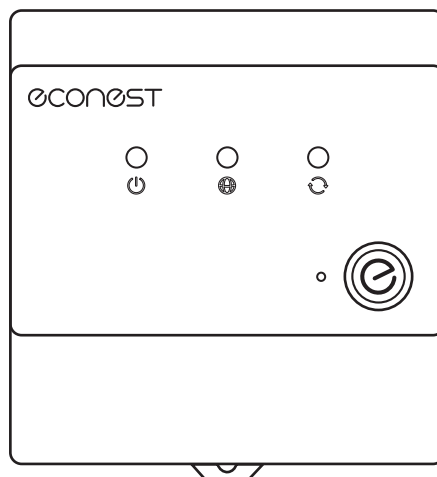


## Home Electricity Monitor

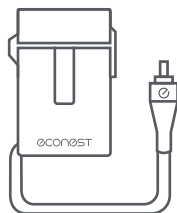


ecoMain

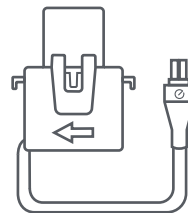
## What's in the box?



ecoMain



ecoSensor(30A) × 5



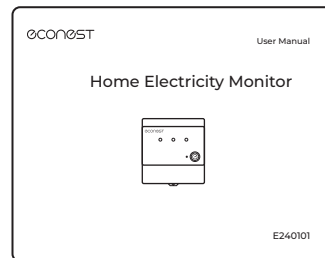
ecoSensor(100A) × 3



Antenna



Power Cord

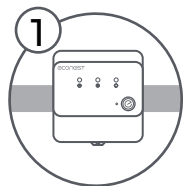


User Manual

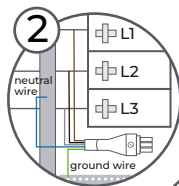


## How to install it?

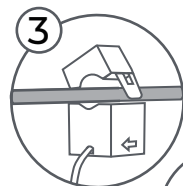
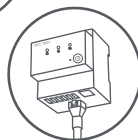
Open the electric panel and make sure that the main circuit breaker is turned off before installation.



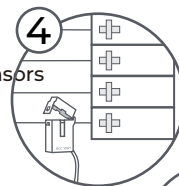
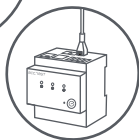
Mount the ecoMain onto the DIN rail.



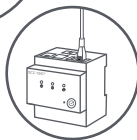
Connect one end of the power cable to the ecoMain and the other end to the incoming power supply.



Clamp the 100A ecoSensors onto the main circuits.



Install 30A ecoSensors onto the branch circuits.



## Get the App

Please go to the App Store, Google Play or the official website [www.eco-nest.net](http://www.eco-nest.net) to search for "econest" and download it safely.

## Join the community

Join our community and unlock exclusive resources.



Attention! There is a risk of electric shock during the installation of this product. Ensure that you turn off the main circuit breaker before installation.

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## User Notice

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Thank you for choosing the ecoMain home electricity monitor from econest.

Read this manual carefully before using it, and retain it for future reference.

Illustrations of the product, the accessories, and the user interface in the user manual are for reference only. Actual product and functions may vary due to product enhancements.

## Regulatory Compliance

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All products bearing this symbol are waste electrical and electronic equipment (WEEE as in directive 2012/19/EU) which should not be mixed with unsorted household waste. Instead, you should protect human health and the environment by handing over your waste equipment to a designated collection point for the recycling of waste electrical and electronic equipment, appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. Please contact the installer or local authorities for more information about the location as well as terms and conditions of such collection points.



