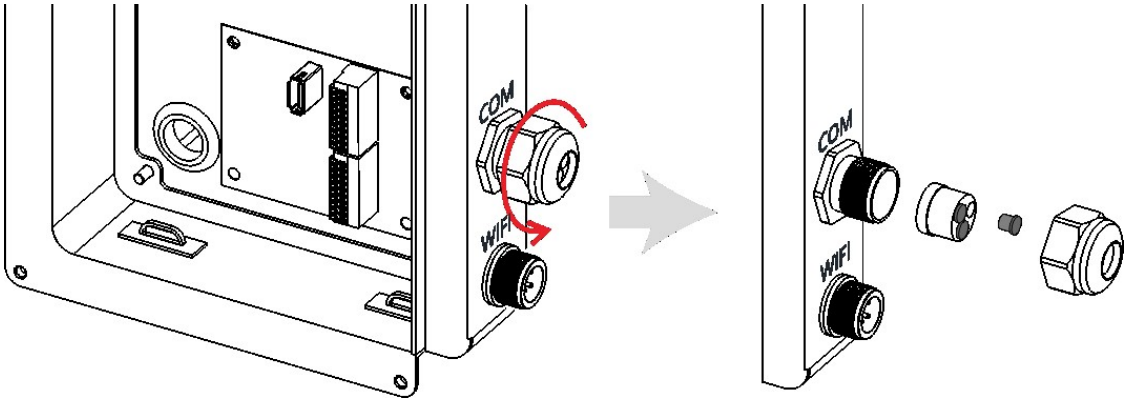


3、Insert the terminal into the wiring seat, use a Phillips head screwdriver to tighten the screws (2.5 N.m), and tighten the nut.

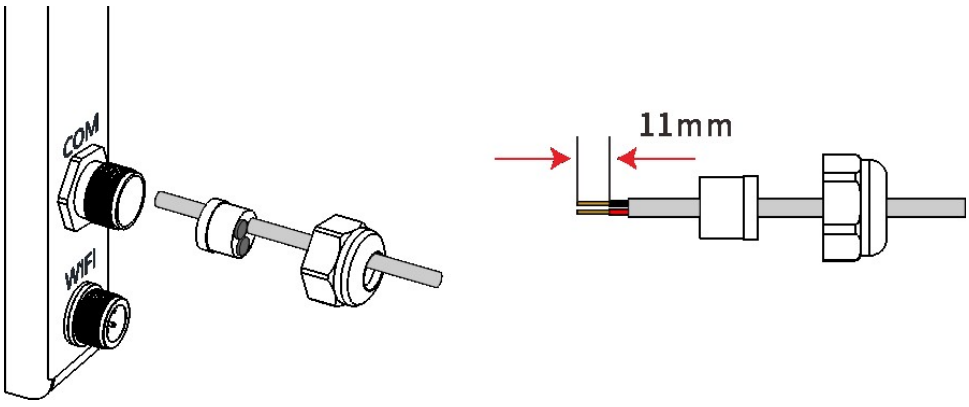


Step 6： Connecting the communication cables (C)

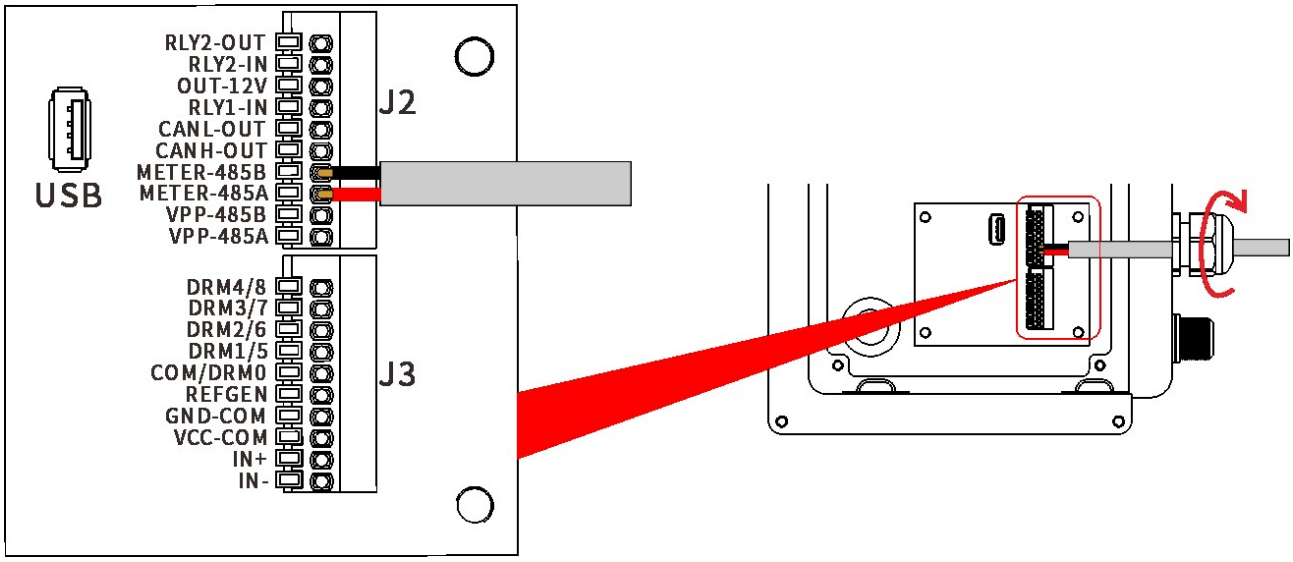
1、Loosen the waterproof connector's press nut and remove the seal. Then, insert the cable into the hole.



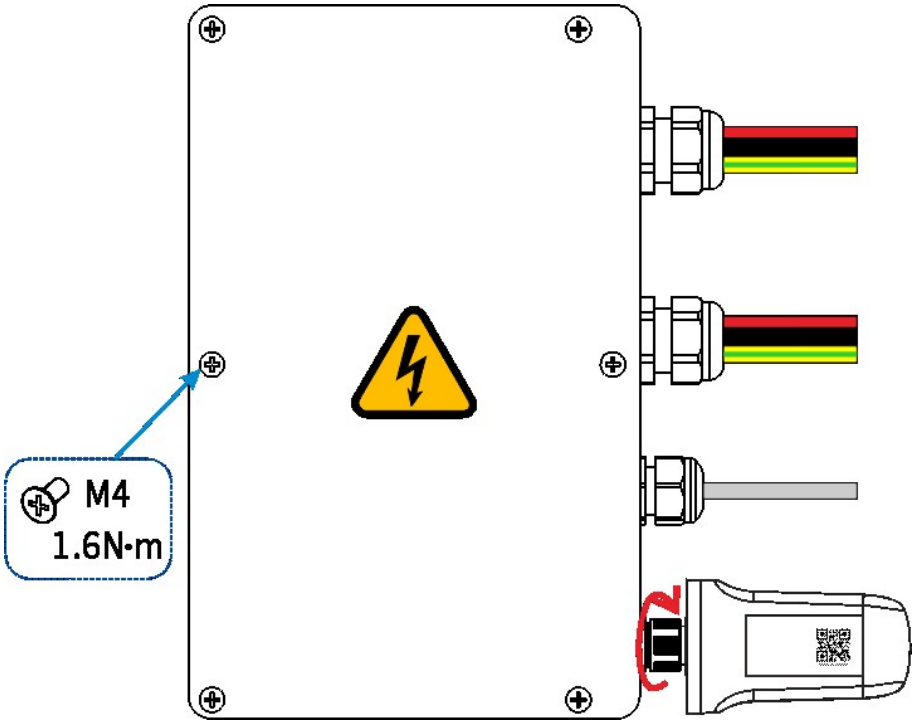
2、insert the cable into the hole. Peel off a 11 mm length of the Communication cable end.



3、Insert the terminal into the wiring seat, and tighten the nut.

