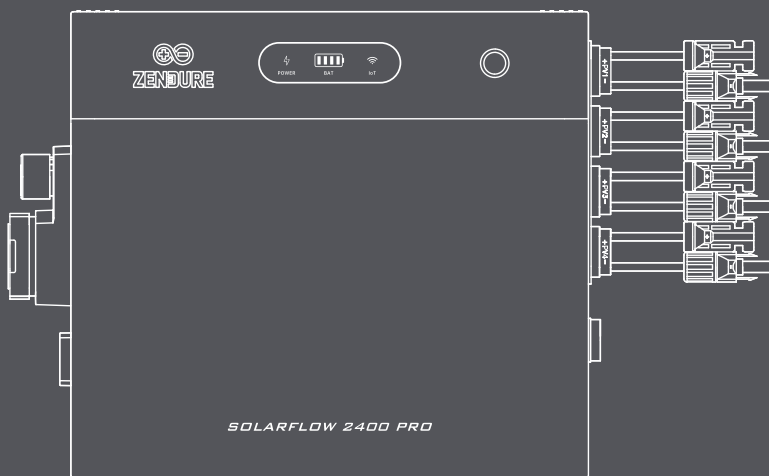




ZENDURE

The Global Pioneer of Plug-in HEMS



SolarFlow 2400 Pro

User Manual

Disclaimer

Please read all safety guidelines, warnings, and other product information in this manual carefully, as well as any labels or stickers attached to the product. Users are responsible for the safe use and operation of this product. Make sure you are familiar with and comply with all applicable regulations in your area when using Zendure products.

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1. SolarFlow 2400 Pro Specification

SolarFlow 2400 Pro Power Station

Parameter	Specification
Model	ZDSF2400P
PV Terminal	
Max. Input Voltage	55 V d.c.
Max. Input Current	4*18 A d.c.
Max. Short-circuit Current	4*22.5 A d.c.
Max. Input Power	3000 W (4*750 W)
Operating Voltage Range	14-55 V d.c.
On-grid Terminal	
Nominal Input/Output Voltage	230 V a.c.
Nominal Input/Output Frequency	50 Hz
Nominal AC Output Power	800 W (default) / 2400 W (*premium)
Nominal AC Output Current	3.5 A a.c. (default) / 10.4 A a.c. (*premium)
Max. AC Input Power	2900 W
Max. AC Input Current	13 A a.c.
Off-grid Terminal	
Nominal Input/Output Voltage	230 V a.c.
Nominal Input/Output Frequency	50 Hz
Max. AC Output Power	2900 W
Max. AC Output Current	13 A a.c.
Max. AC Input Power	2400 W
Max. AC Input Current	10.4 A a.c.
SolarFlow 2400 Pro Battery (Port)	
Battery Type	LiFePO ₄
Battery Rated Energy	2400 Wh
Battery Rated Capacity	50 Ah
Battery Rated Voltage	48 V d.c.
Max. Charge/Discharge Power	2400 W
Max. Charge/Discharge Current	50 A d.c.
Charge Temperature	0 °C to 55 °C
Discharge Temperature	-20 °C to 55 °C
Charge/Discharge Voltage Range	37.5 V d.c. to 54.75 V d.c.
General Information	
Protection Class	Class I
PowerFactor	0.8 (lagging)-0.8 (leading)
Operating Temperature	-20 °C to 55 °C
Type of Enclosure	IP65
Dimensions (W x H x D)	375 × 295 × 253 mm
Weight	27.5 kg
Bluetooth	Bluetooth 5.0
	Frequency: 2402-2480 MHz
	Maximum Transmit Power: 20.0 dBm
Wi-Fi	Wi-Fi 4 802.11 b/n/g
	Frequency: 2412-2472 MHz
	Maximum Transmit Power: 20.0 dBm

2. Safety Instruction

2.1 Safety Guidelines

1. Read this manual and all applicable product documentation carefully before installing, operating, or servicing the product.
2. Before use, inspect the product and cables for damage or other abnormalities, such as cracks, leakage, or overheating. If any abnormality is found, stop using the product and contact Zendure Customer Service.
3. To ensure safe operation and maintain warranty coverage, do not overcharge, over-discharge, use unauthorized accessories, or disassemble or modify the product. Damage caused by improper use may not be covered by the warranty. For details, refer to the applicable warranty terms.
4. Do not place heavy objects on the product.
5. Ensure that all plugs and connectors are clean, dry, and securely connected before use.
6. Do not install or operate the product under severe weather conditions, such as thunderstorms, heavy rain, snow, or strong winds.
7. Close supervision is required when the product is used near children.
8. Keep hands, fingers, and foreign objects away from internal components.
9. Use only chargers, cables, and accessories specified or approved by Zendure. The use of incompatible accessories may cause product damage and may void the warranty.
10. Maintain a minimum clearance of 50 mm around the product to ensure adequate ventilation.
11. Protect the product from excessive heat and prolonged exposure to direct sunlight. Keep it away from heat sources.
12. Install the product in accordance with this manual and applicable local electrical codes and regulations.
13. Do not use the product near strong sources of static electricity or strong magnetic fields.
14. Do not install or operate the product in environments containing flammable or explosive gases, vapors, dust, or other hazardous substances. Ensure adequate ventilation for heat dissipation.
15. When removing a cable, pull the connector rather than the cable to prevent damage to the cable and connector.
16. Do not operate the product beyond its specified ratings. Overloading may result in overheating, fire, electric shock, or device damage.
17. Do not use damaged or modified products, batteries, cables, or accessories. Damaged or modified batteries may behave unpredictably and result in fire, explosion, or injury.
18. Do not operate the product with a damaged power cable, plug, connector, or output cable.
19. Do not disassemble or repair the product yourself. It must be performed by qualified service personnel. Improper reassembly may result in electric shock, fire, or device damage.
20. Do not expose the product or batteries to fire or excessive temperatures.
21. Do not replace internal components unless specifically instructed by Zendure. Servicing and component replacement must be performed by qualified personnel using specified replacement parts.
22. Do not immerse the product in water or other liquids. If the product is accidentally immersed or exposed to significant water ingress, stop using it immediately, keep away from the product, and contact Zendure Customer Service. Do not reuse the product unless it has been inspected and confirmed safe by qualified personnel.
23. The product may become warm during normal operation. This is normal provided that the temperature remains within the specified operating range.
24. Before installation, removal, or servicing, isolate all power sources, including PV input, batteries, and the grid supply, and verify the absence of hazardous voltage before proceeding.
25. Ensure adequate ventilation during battery charging and operation. Do not block or restrict ventilation openings.
26. Clean the product only with a soft, dry cloth. Do not use corrosive chemicals, solvents, or detergents.
27. Do not move, shake, tilt, or subject the product to impact while it is operating.
28. Install the product and batteries securely in accordance with the installation instructions to prevent tipping, falling, or other mechanical hazards.
29. In the event of a fire, evacuate the area and contact the local emergency services. Use only a fire extinguisher suitable for electrical and lithium-ion battery fires, and only if it is safe to do so.
30. Battery servicing must be performed or supervised by personnel knowledgeable about batteries and the required safety precautions.

2.2 Disposal Guide

- 1. Do not dispose of batteries with household waste. Take them to an authorized battery collection or recycling facility in accordance with applicable local laws and regulations.
- 2. Do not attempt to discharge, dismantle, or unnecessarily handle a damaged or defective battery. Contact Zendure Customer Service or an authorized battery recycling facility for guidance on safe handling and disposal.
- 3. During handling, transportation, and disposal, protect batteries from impact, puncture, crushing, fire, and excessive heat to prevent leakage, fire, or explosion.

2.3 EU DECLARATION OF CONFORMITY

ZENDURE TECHNOLOGY CO., LIMITED declares that the SolarFlow 2400 Pro complies with directive 2014/53/EU (RED), 2011/65/EU (RoHS), 2015/863/EU (RoHS).

	Declaration of Conformity The EU Declaration of Conformity is available at this address: https://zendure.de/pages/download-center
	Disposal and Recycling Dispose of the packaging separately by type of material.
	This applies in the European Union and other European countries with separate waste collection systems. Old electrical and electronic devices must not be disposed of with household waste and must be taken to a designated collection point for proper disposal and recycling. To conserve resources and protect the environment, electrical and electronic devices are marked with the symbol shown to the left.
	Batteries and accumulators must not be disposed of with household waste and must be taken to a designated collection point for proper disposal and recycling, whether or not they contain hazardous substances. Chemical symbols: Cd = cadmium, Hg = mercury, Pb = lead. Discharge any built-in or accessory batteries before disposal.

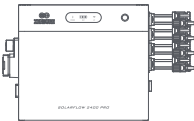
3. Symbols

Symbol	Description
	High-risk hazard that, if not avoided, could result in death or serious injury.
	Important information requiring your attention.
	Included with the product.
	Optional accessory (not included).
	Additional information for correct use or helpful tips.