This product complies with the relevant regulations, such as the Electromagnetic Compatibility Directive (CE RED: EN IEC 61326-1:2021, EN IEC 61000-3-2:2019+A1+A2, EN 61000-3-3:2013+A1+A2, EN 301 489-1 V2.2.3, EN 301 489-17 V3.2.4, EN 300 328 V2.2.2, EN IEC 62311:2020, EN 62479:2010, EN 61010-1:2010+A1, EN IEC 61010-2-030:2021+A11) and the Low Voltage Directive (LVD, EN 61010-1:2010+A1 and EN IEC 61010-2-030:2021+A11:2021), and has obtained CE certification. Users should follow the instructions in this manual for proper use of the product to ensure it continues to meet CE certification safety and performance standards during operation. econest is not liable for any non-compliance with CE certification requirements or safety issues arising from improper use of the product. To maintain compliance with the RF exposure requirement, a separation distance of 20 cm between the device and the human should be maintained.



NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:



- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.



This product has been UL certified. To ensure the product continues to comply with UL certification safety standards, please follow the instructions in this manual for proper operation and maintenance. Econest will not be held responsible for any direct or indirect liabilities resulting from safety incidents or failure to meet certification requirements due to non-compliance with the usage instructions.



This is a safety warning symbol. It is used to alert you to potential risks of personal injury. Please follow all safety instructions accompanying this symbol to avoid possible injury or death. "Warning" indicates a hazardous situation that, if not avoided, could result in death or serious injury. econest requires the monitor to be installed in the household distribution panel and to operate in an environment with hazardous voltages that could lead to injury or death. The installation should be performed by qualified personnel (such as a licensed electrician or other professionals who meet local electrical standards) in accordance with local electrical codes. Improper installation or use of the equipment can be dangerous and even fatal. Under no circumstances will econest be liable for any direct or indirect damage. This includes damage arising from or related to personal injury that is caused by failure to follow the safety information and instructions in this user guide.

## Safety Instructions

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The econest products defined below include but are not limited to: ecoMain, ecoSub, ecoSensor (100A), ecoSensor (30A) and other accessories.

- ecoMain poses an electric shock risk with 100 - 240V AC, 50/60Hz. Please read the user manual and follow the instructions in this manual carefully to avoid any danger.
- Do not use the econest product in any manner other than specified in this user guide, otherwise the protection provided by the equipment may be impaired.
- Do not allow children to use or play with this product. This product is for qualified personnel use only.

- If you believe any of the econest products may have been damaged, do not attempt to use them. Please contact support at [support@eco-nest.net](mailto:support@eco-nest.net) immediately.
- Do not attempt to open, disassemble or repair any components of the econest product.
- Do not install the econest product in an environment with explosive gases or vapors; nor in damp or wet environments; nor in direct sunlight; nor where temperatures are consistently below 32° F (0° C) or above 104° F (40° C).
- Do not use the econest product with third-party accessories or modify it. The econest product is integrated. (Third-party accessories that have not been approved by econest will affect the accuracy of data and the safety of the equipment.)
- Do not install the econest product in areas that could block ventilation openings.
- Do not install the econest product in areas that could obstruct the circuit breaker arc extinction venting area.
- Ensure that you remove power from the electrical panel before installing, disassembling, inspecting or servicing . Wear protective eyewear and protective gloves before attempting to access the econest products system. Ensure no wiring for voltage measurement, current measurement, power, or data is frayed or has exposed conductors. Ensure that there are no cracks, breaks or other defects in the enclosure of the econest product.
- Ensure that the econest product is powered off during any operation, including installation and disassembly, and that there is no possibility of it being powered on during the installation and disassembly process.
- The signal line is not greater than 3m.
- EcoMain and ecoSub products are recommended to be installed on the rails of the distribution box, ensuring reliable fixation.
- The voltage sensing and power connections connected to the primary voltage should be protected against overcurrent by being connected to a circuit breaker / miniature circuit breaker.
- Shipping Instructions: It is recommended to transport this product using the original packaging or similar packaging. If the packaging is marked with an overweight label, the handling must strictly follow the requirements specified on the label. econest will not be held responsible for any direct or indirect damage to the product or any third party due to failure to comply with the specified instructions.

