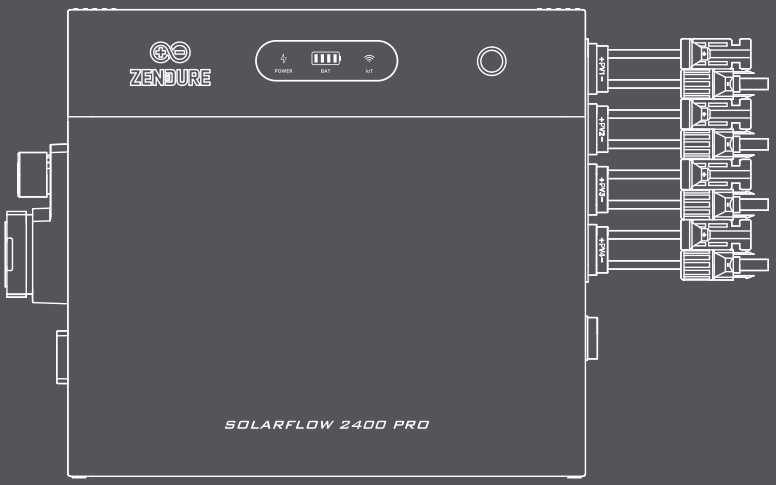
ZENDURE

The Global Pioneer of Plug-in HEMS



SolarFlow 2400 Pro

User Manual / Bedienungsanleitung / Manuel d'utilisation / Manuale d'uso / Manual de usuario / Gebruikershandleiding / Посібник користувача

EN

Disclaimer

Please read all safety guidelines, warnings, and other product information in this manual carefully, and read any labels or stickers attached to the product before using. Users are fully responsible for the safe usage and operation of this product. Make sure you are familiar with the relevant regulations in your area. It is your sole responsibility to ensure compliance with these regulations while using Zendure products.

Content

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1. SolarFlow 2400 Pro Specification

SolarFlow 2400 Pro Power Station	
Parameter	Specification
Model	ZDSF2400P
PV Input	
Max. PV Input Voltage	55 V d.c.
Max. PV Input Current	4*18 A d.c.
Max. PV Input Isc	4*22.5 A d.c.
Max. PV 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	3200 W
Max. AC Input Current	13.9 A a.c.
Off-grid Terminal	
Nominal Input/Output Voltage	230 V a.c.
Nominal Input/Output Frequency	50 Hz
Max. AC Output Power	3200 VA
Max. AC Output Current	13.9 A a.c
Max. AC Input Power	2400 VA
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	326 × 294 × 251 mm
Weight	27.8 kg
Bluetooth	Bluetooth 5.0 Frequency: 2402-2480 MHz
	Maximum Transmit: Power20.0 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. Please read all current documentation before installing, using, or servicing the product, as documentation may be updated over time.
2. Please check whether the product is damaged, cracked, leaking liquids, becoming hot, or exhibiting other abnormalities, and check any cables for damage before operating. If there are any problems, please stop using the product immediately and contact our customer service.
3. To ensure safe use of the product and maintain your warranty rights, please avoid the following improper operations: overcharging, over-discharging, using non-original accessories, or disassembling the product yourself. Damage caused by such improper use is not covered under warranty. For detailed disclaimer terms, please refer to https://eu.zendure.com/pages/warranty-policy.
4. Do not place heavy objects on top of the product.
5. Make sure all cords and plugs are intact and dry before connecting to avoid electric shock.
6. Do not install or operate the system under extreme climatic conditions such as lightning, snow, heavy rain, strong winds, etc.
7. To reduce the risk of injury, close supervision is necessary when the product is used near children.
8. Keep hands and fingers away from the product's internal components.
9. For safety purposes, please use only the original charger and cables designed for the equipment. We are not liable for damage caused by third-party equipment, and this may render your warranty invalid.
10. Maintain a minimum clearance of 50mm between the product and any surrounding objects.
11. During the operation of the solar energy system, avoid direct sunlight to prevent the product from overheating. Do not place the product near any heat source.
12. Please install the product according to our user manual to avoid damage to the product or injury to other people.
13. Do not use this product near strong static electricity or strong magnetic fields.
14. Do not place the equipment in an environment with flammable or explosive compounds, gas, or smoke. Since the product relies on the shell to dissipate heat, exposing the enclosure to excessive heat will lead to damage.
15. To reduce the risk of damage to the electric cords and connectors, pull the connectors rather than the cord when disconnecting the product.
16. Do not use the product over its output rating. Overloads may result in a risk of fire or injury to persons.
17. Do not use any products or accessories that are damaged or modified. Damaged or modified batteries may exhibit unpredictable behavior, resulting in fire, explosion, or risk of injury.
18. Do not operate the product with a damaged cord or plug, or a damaged output cable.
19. Do not disassemble the product. Take it to a qualified service person when service or repair is required. Incorrect reassembly may result in a risk of fire or electric shock.
20. Do not expose the product to fire or high temperatures.
21. Do not attempt to replace the internal components of the equipment by any unauthorized personnel. Have servicing performed by a qualified repair person using only identical replacement parts. This will ensure that the safety of the product is maintained.
22. The product cannot be immersed in liquids. If the product accidentally falls into the water during use, please place it in a safe and open area and stay away from it until it is completely dry. The dried product should not be used again and should be properly disposed of according to the disposal guidelines in this manual.
23. The product may feel warm when it's working. This is a normal operating condition and should not be a cause of concern.
24. To reduce the risk of electric shock, disconnect the solar photovoltaic panels, batteries, and home grid before attempting any instructed servicing.
25. When charging the battery, work in a well-ventilated area and do not restrict ventilation in any way, as inadequate ventilation may cause permanent damage to the equipment.
26. Do not clean the product with harmful chemicals or detergents. Only clean it with a dry cloth.
27. Do not move or shake the unit while operating, as vibrations and sudden impacts may lead to poor connections to the hardware inside.
28. Ensure that the product and the batteries are installed securely to avoid accidents and product damage caused by falling.
29. In case of a fire, only a dry powder fire extinguisher is suitable for this product.
30. Servicing of batteries should be performed or supervised by personnel knowledgeable about batteries and the required precautions.

2.2 Disposal Guide

1. Fully Discharge the Battery (if possible): Before disposal, ensure the battery is fully discharged. This can reduce potential hazards. Always refer to local laws and guidelines for battery recycling and disposal procedures.
2. Handling Failed Batteries: If the battery cannot be fully discharged due to malfunction or product failure, consult a licensed battery recycling facility or professional for proper and safe handling.
3. Segregation of Battery Types: Ensure batteries or cells from different electrochemical systems (e.g., lithium-ion, nickel-metal hydride) are disposed of separately. Mixing different types of batteries can lead to chemical reactions or safety risks.
4. Avoid Physical Damage: Do not expose the battery to physical impacts, punctures, or high temperatures during disposal, as it may lead to leakage, fire, or explosion.
5. Follow Local Regulations: Always adhere to local regulations and guidelines for battery disposal, as improper handling can harm the environment and violate legal requirements.

2.3 EC 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).
The full text of the Declaration of Conformity is available at the following web address:
https://zendure.de/pages/download-center

	**Declaration of conformity** The EU Declaration of Conformity can be requested at this address: https: //zendure.de/pages/download-center
	**Disposal and Recycling** Disposal of packaging: dispose of the packaging separately by type of material.
	Disposal of old equipment (applies in the European Union and other European countries with separate collection (waste collection) Old equipment must not be disposed of in household waste. Every consumer is legally obligated to dispose of old equipment that can no longer be used separately from household waste, for example at a collection point for recyclables. To ensure proper recycling and avoid negative impact on the environment, electronic devices must be taken to an appropriate collection site. For this reason, electronic devices are marked with the symbol shown to the left.
	Batteries and accumulators must not be disposed of in household waste. As a consumer, you are legally obligated to dispose of all batteries and accumulators, regardless of whether they contain pollutants or not, at a designated collection point. Marked with: Cd = Cadmium, Hg = Mercury, Pb = Lead. Discharge any built-in or accessory batteries before disposing.

