

011_MAU Series_MAU5000_EN

Release Notes

This document records the changes related to MAU5000 User Manual.

Version	Update Date	Contents
V1.0	2026-03-26	Initial Version

Read before using

This manual is valid for the following models:

Product Name	Models
PowerTrunk MAU	TSOL-MAU5000 TSOL-MAU5000-M

The following safety symbols are used in this manual. Before installing or operating the system, familiarize yourself with these symbols and their meanings.

Identification	Explanation
	Danger: Danger indicates a dangerous situation that may cause fatal electric shock, other serious personal injury, or fire danger.
	Warning: Warnings indicate such instructions must be fully understood and followed to avoid potential safety hazards, including unit damage or personal injury.
	Note: Notes indicate that the described operation should not be performed. Before continuing, readers should stop using and fully understand the explained operation.

The symbols on the MAU5000 are listed below and illustrated in detail.

Label	Description
	Please read the installation manual first before installation, operation, and maintenance.
	This device SHOULD NOT be disposed in residential waste.
	This device fulfills the requirements of the Radio Equipment Directive.
RoHS	This device complies with the RoHS Directive.
	This symbol indicates the presence of high voltage and the risk of electric shock.
	To avoid electric shock or injury, do not touch or use the inverter for 3 minutes after turning off the inverter or disconnecting it from the power grid.

Read the manual and other related documents before any operation of the unit is carried out. Documents must be stored carefully and be available at all times. All rights to the content of this manual are owned by TsunESS Co., Ltd. (hereinafter “TSUN”). This document cannot be modified, distributed, reproduced or published in any form or by any means without prior written permission from TSUN. Content may be periodically updated or revised due to product development. The information in this manual is subject to change without notice. The latest manual can be acquired and downloaded at www.tsun-ess.com.

Safety Instructions

Statement:

Before installing, operating, and maintaining the unit, please read this manual first and follow all safety precautions marked on the unit and in the manual.

The "instructions", be followed, but only serve as a supplement to all safety precautions. Our company does not assume all "precautions", "warnings", and "dangers" in the manual could represent all safety precautions that would against responsibility for violating general safety operation requirements or violating safety standards for design, production, and use of unit.

This unit should be used in an environment that meets the design specifications, otherwise it may cause unit malfunction, resulting in unit functional abnormalities or component damage, personal safety accidents, property losses, etc., which are not within the scope of product warranty assurance.

Local laws, regulations, and specifications should be followed when installing, operating, and maintaining the unit. The safety precautions in the manual are only a supplement to local laws, regulations, and norms.

Our company shall not be responsible for any of the following situations.

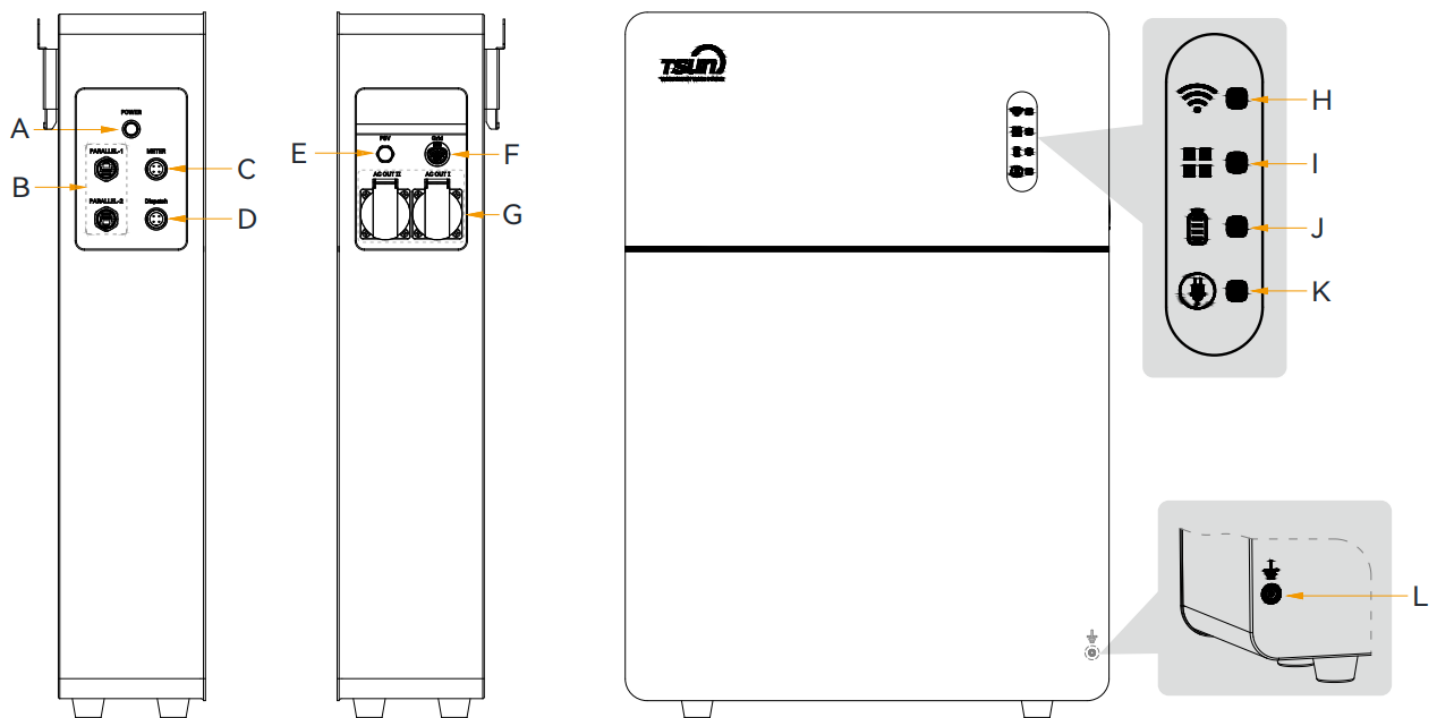
- Not operating within the usage conditions specified in this manual.
- The installation and use environment exceed the provisions of relevant international or national standards.
- Unauthorized disassembly, modification of products, or modification of parameter or product firmware.
- Failure to follow the operating instructions and safety warnings in the product and documentation.
- Product damage caused by abnormal natural environments (force majeure, such as earthquakes, fires, storms, etc.).
- Transportation damage caused by non-authorized transportation.
- Damage caused by storage conditions not meeting requirements stated in this manual.

Danger:

- If fire occurs, evacuate the building or equipment area and press the fire alarm bell, or call the fire alarm number. Under any circumstances, it is strictly prohibited to re-enter a burning building.
- Do not disassemble or modify the MAU5000 without prior written permission from Tsun.

Product Overview

MAU 5000



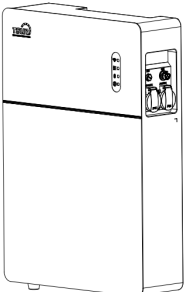
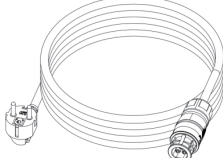
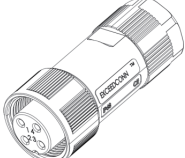
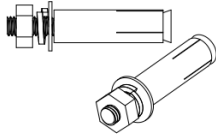
A	Power Button	G	AC Load
B	Parallel communication interface	H	WiFi Indicator
C	RS485 port for Meter (Pin1-A、Pin2-B、 Pin3-5V、 Pin4-GND)	I	Status Indicator
D	RS485 port for Dispatch (Pin1-A、Pin2-B、 Pin3-5V、 Pin4-GND)	J	Battery Indicator
E	Vent Valve	K	Fault Indicator
F	AC Grid	L	Grounding

*Note: There are no PV input ports on PowerTrunk series.