## Package Contents

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When opening the packaging, check the contents of the box against the list below. If there is anything missing, please contact the seller in time. The contents of the package include: 1 ecoMain; 5 ecoSensor (30A) ; 3 ecoSensor (100A) ; 1 antenna; 1 power cable;

1 label; 1 user manual (including quick installation guide, record sheet).

Note: You can keep the original packaging for future storage or transportation.



ecoMain × 1



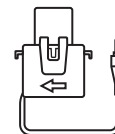
Antenna × 1



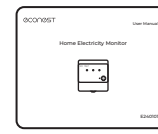
Power Cord × 1



ecoSensor(30A) × 5



ecoSensor(100A) × 3



User Manual × 1

## Package Overview

### Product Brief Introduction :

Econest provides easy-to-use energy management solutions for households and small-scale commercial and industrial businesses. It enables users to monitor the electricity consumption in specific rooms or of specific appliances through up to 40 sensor channels. It offers insights into household power usage and helps pinpoint wasteful electricity consumption.

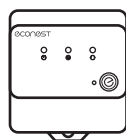
This solution is composed of the ecoMain, ecoSub monitors, ecoSense sensors, and the econest App software. The ecoMain is used to monitor the total electricity consumption entering the household and also conduct monitoring on 10 branch circuits. If more branch circuits need to be monitored, expansion can be achieved through the ecoSub.

The ecoMain supports the monitoring of different power systems, covering the household power systems of most countries. The specific monitored power systems it supports are as follows:

- 2-wire, single phase system

- 3-wire, single split-phase system

- 4-wire, 3-phase Wye (no-Delta neutral ) system



ecoMain



ecoSub



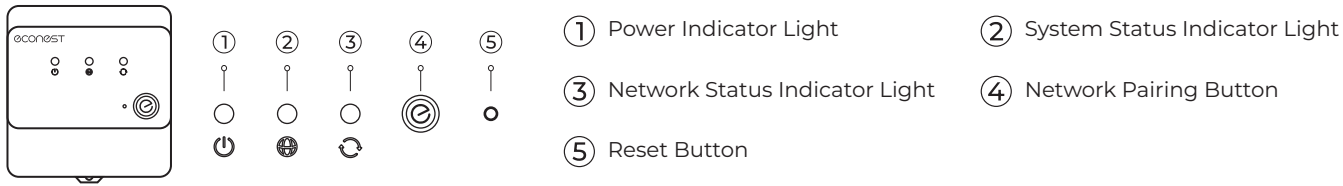
econest Cloud



econest App



Exterior :