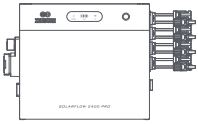
3. Symbols Used in This Guide

Symbol	Explanation
	A high-risk hazard that, if not avoided, could result in death or serious injury.
	Important information that you must pay attention to.
	Included with your product
	Optional (not included)
	Indicates additional information on correct use or useful tips.

4. Important Tips

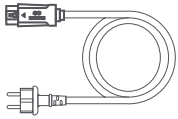
	Grid-tied Regulation: The system is grid-tied. Please check if it is allowed in your area.
	Protect from Direct Sunlight: Ensure that the SolarFlow 2400 Pro is placed in a shaded area to avoid rapid temperature increases that could affect performance.
	Accessory Check: Verify the necessary accessories prior to installation, as some may need to be purchased separately.
	Download the Zendure App: After installation, download the Zendure app to unlock additional smart features and remote control options.
	Grid Connection Time: Once installation and the initial startup are complete, allow approximately 1 minute for the SolarFlow 2400 pro to connect to the grid.
	Set Safe AC Output: Use the Zendure app to configure the AC output for home use. Ensure the output complies with your country or region's safety power limits to prevent overloads.
	Shutdown Procedure: Before removing the SolarFlow 2400 pro, press and hold the button for 6 seconds to turn off the device, and disconnect all power cables for safety.
	Optimal Operating Conditions: It is recommended to use this product in environments ranging from 15° C to 30° C, away from water, heat sources, or sharp objects that could cause damage.
	Long-Term Storage: For long-term storage, discharge the battery to 30% and recharge it to 60% every 3 months. If it drops below 1% after use, recharge it to 60% before storing. Prolonged low power can cause irreversible damage and shorten the battery's lifespan.
	No Disassembly: Do not attempt to disassemble the product. For repairs or servicing, consult official Zendure channels. Improper handling could pose risks of fire or personal injury.
	Low SOC Protection: The battery has a 5% discharge limit to prevent over-discharge and extend its lifespan.

5. What's in the Box



SolarFlow 2400 Pro *1

User Manual *1



3m 16A AC Power Cable *1

Mounting bracket kit *1

Wrench for Removing Solar Connector and AC Connector *1

Before unpacking, check the packaging for any damage (e.g., holes or cracks) . If damaged , do not unpack and contact Zendure service team immediately.
After unpacking, verify that all items are intact, complete. If anything is missing or damaged, contact customer service.

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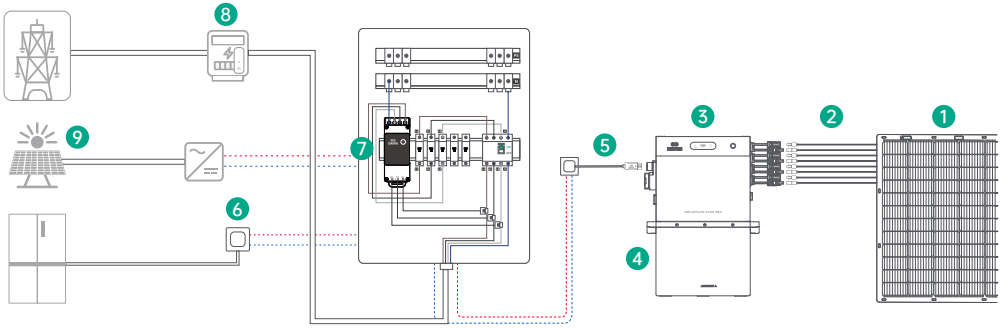
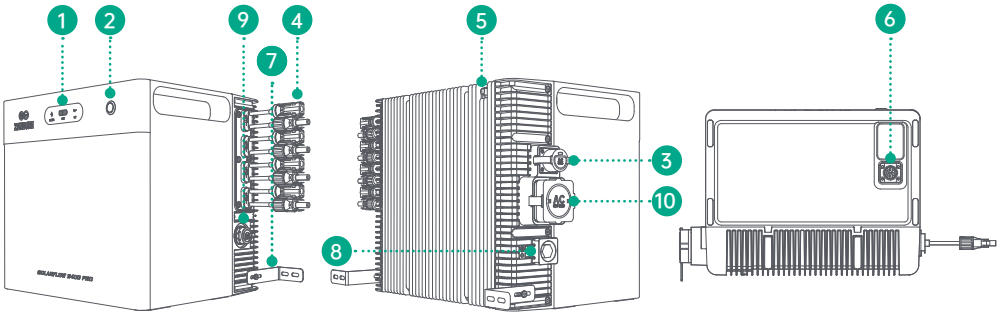
6. Overview

6.1 System Overview



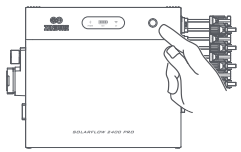
	Name	Description	Included/Not Included
1	Solar Panel	The SolarFlow 2400 Pro supports up to four sets of solar panels for efficient power generation.	
2	Solar Cables	Used to connect the SolarFlow 2400 Pro to the solar panels.	
3	SolarFlow 2400 Pro	Interconnects add - on batteries, and the household grid, ensuring efficient energy storage and seamless power conversion.	
4	Add-on Battery	Expandable batteries that store electricity for household use. The SolarFlow 2400 Pro can connect to up to 5 add - on batteries.	
5	AC Power Cable	Connects the SolarFlow 2400 Pro inverter to the household power socket.	
6	Zendure Smart Plug	Monitors device performance and wirelessly communicates with the SolarFlow 2400 Pro to optimize energy usage. Besides Zendure Smart Plug, third-party brands are also supported (see app in detail).	
7	Zendure Smart CT	Monitors household electricity consumption and wirelessly communicates with the SolarFlow 2400 Pro for energy optimization. Besides Zendure Smart CT, third-party brands are also supported (see app in detail).	
8	Meter Reader	Reads data directly from the household digital electricity meter and wirelessly communicates with the SolarFlow 2400 Pro for energy optimization. Serves as an alternative to the Zendure Smart Monitor CT. Besides meter reader, third - party brands are also supported(see app in detail).	
9	Rooftop PV System	The PV system AC couples with the Zendure storage system, not connected directly. Smart scheduling is achieved using the CT; the storage batttery charges with excess PV power and discharges when PV power is insufficient for household needs.	

6.2 Product Overview



1	LED Light Strip	LED indicators for battery status, power, and IoT connectivity.
2	Button	Front control button for system controls.
3	AC Port	AC input port for connecting to the AC power cable.
4	PV Port 1-4	Ports for connecting up to four sets of solar panels.
5	Antenna	Wireless communication antenna for system connectivity.
6	Battery Terminal	Port for connecting add-on batteries to the system.
7	Brackets	Mounting brackets for securing the system to a wall.
8	Pressure Relief Valve	Warning: Do not touch or loosen! This valve is for safety pressure relief. If loosened, it will affect the product's IP protection rating.
9	RJ45 Port	RJ45 communication interface used to connect to Zendure Smart CT(RS-485 version).
10	Off-grid AC Socket	AC socket for off-grid loads.