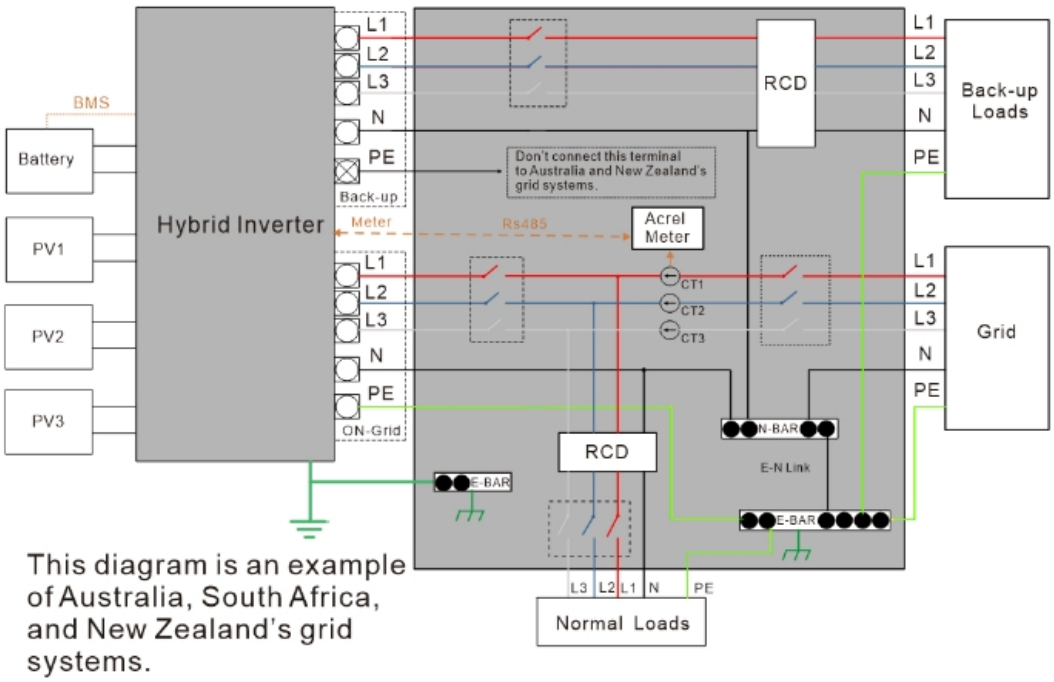


Step 7: Insert the Wi-Fi Module, and tighten the nut. Attach the waterproof cover and lock it in place.



- System Connection Diagrams

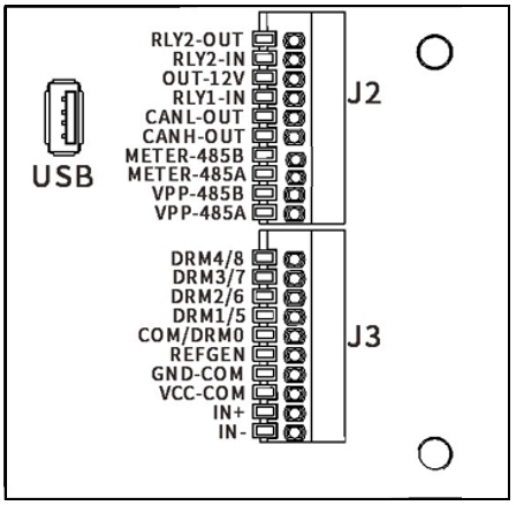
The following diagram illustrates an example use case where the neutral wire is separate from the PE in the distribution box. Please follow local wiring regulations.



4.4.3 DRM connection

In Australia and New Zealand, the inverter supports the demand response modes as specified in the standard AS/NZS 4777.

The following figure shows the wiring between the inverter and the external DRED.



Mode	Asserted by Shorting Terminals on Inverter	Switch Operation on External DRED
DRM0	COM/DRM0 & REFGEN	Close S1 and S5

5 System Operation

5.1 Turning on the hybrid inverter

Warning: Please double-check the installation before turning on the system.

Step 1: Open the battery breaker cover and turn the battery breaker to the ON position.

Step 2: Turn on the PV switch.

Note: The external isolation devices for PV array ports shall include the requirement of an additional external break switching device that conforms to the requirements AS/NZS 4777.1

Step 3: Turn on the grid breaker.

Step 4: Turn on the backup breaker if a backup load is being used.

Step 5: Close the battery breaker cover.

Step 6: Configure the Wi-Fi dongle (Only when turning on the system for the first time).

5.2 Turning off the BESS

Step 1: Disconnect the backup load where applicable, and then turn off the backup breaker.

Step 2: Turn off the grid breaker.

Step 3: Turn off the PV switch.

Step 4: Open the battery breaker cover and turn the battery breaker to the OFF position.

Step 5: Close the battery breaker cover.

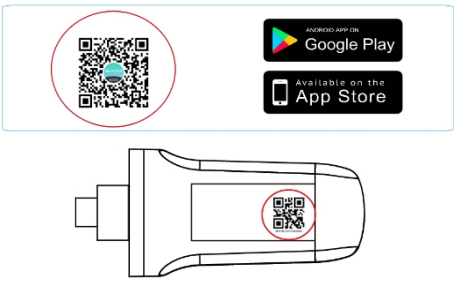
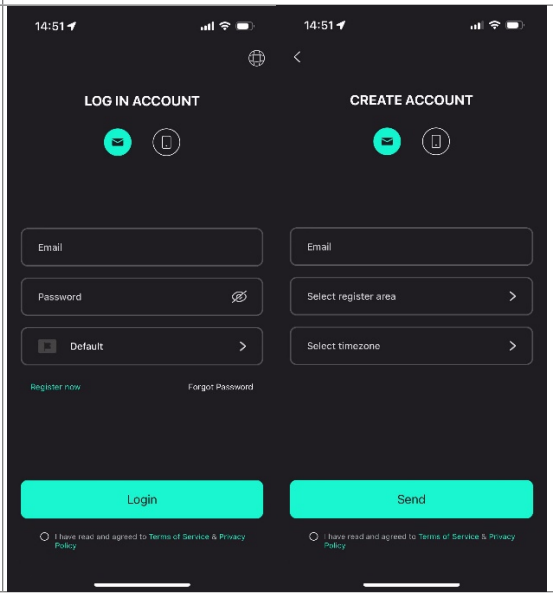
6 ECACTUS CONFIGURATION & WI-FI RELOAD

- This part demonstrates the eCactus configuration step by step.

6.1 Preparations

1. The hybrid inverter must be connected to PV power only.
2. A router connected to the Internet is required to connect to the ECOS application center.
3. Android or iOS smartphone.

STEP 1 1. Scan the QR code on the front of the device to install the Android or iOS version of the ECOS app, depending on your operating system.	

<table>
<tr>
<td></td>
<td> 
</td>
</tr>
<tr>
<td>STEP 2
1. Open the ECOS app and tap the sign-up button to register a new user account.
2. Follow all the instructions given during the sign-up process to successfully connect the device to ECOS.
3. The product ID QR code required for connection can be found on the included Wi-Fi dongle installed on the right side of the device.</td>
<td> 
</td>
</tr>
</table>

NOTICE

- Please ensure the correct router password is entered.
- Make sure that the Wi-Fi dongle's wireless network connection is strong.
- If everything is set up properly, the Wi-Fi LED on the inverter will change from slowly flashing to quick flashing and then become solid, indicating that eCactus has successfully connected to the Wi-Fi network.

4.2 Wi-Fi Reset & Restore

Wi-Fi Reset: Reconfigure the Wi-Fi dongle, and Wi-Fi settings will be reprocessed and saved.
Wi-Fi Restore: Restore the Wi-Fi dongle settings back to the default factory settings.