What’ s in the Box

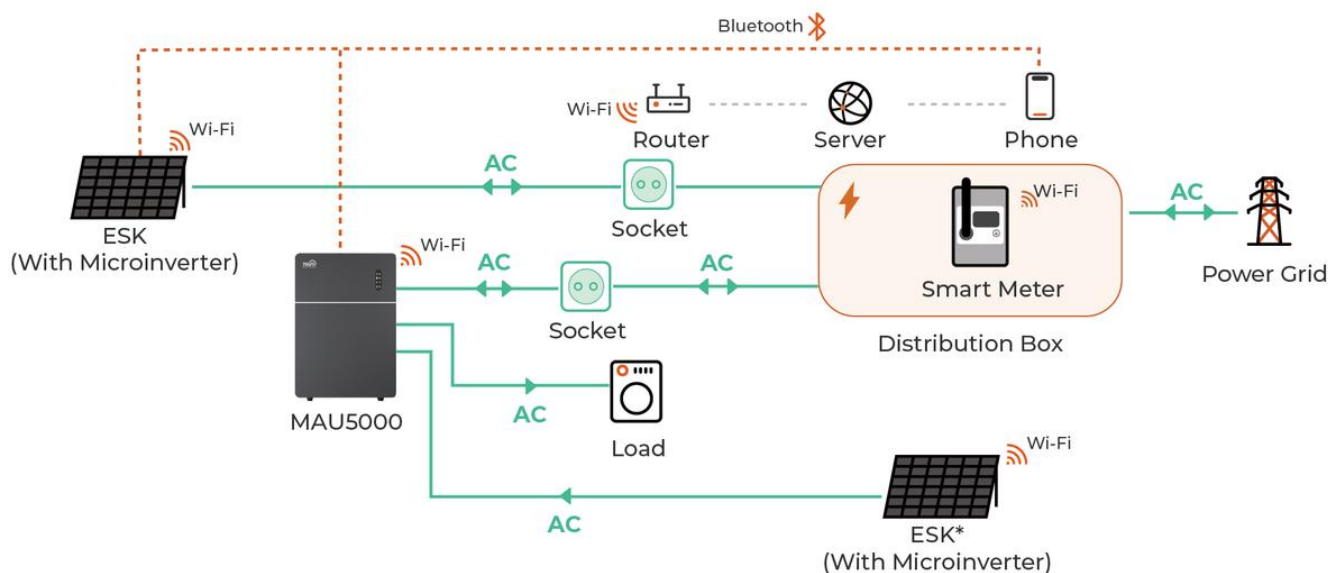
MAU 5000

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SolarTrunk/Pow erTrunk x 1	AC End Cable x 1	RS485 Connectors x 2	QIG x 1	Warranty Card x 1	Expansion Screw x 2

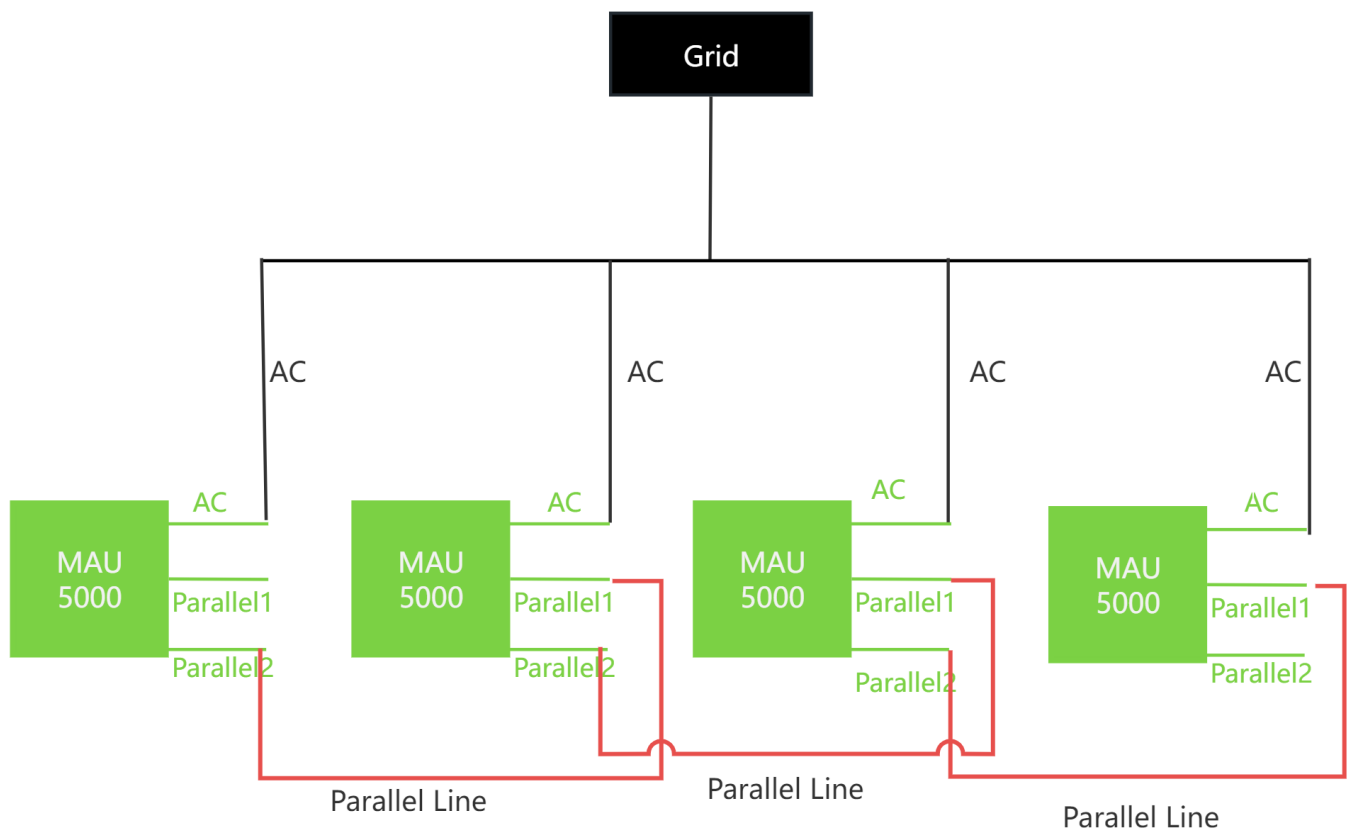
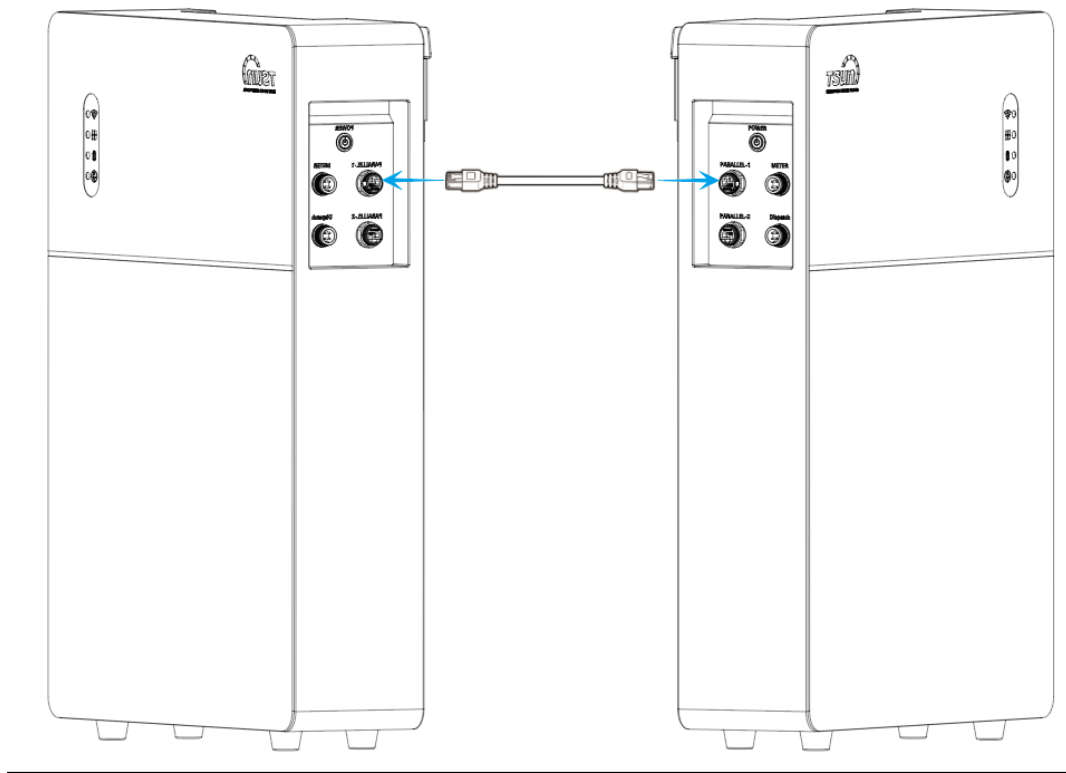
System introduction

System Diagram:



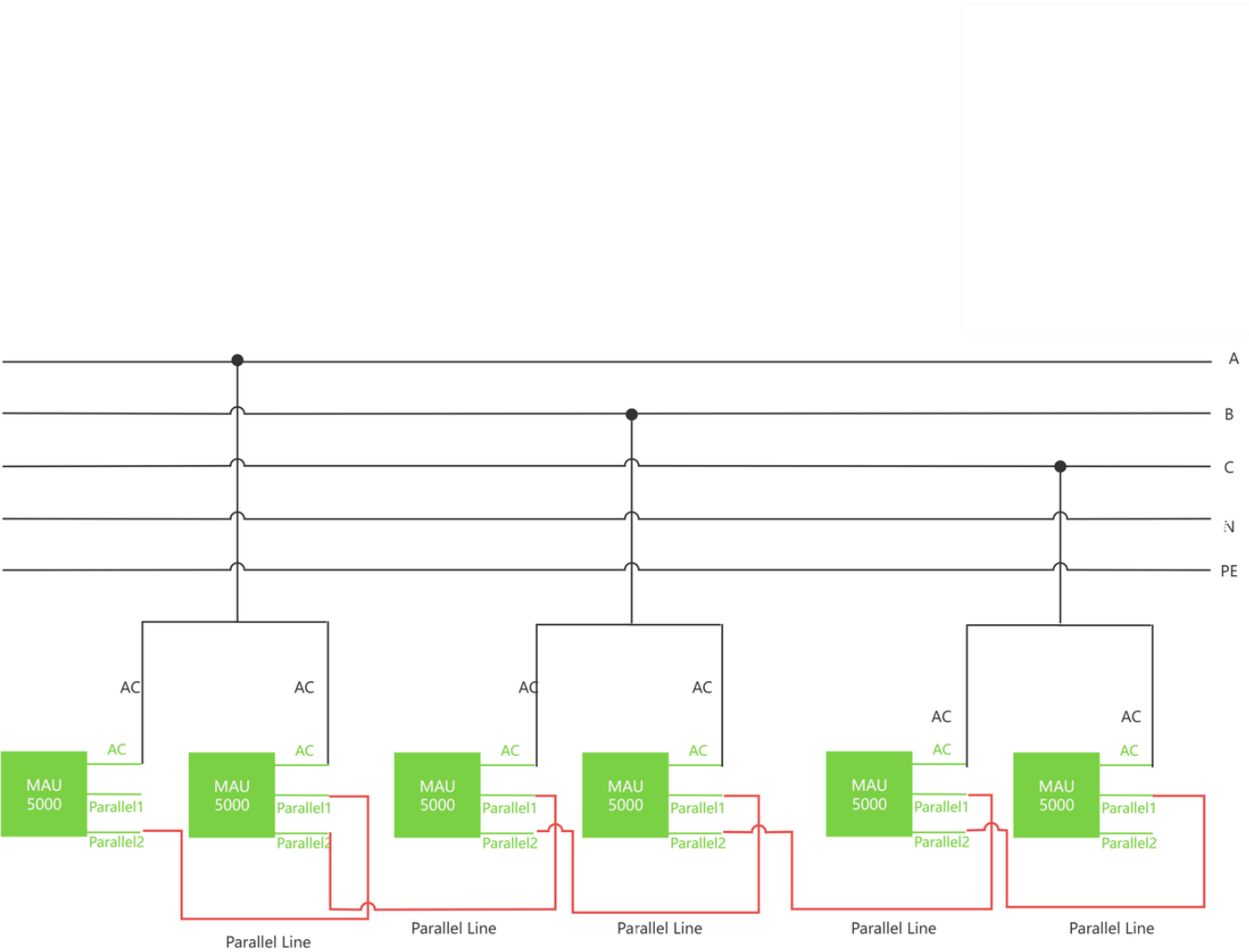
The system can be used in Off-Grid and On-Grid Hybrid Solar systems, suitable for home users and balcony scenarios.

If parallel operation is required, please refer to the figure below.



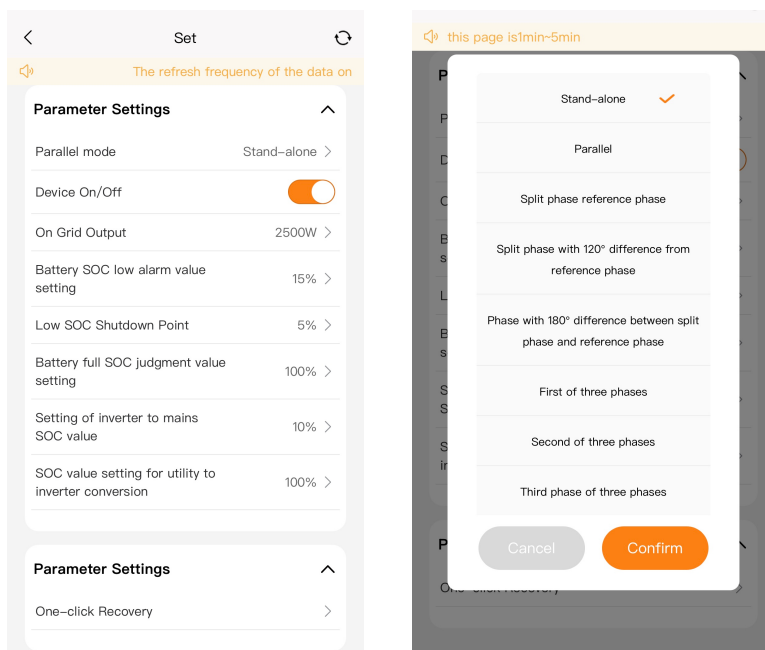
This is the wiring diagram for the MAU5000 single-phase parallel system. The system is powered by the utility grid, with a maximum of 4 MAU5000 units connectable in parallel on a single circuit. The AC terminals of each device are connected to the mains power. The devices are daisy-chained via crystal-head cables (optional accessories) labeled "Parallel Line", which link the Parallel1 and Parallel2 ports of adjacent units in sequence. This forms a closed-loop

communication bus to achieve impedance matching for the entire parallel communication network.



Wiring Diagram for MAU5000 Three-Phase Parallel System.A maximum of 2 units can be connected in parallel per phase circuit, with a total of 6 MAU5000 units deployed. The AC terminal of each device shall be connected to the corresponding phase sequence. Parallel communication between devices is realized via crystal-head cables (optional accessories) marked "Parallel Line". The cables connect the Parallel1 and Parallel2 parallel ports of each device in sequence to form a daisy-chain communication bus, enabling matching and closed-loop connection of the entire parallel communication network.

Configure the parallel mode in the APP based on actual application scenarios.



Parallel connection can also be implemented wirelessly. Simply add the paralleled devices to the same power station.

PowerTrunk installation

Pre-installation

Check the Packaging

Before unpacking the unit, check the packaging for unexpected damage, such as holes and cracks, and review the unit model number. If any damage is found or the model is not what you requested, do not unpack the unit and contact your dealer or source of purchase as soon as possible.

Check the unit

After unpacking the unit, check if it is intact and complete, and free from any obvious damage. If any item is missing or damaged, contact your dealer or source of purchase.

Check the installation environment and position

When choosing the position of installation, comply with the following conditions:

- Choose a proper position to place the SolarTrunk/PowerTrunk, leaving a 20-mm gap at least between its back and the wall, which ensures good heat dissipation.
- Avoid electromagnetic interference that can compromise the correct operation of electronic components of the unit.
- An AC power outlet is needed while finalizing the installation.
- Do not install it under direct sunlight, or near fire sources or explosives.

- Ensure the selected location is not at risk from potential hazards such as flooding.
- The maximum operating altitude is 4,000 meters.