4. Important Tips

	Check local regulations and grid connection requirements before installing or operating the system.
	Install the SolarFlow 2400 Pro in a shaded area and avoid prolonged exposure to direct sunlight to prevent excessive temperature rise.
	Check that all required accessories are available before installation. Some accessories may be sold separately.
	Download the Zendure APP to configure, monitor, and manage the system.
	After installation and initial startup, allow approximately 1 minute for the SolarFlow 2400 Pro to connect to the grid.
	Set the AC output limit in the Zendure APP in accordance with applicable local regulations and circuit capacity.
	Before removing the SolarFlow 2400 Pro, press and hold the button for 6 seconds to turn it off, then isolate all power sources.
	For optimal performance, operate the product at an ambient temperature of 15 °C to 30 °C and keep it away from water, heat sources, and sharp objects.
	For long-term storage, discharge the battery to 30% and recharge it to 60% every 3 months. If the battery level falls below 1% after use, recharge it to 60% before storage. Prolonged storage at a very low SOC may cause irreversible battery damage.
	Do not disassemble or repair the product yourself. Contact Zendure Customer Service if servicing is required.
	The battery reserves 5% SOC to help prevent over-discharge and extend battery life.

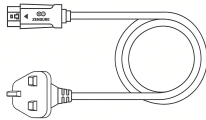
5. What's in the Box



SolarFlow 2400 Pro *1



User Manual *1



3m 13A AC Power Cable *1



Mounting Bracket Kit *1



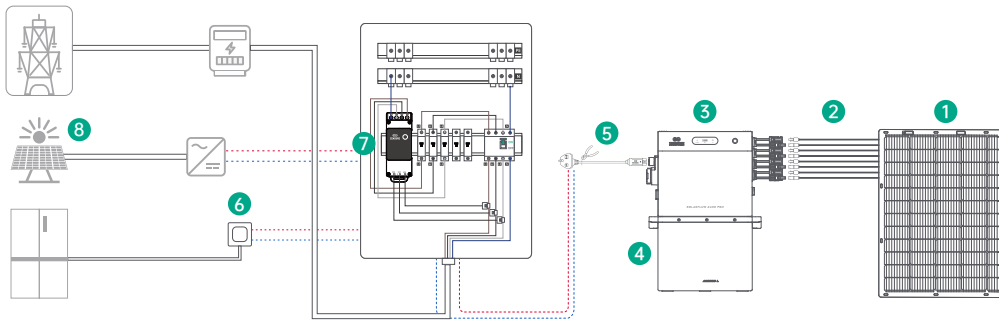
Solar and AC Connector Removal Wrench *1

Before unpacking, inspect the packaging for signs of damage, such as holes or cracks. If damaged, do not unpack the product and contact Zendure Customer Service immediately.

After unpacking, check that all items are present and undamaged. If any item is missing or damaged, contact Zendure Customer Service.

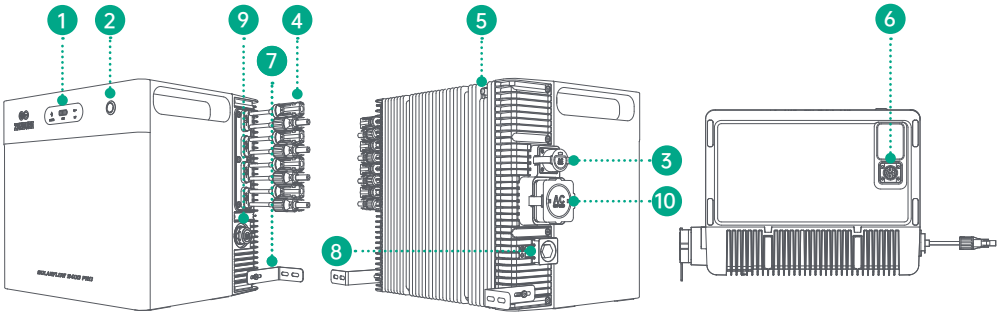
6. Overview

6.1 System Overview



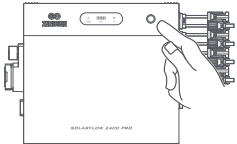
	Name	Description	Included/Not Included
1	Solar Panel	The SolarFlow 2400 Pro supports up to 4 sets of solar panels.	
2	Solar Cable	Connects the solar panel to the SolarFlow 2400 Pro.	
3	SolarFlow 2400 Pro	Connects the solar panel, add-on battery, and household grid for power conversion and energy storage.	
4	Add-on Battery	Stores solar energy for household use. The SolarFlow 2400 Pro supports up to 5 add-on batteries.	
5	AC Power Cable	Connects the SolarFlow 2400 Pro to the distribution board.	
6	Zendure Smart Plug	Monitors the power consumption of connected appliances and communicates wirelessly with the SolarFlow 2400 Pro for energy management.	
7	Zendure Smart Meter	Monitors household power consumption and grid power flow for energy management.	
8	Rooftop PV System	An additional smart meter is required to monitor the generation of an existing rooftop PV system. Excess PV energy can be stored in the battery for later use.	

6.2 Product Overview



1	LED Light Strip	Indicates battery status, power status, and connectivity.
2	Button	Controls basic system functions.
3	AC Port	Connects the AC power cable.
4	PV Ports 1-4	Connects the solar panel. Supports up to 4 sets of solar panels.
5	Antenna	Provides wireless communication.
6	Battery Terminal	Connects add-on batteries. Supports up to 5 add-on batteries.
7	Mounting Brackets	Secure the device to the wall.
8	Pressure Relief Valve	Relieves internal pressure. Do not touch or loosen the valve, as this may compromise the device's IP rating.
9	RJ45 COM Port	Connects to the Zendure smart meter for communication.
10	Off-grid AC Socket	Supplies power to off-grid loads.

6.3 Button Controls

Button	Action	Function
	Press once (when powered on)	Displays the battery SOC or current operating status.
	Press for 2 seconds	Turns on the SolarFlow 2400 Pro.
	Press for 3 seconds	Resets the Wi-Fi connection.
	Press for 6 seconds	Turns off the SolarFlow 2400 Pro.

6.4 LED Display

LED Indicator	LED Status	Description
	Solid Green	The device is powered on and operating normally.
	Blinking Green	The device is operating normally in off-grid mode.
	Blinking Red	A device error is detected. Check the APP for details.
	Solid Green	Wi-Fi is connected.
	Blinking Green	The device is waiting for a Wi-Fi connection.
	Blinking Red	Wi-Fi is disconnected.
	Blinking Yellow	An OTA update is in progress.
	Solid Green	The battery is operating normally, and the four LEDs indicate the current SOC: ● 1 Green LED: 5-25% ● 2 Green LEDs: 26-50% ● 3 Green LEDs: 51-75% ● 4 Green LEDs: 76-100% At 60%, for example, three green LEDs are illuminated.
	Blinking Green	The battery is charging.
	Slow Blinking Red	The battery SOC is below 5%.
	Solid Yellow	The battery is in protection mode, and the four LEDs indicate the current SOC.
	Solid Red	A battery error is detected. Check the system for troubleshooting.
	Slow Blinking Yellow	A low temperature is detected. The battery is heating to reach its operating temperature.

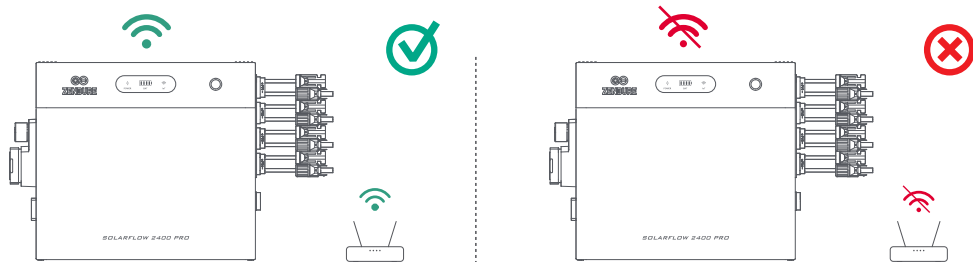
7. Installing the SolarFlow 2400 Pro

7.1 Before Installation

- This user guide only covers cable connections and installation of the SolarFlow 2400 Pro system. For solar module installation, refer to the instructions provided with the solar modules and accessories.
- We recommend installing and setting up the solar system on a sunny day to facilitate system performance checks and troubleshooting.

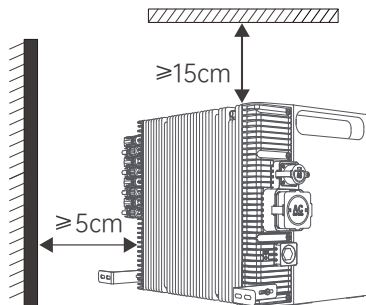
7.2 Selecting a Location for the SolarFlow 2400 Pro

Make sure the device is within the Wi-Fi coverage area.

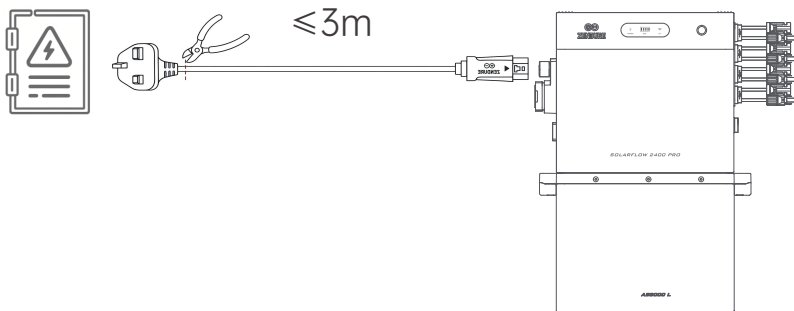


Maintain at least 15 cm of clearance between the antenna side of the device and the wall.