6.3 Button Controls

Button	Action	Function
	Press once (powered on)	LED indicator lights up to show remaining battery level or other operational statuses.
	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 Description	Detailed Explaination
	Solid Green	powered on and operating normally
	Blinking Green	The device is functioning normally, and the off-grid mode is active.
	Blinking Red	A device error has occurred. Please check the app for further details.
	Solid Green	Stable and normal Wi-Fi connection
	Blinking Green	Waiting to connect to Wi-Fi
	Blinking Red	Wi-Fi connection is lost
	Blinking Yellow	OTA update in progress.
	Solid Green	Battery is operating normally and connected. Battery status is indicated by 4 green LEDs: ● 1 Green LED: 0-25% battery ● 2 Green LEDs: 26-50% battery ● 3 Green LEDs: 51-75% battery ● 4 Green LEDs: 76-100% battery Example: At 60% battery level, three green LEDs will be illuminated.
	Blinking Green	Charging the Battery
	Slow Red Blink on First LED	Battery level below 5%.
	Solid Yellow	Indicates the battery level and the battery is in protection mode.
	Solid Red	Battery error detected; check the system for troubleshooting.
	Slow Yellow Blink	Low temperature detected; the battery pack is heating to reach operational temperature.

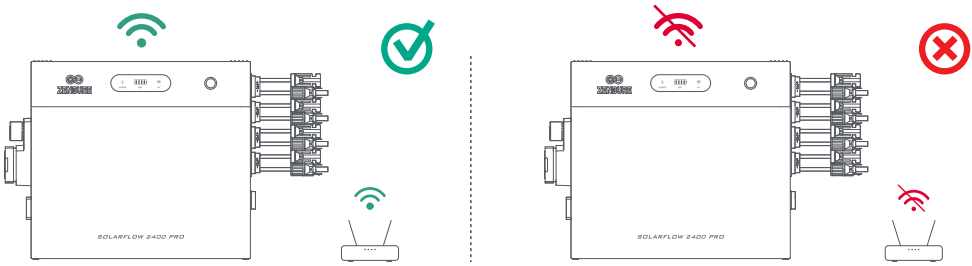
7. Installing the SolarFlow 2400 Pro

7.1 Before Assemble

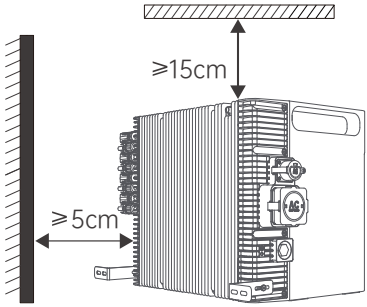
- This user guide only describes the cable connection method and assembly of the SolarFlow 2400 Pro system. To install solar modules, please read the instructions for the solar module and accessories.
- We recommend carrying out any solar-related setup on a sunny day, as it will be easier to assess the performance of your system and check for any issues.

7.2 Selecting a Location for the SolarFlow 2400 Pro

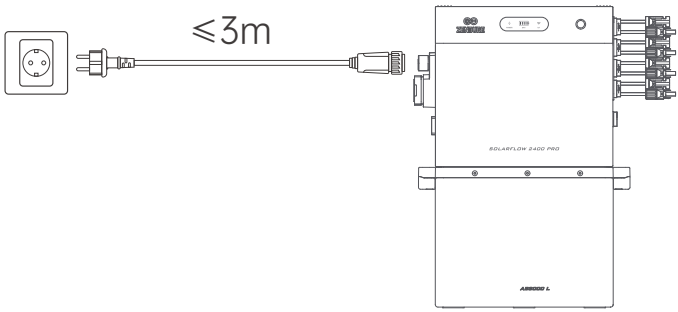
Make sure the Device is within the Wi-Fi coverage area.



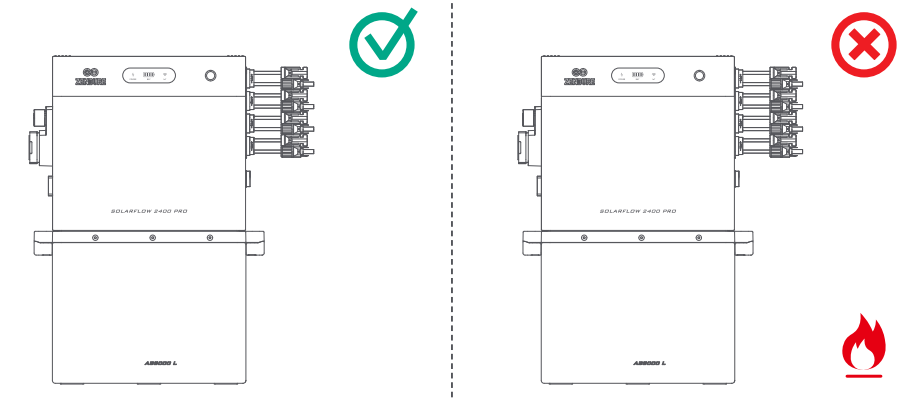
The antenna casing on the device needs to be at least 15cm away from the wall.
Maintain at least 5 cm of clearance around the top surface of the product, where the heat dissipation fins are located, to ensure proper ventilation, efficient heat dissipation, and reliable wireless communication.



Ensure that the SolarFlow 2400 Pro is installed within the length range of the solar panel cables and the 3m AC connection cable. Before making any connections, measure the distance and position the solar panels in the desired location.

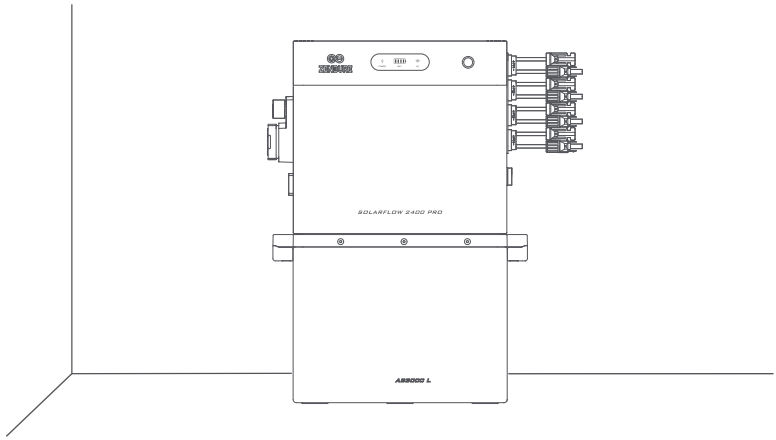


Do not place the device in an area where flammable or explosive materials are stored.

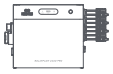


The SolarFlow 2400 Pro can be installed indoors or outdoors. Be sure the device is placed in area where it will not be subjected to direct sunlight or rain.

Place SolarFlow 2400 Pro on a solid, level surface.

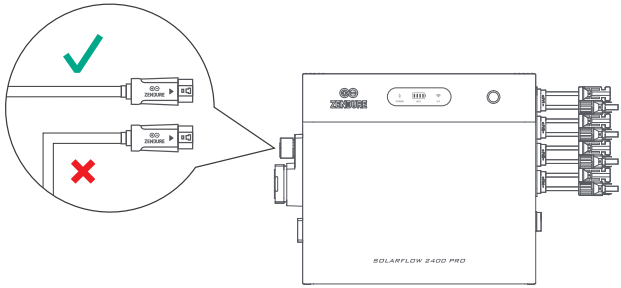


7.3 Assembly Process

Image	Name	Description	Included/Not Included
	SolarFlow 2400 Pro	The SolarFlow 2400 Pro supports up to 4 sets of solar modules and up to 5 additional add-on batteries.	
	3m 16A AC Cable	Used to connect the SolarFlow 2400 Pro to the grid.	
	AB1000/2000/3000L Series Batteries	Add-on batteries stacked beneath the SolarFlow 2400 Pro, storing solar energy for household use.	
	Solar Panels	The SolarFlow 2400 Pro connects to solar panels to generate power. It is recommended to connect between 400W and 900W of solar panels per pair of PV ports.	
	Solar Cables	Standard photovoltaic module cables used to connect solar panels to the SolarFlow 2400 Pro.	
	Solar Parallel Cable	Standard photovoltaic cables designed to connect two solar panels to a single pair of PV input.	