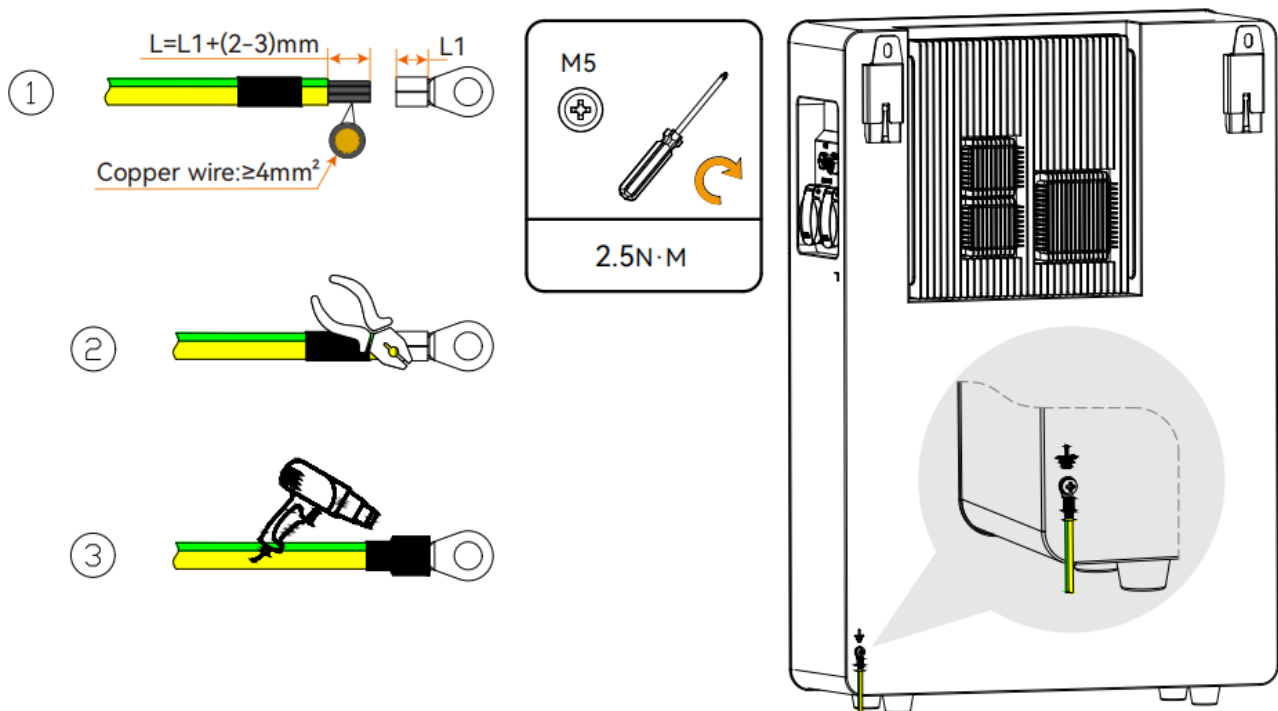
Heavy Lifting Safety

- When carrying the SolarTrunk/PowerTrunk, preparations should be made for load-bearing to avoid being crushed.
- When handling the unit by hand, it is suggested that the SolarTrunk/PowerTrunk should be lifted by two people. Protective gloves are also suggested to be worn to avoid injury.

Installations steps

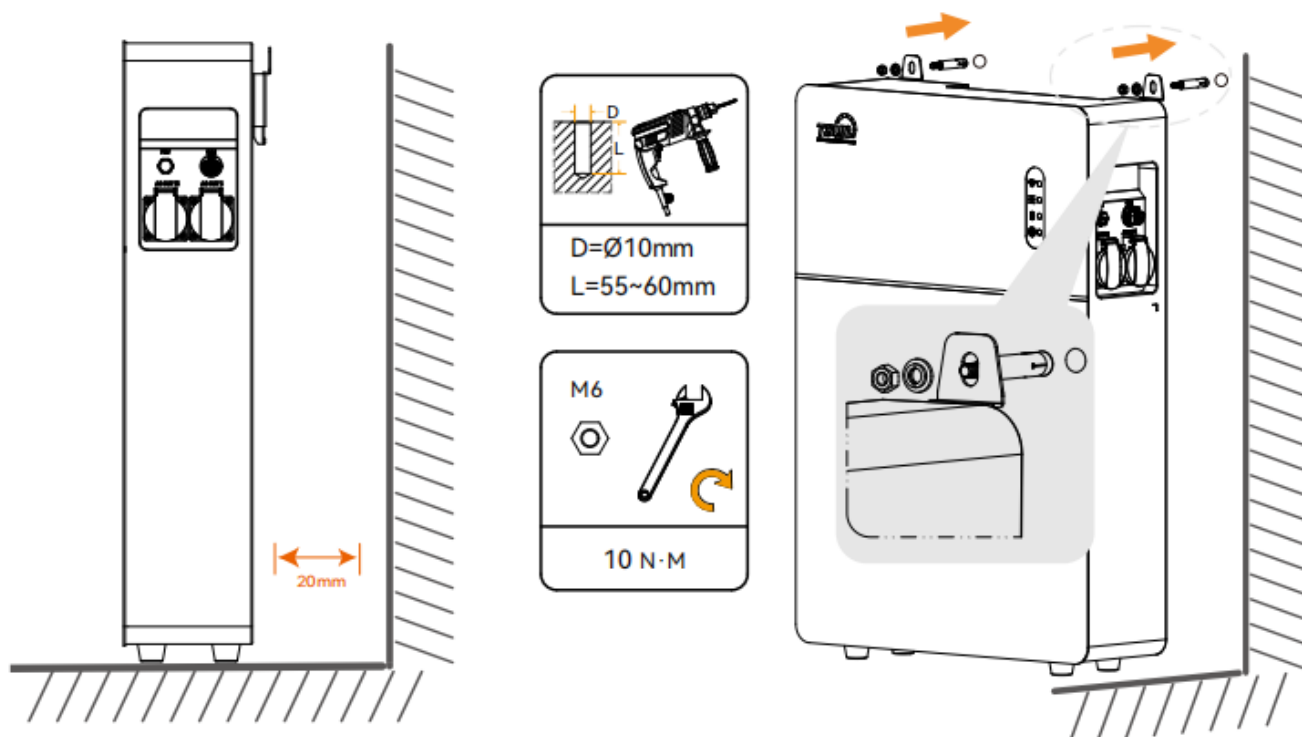
1. Grounding wire connection

Connect the ground wire according to the following steps.



2. Select installation location

Choose a proper position to place the SolarTrunk/PowerTrunk, leaving a minimum 20-mm gap between its back and the wall. This ensures good heat dissipation.

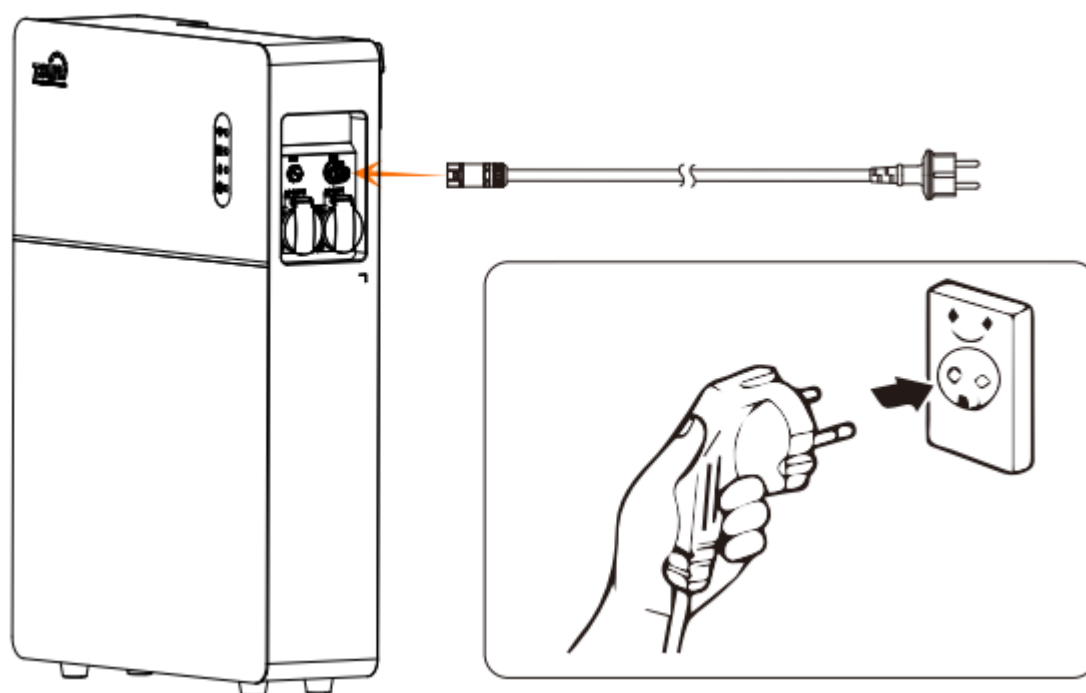


Caution:

- Make sure the selected location has a strong and stable WiFi connection.

Electrical Connections

1. Connect the AC Grid port to the home socket using the AC end cable.



Caution:

- About PowerTrunk series, please skip this step as there are no PV input ports on the unit.