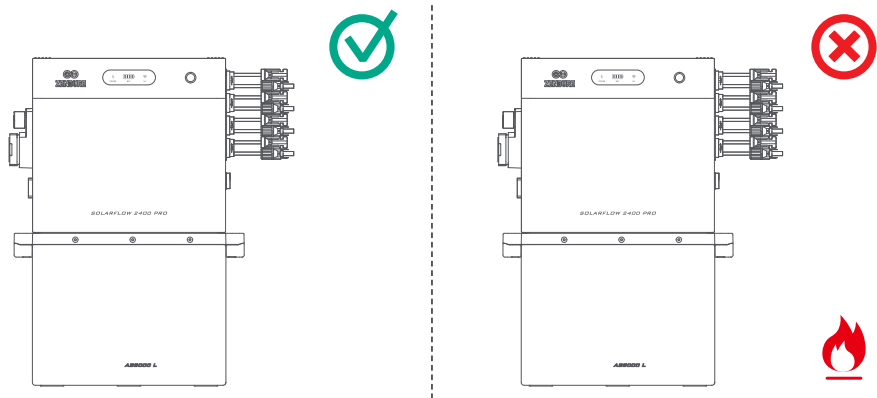
Maintain at least 5 cm of clearance around the heat dissipation fins to ensure proper ventilation and heat dissipation.



Before installation, ensure that the SolarFlow 2400 Pro is within reach of the distribution board using the supplied AC power cable, and that the solar panels are within reach of the solar cables.



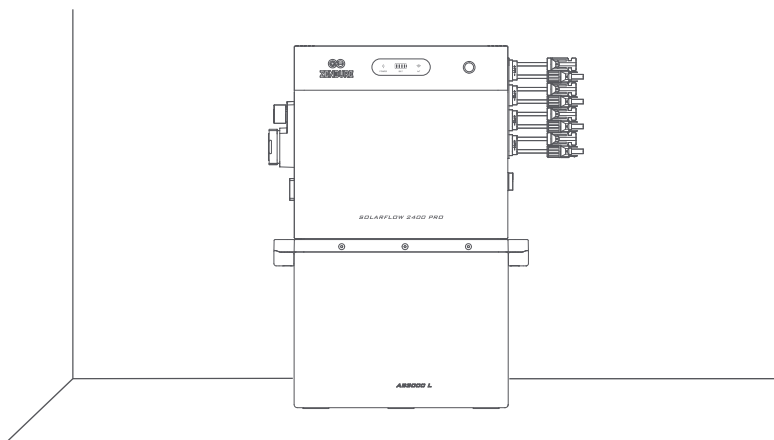
Do not place the device in areas where flammable or explosive materials are stored.



The SolarFlow 2400 Pro can be installed indoors or outdoors. Ensure that the device is protected from direct sunlight and rain.



Place the SolarFlow 2400 Pro on a solid, level surface.

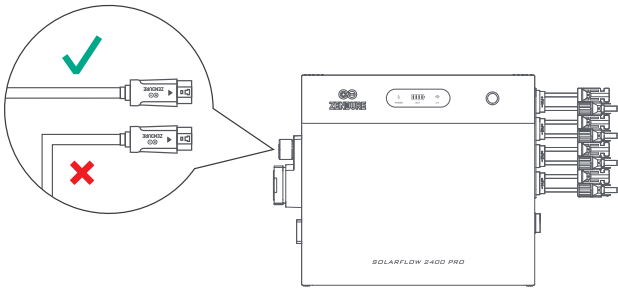


7.3 Assembly Process

Image	Name	Description	Included/Not Included
	SolarFlow 2400 Pro	Supports up to 4 sets of solar panels and 5 add-on batteries.	
	3m 13A AC Cable	Connects the SolarFlow 2400 Pro to the distribution board.	
	AB3000L Add-on Battery	Stores solar energy for household use. Up to 5 batteries can be stacked beneath the SolarFlow 2400 Pro.	
	Solar Panel	Generates solar power for the SolarFlow 2400 Pro. 400–900W of solar panel is recommended per PV port.	
	Solar Cable	Connects the solar panel to the SolarFlow 2400 Pro.	
	Solar Parallel Cable	Connects 2 solar panels in parallel to a single PV port.	

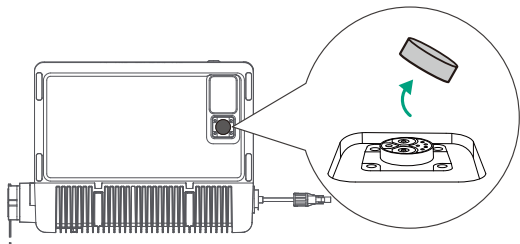
7.3.1 Cable Management

Position the SolarFlow 2400 Pro so that the solar and AC cables can run straight down without excessive bending.



7.3.2 Connect the Add-on Batteries

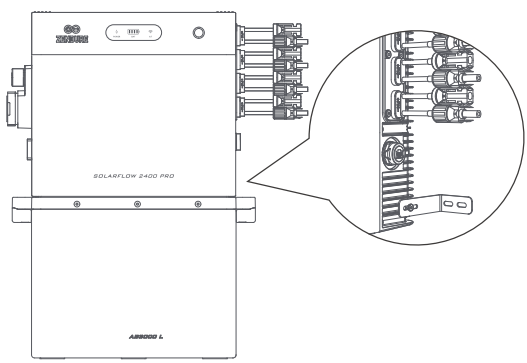
Remove the silicone protective covers from the battery terminal on the SolarFlow 2400 Pro and add-on batteries (sold separately).



Connect the add-on batteries to the SolarFlow 2400 Pro by stacking them underneath and ensuring that the battery terminals lock into place.

A single SolarFlow 2400 Pro supports up to 5 AB3000L batteries, providing a maximum capacity of 16.8 kWh.

- Do not connect or disconnect the batteries during charging or discharging.
- Do not touch the metal pins of the ports with your hands or other objects. If necessary, gently clean them with a dry cloth.
- Use the brackets and screws provided with the package to secure the SolarFlow 2400 Pro on top and ensure stability.



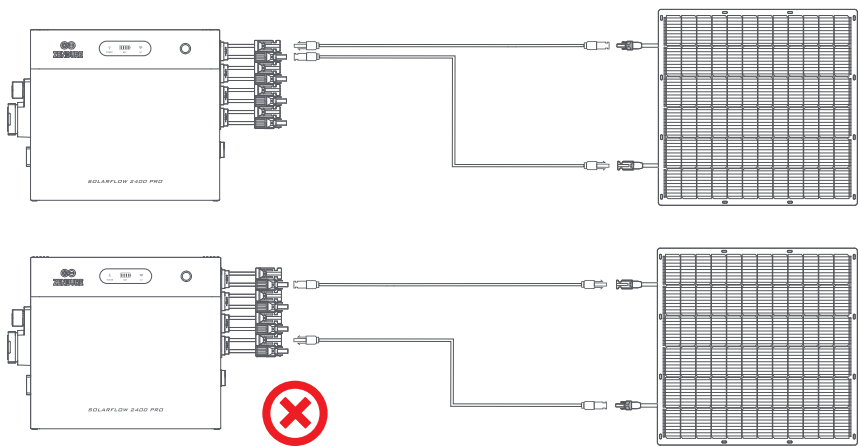
7.3.3 Connect to the Solar Panels

1. The SolarFlow 2400 Pro features 4 MPPTs, with each PV input operating independently.
 - Open-circuit Voltage (Voc): < 55 V per PV port
 - Short-circuit Current (Isc): < 22.5 A per PV port
 - Recommended Power Range: 400–900 W per PV port
2. For optimal efficiency, use solar cables no longer than 3 m to minimize transmission losses.

(1) Connect 1 Solar Panel to the SolarFlow 2400 Pro

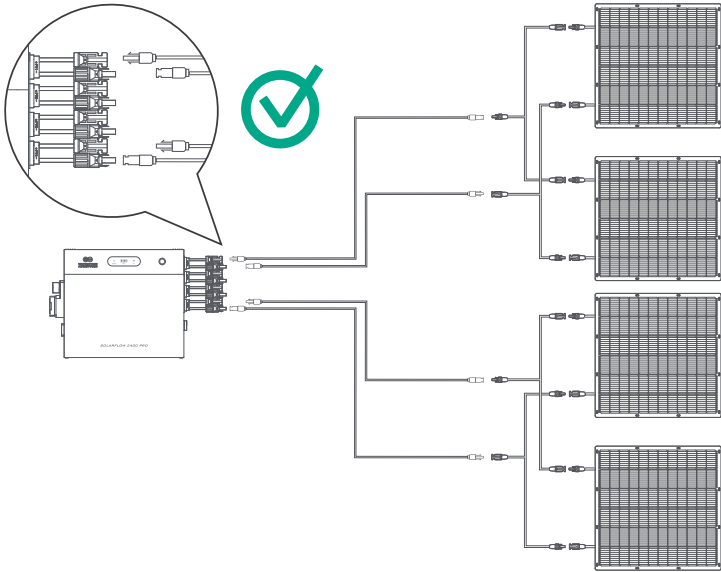
Measure the required cable length and position the solar panel before making the connection.

- Connect both the positive and negative terminals of the same solar panel to the same PV port.