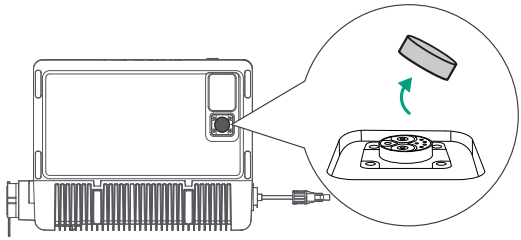
7.3.1 Cable Management

The SolarFlow 2400 Pro should be positioned such that the solar and AC cables can run straight down without significant bending.



7.3.2 Connect to the Add-on Batteries

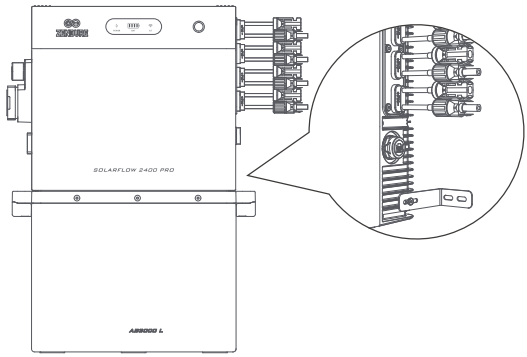
Remove the silicone protective cover from the battery terminals on the SolarFlow 2400 Pro and Add-on Batteries (sold separately).



Connect the Add-on Batteries to the SolarFlow 2400 Pro by stacking them underneath, ensuring the battery cable terminals lock into place.

A single SolarFlow 2400 Pro can be connected up to 5 AB1000/AB2000/AB3000L series batteries, which can maximumly reach to 16.8kWh capacity.

- Do not disconnect them during the charging/discharging process.
- Do not touch the metal pins of the ports with your hands or other objects. Gently clean them with a dry cloth when necessary.
- It is recommended to use the brackets and screws provided with the battery packs to securely fix the SolarFlow 2400 Pro on the top and ensure stability.



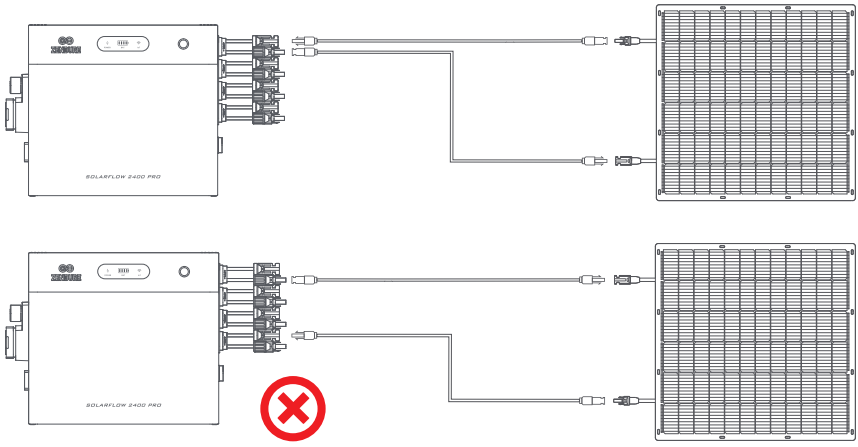
7.3.3 Connect to the Solar Panels

1. The SolarFlow 2400 Pro features four independent MPPTs, with each PV input operating as an isolated MPPT
   - Open Circuit Voltage (Voc): Must be below 55V per PV input.
   - Short Circuit Current (Isc): Must be below 22.5A per PV input.
   - Recommended Power Range: Each PV input supports solar panels rated between 400W and 900W.
2. For optimal inverter efficiency, it is recommended to use a solar cable that is 3 meters or shorter. This ensures reduced energy loss during transmission.

(1) Connect one solar panel to the SolarFlow 2400 Pro

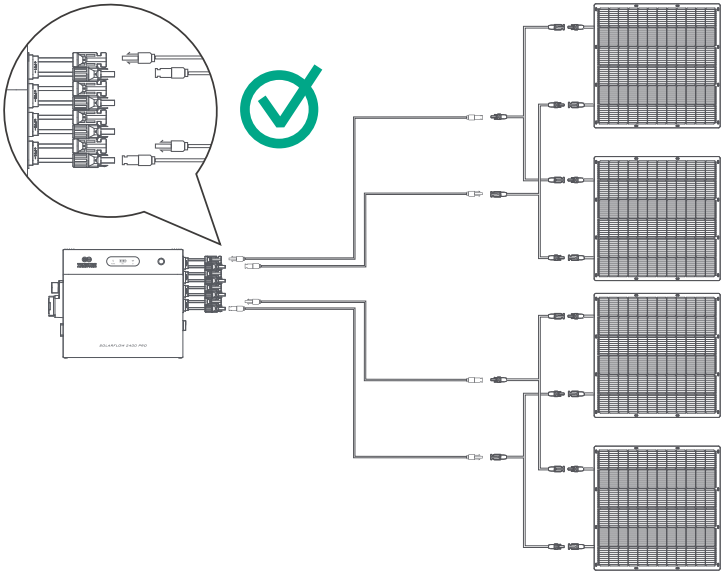
Ensure you measure the distance and install the solar panels in the desired location before connecting them to the SolarFlow 2400 Pro.

- The positive and negative terminals of a single solar panel must be connected to the same PV port.

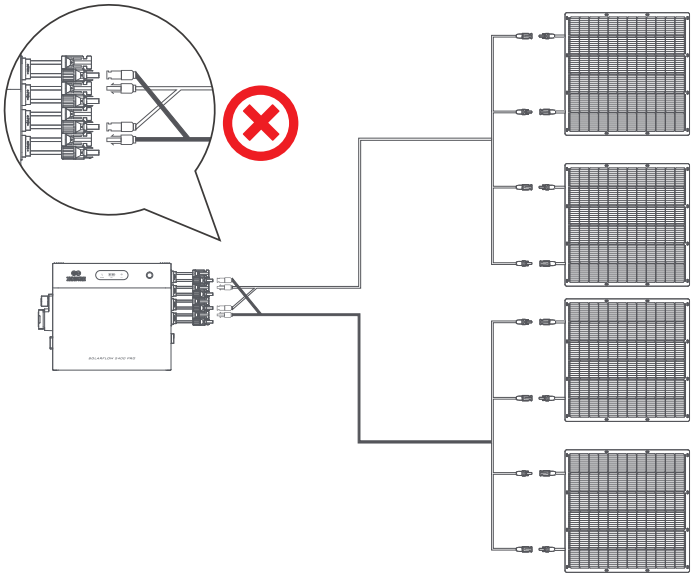


(2) Connecting Solar Panels in Parallel

- Ensure the combined Voc (open circuit voltage) of the panels connected to a single PV input is below 55V.
- The total current for a single PV input must not exceed Isc (short circuit current) 22.5A.