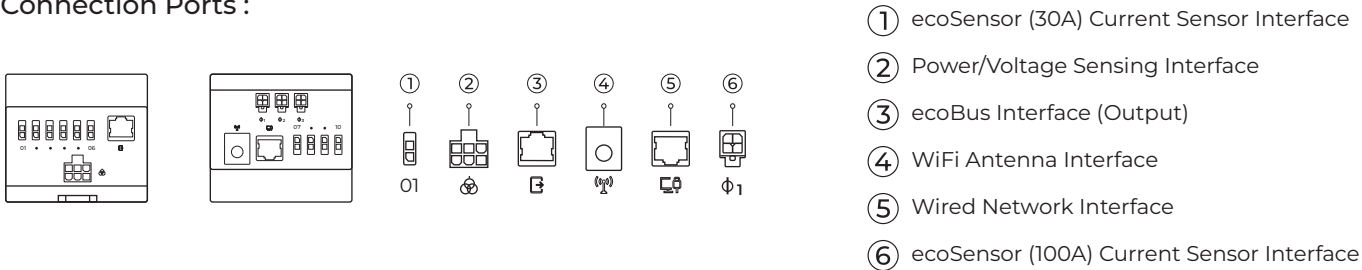


**Power Indicator :** A steady white light indicates normal operation, while no light indicates a power supply issue.

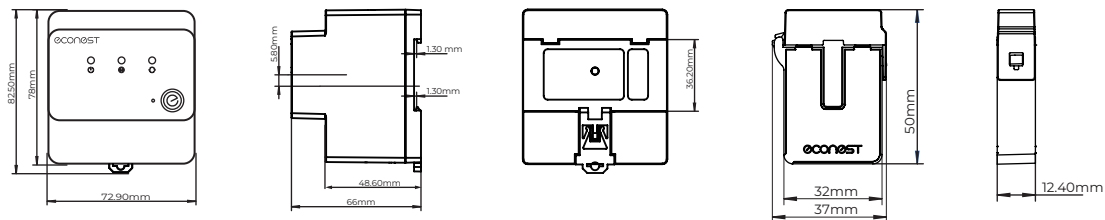
**Network Status Indicator :** A steady white light indicates normal network operation, no light indicates network issues, and blinking indicates Bluetooth pairing in progress.

**System Status Indicator :** A steady white light indicates the system is initializing, no light indicates system malfunction, and blinking indicates the system is operating normally.

Connection Ports :



Mechanical Dimensions :



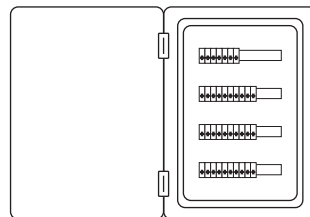
# How to Use

## Install the Monitort :

Note: The following distribution boxes are for reference only. Please refer to the actual ones at home.

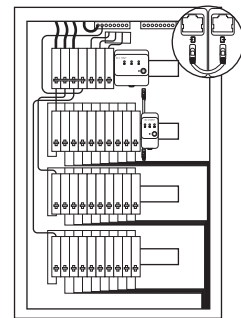
### 1. Turn off the power and remove the cover plate.

Turn off the main power switch at the entry point. Please note that it might be located outside the distribution box where the econest device is installed. Next, open the distribution box panel, unscrew all the screws that secure the cover of the distribution box, and remove the cover so that you can access the circuit breakers and the live incoming power lines.



### 2.Find a suitable location to install ecoMain.

Locate an appropriate spot in the electrical meter box to snap the ecoMain onto the rail inside the box. If additional monitoring is needed, you can add up to three ecoSub units (ecoSub units need to be purchased individually). The ecoSub units are also installed by snapping them onto the rail inside the box. (Note that you can install the master and slave units on different rails to facilitate monitoring the electricity usage of surrounding circuits.) If you have purchased ecoSub units, you can use the ecoBus included in the slave unit packaging to connect ecoMain and ecoSub. During this process, pay close attention to the input and output port labels to avoid incorrect connections!



### 3.Connect the power cord.

Take the power cable from the box and plug the power cable's connector into the power collection port of the ecoMain unit.

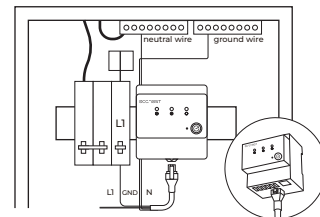
For Single-phase 2-wire systems:

Connect the brown (L1) wire to the circuit breaker that controls this single-phase circuit.

Connect the blue (N) wire to the neutral bus.

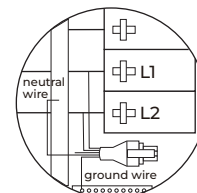
Insulate the black (L2) and gray (L3) wire ends with electrical tape.

Connect the yellow-green (ground) wire to the ground bar.



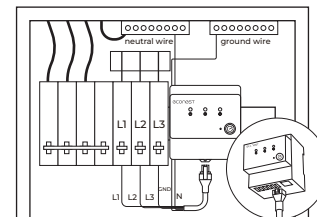
For Single-phase 3-wire systems:

- Connect the brown (L1) wire to the circuit breaker designated for the L1 phase and connect the black (L2) wire to the corresponding circuit breaker of the other phase.
- Connect the blue (N) wire to the neutral bus.
- Insulate the gray (L3) wire end with electrical tape.
- Connect the yellow-green (ground) wire to the ground bar.