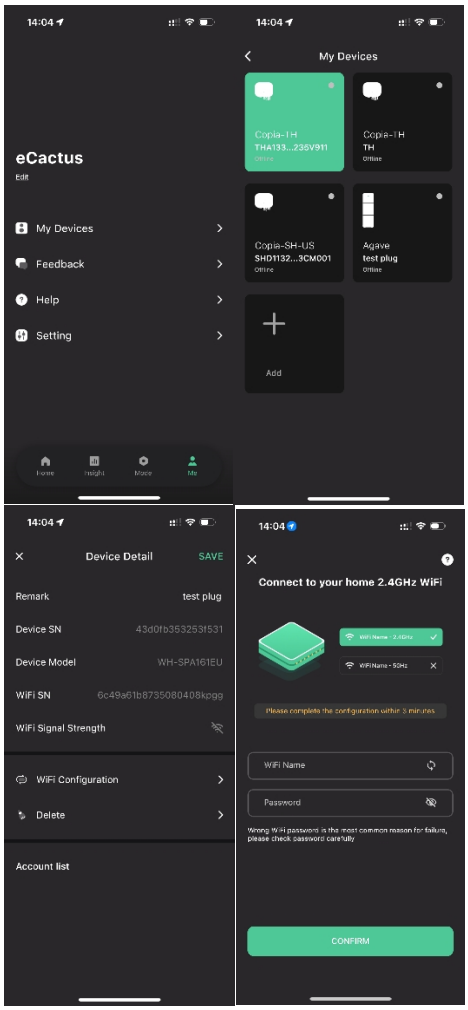
Wi-Fi Reset:

Please use your eCactus ECOS app to reset the Wi-Fi configuration.
Navigate to Settings and My Devices, access the Wi-Fi Configuration page, and follow the instructions to complete the Wi-Fi process.

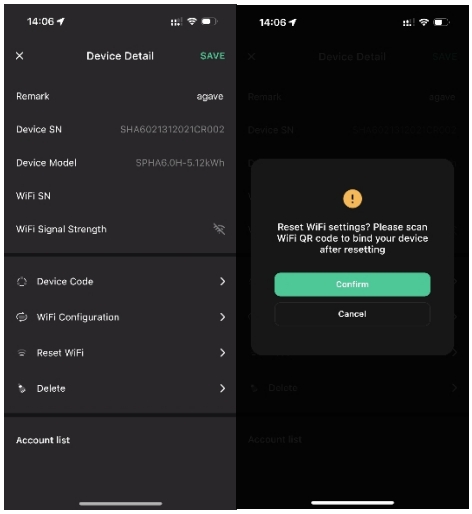
Wi-Fi Restore:

You also need to configure Wi-Fi network after set Wi-Fi dongle back to factory setting.

Wi-Fi Reset:



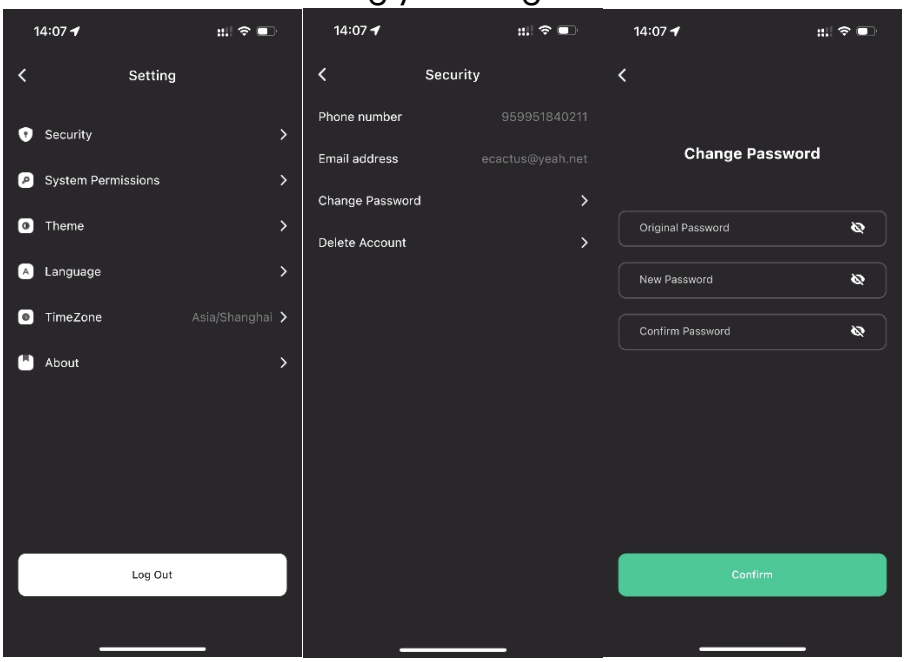
Wi-Fi Restore:



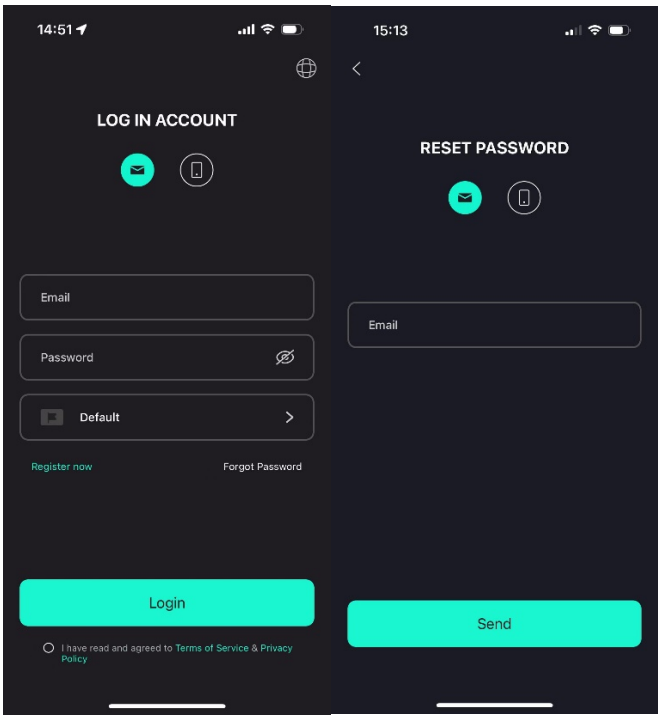
4.3 Change Password & Delete Account

Change Password

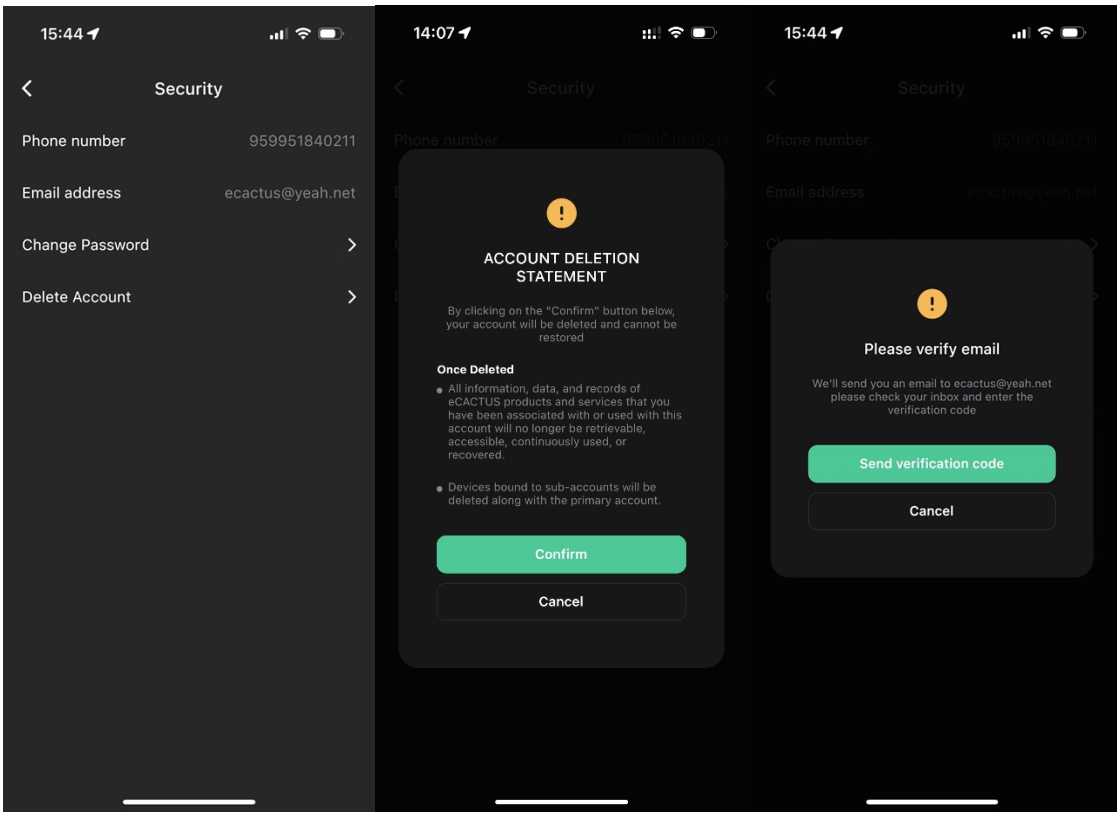
You can change your password by navigating to "**Settings**" >> "**Security**" >> "**Change Password**" and entering your Original Password to set a new password.



If you forget your password, you can reset your password by tapping "**Forgot Password**" on the login page and entering the verification code sent to your email address.



Delete Account



You can delete your account and data by navigating to "**Settings**" >> "**Security**">> "**Delete Account.**" Please read the statement carefully before deleting your account.

Notice: You have 7 days to log back in and cancel your deletion request. Once deleted, your account and all associated data will be erased and cannot be recovered. When complete, we will send an email to your ECOS account to inform you that your account has been successfully deleted.

7 EMS CONFIGURATIONS

Energy management system (EMS) configurations can be set via the eCactus ECOS app or online website.

Three working modes can be configured:

1. **Self-Powered:**

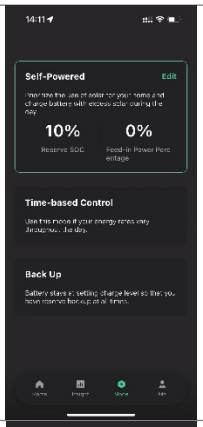
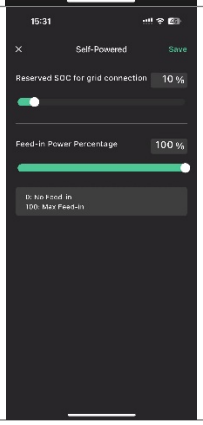
eCactus will manage residential power to minimize power grid reliance.

2. **Load Shifting:**

Batteries will be charged and discharged as configured.

3. **Backup:**

eCactus will not discharge the battery unless the power grid is off. When this happens, eCactus will provide residential power through the batteries.

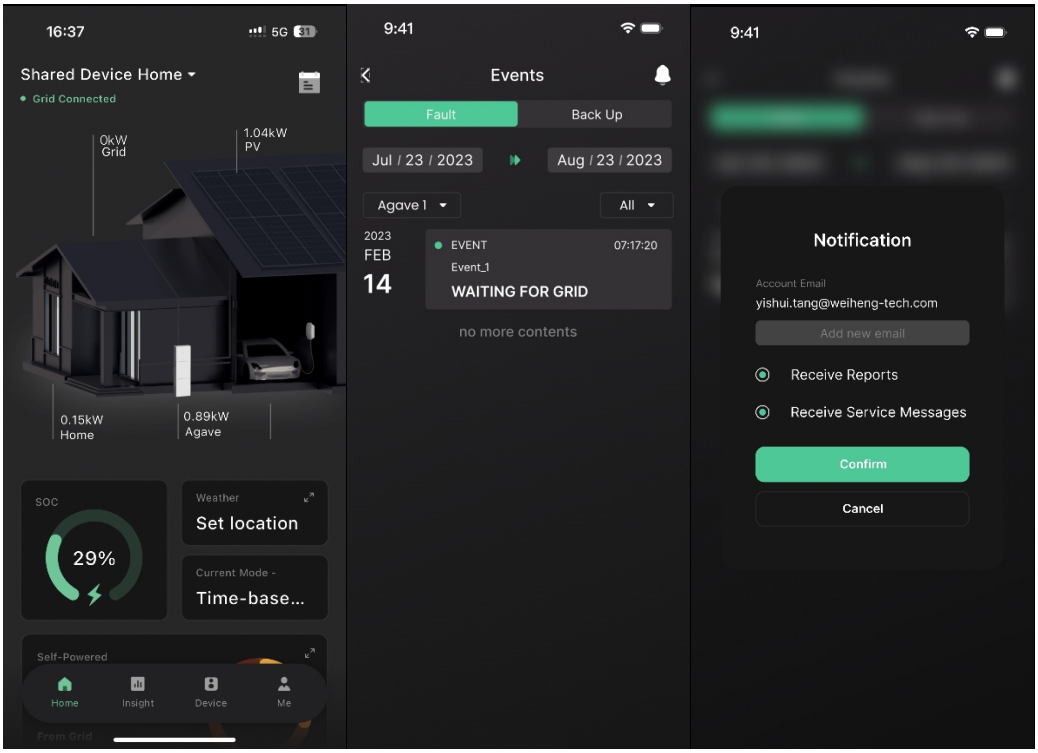
Working Modes: Navigate to the Customize tab and select one of the three operation modes via the eCactus ECOS app.	
Backflow Prevention Setting In three working modes, You can set the feed-in power percentage to 0% to prevent the reverse flow.	

Service Messages Notice

Under “Home” click “ ”

Historical alarms including Earth Fault Alarms will be shown in the window marked in red below. An Earth Fault Alarm will be shown with the status Code DSP_41, with the description “Isolation value too low”.

You can click “ ”, enter the email address you want to receive notifications in the “E-mail” field, tick “Receive Service Messages”, and click “Confirm”. Once alarms occur the system will automatically send email messages to the contact nominated.


16:37
5G
Shared Device Home
Grid Connected
0kW
Grid
1.04kW
PV
0.15kW
Home
0.89kW
Agave
SOC
29%
Weather
Set location
Current Mode -
Time-base...
Self-Powered
Home
Insight
Device
Me
From Grid
9:41
Events
Fault
Back Up
Jul / 23 / 2023
Aug / 23 / 2023
Agave 1
All
2023
FEB
14
EVENT
07:17:20
Event_1
WAITING FOR GRID
no more contents
9:41
Notification
Account Email
yishui.tang@weiheng-tech.com
Add new email
Receive Reports
Receive Service Messages
Confirm
Cancel

8 WEIHENG Monitor CONFIGURATION

For installers, you can set the machine via WEIHENG Monitor. For end users, you can through this software to view the machine settings. Like checking the country code, power quality response modes and inverter firmware version via WEIHENG Monitor. Please contact our technical support for more information.
Note: Only after completing the ECOS configuration, users can log in to the WEIHENG Monitor through the same ECOS account to view the corresponding device information.

Use installers' account or end users' ECOS account to log in. For installers account, you have the right to write. For end users, you have the right to read.
The following uses the end users' account as an example.
Use your ECOS account to log in.

For AS/NZS 4777.2:2020, there are four region requirements: Australia A, Australia B, Australia C, New Zealand, corresponding to different default values. Including default power quality response modes (i.e. volt-watt, volt-var) and grid protection settings (i.e. overfrequency, overvoltage, etc) according to the regions.