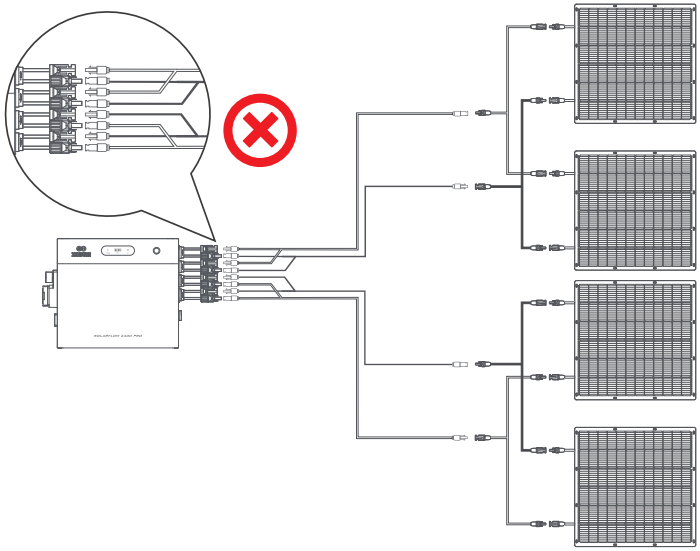


The positive and negative terminals of the same solar panel must be connected to the corresponding positive and negative terminals of the same PV input to ensure proper electrical flow and system functionality. Do not connect panels across different PV Inputs.
We are not liable for any damages resulting from improper connections.



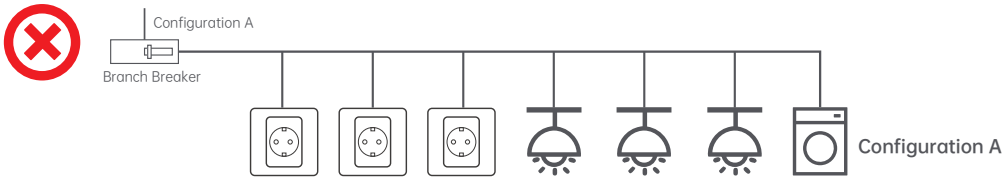
(3) PV Cross-Source Error

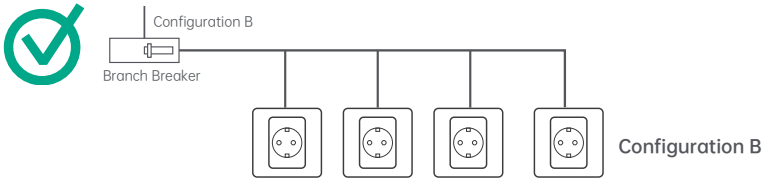
The SolarFlow 2400 Pro has four independent PV ports, each linked to its own MPPT. The connection method illustrated in the diagram incorrectly parallels two originally independent PV ports. This wiring approach can create a PV cross-source issue, resulting in uneven power distribution between the ports and potentially damaging the product.



7.3.4 Connect to the Grid

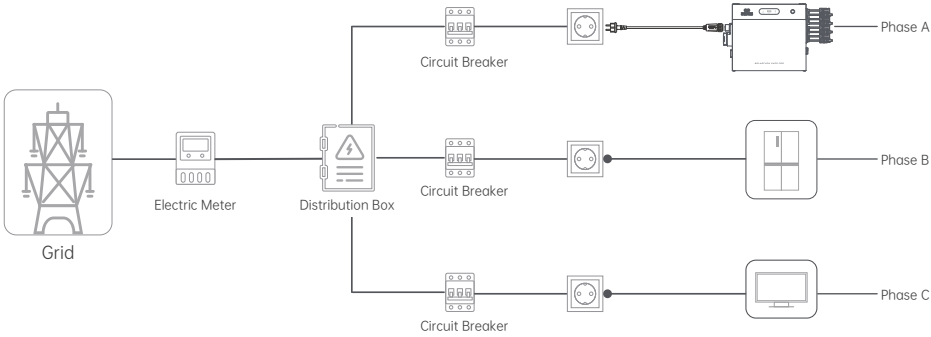
With the device installed on a dedicated circuit, it shall serve as the sole power source other than the utility. The dedicated circuit shall not be shared with any other sources or utilization equipment, except equipment connected downstream of the device.





Configuration A isn't recommended because it can serve multiple loads—including lighting and high-power appliances (e.g., dishwashers and washing machines). Configuration B is preferred because it is a dedicated circuit with no connected loads—the outlets are intentionally left unused.

The inverter is set to a default output power limit of 800W. If you need to exceed this limit, please have a licensed electrician visit your location to assess the safety of your circuit and ensure it complies with safety standards. After the electrician's verification, you can apply to increase the power to 2400W via the Zendure App.

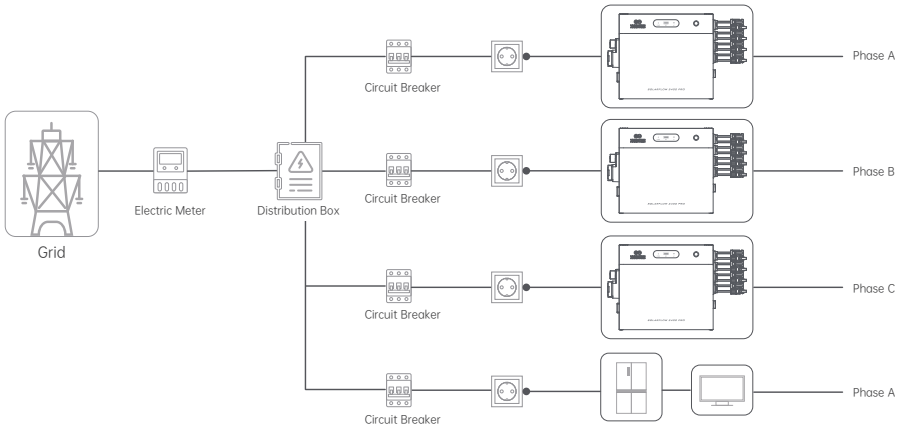


7.4 Installing Multiple SolarFlow 2400 Pro Sets

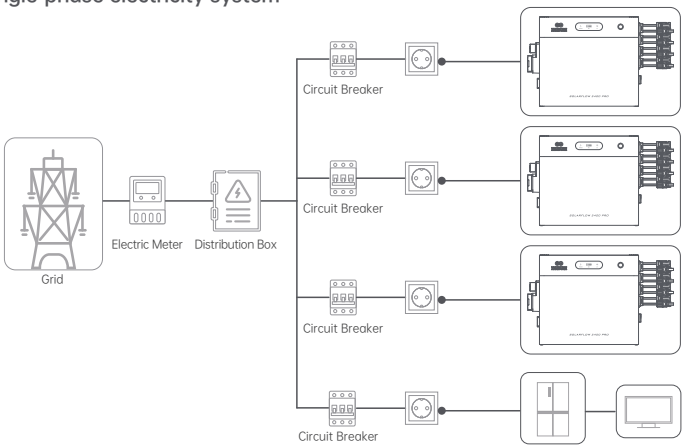
1. Each device's peak power can reach 2400W. Connecting multiple devices to the same circuit can cause the circuit to overload, leading to potential safety risks.
2. If your home does not have the required sockets and circuits, or if you lack the electrical knowledge to accurately identify whether these sockets or circuits meet the requirements, please request the assistance of an electrician. It is recommended to connect each devicer directly to a separate breaker. For detailed instructions, refer to section 7.5.
3. The total maximum output power of all devices is set to a default of 800W.
4. If you need to exceed this limit, please invite an electrician to your home to ensure your wiring is safe and does not exceed the circuit load, or follow the installation guidelines in section 7.5 to connect each device directly to the breaker. Then you can apply to increase the power via the Zendure App.

- For Three-Phase Power: Connect each inverter to a socket on a dedicated circuit for each phase, ensuring no other appliances share the same circuit.
- For Single-Phase Power: Connect the inverter to a socket on the dedicated circuit, without any other appliances sharing the same circuit.
- Press and hold the button for 2 seconds to power on each inverter.

Installation in three-phase electricity system



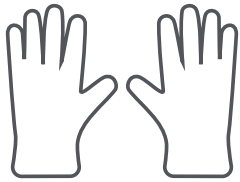
Installation in single-phase electricity system



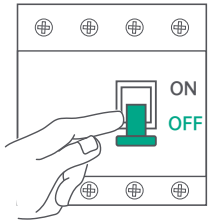
7.5 Connect to the Grid via a Circuit Breaker. (Optional)

⚠ Please Note: This installation must be performed by a certified electrician to avoid risks of electric shock, fire, or other hazards.

