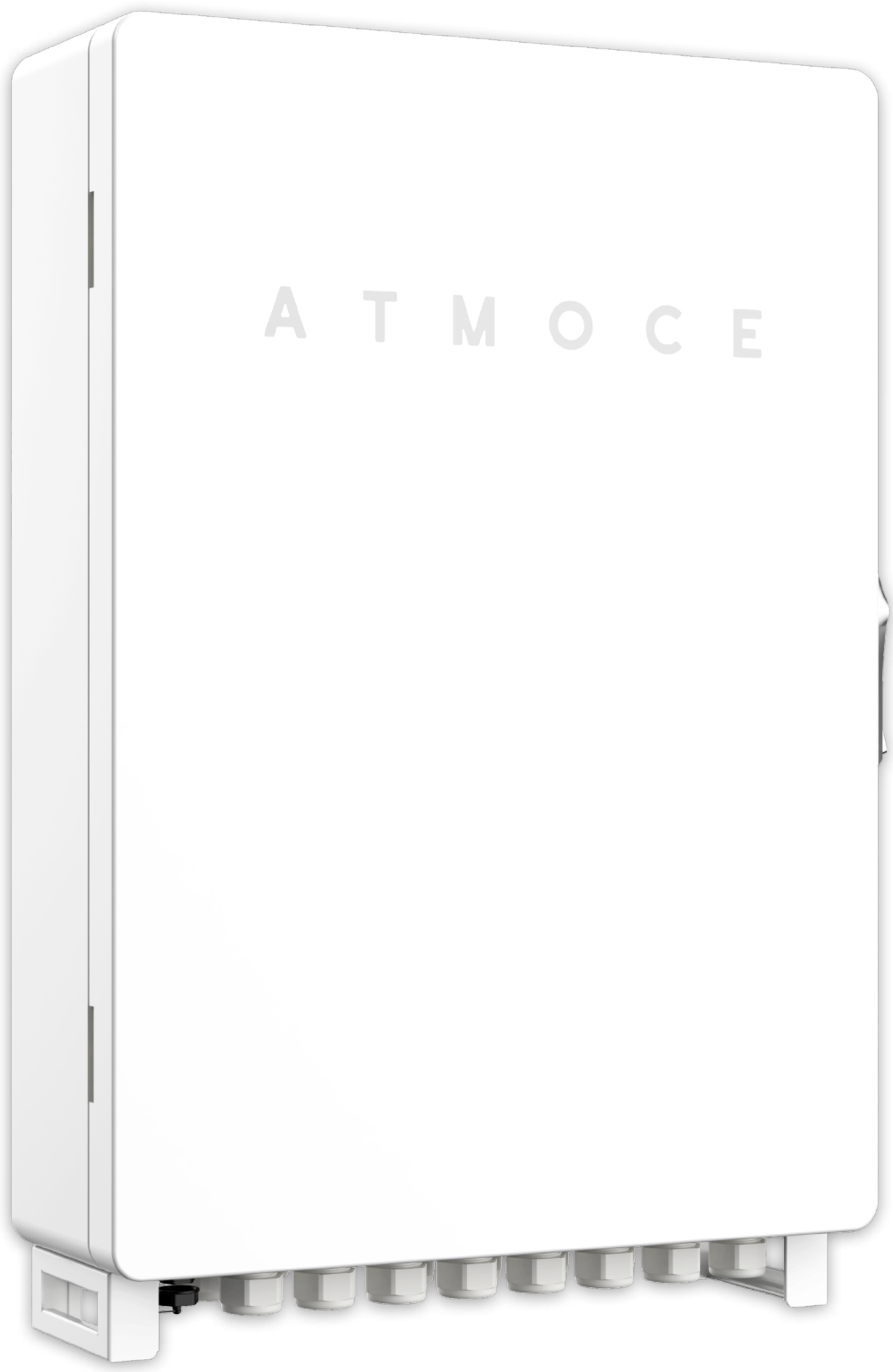
M-CombinerX

MC100-Wye-8in1 User Manual



ATMOCE

About This Document

Corporate Contact Information

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Disclaimer

- Product information is subject to change without prior notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.
- For optimum reliability and to meet warranty requirements, this product must be installed in accordance with the instructions in this manual.

Applicable Scope

- This manual is intended for professional installation and maintenance personnel only.
- This manual mainly introduces the assembly, installation, configuration, maintenance and troubleshooting methods of the MC100-Wye-8in1 combiner.

Revision History

	Date	Version	Description
1	01/06/2026	Rev. 1.0.0	First release

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Safety Information

1.1 Statement

- Before installing or using the ATMOCE M–CombinerX, please carefully read the user manual, all instructions and safety labels on the product, and any safety manuals available. Not following these safety instructions may result in personal injury, damage to the equipment, or invalidation of the warranty.
- DANGER, WARNING, CAUTION, and NOTE in this manual imply that they must be observed. You must also comply with relevant international, national or regional standards and industry practices. ATMOCE assumes no responsibility for any violation of safe operation requirements or of safety standards for the design, manufacture and use of the equipment.
- This equipment should be used in an environment that meets the design specifications; otherwise, the equipment failure, abnormal equipment function or damage to components that arises shall not be covered by the warranty.
- All operations such as transport, storage, installation, operation, use, maintenance, etc. should comply with applicable laws, regulations, standards and specifications.