The default selection of end user's product is Australia A. If you you want to adjust the setpoints (within the permitted/allowed range), please contact our technical support or the installer.
(1) View country code
Open the WEIHENG Monitor, click the "Saf" button and open the page to check the country code and the setpoints.
"AUS" means Australia, "AS4777_2_A" means Australia Region A.

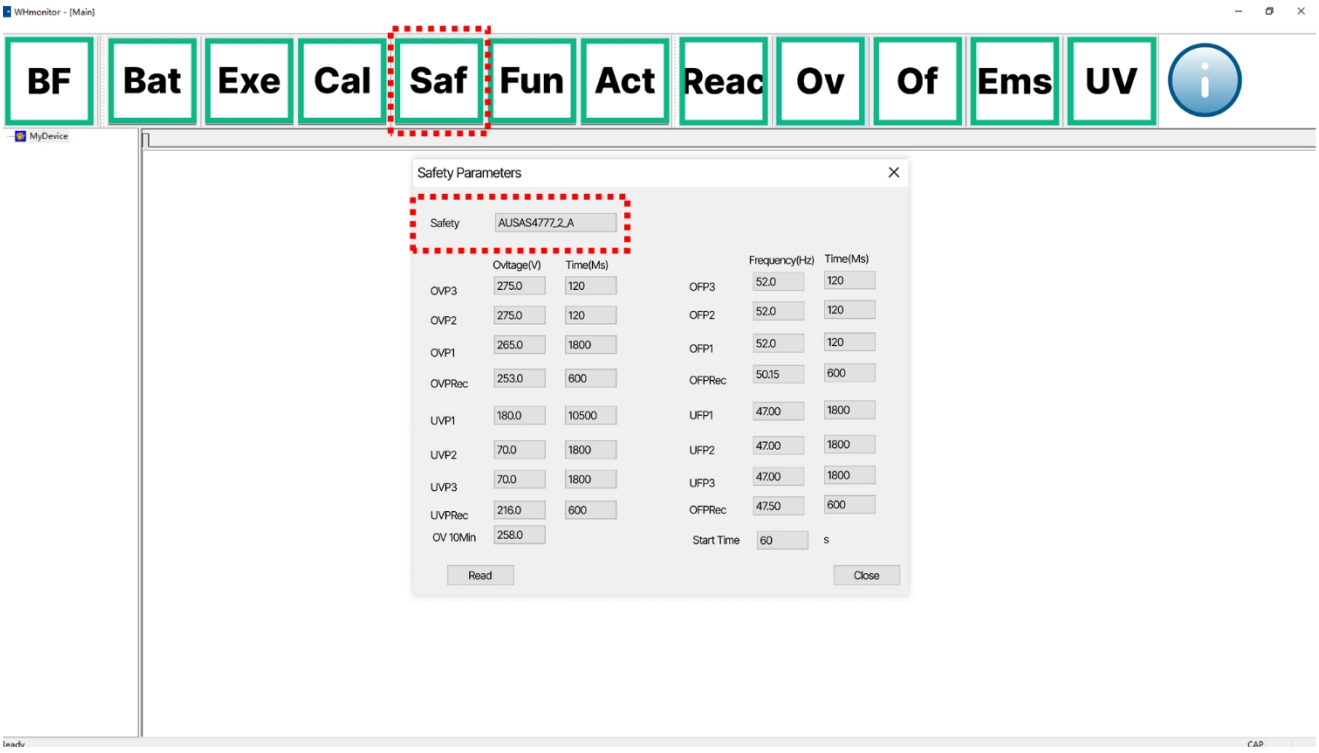
The default protection settings points (under/over frequency, under/over voltage) are automatically loaded according to AS/NZS 4777.2:2020 Table 4.1 & 4.2.

Table 4.1 — Passive anti-islanding voltage limit values

Protective function	Protective function limit	Trip delay time	Maximum disconnection time
Undervoltage 2 ($V<<$)	70 V	1 s	2 s
Undervoltage 1 ($V<$)	180 V	10 s	11 s
Overvoltage 1 ($V>$)	265 V	1 s	2 s
Overvoltage 2 ($V>>$)	275 V	—	0.2 s
NOTE Refer to Table 2.5 for the measurement specifications.			

Table 4.2 — Passive anti-islanding frequency limit values

	Region	Australia A	Australia B	Australia C	New Zealand
Under-frequency 1 ($F<$)	Protective function limit value	47 Hz	47 Hz	45 Hz	45 Hz
	Trip delay time	1 s	1 s	5 s	1 s
	Maximum disconnection time	2 s	2 s	6 s	2 s
Over-frequency 1 ($F>$)	Protective function limit value	52 Hz	52 Hz	55 Hz	55 Hz
	Trip delay time	—	—	—	—
	Maximum disconnection time	0.2 s	0.2 s	0.2 s	0.2 s
NOTE Refer to Table 2.5 for the measurement specifications.					



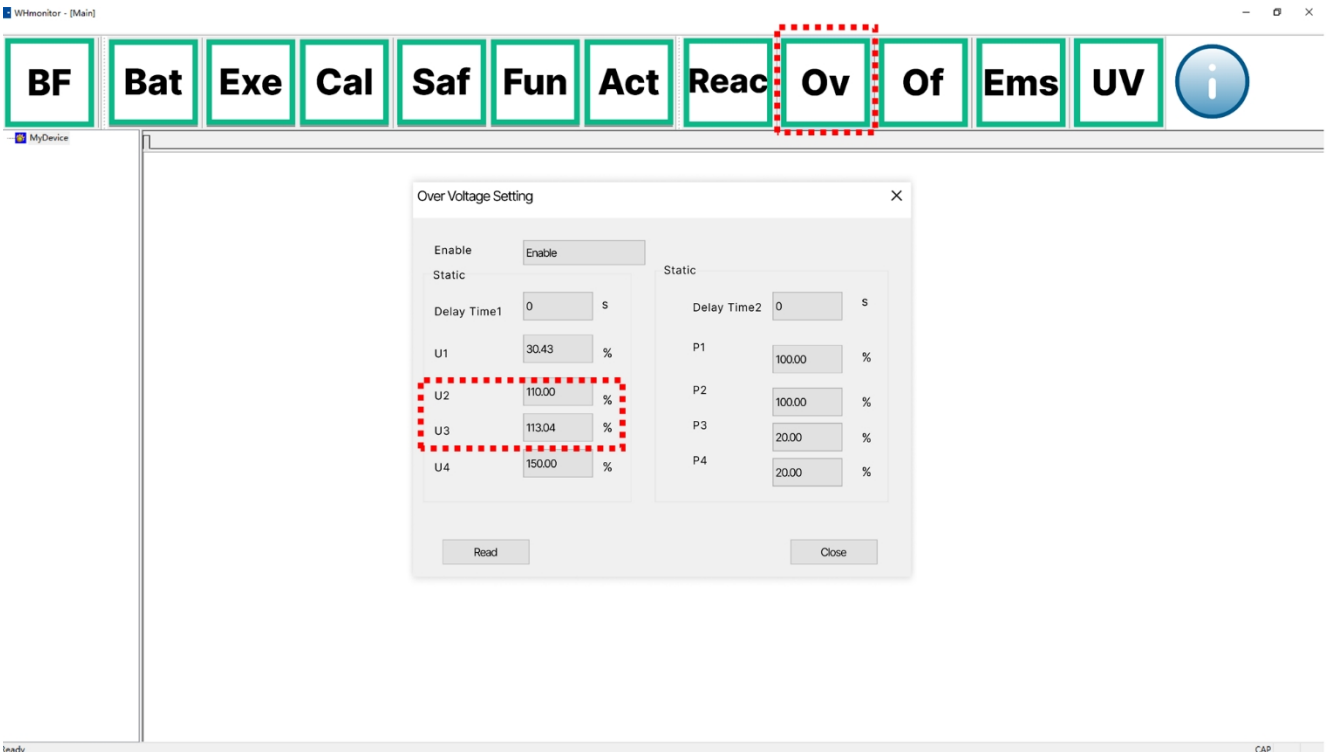
(2) Volt-Watt mode

Click the “Ov” button and open the page.