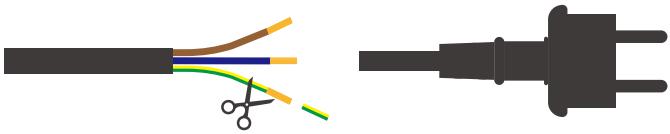
1. Put on Insulating gloves(Note: Gloves are not included and must be provided by the electrician or user.)



2. Turn off circuit protection switches to avoid electric shock risk, ensure the circuit breaker is turned off before starting the installation. Verify that there is no voltage at the terminals using a multimeter. Only proceed with the installation after confirming the absence of voltage.

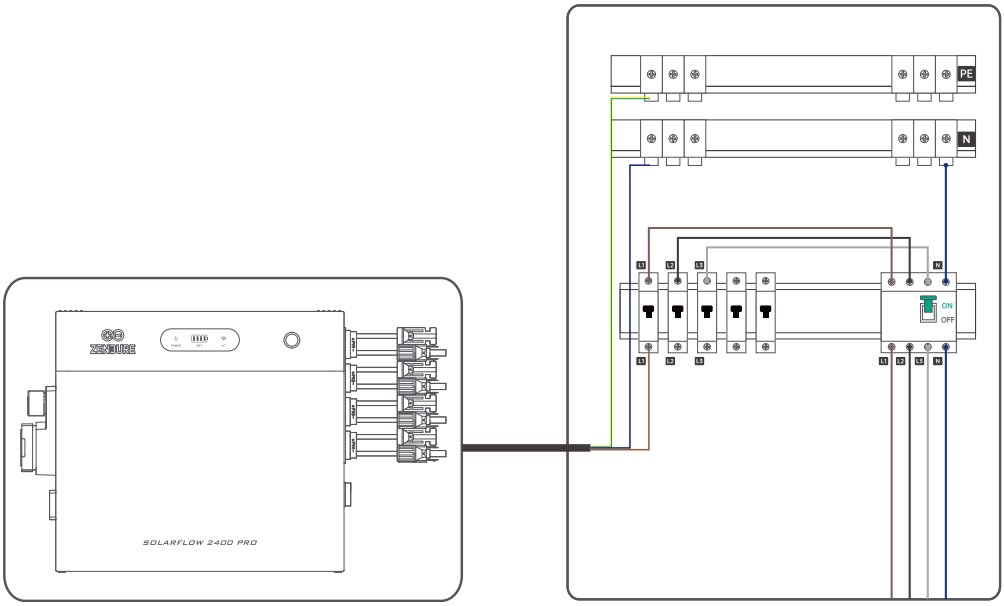


3. Cut off the plug of the AC cable and strip the insulation from the three wires to expose the copper.

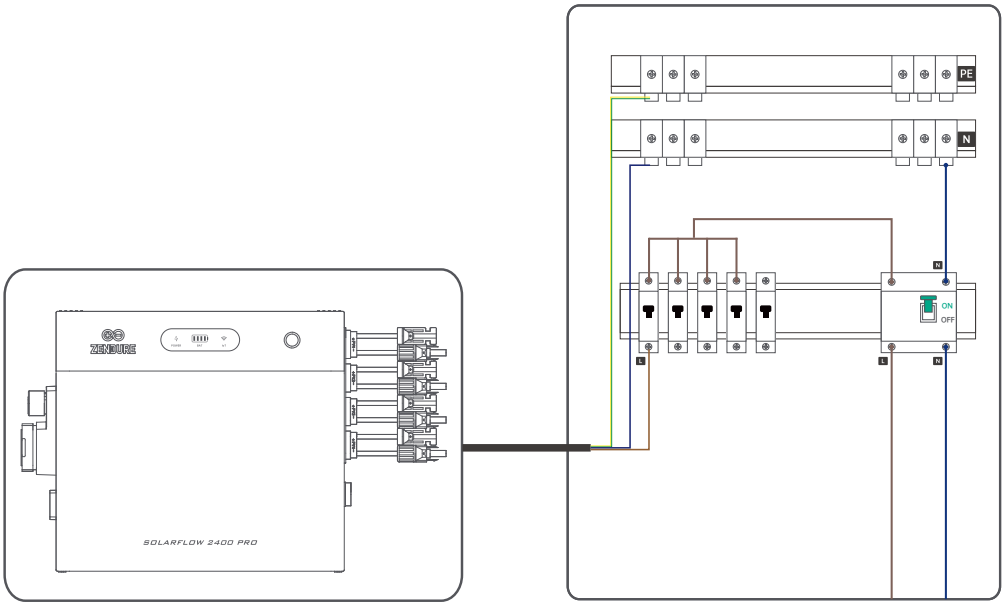


4. Connect the power cable to the electrical panel:
(1) Connect the live wire to an available circuit breaker.
(2) Connect the neutral wire and ground wire to the neutral and ground bars in the household panel, respectively

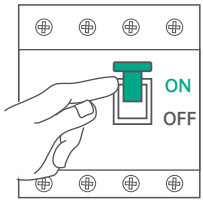
Three-phase power household installation diagram

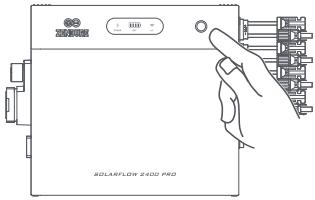


Single-phase power household installation diagra



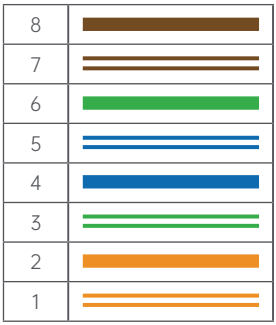
5. Power On
(1) Check that all connections are safe and error-free before powering up the device.
(2) Turn on the main circuit breaker of your home electrical system.
(3) Press and hold the button on the SolarFlow 2400 Pro for 2 seconds to power on.

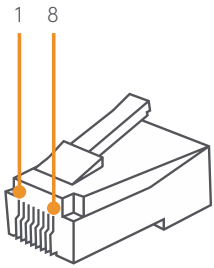


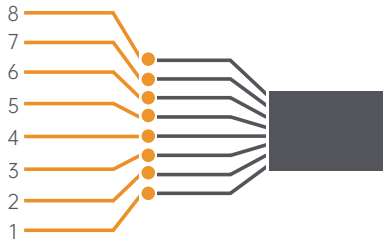


8. RJ45 Communication Port Wiring (Optional)

8.1 Pin Definitions







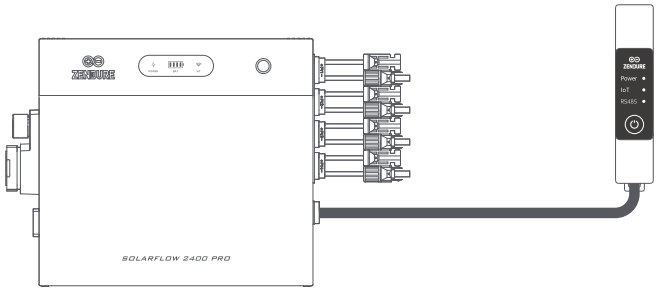
⚠ Note:
- Crimp the RJ45 plug and wire it according to the pin definitions above (EIA/TIA-568B pin order shown).
- RS485 A (Pin 1) and RS485 B (Pin 2) must be carried on the same twisted pair.
- This is NOT an Ethernet port. Do not connect it to a network switch, router, or PoE equipment.

The RJ45 plug shown in the figure follows the T568B pin order.