1.2 Safety Labels

To reduce the risk of electric shock and to ensure the safe installation and operation of the microinverter system, the following safety symbols are used throughout this manual to indicate hazardous conditions and important safety instructions.

Danger	**A label indicates a hazard with a high level of risk. If not avoided, it may result in serious personal injury or death.**
Warning	**A label indicates a hazard with a medium level of risk. If not avoided, it may result in serious personal injury or death.**
Caution	**A label indicates a hazard with a low level of risk. If not avoided, it may result in serious personal injury or death.**
Note	**A label indicates a safety hazard and risk of device damage. If not avoided, it may result in equipment damage, data loss, reduced performance, and other consequences, but does not involve personal injury.**

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1.3 Personal Safety Instructions

Danger

- The installation process is strictly prohibited to operate with electricity. It is prohibited to install or remove cables with electricity. The moment the cable core touches the conductor, it will generate electric arc or electric spark, which can lead to fire or personal injury.
- When equipment is energised, unregulated and incorrect operation may produce a fire, electric shock or explosion, resulting in injury, death or property damage.
- Do not work alone. When using or working near electrical equipment, someone should be within earshot or close enough to help you. Remove rings, bracelets, necklaces, watches, etc. when operating PV modules, microinverters, M-CombinerXs and other electrical equipment.

Warning

- Specialised protective equipment must be used during operations, such as protective clothing, insulated shoes, goggles, helmets and insulated gloves.
- Do not ignore warnings, cautions and precautions in manuals and on equipment.
- During operation of the equipment, if a malfunction is detected that could result in personal injury or equipment damage, immediately terminate the operation, report it to the person in charge, and take effective protective measures.
- Do not apply power to the equipment before installation is completed or without confirmation from a qualified person.

Note

- Do not install by untrained personnel. ATMOCE shall not be liable for any loss or damage caused by improper use, installation, or misuse of the product.
- Personnel responsible for installing and maintaining the equipment must first be trained in the correct methods of operation and be aware of the various safety precautions and relevant standards in their country/region.
- Personnel in special scenarios such as electrical operation, work at heights, and operation of special equipment must have special operating qualifications required by the local country/region.

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1.4 M–CombinerX Safety Instructions

Danger

- Do not attempt to repair the combiner without authorization, as it does not contain any user repairable components. Unauthorized disassembly, repair, or destruction of the combiner and its internal components will void the warranty. In case of malfunction of the combiner, please contact ATMOCE for technical assistance.
- Do not use the combiner in any way other than as specified by ATMOCE as unauthorized use may result in personal injury or damage to the equipment.
- Do not use accessories that have not been approved by ATMOCE as this may result in equipment damage or personal injury.
- Since the combiner is powered by multiple sources, please confirm that all the circuit breakers are in the Off position before any installation, maintenance or cleaning.
- Do not operate the ATMOCE combiner if the appearance is damaged.

Warning

- Check that the cables and connectors to ensure that they are in good condition. Do not operate the combiner with damaged or unqualified cables or connectors.
- Do not disassemble the enclosure and protective panel of the combiner except for necessary maintenance.
- Use the circuit–breakers in the ATMOCE combiner in accordance with their markings and do not change their purpose without authorisation.

Note

- When installing the ATMOCE combiner, comply with the installation regulations and/or local electrical regulations.
- The combiner is suitable for use in environments with a maximum ambient temperature of 50°C.
- When installing the ATMOCE combiner, use copper wires with a temperature resistance of 90°C or higher. Please take full account of local regulations.
- Please select cables that meet safety requirements based on the parameters of the circuit breaker, check the cables and connectors to ensure that they are in good condition and in rated condition.
- Do not connect the combiner to the grid or connect the AC circuit before completing all installation procedures and obtaining approval from the utility company.
- Provide cable supports at least every 1 meter.

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1.5 Cable Safety Instructions

Danger

- Do not attempt to install cables unless the circuit is disconnected.
- Take care not to damage the copper conductor of the cable when stripping the cable sheath. If the exposed wires are damaged, the system may not function properly.

Warning

- Ensure that all AC and DC wiring is correct and that none of the AC or DC cables are pinched, shorted, or damaged. Ensure that all AC junction boxes are properly closed.
- Do not leave the connectors on the cable uncovered for long periods of time. Unused AC connectors must be covered with caps because they are energised when the system is powered on.
- All cables must be firmly connected, well insulated, and of appropriate specifications.
- If it is necessary to remove the sealing caps or connectors, use the disconnection tool supplied by ATMOCE.

Note

- Cable selection and routing must follow local laws, regulations and norms.
- When routing cables, make sure that the minimum bending radius of cables is 8xOD (8 times the cable's outer diameter) or r55 mm.
- In the process of laying power cables, if the length of the power cable is found to be insufficient, the power cable must be replaced, and it is strictly prohibited to make joints or welding points in the power cable.
- Do not expose terminals or cable connectors to continuous tension and avoid pulling or bending the cable at the connection.
- Avoid routing cables with overly tight cable clamps.
- Cable crossing holes should be free of sharp edges to avoid damage to the cables by sharp edges, burrs, and so on.
- Ensure that the cable connector is kept free from dirt or debris and prevent dirt or debris from entering the connector.