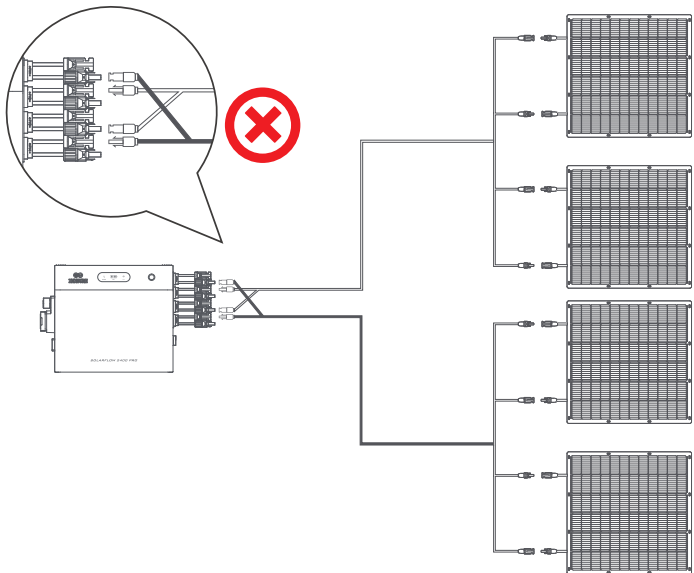


(2) Connect Solar Panels in Parallel

- Ensure that the Voc (open-circuit voltage) of each solar panel connected to a single PV port is below 55 V.
- Ensure that the combined Isc (short-circuit current) of all solar panels connected to a single PV port does not exceed 22.5 A.

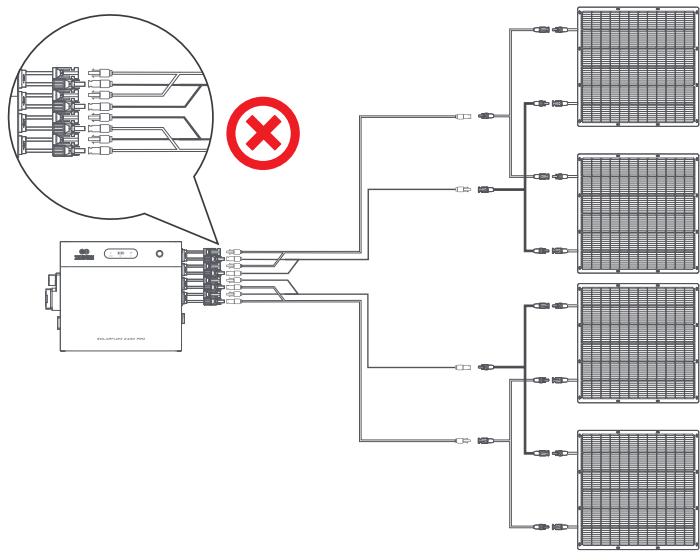


Connect both the positive and negative terminals of the same solar panel to the same PV port. Do not connect a solar panel across different PV ports. Zendure is not liable for damage caused by improper connections.



(3) Incorrect Cross-Connection of PV Ports

The SolarFlow 2400 Pro has four independent PV ports, each with a dedicated MPPT. Do not connect or parallel different PV ports, as this may cause abnormal power flow between the MPPTs and damage the device.

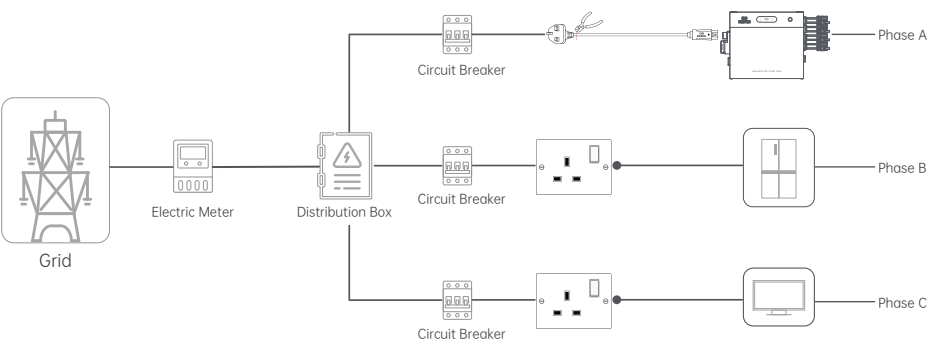


7.4 Connect to the Grid

7.4.1 Install a Single SolarFlow 2400 Pro

Hardwire the SolarFlow 2400 Pro to a dedicated circuit. Do not connect other household loads to the same circuit.

 The inverter output power is limited to 800 W by default. To raise the limit to 2400 W, have a licensed electrician verify that the circuit meets applicable safety requirements, then submit an application via the Zendure APP.



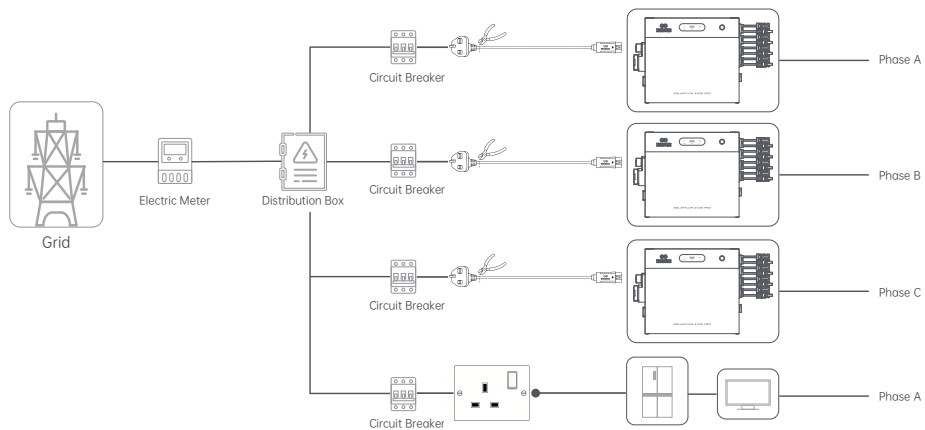
7.4.2 Install Multiple SolarFlow 2400 Pro Units

1. Each SolarFlow 2400 Pro must be connected to a dedicated circuit protected by a separate circuit breaker. For more information, please refer to 7.4.3 Hardwiring Instructions.

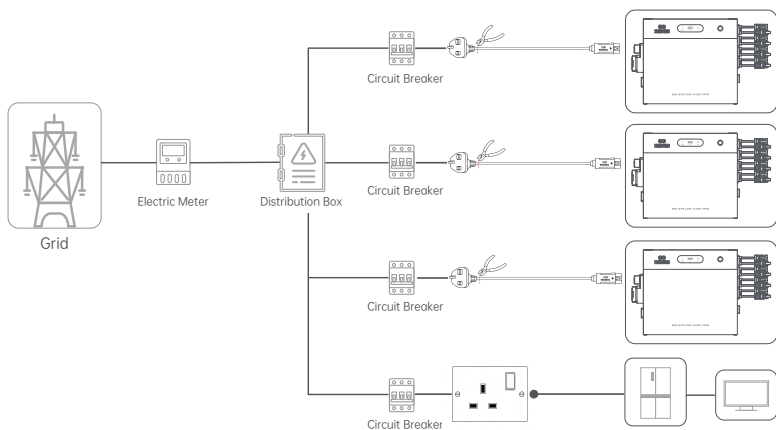
2. The total output power of all connected units is limited to 800 W by default. To exceed this limit, have a licensed electrician verify that the circuits meet applicable safety requirements, then submit an application via the Zendure APP.

- For Three-Phase System: Connect each inverter to a separate phase.
- For Single-Phase System: Connect each inverter to a dedicated circuit.
- Press and hold the button for 2 seconds to power on each device.

Installation in three-phase system



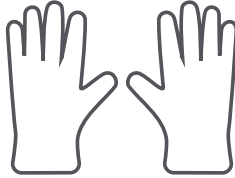
Installation in single-phase system



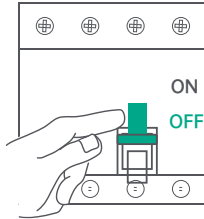
7.4.3 Hardwiring Instructions

⚠ Warning: Installation must be performed by a licensed electrician to avoid the risk of electric shock, fire, or other hazards.

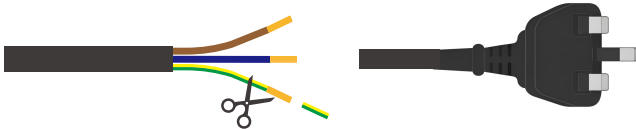
1. Wear insulated gloves before installation.



2. Turn OFF the main switch before installation. Use a multimeter to verify the absence of voltage at the terminals before proceeding.