2. Connect external load to the AC Load port if needed.

Power on the PowerTrunk

3. After the wiring is completed, the SolarTrunk/PowerTrunk will start automatically. The operation method of the buttons and the definition of the indicator light are as follows:

Buttons/Indicators

Buttons/Indicators	Operations/Status	Function
Power button	Press once	Turn on the battery
	Press once when switched on	Turn off the battery
WiFi Indicator	Constant On	WiFi working normally
	Constant Off	WiFi not connected
Status Indicator	Constant Green	Working normally(On-Grid / Off-grid)
	Flashing(on 1s/off 1s)	System fault
	Flashing(on 0.5s/off 0.5s)	Off-grid output overload
Battery Indicator	Constant On	Charging state
	Flashing(on 1s/off 1s)	Discharging state
	Flashing(on 0.5s/off 0.5s)	Device is powered on
	Constant Off	Battery not connected
Fault Indicator	Constant On	Utility power or off-grid output normal
	Flashing(on 0.5s/off 0.5s)	Utility power or off-grid output abnormal
	Constant Off	No AC output

Smart Meter Installation

The installation of the meter needs to be done by a professional. Please refer to the meter QIG or user manual for detailed steps.

How to disconnect the whole system

1. Disconnect the AC end cable from the socket.
2. Press the Power button once to turn off output of AC load.



Caution:

- Please scan the QR code below to check how to disassemble the DC connectors.
1. Attach the disassembly tool, rotate it, and clamp it
 2. Press the tool and unplug the connector



- Please follow the steps to disassemble the AC connectors.
1. Attach the disassembly tool, rotate it, and clamp it
 2. Press the tool and unplug the connector

APP Quick Use Guide

APP Basic setting

Step 1 Download the APP

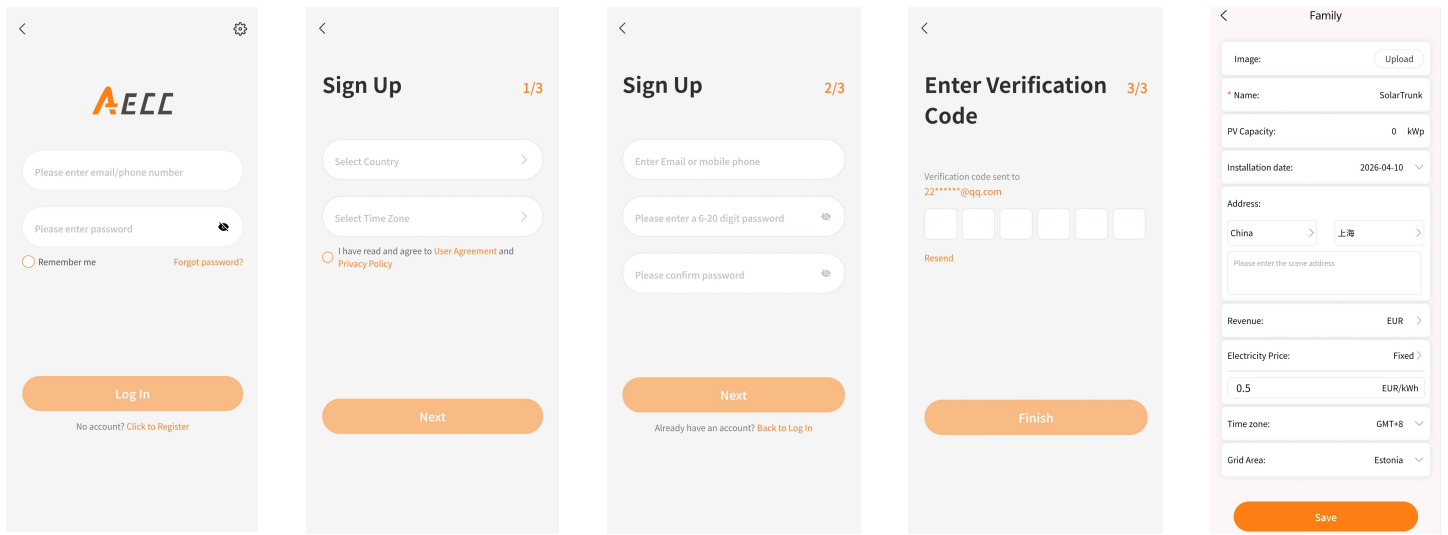
1. Download “AEC Cloud” and install it on your smart phone.

Before performing this operation, please complete the installation of the SolarTrunk or PowerTrunk.



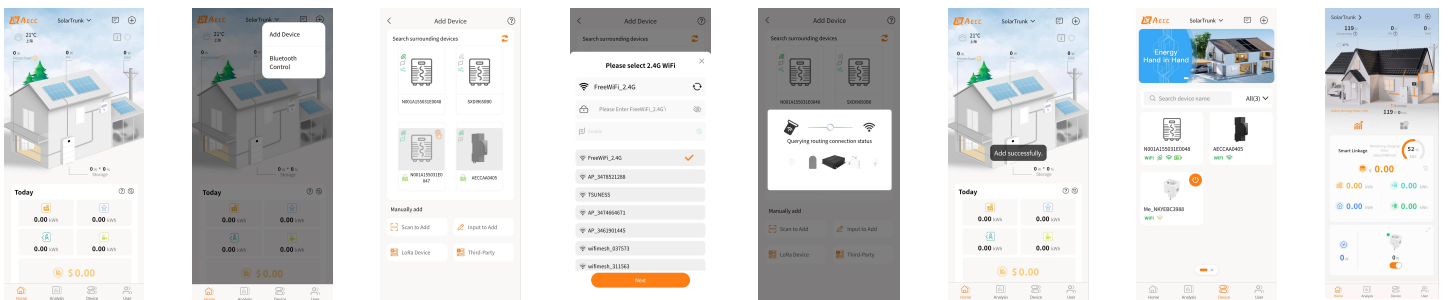
Step 2 Account registration & plant creation

1. Tap "**Click to Register**" to create your account
2. Fill in all details and tap "**Next**"
3. Enter verification code and tap "**Finish**"
4. Fill in all required fields of Family page and tap "**Save**" button



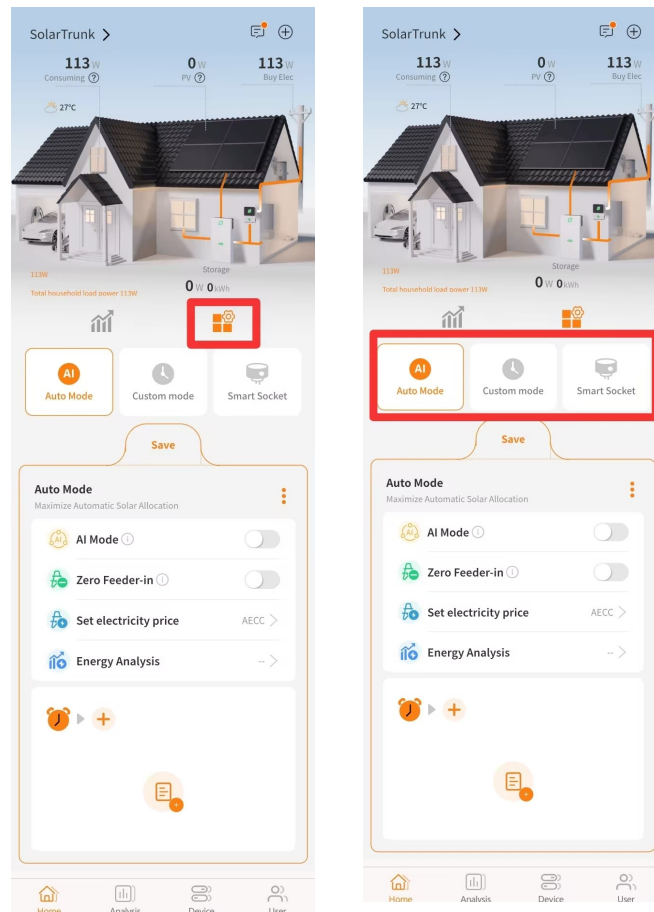
Step 3 Add device & Config wifi network

1. Tap "+" in the top right corner of the page.
2. Tap **"Add Device"** on the homepage.
3. Select the corresponding device for network pairing according to the SN on the nameplate.
4. Select Wi-Fi (2.4GHz) and enter the password.
5. Once the device is added successfully, the screen will show **"Add successfully"**.
6. Follow the same steps above to add electricity meters and smart sockets. After all devices have been added, tap **"Device"** at the bottom of the home page to view the added devices.
7. After configuration completed, please wait patiently for a moment, then tap **"Home"** in the bottom left corner of the main page, and the home interface will refresh.