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1.6 CT Safety Instructions

Danger

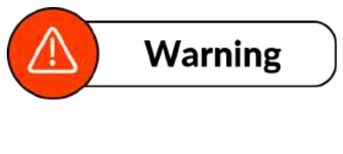
- To avoid the risk of electric shock, always disconnect the circuit from the distribution system (the distribution panel) before installing or repairing the current transformers (CTs).
- Do not install CTs when the sensing circuit is energised. Before turning on the sensing circuit, the CT signal cable must be installed in the terminal.
- Only qualified personnel should troubleshoot, install or replace CTs.
- Mount the CTs and cables so that they do not come into direct contact with live terminals.

Warning

- Failure to follow these instructions may result in damage to the equipment.
- Please observe national and local electrical regulations for all electrical installations.

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1.7 Environment Instructions



- Do not place the equipment in an environment where flammable or explosive gases or fumes are present, and it is forbidden to carry out any operation in such an operation.
- Do not install or use the equipment in a potentially explosive environment.
- Do not place the equipment near sources of heat or ignition, such as fireworks, candles, heaters or other heat generating devices, as heat from the equipment may result in damage to the equipment or cause a fire.
- Do not expose terminals or connectors to direct sunlight.

- Do not attempt to install the equipment in adverse weather conditions.
- Do not expose terminals or connectors to directed pressurized liquids (such as water jets).
- Do not immerse the terminals or connectors in liquid.
- Do not install the equipment in an environment with volatile gases, corrosive gases or organic solvents.
- Do not install the equipment in an area with strong vibration, strong noise sources, and strong electromagnetic field interference.
- When installing the equipment, make sure that the mounting surface is sturdy and meets the equipment load–bearing requirements.
- After installing the equipment, remove empty packing materials, such as cardboard boxes, foam, plastic, cable ties, etc., from the equipment area.

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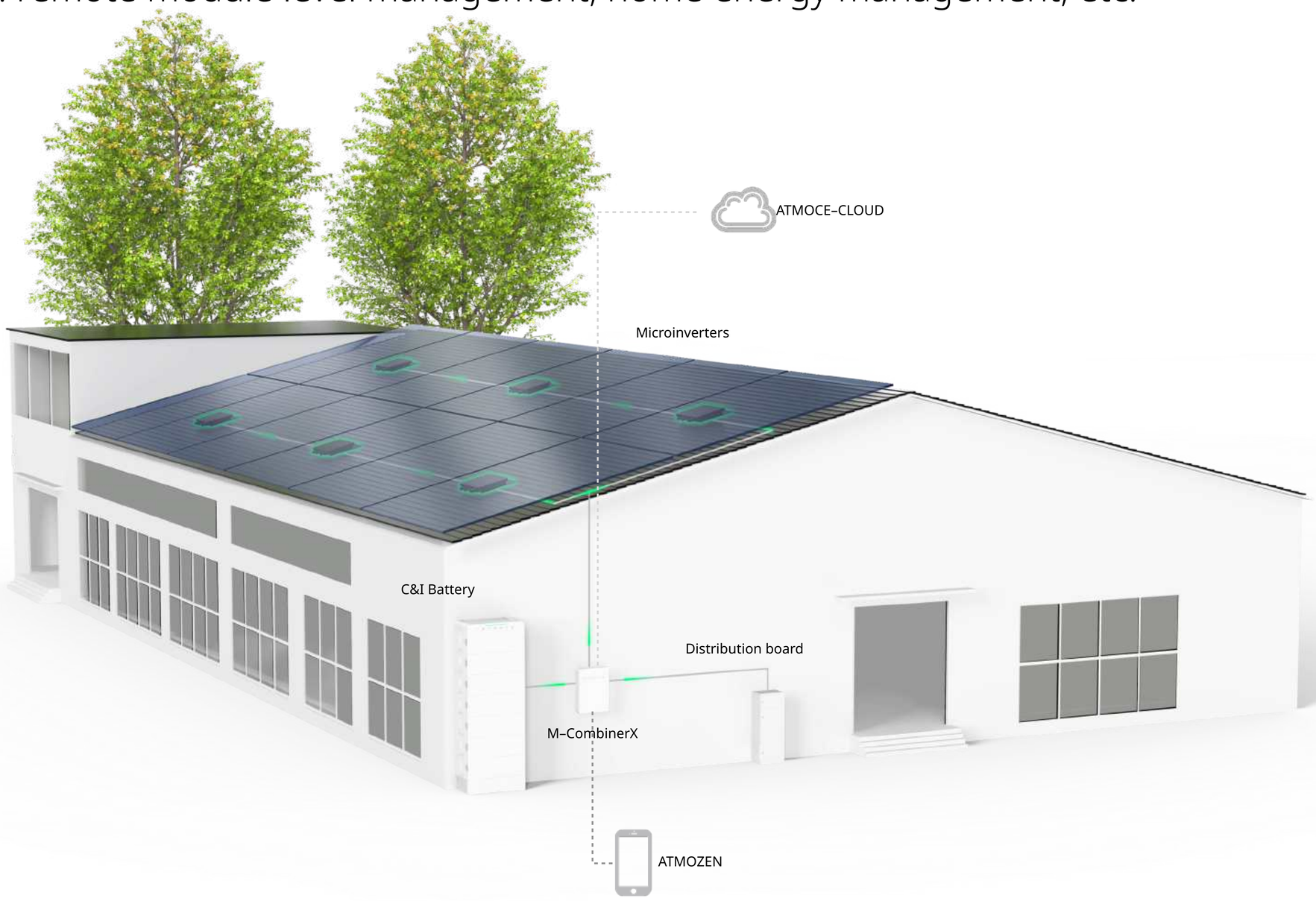
Product Information