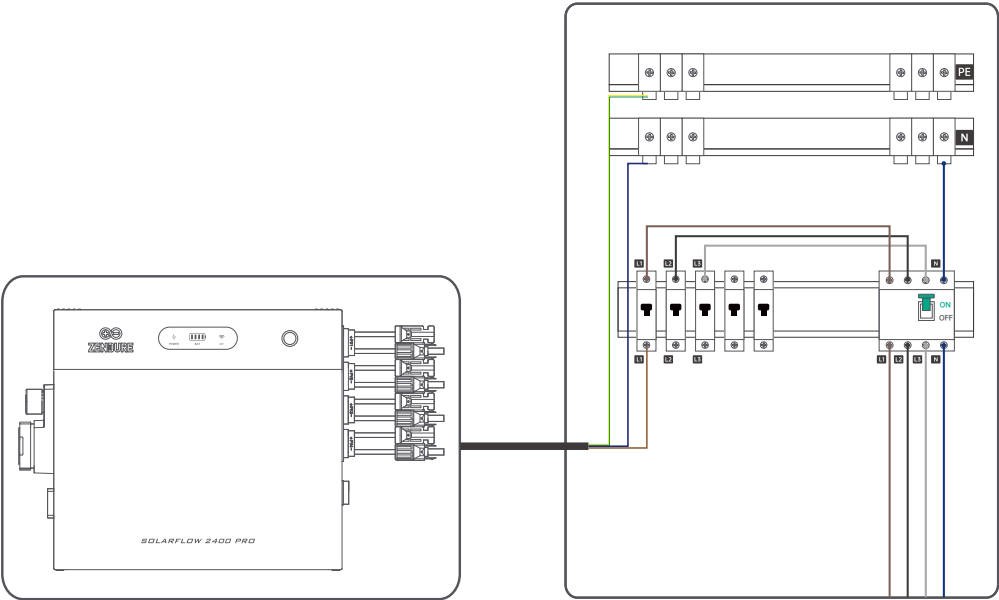


3. Cut off the plug from the AC cable, then strip the outer sheath and conductor insulation as required for connection.

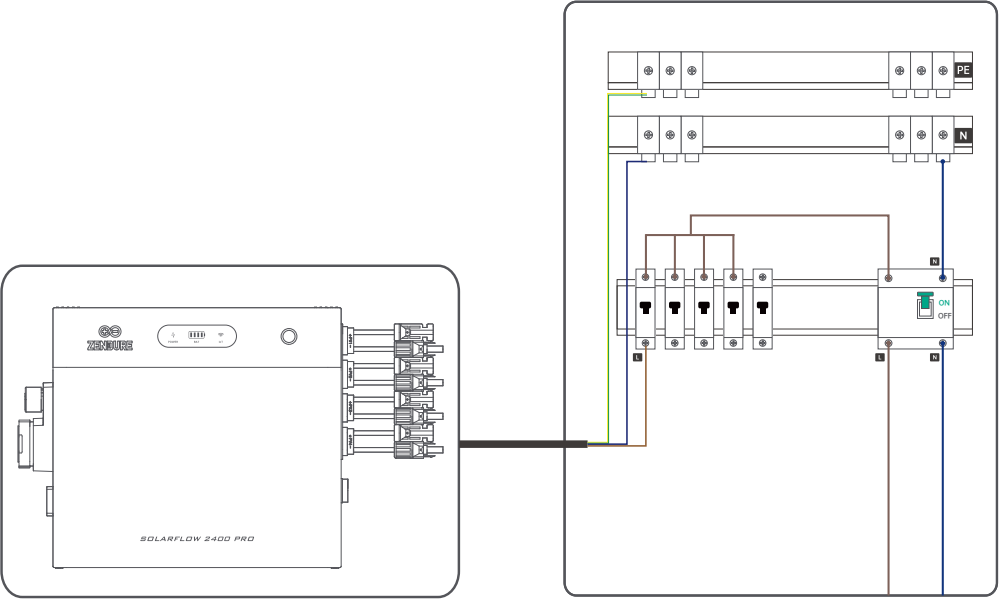


4. Connect the AC cable to the distribution board:
 - (1) Connect the live (L) conductor to the dedicated circuit breaker.
 - (2) Connect the neutral (N) and protective earth (PE) conductors to the corresponding N and PE busbars.

Three-phase installation diagram

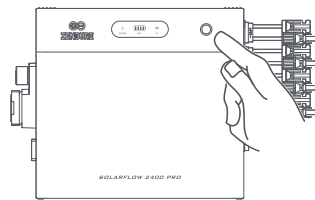
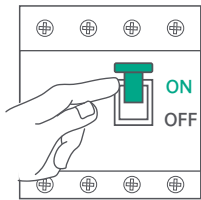


Single-phase installation diagram



5. Power On

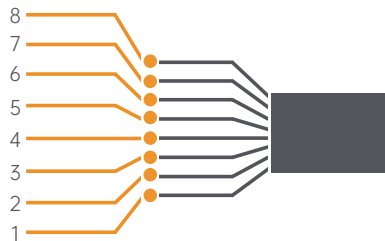
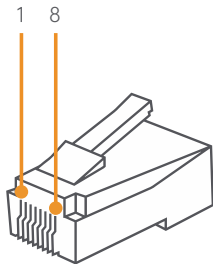
- (1) Verify that all connections are correct and secure before powering on the device.
- (2) Turn ON the main switch.
- (3) Press and hold the button on the SolarFlow 2400 Pro for 2 seconds to turn it on.



8. RJ45 Communication Port Wiring

8.1 Pin Definitions

8	
7	
6	
5	
4	
3	
2	
1	

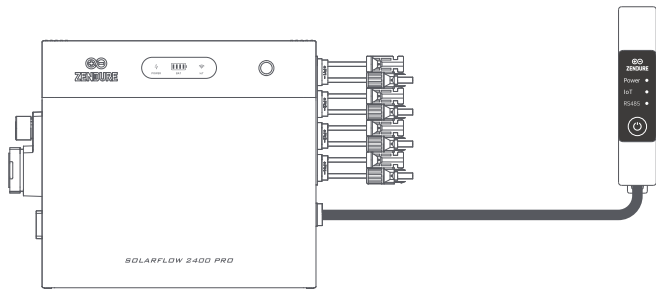


-  **Note:**
- Crimp the RJ45 plug according to the pin definitions.
 - RS485 A (Pin 2) and RS485 B (Pin 1) must use the same twisted pair.
 - This port is not an Ethernet port. Do not connect it to a network switch, router, or PoE device.

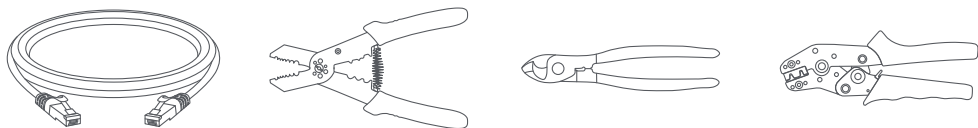
The RJ45 plug shown below follows the T568B pin order.

Pin Number	Definition	Function
1	RS485 B	RS485 communication (for Zendure Smart Meter)
2	RS485 A	
3	N.C.	N/A
4	N.C.	N/A
5	DI1	Reserved digital input (dry contact)
6	DI2	
7	N.C.	N/A
8	N.C.	N/A

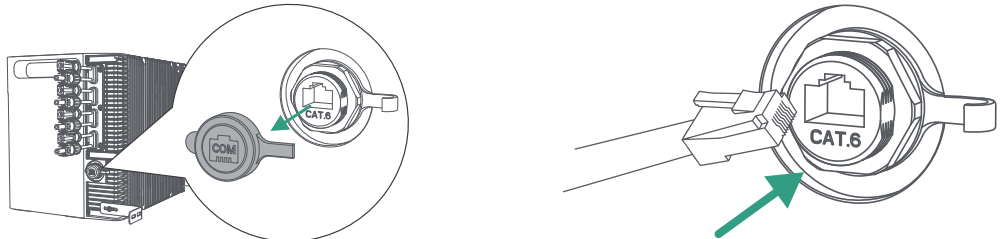
8.2 Connect to the Smart Meter 3CT-S/1CT-S



1. Prepare one RJ45 communication cable (STP, shielded twisted pair), a wire stripper, a wire cutter, and a crimping tool.



2. Connect the RJ45 communication cable to the RJ45 COM port on the SolarFlow 2400 Pro.

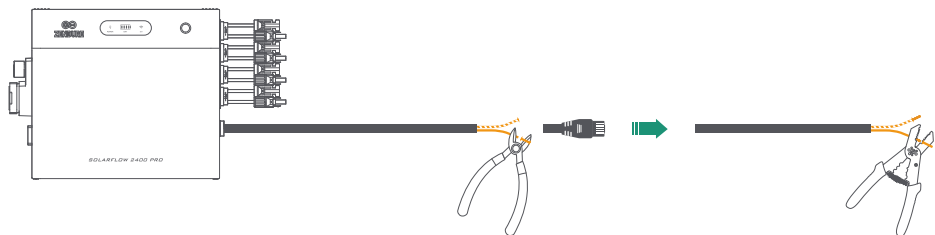


Remove the protective cap from the RJ45 COM port.

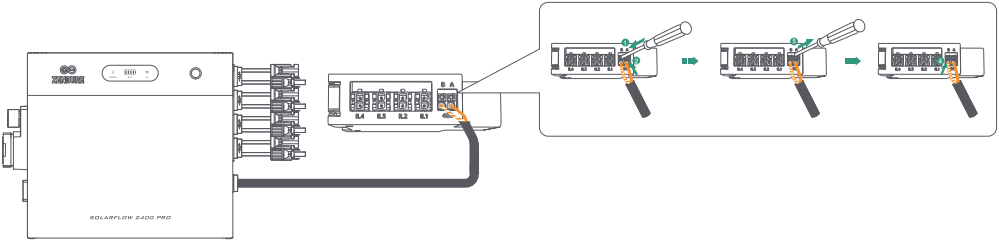
Insert the RJ45 connector firmly until you hear a "click".