The default protection setpoints are loaded according to AS/NZS 4777.2:2020 Table 3.6.

Table 3.6 — Volt–watt response default set-point values

Region	Default value	V_{W1}	V_{W2}
Australia A	Voltage	253 V	260 V
	Inverter maximum active power output level (P) % of S_{rated}	100 %	20 %
Australia B	Voltage	250 V	260 V
	Inverter maximum active power output level (P) % of S_{rated}	100 %	20 %
Australia C	Voltage	253 V	260 V
	Inverter maximum active power output level (P) % of S_{rated}	100 %	20 %
New Zealand	Voltage	242 V	250 V
	Inverter maximum active power output level (P) % of S_{rated}	100 %	20 %
Allowed range	Voltage	235 to 255 V	240 to 265 V
	Inverter maximum active power output level (P) % of S_{rated}	100 %	0 % to 20 %
NOTE Australia C parameter set is intended for application in isolated or remote power systems.			



U2=110% means Vw1= 110%*230=253V

U3=113.04% means Vw2=113.04%*230=260V

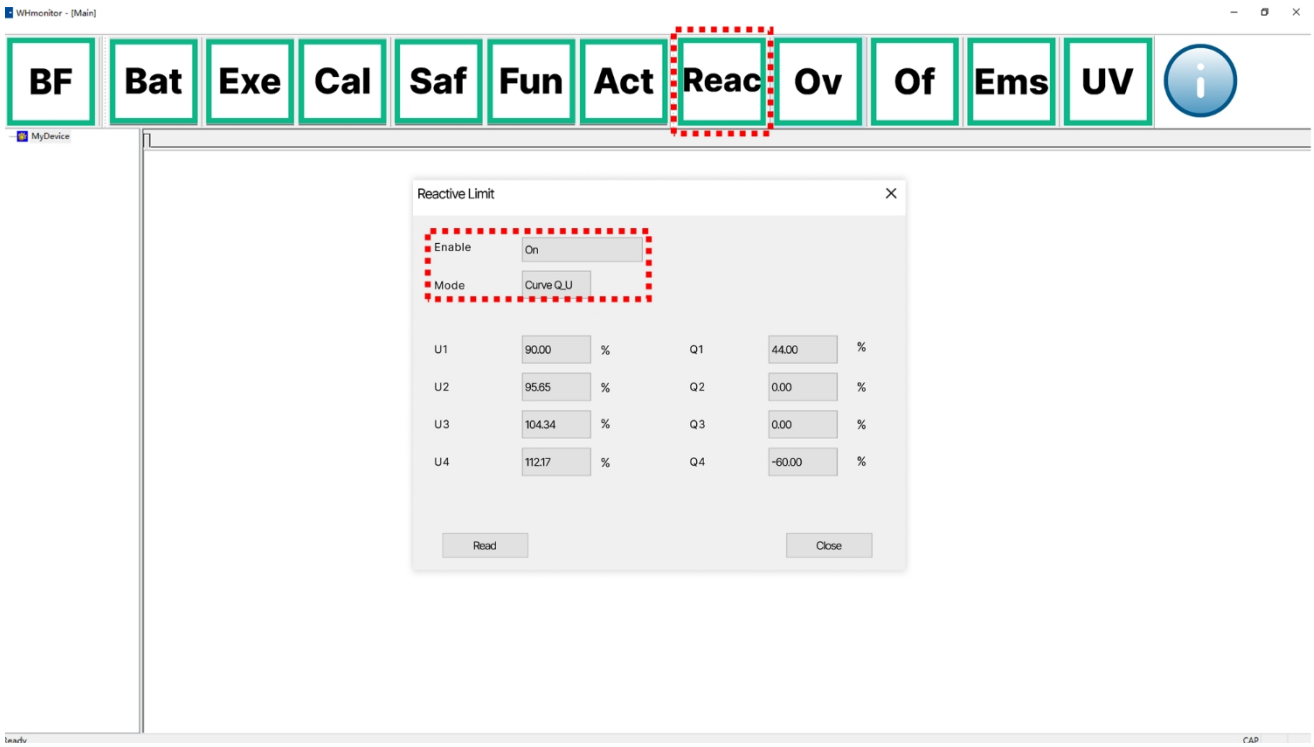
(3) Volt-Var mode

Click the “Reac” button and open the page.

The default protection setpoints are loaded according to AS/NZS 4777.2:2020 Table 3.7.

Table 3.7 — Volt–var response set-point values

Region	Default value	V_{V1}	V_{V2}	V_{V3}	V_{V4}
Australia A	Voltage	207 V	220 V	240 V	258 V
	Inverter reactive power level (Q) % of S_{rated}	44 % supplying	0 %	0 %	60 % absorbing
Australia B	Voltage	205 V	220 V	235 V	255 V
	Inverter reactive power level (Q) % of S_{rated}	30 % supplying	0 %	0 %	40 % absorbing
Australia C	Voltage	215 V	230 V	240 V	255 V
	Inverter reactive power level (Q) % of S_{rated}	44 % supplying	0 %	0 %	60 % absorbing
New Zealand	Voltage	207 V	220 V	235 V	244 V
	Inverter reactive power level (Q) % of S_{rated}	60 % supplying	0 %	0 %	60 % absorbing
Allowed Range	Voltage	180 to 230 V	180 to 230 V	230 to 265 V	230 to 265 V
	Inverter reactive power level (Q) % of S_{rated}	30 to 60 % supplying	0 %	0 %	30 to 60 % absorbing
NOTE 1 Inverters may operate at a reactive power level with a range up to 100 % supplying or absorbing.					
NOTE 2 Australia C parameter set is intended for application in isolated or remote power systems.					



U1 means Vv1
U2 means Vv2
U3 means Vv3
U4 means Vv4

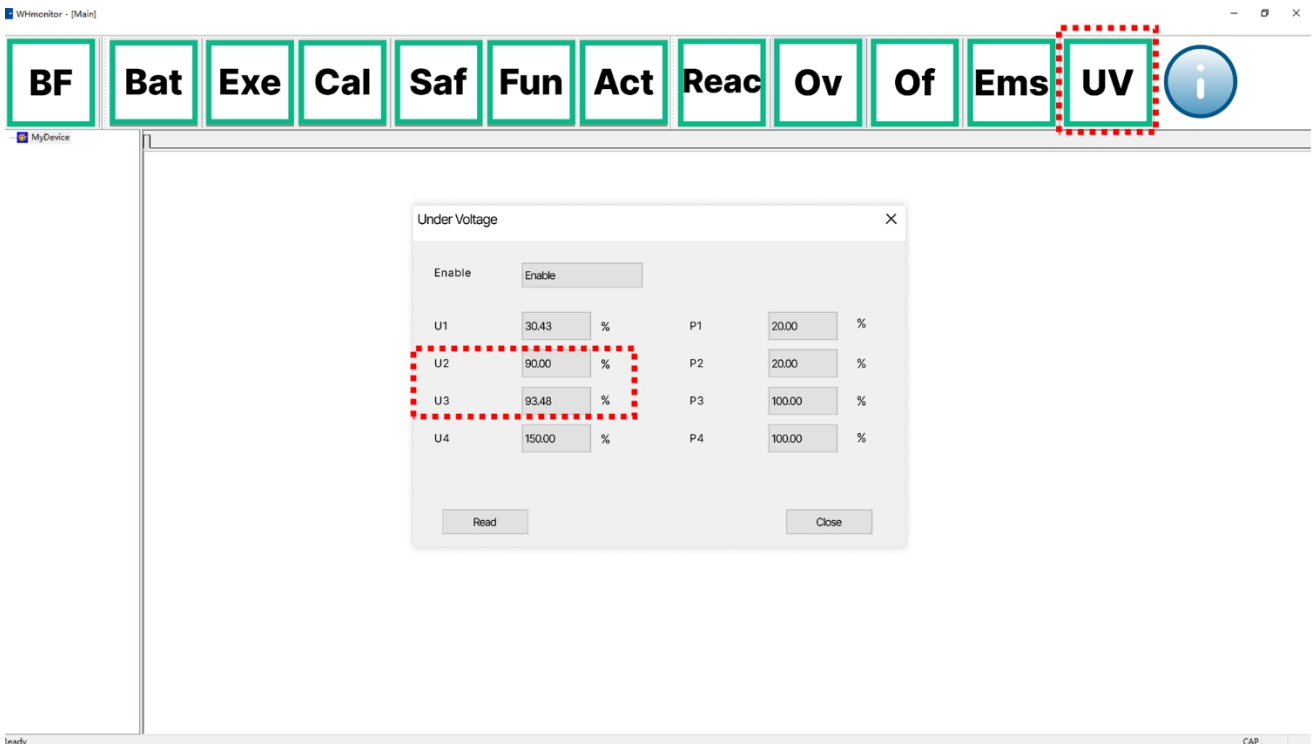
(4) Volt-watt set-point when charging (Under Voltage)
click the “UV” button and open the page.
The default protection setpoints are loaded according to AS/NZS 4777.2:2020 Table 3.8.