2.1 ATMOCE System

2.1.1 Overview

The system includes the following components:

- Microinverter: MI Series Microinverter. ATMOCE microinverters are compact and efficient devices for home distribution systems. The grid–connected microinverter converts the DC output of a PV module into grid–compliant AC power.
- M–CombinerX: MC100-Wye-8in1/ MC100-Delta-8in1/ MC100-Wye-4in1, etc. The M–CombinerX is an energy management equipment that ensures the proper connection of microinverters, batteries and loads, and enables grid connection.
- M-ELV BattBank: The M-ELV BattBank is an AC-coupled energy storage system for commercial applications. It supports independent pack operation, flexible expansion, smart energy management, and safe integration with microinverters and third-party PV systems.
- ATMOCE–Cloud: A web–based energy management portal. Users can use it to view detailed operational data, manage multiple energy systems, and resolve system issues remotely. For more information, please visit https://www.atmocecloud.com.
- ATMOZEN App: A mobile application suitable for iOS and Android devices with the following main functions: remote module level management, home energy management, etc.



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2.2 MC100–Wye-8in1

2.2.1 Overview

The M–CombinerX (MC100–Wye-8in1) is an integrated control and power equipment that ensures the proper connection of microinverters, batteries and loads, and achieves grid connection. By integrating the M–Gateway, an intelligent energy controller, the combiner can manage the system performance and control the devices above. The combiner communicates with the ATMOCE–Cloud and ATMOZEN App, allowing you to view the status of energy production and consumption.

2.2.2 Functional Characteristics

- **Reliability**

  The M-Gateway intelligently manages energy flows to support stable and reliable system operation. It helps coordinate renewable energy, grid power, and energy storage to ensure continuous power availability for home energy applications.

- **Safety**

  The system is designed with IP65-rated protection and reinforced insulation to reduce risks from dust, water, and outdoor environmental conditions. This helps improve electrical safety and supports dependable operation in different installation environments.

- **Scalability**

  The system supports flexible integration with multiple energy sources, including PV, grid power, and energy storage systems. This allows users to expand or adapt the system according to changing business energy needs.