Step 4 Settings & Work mode

1. Tap the button circled in the red box to view and set the three work modes.
2. Complete the work mode settings.

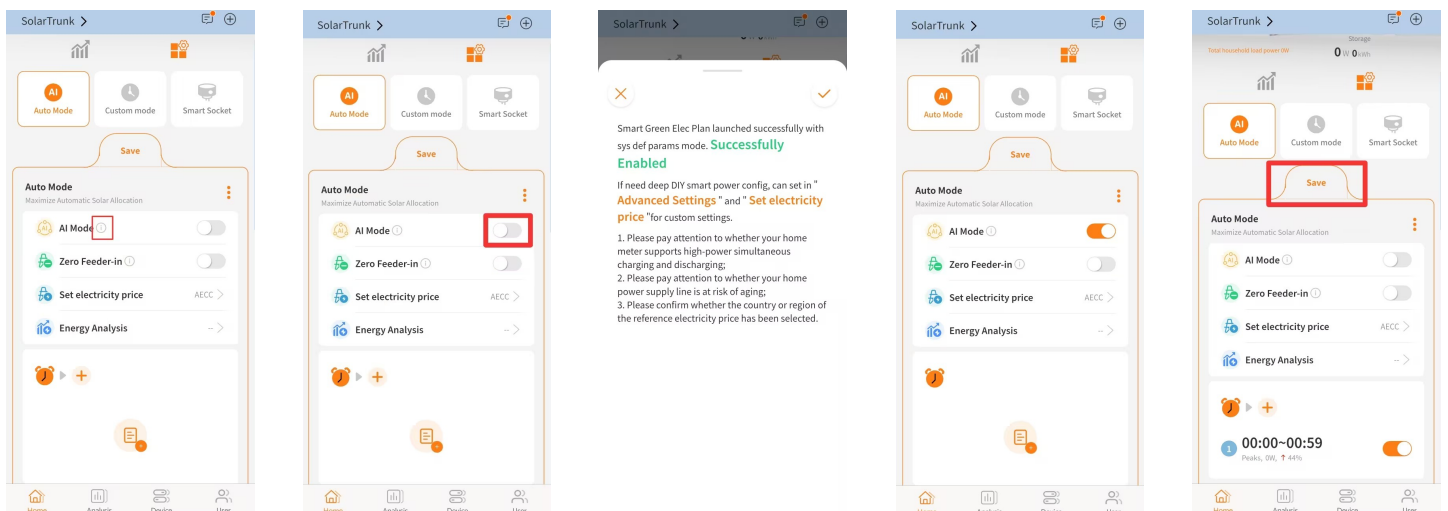


Work mode

Auto Mode

AI Mode

1. Tap the icon next to **"AI Mode"** (circled in the red box) to view the precautions.
2. Toggle on the switch of **"AI Mode"**.
3. Tap the "checkmark".
4. Once this function is enabled, the button will appear orange.
5. After completing all configurations, tap the **"Save"** button.

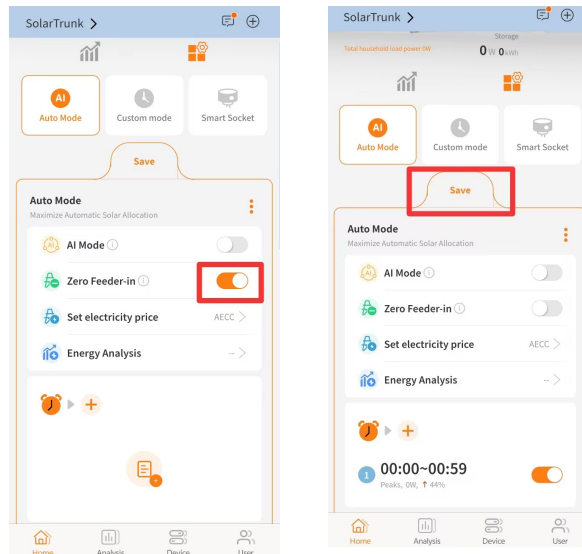


Zero Feeder-in

1. When enabled, power feeding into the grid is not allowed.

When disabled, residual PV power feeding into the grid is allowed.

2. After completing all configurations, tap the "Save" button.

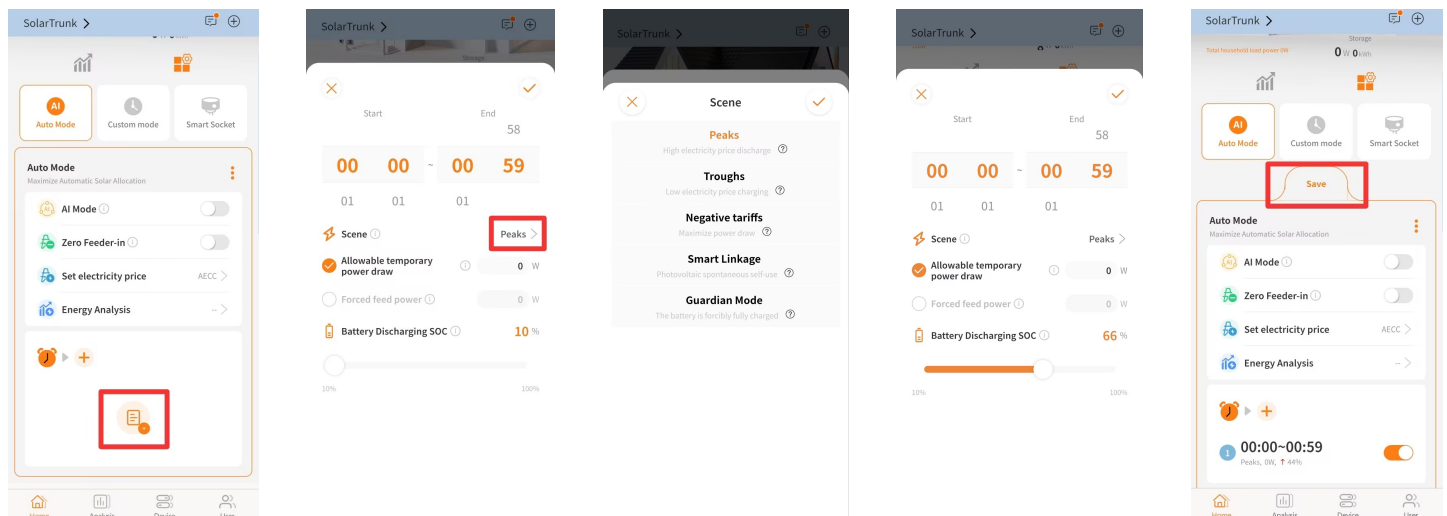


Set the electricity usage schedule manually

1. Tap the button circled in the red box
2. Tap "**Peaks**" to select a scene.

You can tap the question mark inside the circle to view detailed information for each scene, after selecting a scene, tap "checkmark".

3. Set the corresponding parameters and tap "checkmark".
4. After completing all configurations, tap the "Save" button.



Set electricity price

1. Configure electricity price parameters

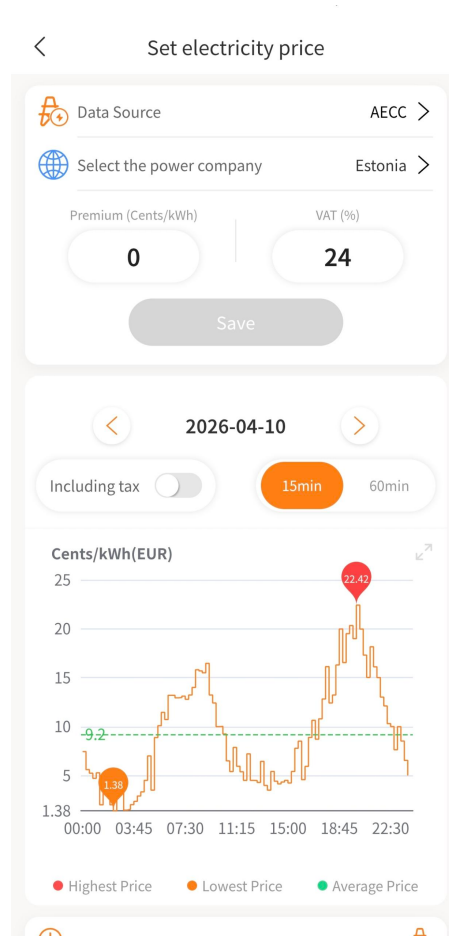
Select "**Data Source**" and "**Select the power company**", set "**Premium**" and "**VAT**", then tap "Save" to apply the settings.