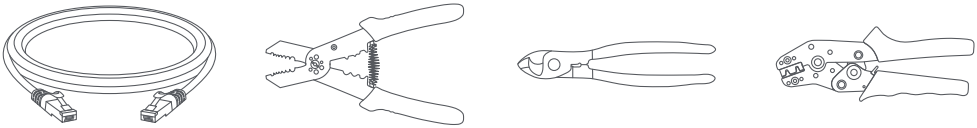
Pin Number	Definition	Function
1	RS485 B	RS485 communication (for Zendure Smart CT)
2	RS485 A	
3	N.C.	N/A
4	N.C.	N/A
5	DI1	Reserved digital input (dry contact)
6	DI2	
7	N.C.	N/A
8	N.C.	N/A

EN

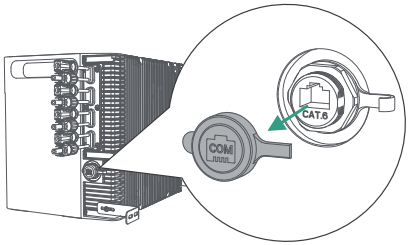
8.2 Connect SF2400 Pro with the Smart Meter 3CT-S/1CT-S (Optional)



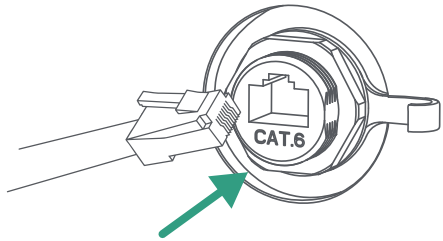
1. Preparation: One RJ45 Ethernet cable (STP - Shielded Twisted Pair), a wire stripper, a wire cutter, and a crimping tool.



2. Connect the RJ45 Ethernet cable to the inverter-side RJ45 port (SF2400 Pro).

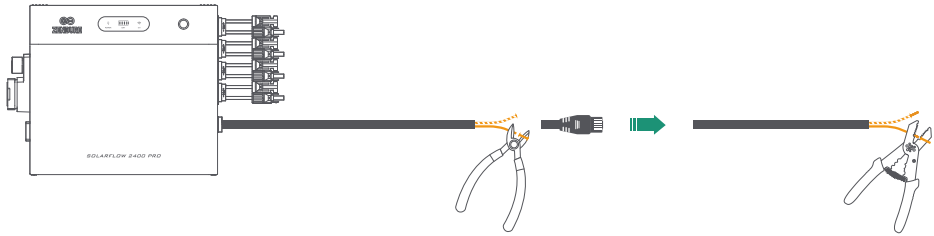


Remove the protective cap from the RJ45 port on SolarFLow 2400 Pro.

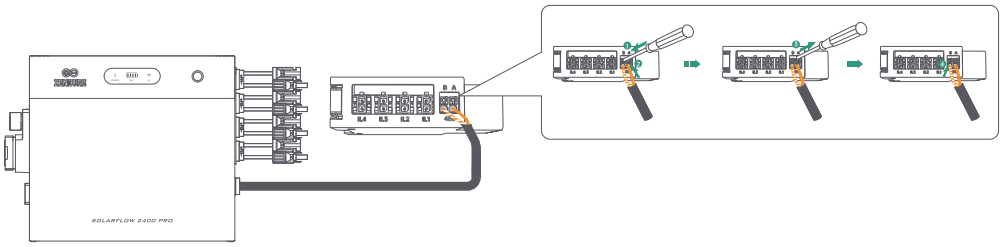


Insert the RJ45 connector firmly until you hear a "click"

3. Connect the RJ45 Ethernet cable to the Zendure Smart CT (3CT-S/1CT-S).
- Route the RJ45 communication cable from the inverter to the Smart Meter wiring area.
- Cut off the RJ45 plug and strip the outer jacket of the cable. Carefully separate and pull out the white-orange and orange conductors.
- Trim unused wires and ensure no bare conductor is exposed. Tuck the unused conductors back into the cable jacket and secure with insulation tape.



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



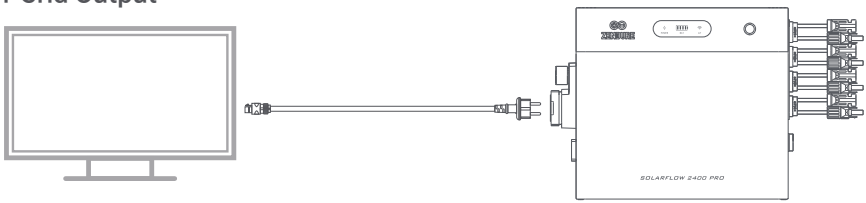
9. Off-Grid Power Socket Usage Instructions

9.1 Function Overview

1. The Off-Grid AC port is bidirectional. It can supply power to loads from the battery system, and it can also accept AC input from an external PV inverter.
2. This port is available for input and output whether SolarFlow 2400 is in grid-tied mode or off-grid mode.
3. The Off-Grid AC port is disabled by default. Enable it in the Zendure App before use. After use, please disable the function in the App.

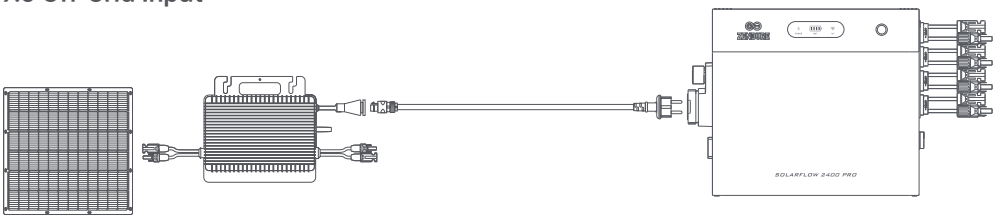
• Waterproofing: The socket is not waterproof during use, or when the cover is not fully closed. Indoor installation is recommended. For outdoor use, The off-grid socket is not waterproof during operation; Use only in dry conditions and close the cover immediately after use to prevent water ingress, electric shock, fire, or device damage.

9.2 Off-Grid Output



• Output Power: 3200W Max
SolarFlow 2400 provides 2400 W continuous output, 3600W for up to 200 ms. When the system is grid-tied, it can power loads demanding 3200 W: SolarFlow 2400 supplies up to its rated output, and any additional power required is automatically drawn from the household grid.
• Emergency Power Supply (Backup Switching)
It can configure the loads connected to the Off-Grid AC port to be supplied by the household grid only, without battery discharge during operation. If a grid outage occurs, the system switches to battery power, supplying the load up to 2400W max, to keep it operating.

9.3 Off-Grid Input



The off-grid socket supports AC input from an external inverter, allowing it to charge the SolarFlow 2400 Pro. Ensure the inverter's output parameters fall within the allowable range of the SolarFlow 2400 Pro.

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 Swicth

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.

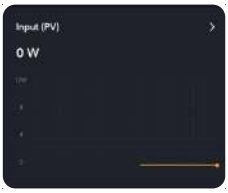
3. Design Goals

- 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

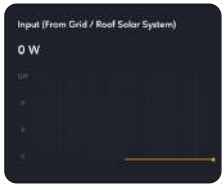
1. Input (From PV)

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.

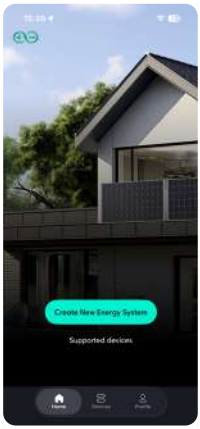
3. Remove Device
Remove the connection between the device and the App. If you need to control the device using the App again, you need to add the device again.