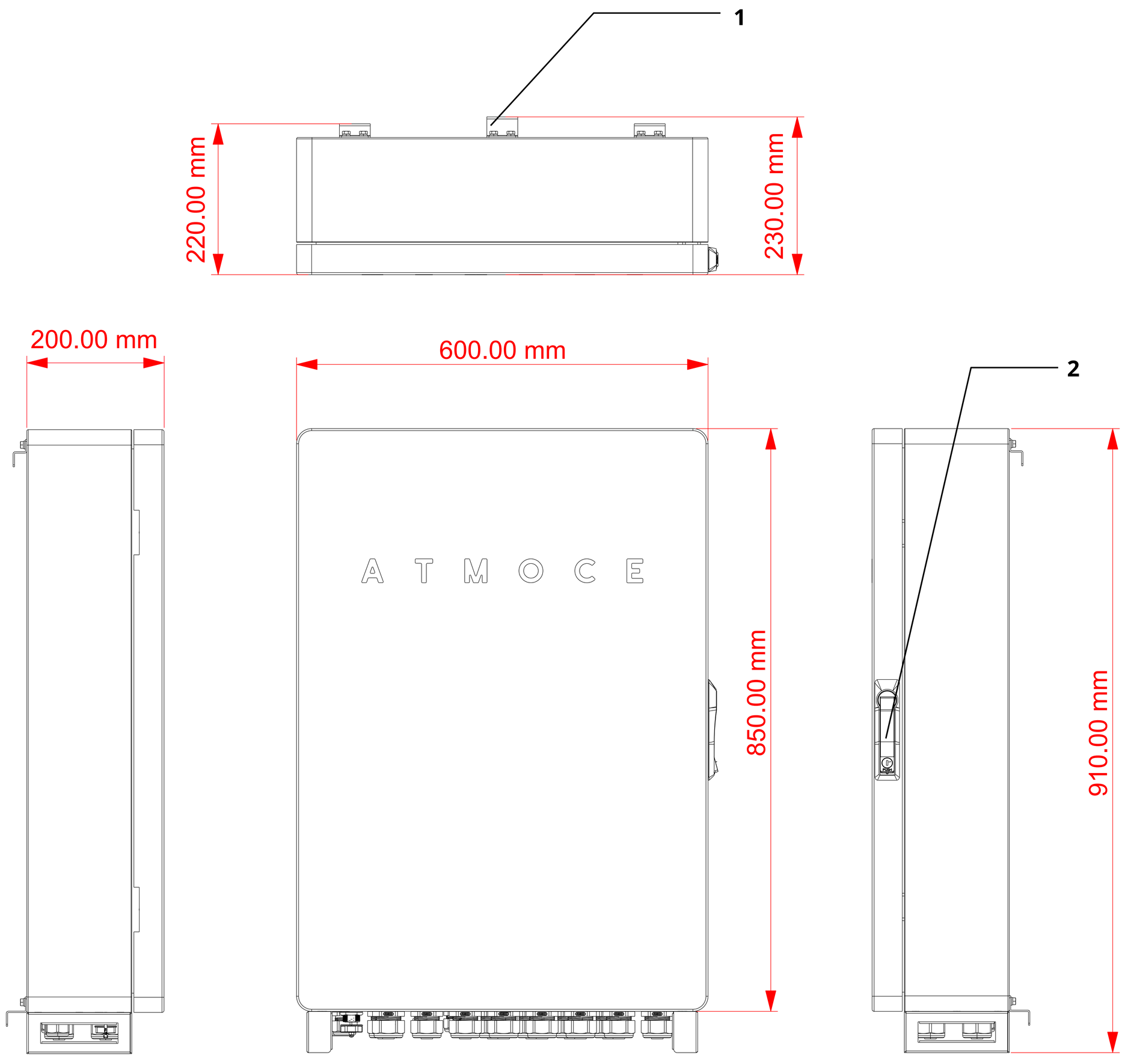
- **Smart**

  The ATMOZEN App provides guided installation and system activation, helping users complete setup more easily. With intelligent energy management, the system can monitor and optimize energy flow for efficient daily operation.