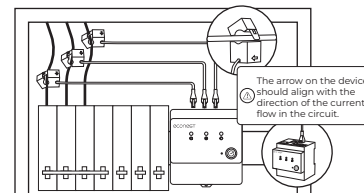
For 3-phase 4-wire Wye systems:

- Connect the brown (L1) wire to the circuit breaker corresponding to the L1 phase, the black (L2) wire to the circuit breaker corresponding to the L2 phase, and the gray (L3) wire to the circuit breaker corresponding to the L3 phase.
- Connect the blue (N) wire to the neutral bus.
- Connect the yellow-green (ground) wire to the ground bar.

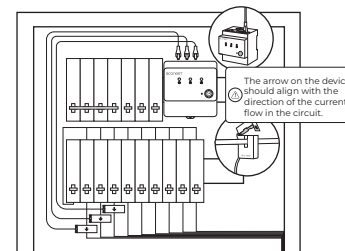


#### 4.Connect the current sensor.

Clamp the ecoSensor (100A) onto the three-phase main circuit, ensuring that the arrow on the ecoSensor (100A) aligns with the current direction of the circuit. Connect the other end of the ecoSensor to the main channel input port on the main unit.

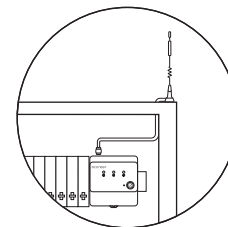


Clamp the ecoSensor (30A) onto the branch circuit, ensuring that the arrow on the ecoSensor (30A) aligns with the direction of the current flow in the circuit. Connect the other end of the ecoSensor to the sub-channel input port on the main unit.(Remove the labels from the box and assign a serial number to each sensor.Also,make a note of the corresponding channel names for eachsensor using the record sheet which can be found at the end of the user manual, as these will be used later in the App configuration page. If you are not familiar with the channel names for your circuit, you can refer to the original electrical panel wiring diagram for reference.)



## 5.Install the antenna or network cable.

Install one end of the antenna at the antenna interface of the ecoMain and place the antenna outside the electricity distribution box; If you want to use a network cable for connection, insert one end of the network cable into the wired network interface above the ecoMain. (The econest only provides an antenna and does not provide a network cable. If you need to use a network cable, you can prepare it by yourself. The specification of the network cable should be Cat5e grade or above.)



## 6.Turn on the power supply device.

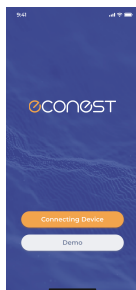
Turn on the power supply device of the distribution box and check whether the power indicator light is on. If it is on, the hardware installation process is completed, and then the network configuration steps will begin.

## Download the econest App :

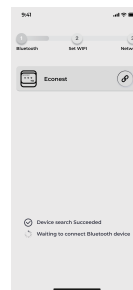
Please go to the App Store, Google Play or the official website [www.eco-nest.net](http://www.eco-nest.net) to search for "econest" and download it safely.

## Connection and WiFi Setup :

1.Open the econest App on your phone, and follow the prompts to click on 'Connection Device' for the Bluetooth pairing process.



2.Press and hold the Bluetooth pairing button on the ecoMain device until the Bluetooth network indicator light turns on (white). Then, find 'Econest -xxx' on the device and click on it to connect.



3.Once the device is successfully connected, go to the Wi-Fi page and connect to the Wi-Fi to complete the network configuration.



## Configuration of the App :

After the network configuration is successful, you will be redirected to the onboarding guide page. Follow the instructions to proceed. (You can refer to the table of corresponding monitoring devices and sensors you recorded earlier for learning.) If the network configuration fails or you encounter other issues, follow the prompts on your phone to solve them or refer to the *Troubleshooting* part for guidance .

## Guarantee

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This product comes with a one-year warranty, which commences from the date of purchase. Under appropriate storage conditions, should the product suffer from non-human-induced damage within one year, our company will offer free repair or replacement services to ensure that your usage experience remains unimpaired. In the event that the product exhibits slight performance deterioration due to natural aging but still functions properly, we will continue to provide technical support and reasonable solutions to safeguard your legitimate rights.