2. Adjust viewing dimensions

Switch the date, toggle the "**Including tax**" switch, and select the data granularity between "**15min**" and "**60min**".

3. View electricity price trend

Check the daily electricity price fluctuation chart to obtain the highest, lowest, and average price information.



Energy Analysis

1. Switch time dimensions

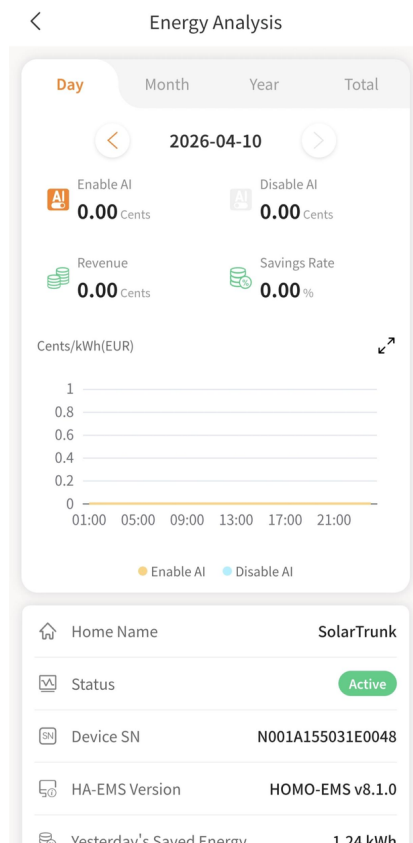
Select the time granularity via "**Day**", "**Month**", "**Year**", "**Total**" tabs, and switch the specific date with the left/right arrow buttons.

2. View energy data

Check the cost data of "**Enable AI**" and "**Disable AI**", as well as "**Revenue**" and "**Savings Rate**", and view the corresponding energy consumption trend chart.

3. Check device information

View the basic information of the device, including "**Home Name**", "**Status**", "**Device SN**", "**HA-EMS Version**", etc.



Custom Mode

Step 1: Enter Custom Mode

Toggle on the switch for "Custom mode" (below Smart Green Power Plan) , then tap "Setting" to enter the custom configuration page.

- Function explanation: In the custom mode, you can customize the time period to control the charging and discharging of the energy storage system and allocate power according to your power-using habits.

Step 2: Configure Basic Feed Power

*Tip: Basic feed power only takes effect in the power-feeding mode.

- Function explanation: This setting value provides standby power consumption for home appliances; in power feeding mode, the machine's discharge power = feeding power + basic feeding power

Step 3: Create Custom Power Plans

1. Tap "+ Set Plan" under the Usage Plan section to add a new power rule.
2. Select Operation Mode
 - Charging Mode: For setting battery charging rules (e.g., charging during off-peak electricity hours).
 - Power Feeding Mode: For setting power discharge/grid-feeding rules (for selling excess power or using stored energy).

3. Set Time Periods

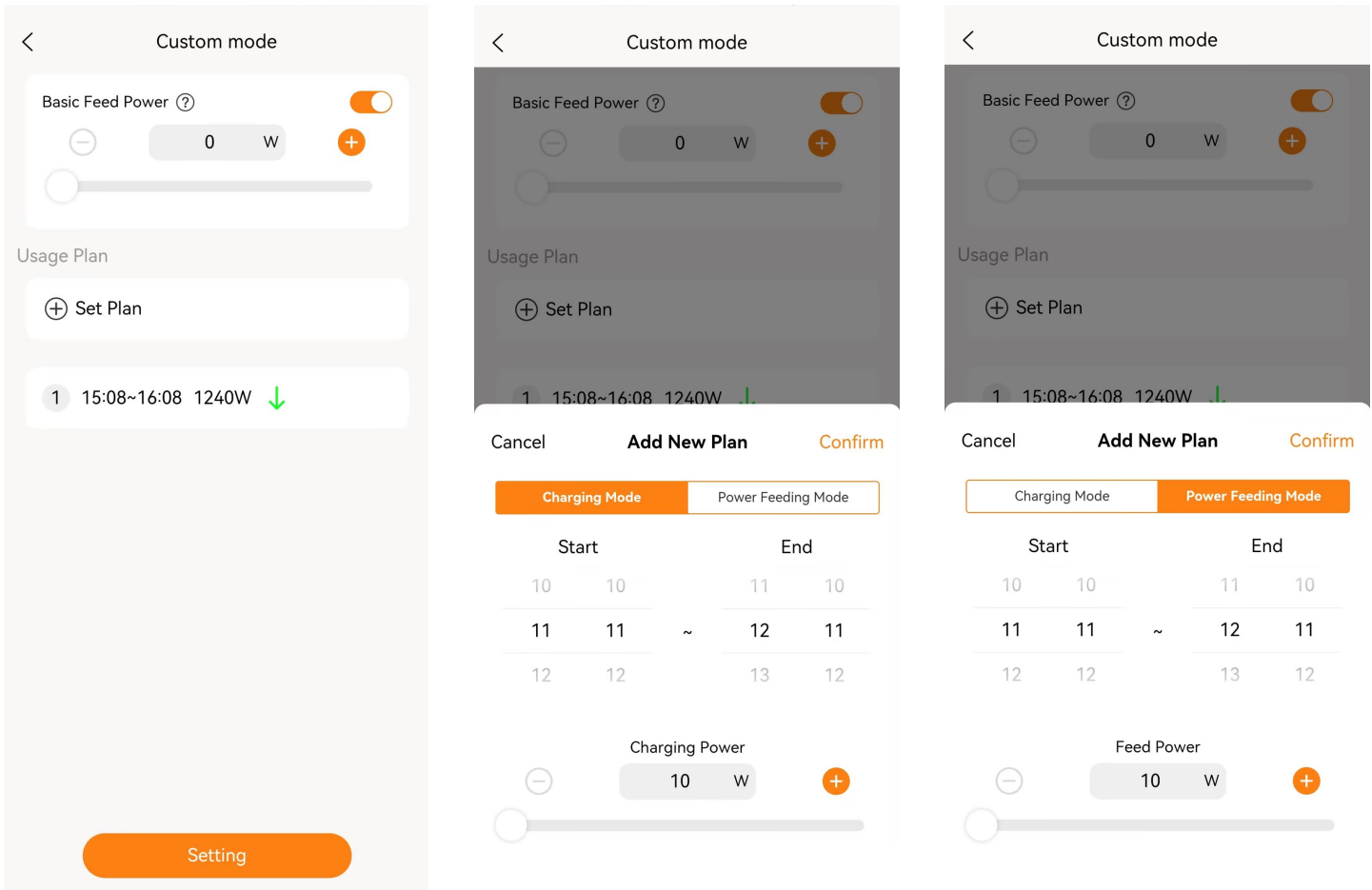
Use the time selectors to define the start and end duration of your custom rule.

4. Adjust Power Parameters

Set the corresponding power value (Charging Power in W for charging mode, Feed Power in W for power feeding mode) via the slider or +/- buttons.

5. Save the Plan

Tap "Confirm" to save the rule, then tap "Setting" at the bottom to apply all configurations.



Smart Socket Mode

Step 1: Enter Smart Socket Mode

Toggle on the switch for "Smart Socket Mode" to access its dedicated configuration page.

- Function explanation: In the smart socket mode, you can control the power output of the energy storage system by monitoring the power consumption of the smart socket. It can be used in conjunction with the "custom mode". For example, within the timed period, the total power output of the energy storage system = timed output power + power consumed by the smart socket. When custom mode and smart socket mode are both enabled: machine discharge power = feeding power + socket power + basic feeding power

Step 2: Adjust the Basic Feed Power

On the Smart Socket Mode page, use the +/- buttons or drag the slider to set the value of "Basic Feed Power" (measured in watts, W). This parameter defines standby power consumption for home appliances and only works in this mode.

- Function explanation: This setting value provides standby power consumption for home appliances; in smart socket mode, the machine's discharge power = socket power + basic feeding power

Step 3: Save the Configuration

After adjusting the Basic Feed Power to your desired value, tap the orange "Save" button at the bottom of the page to apply all settings for the Smart Socket Mode.