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2.2.3 Product Structure

Section A. MC100–Wye-8in1 Dimensions

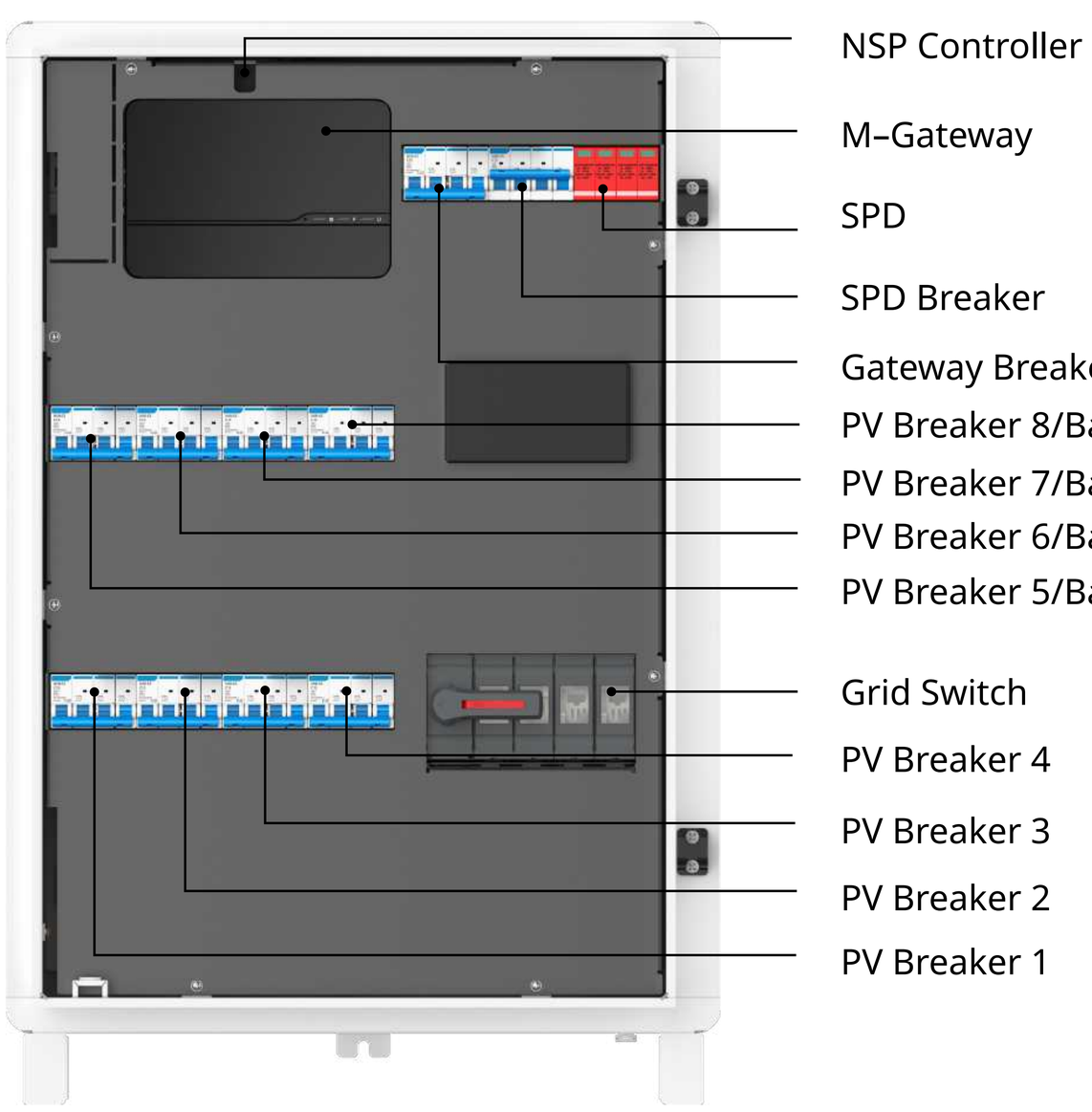


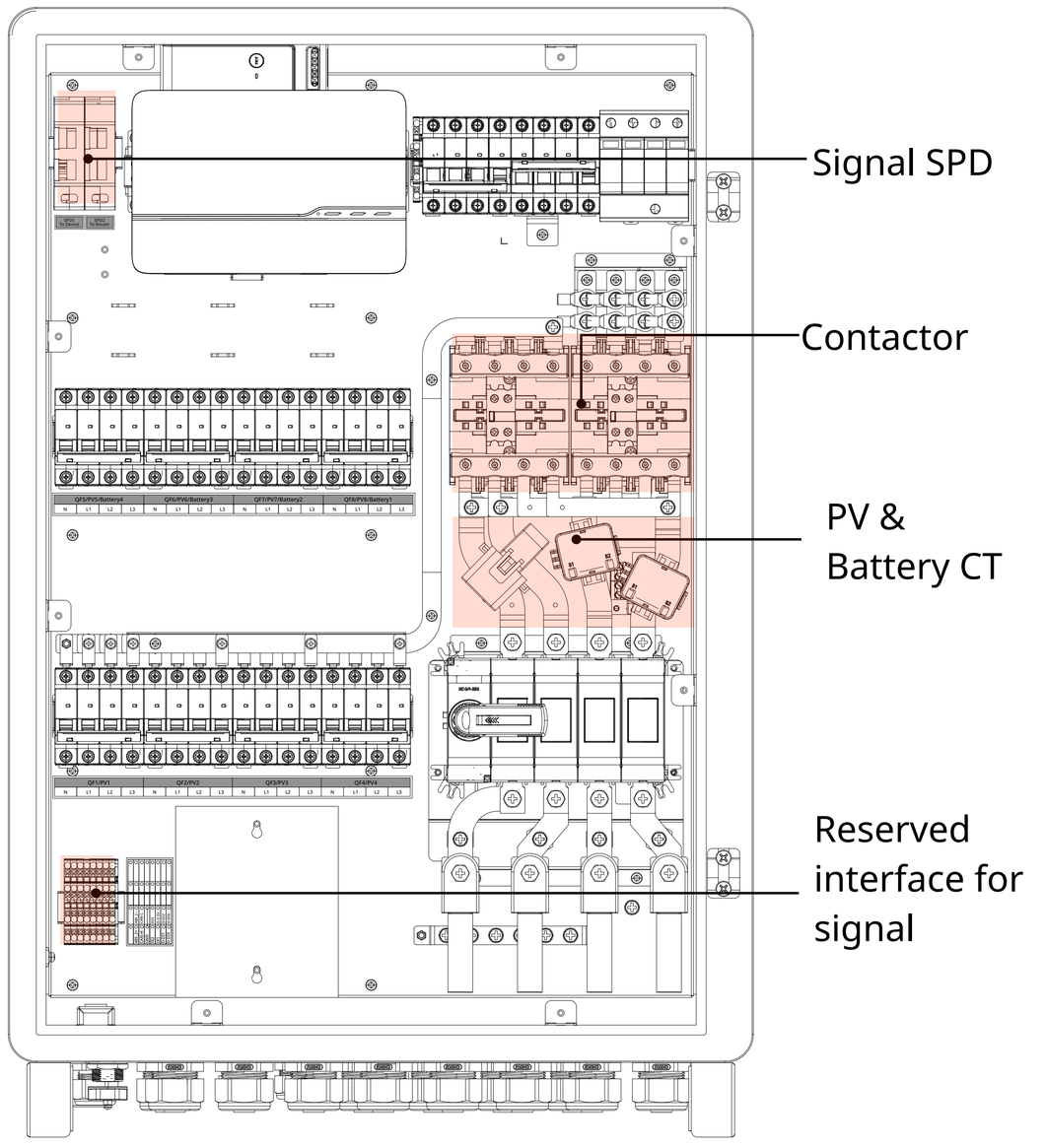
1. Mounting Tab
2. Door Locks

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Section B. Items inside the MC100–Wye-8in1

a. Open the door of the MC100–Wye-8in1 and refer to the following figure and table for pre–installed components in the MC100–Wye-8in1.
b. Remove the protective panel and refer to the following figure and table for pre–installed components in the MC100–Wye-8in1.