If you are not a professional, please refrain from attempting to power on or repair the product, as this may lead to unnecessary damage. When repairs are required, ensure that they are carried out by trained or authorized professionals. Users are strictly forbidden from attempting any self-repair of the product.

## Troubleshooting

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Before proceeding with the following troubleshooting steps, ensure that you have carefully read and fully understood the *Safety Instructions* provided earlier! Here are some of our most frequently used troubleshooting tips. For additional assistance, you can refer to the content in *Get More Help* below.

### **After installation, if the power indicator light on the ecoMain device does not illuminate:**

1. Check if the main circuit breaker is turned on.
2. Check if the power cable is properly connected.

### **After installation, the econest app fails to find the ecoMain device:**

1. Ensure the ecoMain device is powered on :
  - Check if the Bluetooth network indicator light is on. Verify if the cables are securely and correctly connected.
  - Check if the main circuit breaker is turned on.
  - Ensure the circuit breaker powering the ecoMain device is on.
2. Ensure that your phone can connect to the ecoMain device:
  - Check if Bluetooth is enabled on your phone.
  - If you are using an Android phone, enable location services to scan for Bluetooth devices accurately.
  - If you are using an iPhone, make sure that Bluetooth access is granted to the econest App in "Settings" > "Econest App".

- 3.Ensure that the Wi-Fi antenna of the ecoMain device is correctly installed (if using a wireless connection):
  - Check if the antenna is firmly screwed into the energy monitor.
  - Ensure that the antenna is positioned outside the distribution box.
  - If the Wi-Fi network signal quality at the location of the distribution box is poor, you may need to use a Wi-Fi repeater to enhance the Wi-Fi coverage or switch to a wired network connection.
- 4.Ensure that the wired Ethernet connection of the ecoMain device is correctly installed (if using a wired connection):
  - Check if the Ethernet cable is securely connected to the Ethernet port of the ecoMain device. Ensure that the Ethernet cable is firmly connected to the router, switch, or modem.
- 5.Ensure that there are no firewalls preventing the new device from accessing the internet:
  - Try power-cycling the circuit breaker connected to the ecoMain device.
  - Try restarting the econest App.
  - Try restarting your phone.

**If the econest application fails to obtain real-time data from the ecoMain device, you can take the following actions:**

- 1.Check if the power cord is properly connected to the corresponding L1, L2, L3, ground wire, and neutral wire. For detailed instructions, please refer to the *5. Connect the Power Cord* section in the *Install the Product* part of this user manual.
- 2.Make sure that all ecoSensors are firmly clamped onto their respective cables inside the distribution box. Also, verify that the plugs of the ecoSensors are securely inserted into the correct ports on the ecoMain or ecoSub device.
- 3.Ensure that all channels have been correctly configured in the App. Specifically, confirm that the monitoring channels corresponding to the devices labeled are properly set up.
- 4.Ensure that all ecoSensors are oriented correctly according to the user manual. Keep in mind that current sensors are directional. Check that the corresponding wiring is connected to adjacent circuit breakers of different phases.
- 5.Confirm that there is a noticeable load on this channel.
- 6.Ensure that your mobile phone has sufficient memory to run the econest App.

## Get More Help

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During the use of this product, if you encounter any issues or require further technical support, here are several ways to seek assistance:

**Visit our official website**

Go to [www.eco-nest.net](http://www.eco-nest.net). Navigate to the *Help Center* on the website, where you can find the Frequently Asked Questions (FAQ) and

a wealth of other useful information. Additionally, you can leave us a message through the *Chat With Us* portal on our official website to receive our prompt response.

#### **Send an email**

You can send an email to support@eco-nest.net. In the email, please elaborate on the problems you've encountered, including the operation steps, error messages that popped up, and any other relevant details. Our technical support team will get in touch with you within 48 hours of receiving the email.