3. Connect the RJ45 communication cable to the Zendure Smart Meter (3CT-S/1CT-S).

- Route the RJ45 communication cable from the SolarFlow 2400 Pro to the Smart Meter wiring area.
- Cut off the RJ45 connector and strip back the outer jacket. Separate the white-orange and orange conductors.
- Trim the unused conductors, ensuring that no bare wire is exposed. Fold them back into the cable jacket and secure them with insulating tape.



- Crimp the stripped white-orange wire and connect it to RS485 B on the Smart Meter.
- Crimp the stripped orange wire and connect it to RS485 A on the Smart Meter.

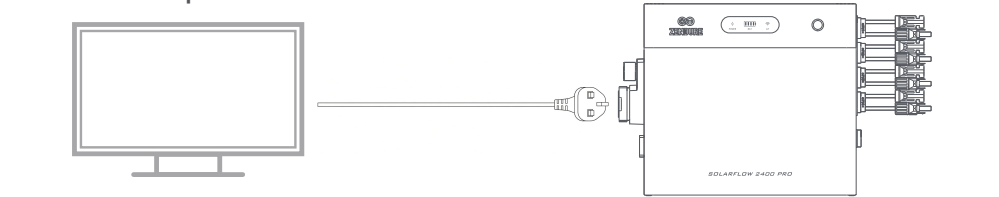


9. Off-Grid Power Socket Instructions

9.1 Function Overview

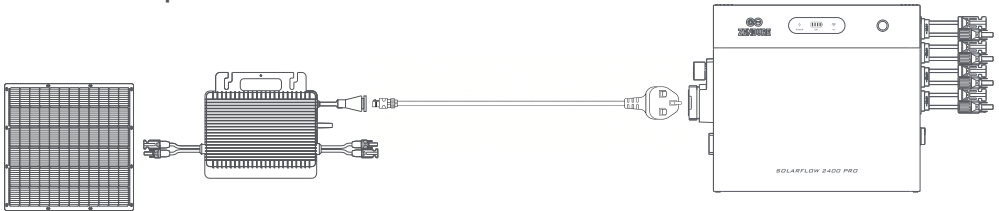
1. The off-grid AC port is bidirectional. It can supply power to loads from the battery or receive AC power from an external micro-inverter.
 2. The off-grid AC port supports both input and output in on-grid and off-grid modes.
 3. The off-grid AC port is disabled by default. Enable it in the Zendure APP before use and disable it when no longer needed.
- The off-grid AC socket is not waterproof while in use or when the cover is open. Indoor use is recommended. For outdoor use, keep the socket dry during operation and close the cover after use to prevent water ingress.

9.2 Off-Grid Output



- Output Power: 2900W Max
- In grid-tied mode, the off-grid AC port can supply loads of up to 2900 W, with the SolarFlow 2400 Pro providing up to its rated output and the remaining power supplied by the grid.
- Emergency Power Supply (Backup Switching)
- The loads connected to the off-grid AC port can be configured to use grid power without discharging the battery during normal operation. If a grid outage occurs, the system automatically switches to battery power and supplies up to 2400 W to keep the loads running.

9.3 Off-Grid Input



Connect a compatible third-party micro-inverter to the off-grid AC port to supply AC power to the system and charge the battery.

10. Zendure APP

10.1 Download

1. Scan the QR code
2. Go to Google Play and App Store to search for "Zendure" and download the Zendure App.



Android App



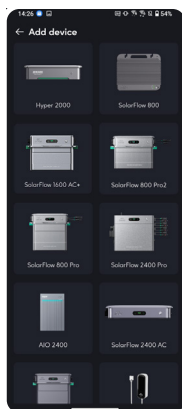
iOS App

10.2 Registration and Login

1. Open the Zendure App;
2. Follow the instructions to complete account registration and login;
3. If you wish to see the App forum section, please select "Germany" during registration.

10.3 Add SolarFlow 2400 Pro

1. After entering the App, click the "Add Device" button in the upper right corner;
2. After entering the Add Device section, the App will automatically search for nearby Zendure devices; if SolarFlow 2400 Pro is found, you can directly click to add it.
3. If it is not found automatically, you can swipe down to select SolarFlow 2400 Pro and follow the prompts to manually add it.
4. After the SolarFlow 2400 Pro is successfully added, the App will automatically guide you to create a Home Energy Management System (hereinafter referred to as HEMS). Follow the page prompts to complete its initialization settings, and it can be created successfully.



10.4 How to Use SolarFlow 2400 Pro

10.4.1 Charge/Discharge Status

- Charging: The battery is in charging status.
- Discharging: The battery is in discharging status.
- Standby: No input/output, device standby.
- Bypass: The battery is fully charged or charged to SOC limit or abnormal, and the solar energy directly supplies power to the home.

10.4.2 Energy Flow

Click to view the energy flow diagram.

10.4.3 Product Preview Image

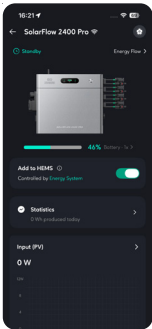
10.4.4 Total Remaining Battery Capacity

Displays the total remaining battery capacity; click to view the remaining capacity of different batteries

10.4.5 Add to HEMS Swith

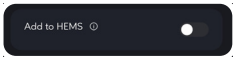
1. Turn on

When turned on, the device will be controlled by the HEMS. Manual control is not available, you can't use Ongrid Settings, Battery Setting, Grid-connected Standards and Power Distribution Strategy.



2. Turn off

When turned off, the device will be removed from system control. You can use all the manual settings.



3. Design Goals

- Avoid conflicts between the HEMS and manual control at the same time.
- You are able to adjust device settings by yourselves.

10.4.6 Device Real-time Monitoring

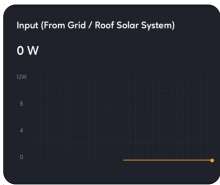
1. Input (From PV)

The real-time PV input power of SolarFlow 2400 Pro.



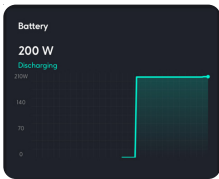
2. Input (From Grid/ Rooftop Solar System)

The real-time AC input power of SolarFlow 2400 Pro.



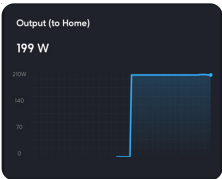
3. Battery

The battery pack as a whole, real-time data on discharge or charge power.



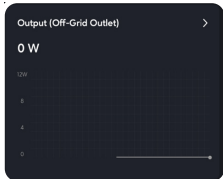
4. Output (AC outlet to home)

The real-time AC output power of SolarFlow 2400 Pro.



5. Output (Off-grid Outlet to load)

The real-time AC output power of SolarFlow 2400 Pro's off-grid outlet.



10.4.7 Device Setting

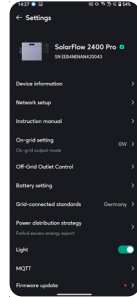
1. General Setting

- Device Information: More information.
- Network Setup: Reconfigure the network.
- Instruction Manual: digital version of the product manual.

2. Commom Setting

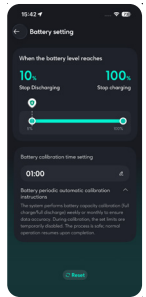
• On-grid Settings

- (1) On-grid input mode: Specify the AC charging power (constant power charging)
- (2) On-grid output mode: Specify the AC discharging power (constant power discharging)
- (3) Set the regulatory output limit power: The system will not exceed this safety output value in any working state, ensuring the safety of your home wiring.



• Off-Grid Outlet Control

- (1) Normal Mode: The Off-grid (AC) output port will never enter sleep mode and will continue to work continuously.This may lead to noload losses and waste battery power.
- (2) Eco Mode: If the Off-grid (AC) output port remains unloaded for 2 hours, it will enter sleep mode and stop working.
- (3) Off: Turn off the Off-grid (AC) output port.



• Battery Setting

Adjust the battery discharge limit and charging limit.
Set the time allowed for automatic battery calibration.

• Grid-connected Standards

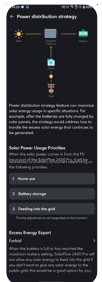
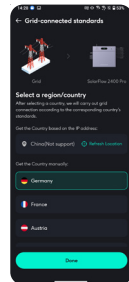
Select the national standard applicable to the equipment installation site. Once configured, the equipment will operate with voltage and frequency values that comply with the selected national standard.

• Power Distribution Strategy

Understand the priority of solar energy flow distribution within the system.

Set whether to allow excess energy export.

- Allow: After the battery is full, permit the solar power exceeding household demands to backfeed into the grid.
- Forbidden: After the battery is full, it doesn't permit solar power exceeding household demands to backfeed into the grid.



• Firmware update

Make sure your device has configured Wi-Fi and has a stable network connection. If there is an important update for the firmware of SolarFlow 2400 Pro, the app will guide you to through the process. Make sure your devices are on and connected to Wi-Fi before updating.