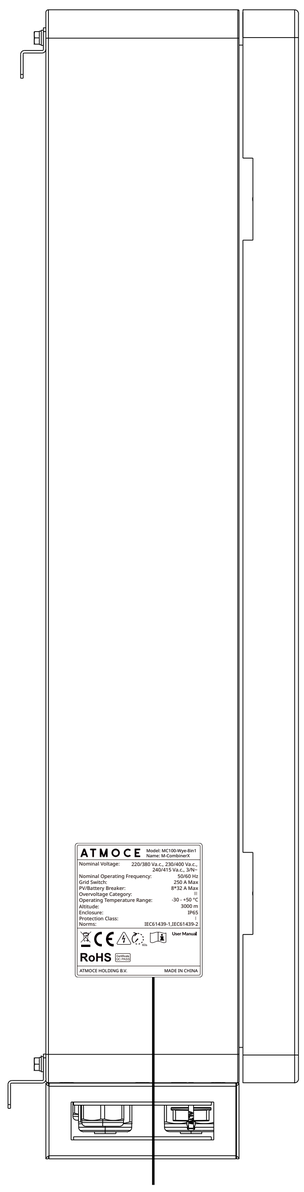




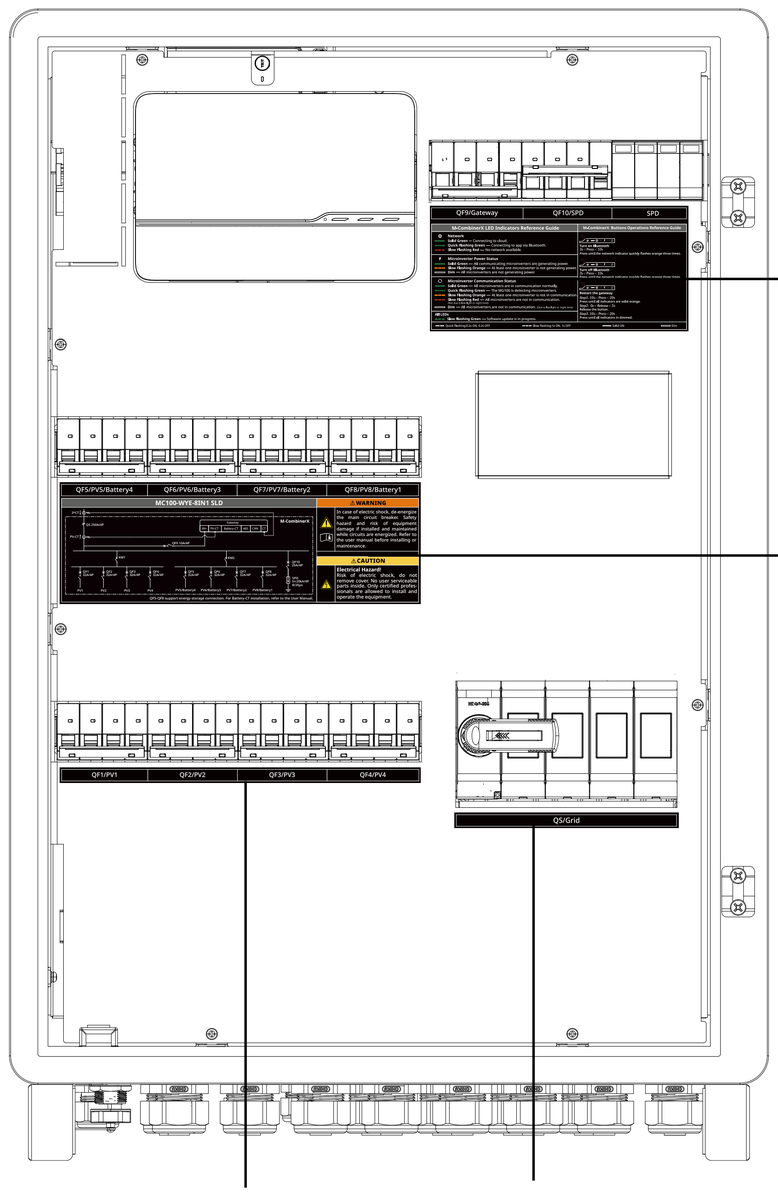
Catelog	Model	Description
NSP Controller	MA-NSP-Ctrl	/
M–Gateway	MG100-Wye	/
SPD	JLSP–GA385/40/4P	4–pole, In: 20kA
SPD Breaker	NXB–63 D25 4P	4–pole, 25A, 400V, 6kA
Gateway Breaker	NXB–63 C10 4P	4–pole, 10A, 400V, 6kA
PV/Battery Breaker	NXB–63 C32 4P	4–pole, 32A, 400V, 6kA
Grid Switch	NDG3-250A 4P AZK	4–pole, 250A, 400V
Signal SPD	JLSP-DPE	/
Contactor	DC220	/
PV & Battery CT	NCTK-24 250/50mA	/
Reserved interface for signal	RPVTT 2.5 + RPVTT 2.5-PV GN	/