Work Mode Setting	Smart Green Power Plan	In the scenario of smart green power plan, the cloud generates electricity consumption plan based on electricity price, weather, equipment and other information, combines intelligent CT to collect AC energy data, dynamically controls battery charging and discharging, and efficiently distributes load. For more information, please access the "Smart Green Power Plan" advanced settings interface. Click the three dots in the upper right corner to enter the "Green Power Plan Boundary Parameters" setup page. Then, click the arrow on the left side of the interface to open the "AI Smart Green Power Plan Instructions" and review the detailed operations.
	Custom Mode	Customize the setting of timed time periods to control charging and discharging settings, enable settings, and allocate power according to electricity usage habits.
	Smart Socket Mode	In the smart socket mode, the power output of the energy storage system can be controlled by monitoring the power consumption value of the smart socket, which can be used in conjunction with the "custom mode".

Before installing the smart meter, please check the WiFi signal first. If the signal is weak, it is recommended to purchase a repeater and set the route and repeater in the 2.4-GHz band.

How to set the repeater, here we take FRITZ! Repeater as an example:

Enable the 2.4-GHz band in the FRITZ!Box user interface (<http://fritz.box>) under “Wi-Fi / Wi-Fi Network” .Enter the website printed on the product, enter your username and password (also printed on the product) , and switch the FRITZ! repeater to the 2.4-GHz band.

During the network configuration process, please only use the 2.4GHz network. If the page displays an error, check the following possible causes and try again:

1. Check if the WIFI password is correct or not, and make sure WIFI names no special characters, only numbers and English letters are acceptable .
2. Check if WiFi and router work only in 2.4GHz , the device cannot connect to the 5G network.
3. WiFi signal strength should be at least 2 bars shown on your phone for 2.4GHz band.
4. One router can only connect to up to 9 devices (not only SolarTrunk, but also phones, PCs, etc.). Please check if the connected device already exceeds 9.
5. Make sure that your phone's WLAN is turned on.
6. Try shortening the distance between the phone and the device.

After approximately 10 seconds, the WiFi configuration will be completed successfully, and the data of PowerTrunk will be uploaded to the server in about 5-10 minutes.

FAQ

1. Q: Is the balcony storage system complicated to install? Does it require a professional electrician?

A: Our products feature a "plug-and-play" design with clear instructions, allowing general users to complete installation easily. Regarding grid interconnection requirements in specific countries, we recommend consulting local electricity service providers.

2. Is the system safe, especially in semi-outdoor environments like a balcony?

A: The product is designed with an IP65 waterproof and dustproof rating, capable of withstanding common rain and snow conditions. It features a built-in heating membrane that warms the battery in low-temperature environments, ensuring reliable power availability even under cold conditions.

3. Are the products internationally certified?

A: Yes, we have passed multiple mainstream international certifications, including CE and RoHS, and comply with the UN38.3 transportation standard, ensuring safe and compliant export to global markets.

4. Can the MAU5000 be mounted on the wall?

A: No, the MAU5000 requires floor-standing installation. The mounting brackets on the device are only for anti-tipping purposes when secured to the wall and are not load-bearing.

5. Which electricity meters are compatible with MAU5000 for anti-reverse flow function?

A: It is compatible with various electricity meters including Pulse P1, SMeter-RS07, SMeter-RS06, SMeter-RS09, SMeter-RS02, ShellyPro EM-50, Shelly 3EM, Shelly Pro 3EM, Poweropti, IOmeter, Ecotracker IR and P1 Meter.

6. Can the MAU5000 be connected in parallel?

A: Yes. Up to 4 units can be connected in parallel for single-phase systems, and up to 6 units for three-phase systems. They support parallel connection via WiFi or RS485. You can add devices within the same power station for unified monitoring.

Product Maintenance

- During normal operation, check that the environmental and logistic conditions are appropriate. Make sure that the conditions have not changed over time and that the unit is not exposed to adverse weather conditions and has not been covered with foreign bodies.
- DO NOT use the unit if any problems are found and restore the normal conditions after the fault has been corrected.
- The firmware version can be checked by using the monitoring system.
- Avoid temporary repairs. All repairs should be carried out using only genuine spare parts.

Storage and Disposal

- If the unit is not used immediately or is stored for long periods, check whether it is correctly packed. The unit must be stored in well-ventilated indoor areas that do not have characteristics that might damage the components of the unit.
- For long-term storage, please charge and discharge this product once every 3 months. Products that have not undergone charging and discharging for more than 3 months will not be covered by the warranty.

- If the battery level of this product is critically low and it has been idle for an extended period, it needs to be recharged before it can be used again.
- Take a complete inspection when restarting after a long time or prolonged stop.
- Please dispose of the unit properly after scrapping, as component parts are potentially harmful to the environment, following the regulations in force in the country of installation.
- If conditions permit, make sure that the battery is fully discharged before disposing it in a designated battery recycling bin. The product contains batteries with potentially dangerous chemicals, so it is strictly prohibited to dispose of it in ordinary trash cans. For more details, please follow the local laws and regulations on battery recycling and disposal.
- If the battery cannot be fully discharged due to a product failure, please do not dispose of the battery directly in the battery recycling box. In such case, you should contact a professional battery recycling company for further processing.
- Please dispose of over-discharged batteries that cannot be recharged.

Warranty Service

This Warranty is subject to the following conditions:

- The products must have been installed and correctly commissioned by an authorized and licensed installer. Proof may be required of correct commissioning of the Product (such as a certificate of compliance). Claims for failures due to incorrect installation or commissioning are not covered under this Warranty.
- Where a Product or part thereof is replaced or repaired under this Warranty, the balance of the original Warranty period will apply. The replacement product or part(s) do not carry a new voluntary warranty.
- The product must have its original serial number and rating labels intact and readable.
- This Warranty does not extend to any product that has been completely or partially disassembled or modified, except where such disassembly is carried out by TSUNESS
- The terms of this Warranty cannot be amended except in writing by one of our authorized officers.
- There must have been a commissioning report signed by the end user and the installer for product commissioning and handling instructions.

Exclusions

1. TSUNESS makes no warranties, either expressed or implied, orally, or in writing, concerning any other warranty coverage except those expressly stated in this limited Factory warranty.
2. The Factory warranty does not cover damages that occur due to:

- Transport damage;
 - Failure to observe the user manual, maintenance regulations, and intervals;
 - Modifications, changes, or attempted repairs, except as conducted by an Authorized Dealer;
 - Incorrect use or inappropriate operation;
 - Insufficient ventilation of the covered product;
 - Failure to observe the applicable safety regulations;
 - Force majeure.
3. This factory warranty does not cover cosmetic defects which do not directly influence energy production, or degrade form, fit, and function.
 4. Claims that go beyond the scope of this limited factory warranty, in particular claims for compensation for direct or indirect damages arising from the defective device, for compensation for costs arising from disassembly and installation, or loss of profits, are expressly NOT covered by this factory warranty.
 5. In no event will TSUNESS Co., Ltd be held responsible or liable for any personal injuries resulting from the use of the system, or for any other damages, whether direct, indirect, incidental, or consequential; even if TSUNESS Co., Ltd has been advised of such damages.

Appendix

Product Certificates

Micro Storage Unit Datasheet

Model	TSOL-MAU5000	TSOL-MAU5000-M
Battery (DC)		
Battery Capacity (Wh)	5120	5120
Battery Type	LiFePO ₄	LiFePO ₄
Nominal Voltage (V)	51.2	51.2
Life Cycle	6000	6000
AC Port (On-grid)		
Max. AC Output Power (W)	800	2500

Max. AC Input Power (W)	2500	2500
Nominal AC Voltage (V)	220/230/240, L/N/PE	220/230/240, L/N/PE
Nominal AC Frequency (Hz)	50/60	50/60
AC Port (Off-grid)		
Max. AC Output Power (W)	2500	2500
Nominal AC Voltage	220/230/240, L/N/PE	220/230/240, L/N/PE
Nominal AC Frequency (Hz)	50/60	50/60
Switch Time (ms)	10	10
General Data		
Dimensions (W×H×D mm)	484 × 707 × 168	484 × 707 × 168
Weight (kg)	50	50
Communication	WiFi (Bluetooth) + RS485	WiFi (Bluetooth) + RS485
Ingress Protection	IP65	IP65
Cooling Method	Natural Convection	Natural Convection
Operating Temperature Range	-20 ~ 55°C	-20 ~ 55°C
Relative Humidity	0 ~ 95%, Non condensing	0 ~ 95%, Non condensing
Max. Operating Altitude (m)	2000	2000
Protection Class	I	I