3. Remove Device

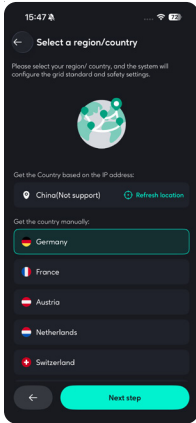
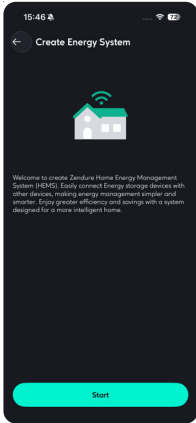
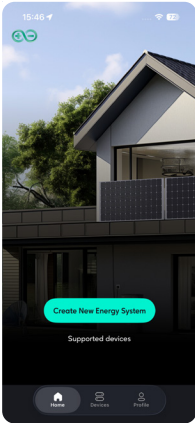
Remove the connection between the device and the App. If you need to control the device using the App again, you need to add the device again.

10.5 How to Use Home Energy Management System

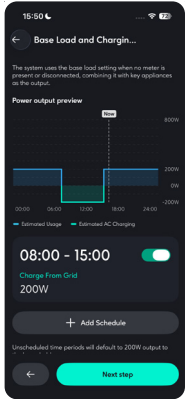
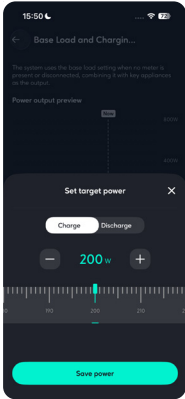
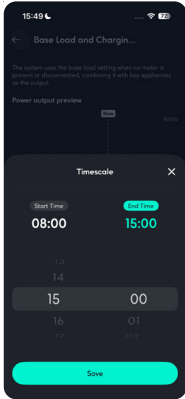
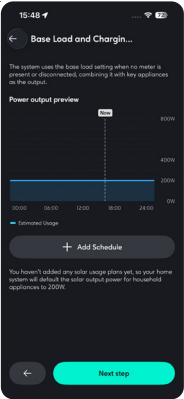
10.5.1 Create An Energy System

Create on the Home interface.

- 1. Create System: Click on "Create System".
- 2. Create Energy System: Read the system introduction, and click "Start" to enter the next interface.
- 3. Select a region/country: Follow the instructions to select the national standard for device installation in your country, and click "Next step" to enter the next interface.



- 4. Select Device: Select the device. To create a system, there must be an energy storage device. Click "Support Device" to view devices that support to be added into a system. If there are Meters or Plugs in your home, you can add them to the system synchronously. Click "Next step" to enter the next interface.
- 5. Safety Settings: Set the maximum output power and maximum input power allowed by the system to ensure that the system operates at a safe value. After completion, click "Next Step" to enter the next interface.
- 6. Base Load Settings: The charging and discharging power plan from 0:00 to 24:00. If the user does not set it, it will be a constant power output of 200W. When the system does not have a Smart Meter or Smart Appliances, it will input and output according to the power set by the basic load.

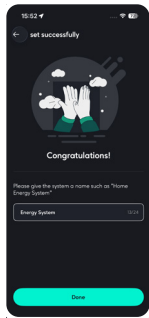


As shown in the figure, it is set to charge 200W from the grid from 08:00 to 15:00. If the system is not bound to a Smart Meter or Smart Appliances, the system will maintain a discharge action of 200W during the time period from 00:00 to 08:00, maintain a charge action of 200W during the time period from 08:00 to 15:00, and maintain a discharge action of 200W during the time period from 15:00 to 24:00.

7. Create System Successfully: System creation successful. You can rename your system and then use it.

- Create with SolarFlow 2400 Pro's initialization.

After successfully adding the SolarFlow 2400 Pro, you can complete the system creation through the device initialization guide.



10.5.2 System Status

1. Solar Panel

Display the power input from the solar panels within the system, and view the branch data.

2. Appliances

Display the type of electricity consumption data currently being used to control the output of the energy storage system.

As shown in the figure, the current system has not configured any sensors (Smart Appliances), the energy system automatically outputs according to the basic load plan. If the system is connected to a Smart Appliance, this will display the monitored values of the devices.

3. Device status

Display the energy storage devices within the current energy system, as well as their charging and discharging status. Click to view the detailed status of energy storage devices.

As shown in the figure, when the battery is fully discharged or fully charged, the battery will enter bypass mode, and the input energy from the solar panels will be directly output to the home.

If you want to allow the system to continue charging or discharging, you only need to go to the system settings and adjust the limit of battery charging and discharging according to your own usage needs.

4. Total Output / Input

The total discharge or charging power of all energy storage devices to the home.

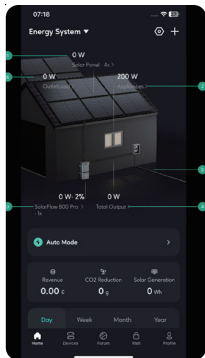
If the maximum safe value is reached, a "Max" mark will be displayed (as shown in the figure below). Clicking the "Max" mark can adjust the safe value.

5. Grid

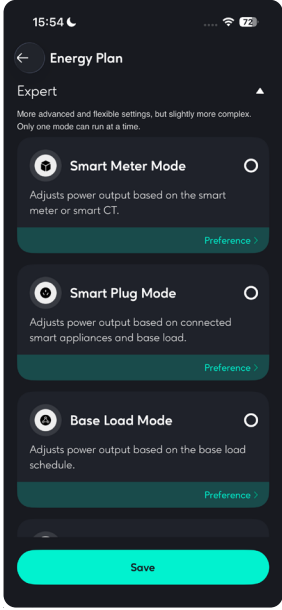
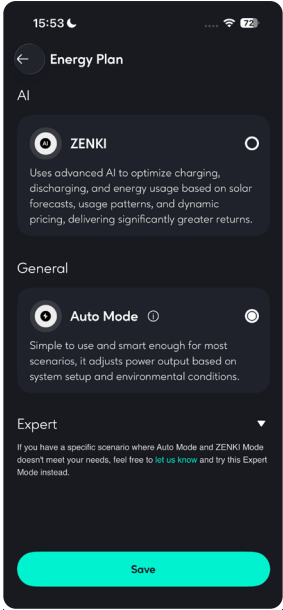
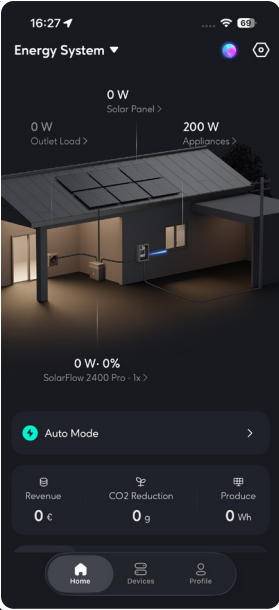
If a Smart Meter is installed in the system, the energy flow between the home and the grid can be detected here.

6. Outlet Load

If your device supports an off-grid outlet, the system will summarize the data of all devices with off-grid outlets here.



10.5.3 Energy Plan



- Zenki Mode

ZENKI is a core AI technology module in Zendure HEMS, and it is an intelligent energy forecasting, scheduling and optimization platform. It utilizes advanced AI algorithms (including large language models that will be integrated in the future) to accurately forecast and intelligently control the production, storage and consumption of energy, aiming to help users maximize the utilization rate of clean energy, reduce energy costs, improve energy efficiency and achieve more convenient energy management.

- Auto Mode

Auto Mode can automatically select the best operating strategy based on the device configuration within the system and electricity prices.

- If a Smart Meter is configured, the output of the energy storage device is dynamically controlled according to the real-time monitoring data of the Smart Meter.
- If there is no Smart Meter but a smart appliance is configured, the output of the energy storage device is dynamically controlled according to the real-time monitoring data of the smart plug.
- If there is neither a Smart Meter nor a smart plug, the output of the energy storage device is controlled according to the basic load plan.
- Priority: Smart Meter > Smart Plug > Basic Load Plan
- With dynamic electricity prices, the battery will discharge during high and normal electricity price periods, and charge during low electricity price periods.

If you need to quickly switch the system to a certain strategy, you just need to directly add or remove devices in the system settings, adjust the electricity price settings, and adjust the basic load curve.

- Expert Mode

More advanced and flexible settings.

- (1) Smart Meter Mode: System will adjust power output based on the smart meter or smart CT.
- (2) Smart Plug Mode: System will adjust power output based on connected smart appliances and base load.
- (3) Base Load Mode: System will adjust power output based on the base load schedule.
- (4) Electricity Price Mode: System will optimize energy usage by charging when electricity prices are low and discharging when prices are high.

10.5.4 Historical Data

The newly upgraded historical data section allows you to view the historical data of all devices within the entire system.

Available data to view:

- Solar energy: Data from your energy storage device(such as SolarFlow 2400 Pro).
- Battery charging and discharging: Data from your energy storage device (such as SolarFlow 2400 Pro).
- Household electricity usage: Data from your energy storage device (such as SolarFlow 2400 Pro).
- Grid: Data from your Smart Meter.



10.5.5 System Settings

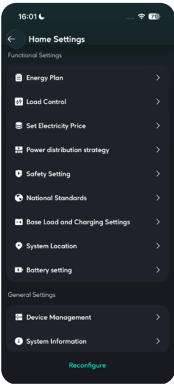
1. Functional Setting

- Energy Plan: Display the energy plan currently running in the energy system.
- Set Electricity Price
 - If you choose a fixed electricity price, you need to manually enter the price.
 - If you choose a dynamic electricity price, select the electricity price source according to your actual needs, set your expected high and low electricity price ranges, and the system will automatically discharge during high electricity price periods and charge during low electricity price periods (charging is limited by the maximum safe charging power).