Table 3.8 — Volt-watt response set-point values for multiple mode inverters with energy storage when charging

Region	Default value	$V_{W1\text{-}ch}$	$V_{W2\text{-}ch}$
Australia A	Voltage	207 V	215 V
	$P_{charge}/P_{rated\text{-}ch}$	20 %	100 %
Australia B	Voltage	195 V	215 V
	$P_{charge}/P_{rated\text{-}ch}$	0 %	100 %
Australia C	Voltage	207 V	215 V
	$P_{charge}/P_{rated\text{-}ch}$	20 %	100 %
New Zealand	Voltage	216 V	224 V
	$P_{charge}/P_{rated\text{-}ch}$	20 %	100 %
Allowed Range	Voltage	180 to 230 V	180 to 230 V
	$P_{charge}/P_{rated\text{-}ch}$	0 to 20 %	100 %

NOTE 1 P_{charge} refers to power input level through the grid-interactive port.

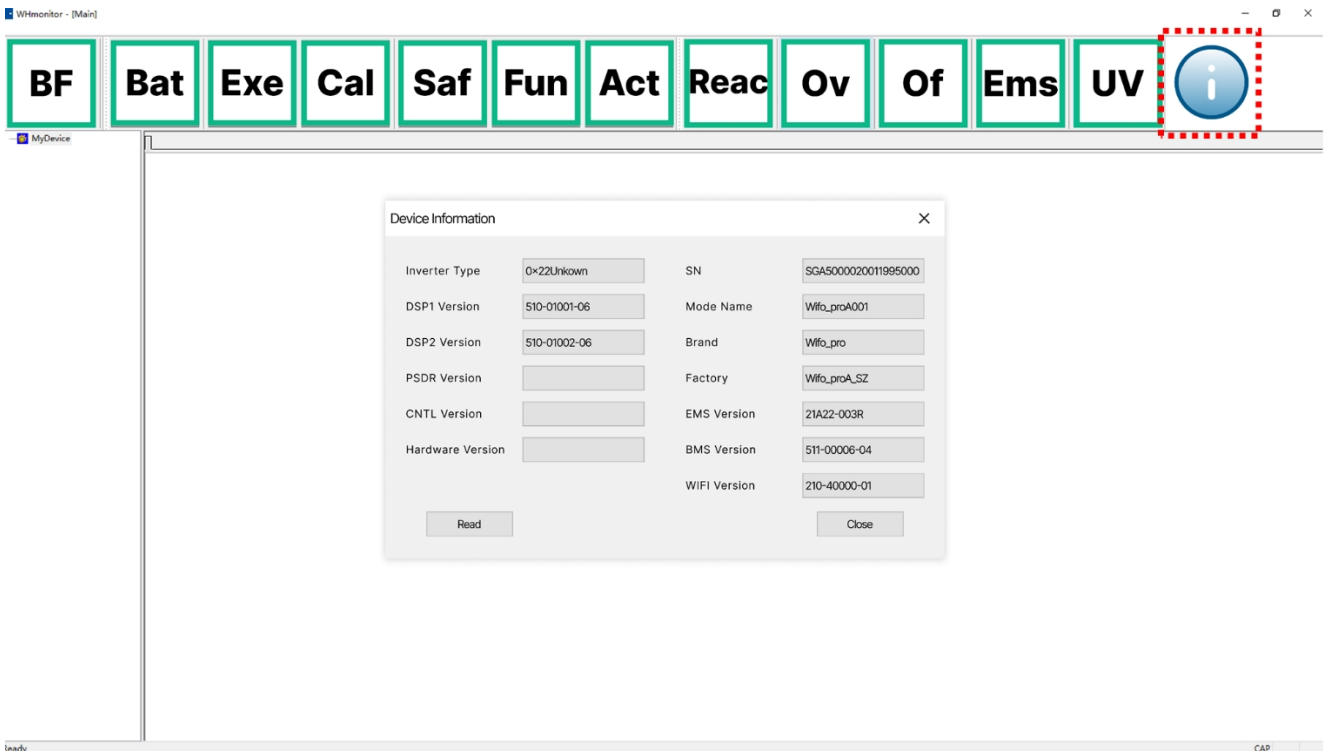
NOTE 2 $P_{rated\text{-}ch}$ refers to the rated active power input through the grid-interactive port used for charging the energy storage.