10.5 How to Use Home Energy Management System

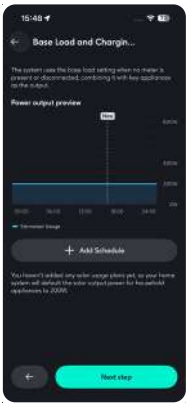
10.5.1 Create An Energy System

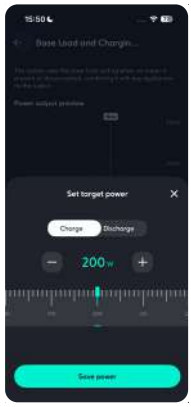
Create on the Home interface.

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

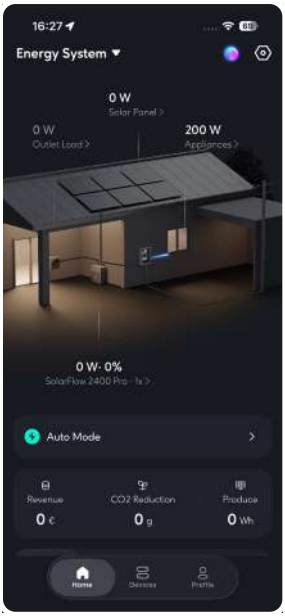
If a Smart Meter is installed in the system, the energy flow between the home and the grid can be detected here.

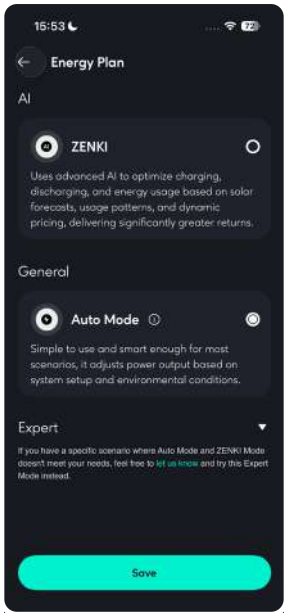
6. Outlet Load

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

Max

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.

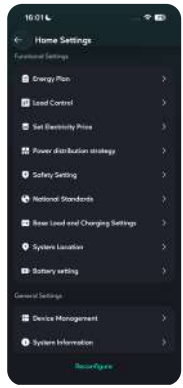
• Expert Mode
More advanced and flexible settings.
(1) Smart Meter Mode: System will adjust power output based on the smart meter or smart CT.
(2) Smart Plug Mode: System will adjust power output based on connected smart appliances and base load.
(3) Base Load Mode: System will adjust power output based 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.

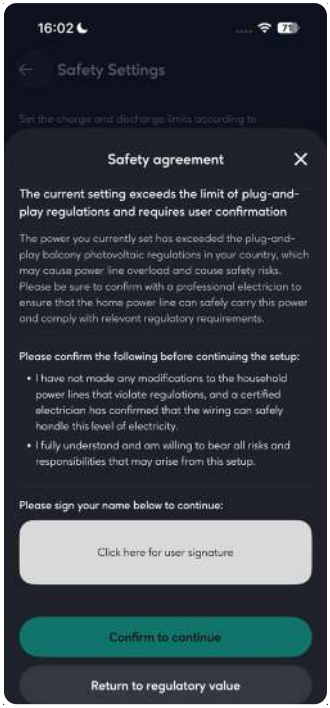
- Safety Setting

The total discharge and charging power of the system will not exceed this safe discharge power limit and safe charging power limit.
To comply with plug-and-play regulations in different countries, 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. The power limits under plug-and-play regulations for each country are as follows:

Country	The Power Limits Under Plug-and-Play Regulations
Germany	800W
France	900W
Belgium	800W
the Netherlands	800W
Italy	350W
Austria	800W
Switzerland	600W

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

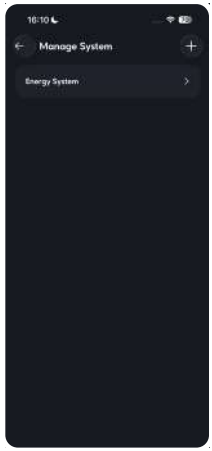
When exceeding 2400w

• 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

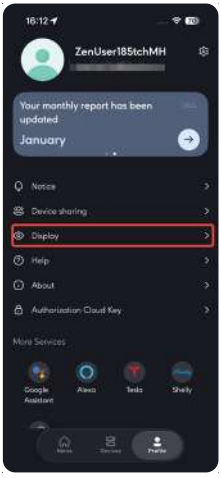
1. When an energy storage device is actively removed/deleted from the system by the user: the system operates with an output of 0W.
2. When there is an energy storage device offline, disconnected from the network, or disconnected from sensor communication within the energy system:

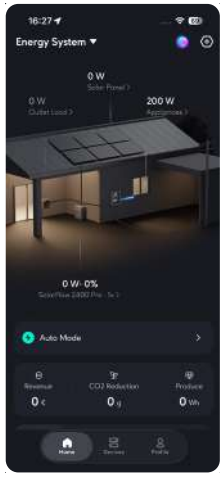
- Online energy storage devices within the system: continue to operate according to the corresponding strategy (taking the offline device as a failed unit).
- Offline energy storage devices within the system: shut down the output power and set it to output 0W.

10.6 More

Interface Style Switching

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

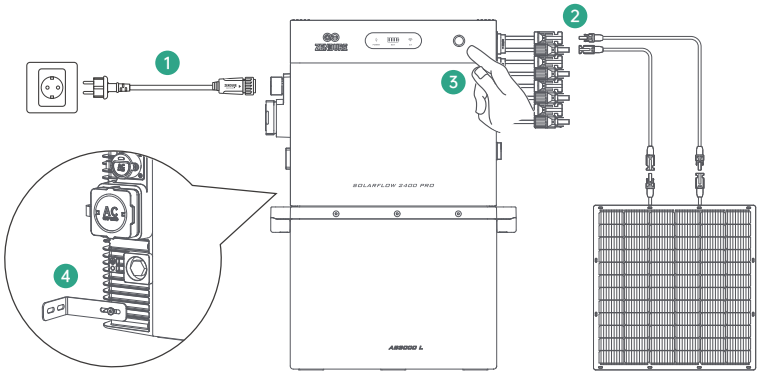




11. Maintenance

11.1 Disconnection of SolarFlow 2400 Pro

1. AC Power Cable Disconnection:
   • Unplug the AC cable from the AC outlet first.
   • Press the AC connector release on the SolarFlow 2400 Pro and pull out the cable.
2. Solar Panel Cable Removal: Solar Panel Cable Removal: Use the disconnection Wrench included in the package to safely unplug the solar cable connectors from the PV inputs.
3. Power Off: Press and hold the power button on the SolarFlow 2400 Pro for 6 seconds to turn it off.
4. Brackets Removal: Unscrew and detach the brackets securing the SolarFlow 2400 Pro set to the wall.
5. Battery Disconnection: Disconnect the the product to the Add-on Battery, by lift and removing SolarFlow 2400 Pro Unit.
6. Store the product indoors, away from direct sunlight and flammable materials, with a temperature range of -25° C to 65° C.
7. To prevent battery degradation during long-term storage, the battery must be discharged to 30% and recharged to 60% every three months. If the charge level drops below 1% after use, the battery must be recharged to 60% prior to storage.



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2. Privacy Policy: By using Zendure Products, Applications and Services, you consent to the Zendure Terms of Use and Privacy Policy, which you can access via the "About" section of the "User" page in the Zendure app.

Available on the App Store

Get it on Google play

The Zendure app allows users to monitor and manage power systems, offering real-time power monitoring, historical records, charge/discharge scheduling, and more.

1. To download the Zendure app, scan the QR code or search “Zendure” in the Apple App Store® or Google Play Store.
2. Open the Zendure app. Log In or sign up.
3. Follow the in-app instructions to add your SolarFlow 2400 Pro Power Station.
4. Please update the firmware to the latest version in the settings before using.