#### **Use the App's help function**

On the *system* page of the App, click on the settings icon in the upper - left corner. You will then be able to access the help page.

## **Join Our Exclusive Community**

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In order to better support your use of our products, we sincerely invite you to join our official community (you can scan the QR code on the right). Through the community, you can exchange experiences with other users, share usage tips, and receive the latest product updates, event information, and assistance from our professional team.



#### **Efficiently Keep Track of Product Developments and Get Technical Support Faster.**

In the community, you will be the first to know about the latest updates and features of our products. We will also regularly share useful tips to help you make the most of the product and enhance your experience. Additionally, there are many technical experts and our professional customer support team available to help answer any questions.

#### **Share Product Experiences and Suggestions, Get Personalized Services.**

Through the community, you can connect with other users of the product, exchange experiences, share insights, explore creative uses, and enhance your usage effectiveness. At the same time, based on your needs, we will periodically offer personalized services. For instance, through participating in surveys or providing feedback, you can not only help improve product features but also receive customized service recommendations within the community.

#### **Enjoy VIP Services.**

Community members will have access to preferential customer service channels. If you encounter urgent issues, you will receive support ahead of others and enjoy a more efficient and convenient customer service experience.

# Specifications

Basic Information	Name	ecoMain
	Model	E2401
	Dimensions(HxWxH)	73mmx78mmx66mm
	Net Weight	223g
Measurement	Supported Power Systems	2-wire, single phase system 3-wire, single split-phase system 4-wire, 3-phase Wye system
	Maximum Measured Voltage	260VAC L-N
	Measured Voltage Channels	3 Phases (L1, L2, L3)
	Measured Current Channels	3 x 100A(main circuits) 10 x 30A(branch circuits)
	Electricity Consumption Measurement Accuracy	±2%(typical)
Power	Power Supply	100-240VAC line-to-neutral, 50/60Hz
	Power Consumption	<3W
Communication	Wi-Fi	2.4GHz IEEE 802.11b/g/n max. e.i.r.p. 20dBm
	Bluetooth	Bluetooth V4.2 max. e.i.r.p. 10dBm
	Ethernet	10/100Base - T
Environmental	Operating Temperature	0~40 ℃
	Operating Humidity	20~80%
	Storage Temperature	-20~55 ℃
	Height Above Sea Level	≤3000m

Basic Information	Name	ecoSensor(30A)
	Model	E2403
	Dimensions(HxWxH)	34mmx50mmx12.4mm
	Net Weight	38g
Specifications	Max Primary Current	30A
	Max Voltage	250V (Primary) / 333mV (Secondary)
	Cable Length	0.4m
	Maximum Measured Cable Diameter	8mm
	Measurement Accuracy	±1%(typical)

Basic Information	Name	ecoSensor(100A)
	Model	E2404
	Dimensions(HxWxH)	34mmx30.7mmx49mm
	Net Weight	101g
Specifications	Max Primary Current	100A
	Max Voltage	250V (Primary) / 333mV (Secondary)
	Cable Length	0.8m
	Maximum Measured Cable Diameter	16mm
	Measurement Accuracy	±1%(typical)



ecoMain	Circuit Branch	Location	ecoSub1	Circuit Branch	Location
M#1			Ch1-1		
M#2			Ch1-2		
M#3			Ch1-3		
M#4			Ch1-4		
M#5			Ch1-5		
M#6			Ch1-6		
M#7			Ch1-7		
M#8			Ch1-8		
M#9			Ch1-9		
M#10			Ch1-10		
ecoSub2	Circuit Branch	Location	ecoSub3	Circuit Branch	Location
Ch2-1			Ch3-1		
Ch2-2			Ch3-2		
Ch2-3			Ch3-3		
Ch2-4			Ch3-4		
Ch2-5			Ch3-5		
Ch2-6			Ch3-6		
Ch2-7			Ch3-7		
Ch2-8			Ch3-8		
Ch2-9			Ch3-9		
Ch2-10			Ch3-10		



## Create An Energy Brain For a Smarter Home

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