U2 means Vw1-ch

U3 means Vw2-ch

（5）View the inverter firmware version

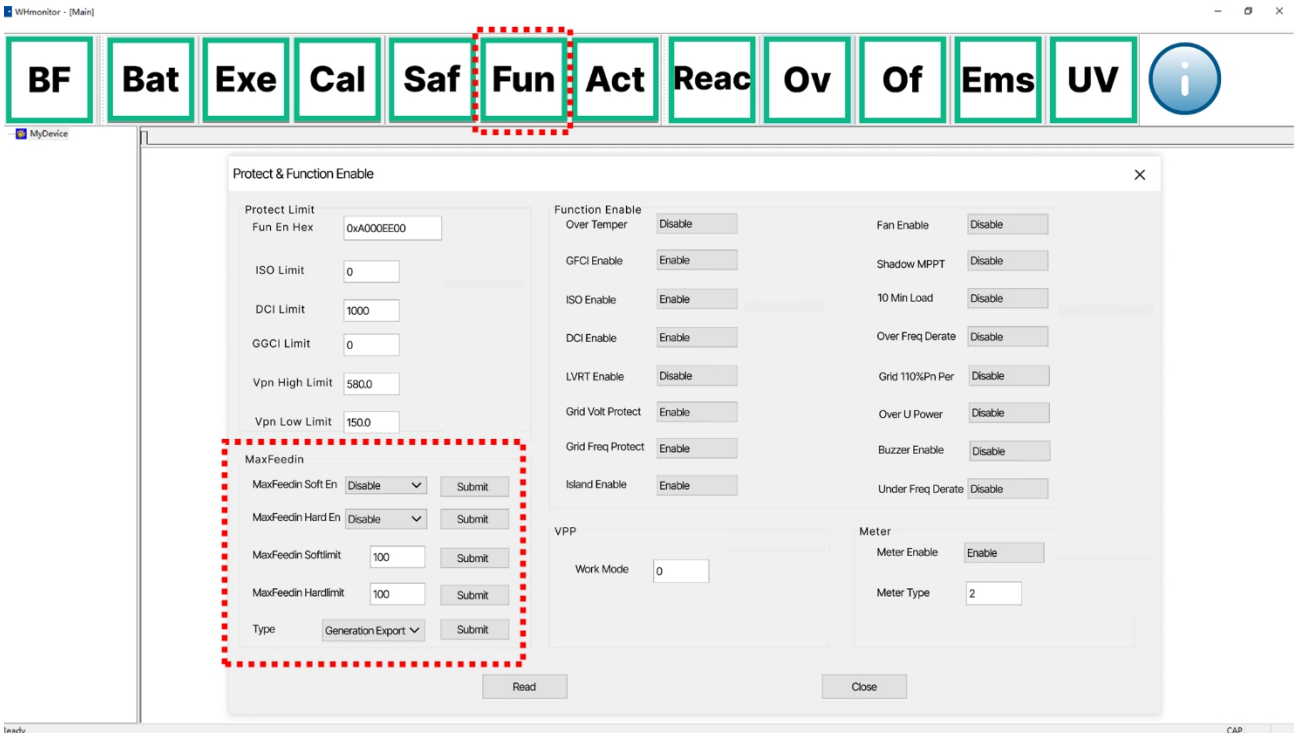


Inverter firmware version includes DSP1 Version, DSP2 Version, BMS Version and BMS Version.

（6）Set Generation Limit and Export limit control function

Inverter system and one meter used as external device for generation control function.

Open the WEIHENG Monitor, click the “Fun” button, open the setting page and find the “MaxFeedin” part to enable and setup Generation Limit and Export Limit control.



Generation Limit control

Soft limit: Limit the apparent power output from the inverter to less than a certain value. When this value is exceeded, the device will reduce the output power to less than the soft limit within 15 seconds.

Hard limlt: Limit the apparent power output from the inverter to no more than a certain value. When this value is exceeded for 15 seconds, the function will operate to disconnect the device within 5 seconds.

Export limit control

Soft limit: Limit the power output to the grid to less than a certain value. When this value is exceeded, the device will reduce the output power such that the export limit of the electrical installation is met within 15 seconds.

Hard limlt: Limit the power output to the grid to no more than a certain value. When this value is exceeded, the function will operate to disconnect the device within 5 seconds.

9 TROUBLESHOOTING

	Issue	Solution
1	Red LED flashing every 0.5 seconds	Meter Communication Fault. Please check whether the power supply & communication cables are properly connected in accordance with local standards.
2	Red LED flashing every 2 second	Battery Communication Fault. Please check whether the PCS is properly connected to the battery box, and make sure that the battery switch and breaker are both in the ON position.
3	Abnormal ECOS Energy Flow Monitoring	Please check whether the power supply and CT have been properly installed according to the installation manual.
4	All the LEDs are off	Please check whether the voltage at each port is within the normal range.
5	SOC mis-indicates and fluctuates after initial installation	Do nothing, and the device will self-correct itself as soon as the battery is fully charged or discharged.
6	Battery completely depleted	We highly recommend disconnecting the battery ASAP during installation or when the device is on standby to avoid serious depletion and damage caused by extreme power consumption over a long period of time. Please contact after-sale services for technical support in the event of serious battery depletion.
7	Code DSP_1	PV1 overvoltage. Please check whether the open circuit voltage is within the normal voltage range.
8	Code DSP_2	PV1 overcurrent. Please check whether PV1 is correctly connected.
9	Code DSP_3	PV2 overvoltage. Please check whether PV2 is within the rated voltage range.
10	Code DSP_4	PV2 overcurrent. Please check whether PV1 is correctly connected.
11	Code DSP_9	Please check whether PV is within the normal voltage range.
12	Code DSP_10	No grid power. Please check whether the gird voltage is normal.

	Issue	Solution
13	Code DSP_11	Grid voltage fault. Please check whether the grid voltage is within the normal range.
14	Code DSP_12	Grid current fault. Please check whether the EPS load power is within the normal range.
15	Code DSP_13	Grid frequency fault. Please check whether the grid frequency is within the normal range.
16	Code DSP_14	Overheat fault. Please check whether the cooling system is working properly.
17	Code DSP_16	Current over-leak fault. Please check the solar panel and device wiring.
18	Code DSP_17	Isolation resistance fault. Please check the solar panels and wiring system.
19	Code DSP_26	Battery voltage fault. Please check whether the battery voltage is within the normal range.
20	Code DSP_37	EPS voltage fault. Please check whether the EPS load power is within the normal range.
21	Code DSP_38	EPS current fault. Please check whether the EPS load power is within the normal range.
22	Code DSP_39	EPS overload fault. Please check whether the EPS load power is within the normal range.
23	Code DSP_40	EPS short circuit fault. Please check whether the EPS load power is within the normal range.
24	Code DSP_41	Earth & Neutral wire fault. Please check whether the earth and neutral wires are properly wired in line with standard requirements.
25	What should I do if I forget my ECOS password?	Please visit the ECOS website or use the app, tap “Forgot Password,” enter your email address for verification, and follow the instructions to reset your password.
26	How can I change my ECOS password?	Log into ECOS and navigate to "Settings" >> "Security" >> "Change Password" to enter your new password.
27	How can I delete my device account?	Log into ECOS, then navigate to "Security" >> "Delete Account." Complete email verification to request Account Deletion. Deletion requests can be canceled by logging in within 7 days after requesting account deletion. All account data will

	Issue	Solution
		be deleted and will not be recoverable. Please think twice before deleting your account.
28	How can I share my ECOS account with my family members?	The first ECOS registered will be recognized as the master account, and others can scan the device code shared by the master account. Please navigate to “Settings" >> "My Device" >> "Device code" to share the code.
29	Why is there no data on the home page?	The device may be offline. 1- Check whether your Wi-Fi is working; 2- Check whether the LED is on; 3- Check whether the Wi-Fi dongle is properly connected; Data may take a while to upload, after which ECOS will be bound to the device. Poor mobile phone reception. Check whether the internet is working properly and try to restart ECOS.
30	Adding multiple devices to ECOS	Log in to the ECOS app and tap the “+” on the top left of the home page. Scan the QR code on the Wi-Fi dongle to add new devices. Or navigate to “Setting" >> "Devices” and tap the “+” to add more devices.
31	How can I delete my device account?	Log in to ECOS and navigate to “Setting" >> "My Devices,” select the device account, and tap the top right of the screen to delete the device.
32	Why is the device offline	There are many possible reasons for the device to be offline. 1. Check whether the Wi-Fi network is working properly 2. Check whether the LED is on 3. Check whether the LED on the Wi-Fi dongle is on
33	Why can't I search for and find the Wi-Fi dongle hotspot?	1. Check whether the LED is on 2. Check whether the LED on the Wi-Fi dongle is on 3. Restart or reconnect the Wi-Fi dongle
34	Why is no internet connection found when	Disconnect your mobile phone from the WLAN, and reconnect it to your home Wi-Fi or your

	Issue	Solution
	returning to other interfaces after configuring ECOS via WLAN?	mobile network after successfully configuring WLAN.

10 CLEANING AND MAINTENANCE

Power off the system before cleaning or performing any maintenance.

- **Shut down procedures:**

Step 1: Disconnect the backup load where applicable, and then turn off the backup breaker.

Step 2: Turn off the grid breaker.

Step 3: Turn off the PV switch.

10.1 Cleaning

Power off the system before cleaning the inverter. Only clean the battery case with a soft, dry brush or vacuum cleaner to remove dirt. Do not use any solvents, abrasives, or corrosive liquids to clean the case.

10.2 Maintenance

The inverter requires periodically maintenance, details as below:
NOTE: Make sure inverter is totally isolated from all DC and AC power for at least 5 mins before maintenance.

Heat sink: please use clean towel to clean up heat sink once a year.
Torque: please use torque wrench to tighten AC and battery wiring connection once a Year.