- Power Distribution Strategy

Understand the priority of solar energy flow distribution within the system. Set whether to allow excess energy export.

- Allow: After the battery is full, permit solar power exceeding household demands to backfeed into the grid.
- Forbidden: After the battery is full, it doesn't permit solar power exceeding household demands to backfeed into the grid.

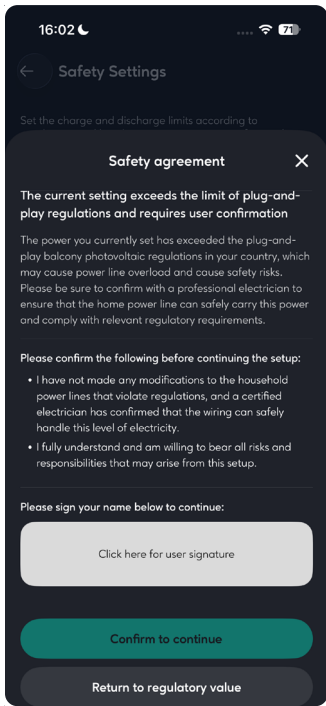


- Safety Setting

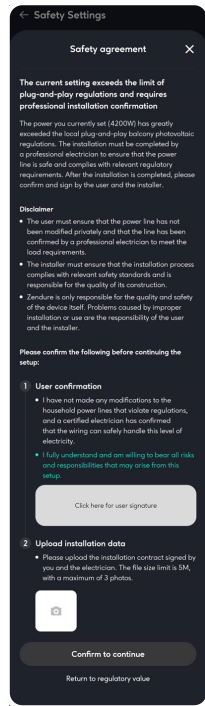
The total discharge and charging power of the system will not exceed this safe discharge power limit and safe charging power limit.

We have restricted the output power of HEMS. If higher power is required, users may set a power range of 0-2400W after signing a confirmation that the wiring safety check has been performed under electrician guidance.

- To use power above 2400W, follow the in-app instructions to complete the required steps.
- (1) User must ensure electrical circuits are unmodified and certified by an electrician
 - (2) User guarantees authenticity and completeness of uploaded electrician-signed contracts
 - (3) Zendure is only liable for device quality/safety. The user and the electrician they hire shall bear full responsibility and consequences for any power outages, personal injuries, or property damage resulting from non-compliance with installation standards, lack of qualifications of the electrician, or improper use.



When exceeding the limits of plug-and-play regulations



When exceeding 2400w

- National Standards
Select the national standard applicable to the equipment installation site. Once configured, the equipment will operate with voltage and frequency values that comply with the selected national standard.
- Base Load and Charging Settings
The charging and discharging power plan from 0:00 to 24:00. A maximum of 10 tasks can be set simultaneously.
- Battery Settings
Adjust all energy storage devices' battery discharge limit and charging limit.

- 2. General Setting
- Device Management

You can add or remove all devices within the system here.

When multiple energy storage devices are in operation, the exception handling logic is as follows: offline devices will actively shut down their output to 0W, and the remaining online devices will actively take over their target power.

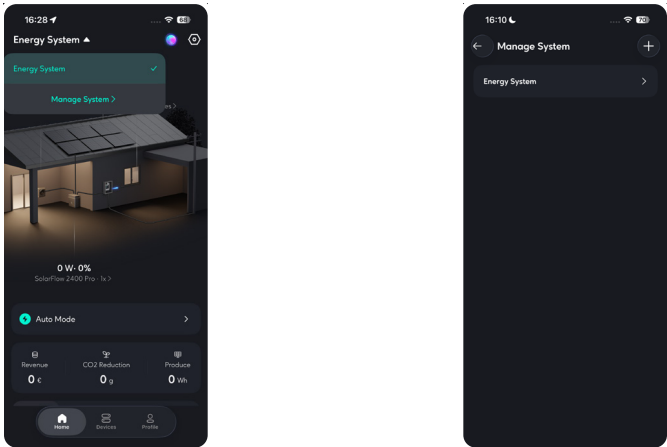
Multiple energy storage devices can be added, a maximum of one Smart Meter can be added, and multiple smart appliances can be added.

- System Information

You can modify the name of the energy storage system here.

10.5.6 System Management

This is where you can access all the home energy systems you can access, including those you created and those you joined as a member of someone else's creation.



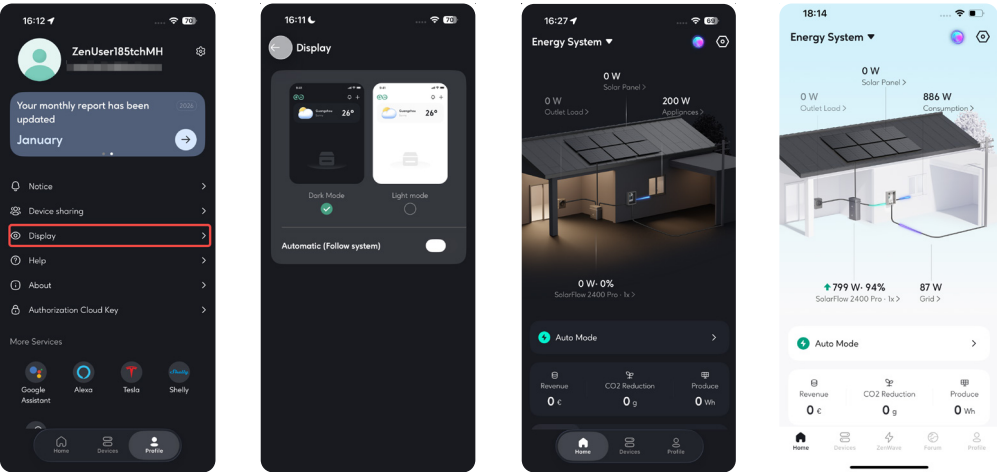
10.5.7 Exception Handling Logic

- 1. When an energy storage device is actively removed/deleted from the system by the user: the system operates with an output of 0W.
- 2. When there is an energy storage device offline, disconnected from the network, or disconnected from sensor communication within the energy system:
 - Online energy storage devices within the system: continue to operate according to the corresponding strategy (taking the offline device as a failed unit).
 - Offline energy storage devices within the system: shut down the output power and set it to output 0W.

10.6 More

Interface Style Switching

Click on Profile, select Display, and you can choose your preferred style to view the HEMS interface.



11. Maintenance

11.1 Disconnect the SolarFlow 2400 Pro

1. AC Power Cable:

- Disconnect the AC cable from the circuit breaker and PE busbar in the distribution board.
- Press the connector release on the SolarFlow 2400 Pro and disconnect the cable.

2. Use the supplied wrench to disconnect the solar panel connectors from the PV ports.

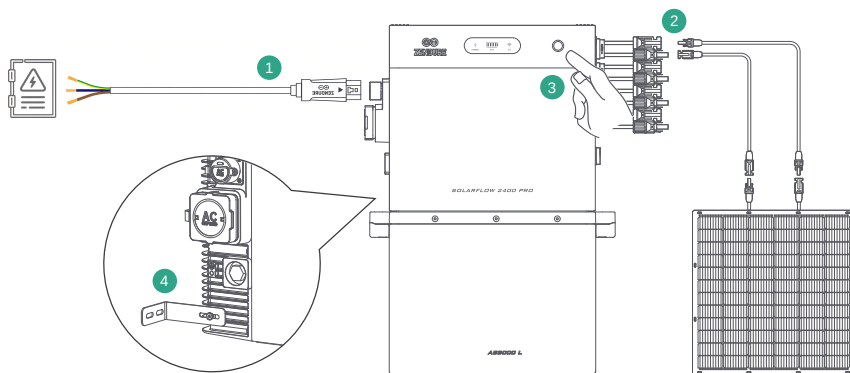
3. Power Off: Press and hold the power button on the SolarFlow 2400 Pro for 6 seconds to turn it off.

4. Remove the screws and brackets securing the SolarFlow 2400 Pro to the wall.

5. Lift the SolarFlow 2400 Pro off the add-on battery and remove the device.

6. Store the device indoors, away from direct sunlight and flammable materials, at an ambient temperature of -25°C to 65°C .

7. To minimize battery degradation during long-term storage, discharge the battery to 30% and recharge it to 60% every three months. If the battery level falls below 1% after use, recharge it to 60% before storage.



To the extent permitted by applicable laws and regulations, Zendure reserves the right to update this document and related product information, including warranty terms and eligibility for warranty service, in response to product updates. This document is subject to change without prior notice. For the latest product information, please visit Zendure's official website.



1. The Zendure APP is continuously updated and may change over time. In case of any differences, follow the in-app instructions.
2. The Zendure "Terms of Use and Privacy Policy" are available under User > About in the Zendure APP.



The Zendure APP provides real-time power monitoring, historical data, charge/discharge scheduling, and other energy management functions.

1. Scan the QR code or search for "Zendure" in the App Store or Google Play to download the APP.
2. Open the APP and log in or create an account.
3. Follow the in-app instructions to add the SolarFlow 2400 Pro.
4. Update the SolarFlow 2400 Pro firmware to the latest version before using.