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2.2.4 Product Labels



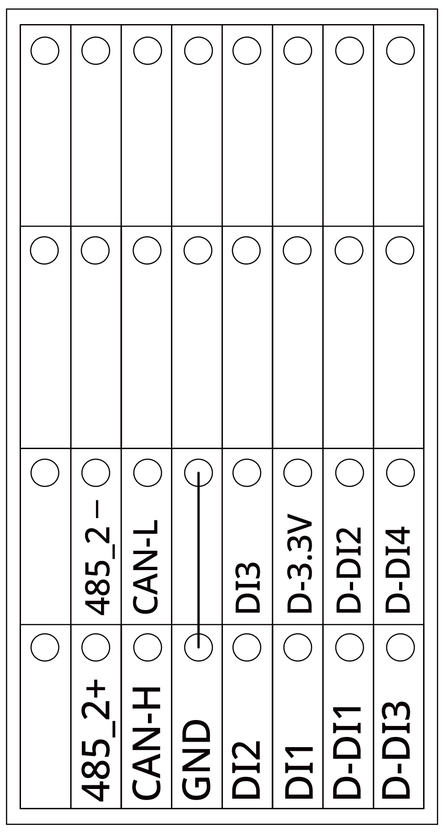
Nameplate Label



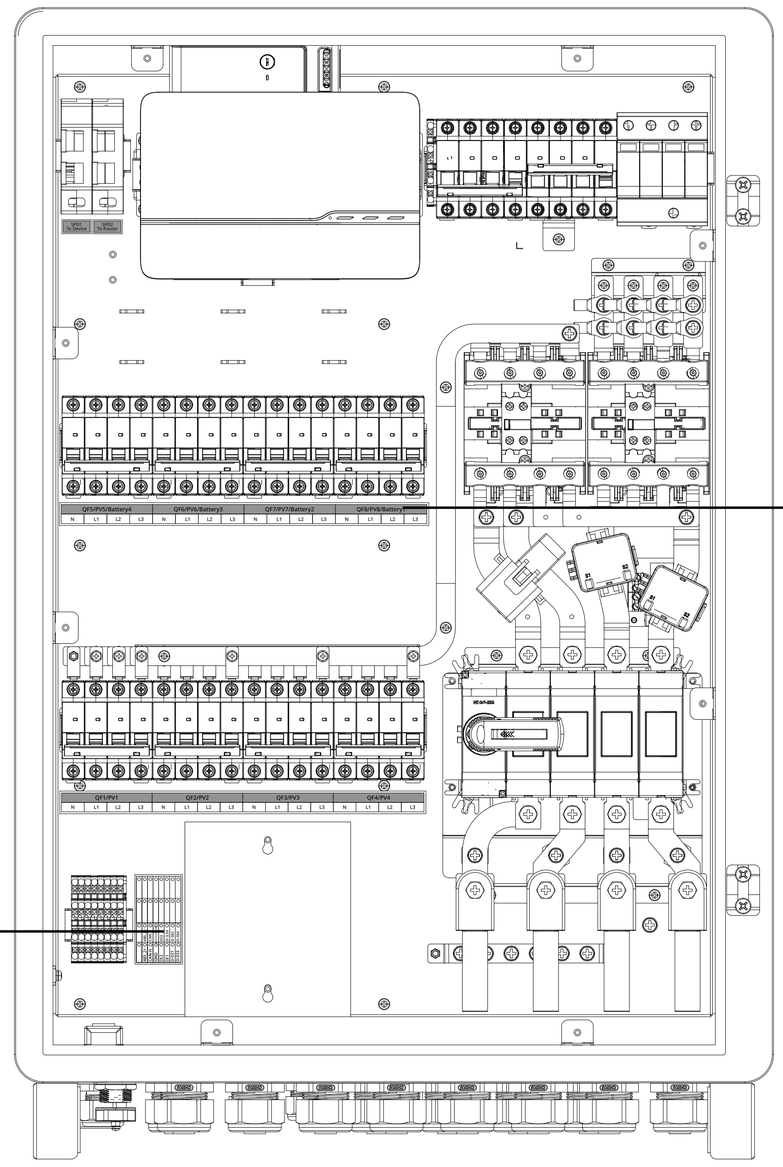
MC100–Wye-8in1 LED Indicator

MC100–Wye-8in1 Safety Instruction and Wire Diagram

Breaker Function and Polarity Description



PE and Communication Wire Diagram



Breaker Function and Polarity Description

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Section A. MC100–Wye-8in1 Safety Instructions

The following safety instructions appear on the protective panel:

⚠WARNING

In case of electric shock, de-energize the main circuit breaker. Safety hazard and risk of equipment damage if installed and maintained while circuits are energized. Refer to the user manual before installing or maintenance.

⚠CAUTION

Electrical Hazard!
Risk of electric shock, do not remove cover. No user serviceable parts inside. Only certified professionals are allowed to install and operate the equipment.

Section B. Nameplate Label Symbols

The following symbols appear on the nameplate label:

Lable	Description
07 PC	Made of PC material. Do not heat or expose to direct sunlight.
CE	The product has passed CE related certification.
	Waste of electrical and electronic equipment. This product cannot be treated as household waste. Please dispose of it in accordance with local regulations or return it to ATMOCE.
RoHS	Restriction of Hazardous Substances. The product has passed RoHS certification.
60s	Delayed discharge. After the device is powered off, please wait 60 seconds for the unit to fully discharge.
	Please read the user manual before using the equipment.

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Storage Requirements

If the product is not to be used and installed immediately, it must be stored in accordance with the following requirements:

- Do not remove the outer packaging of the product.
- The storage temperature should be maintained within –40 ℃ to +70 ℃.
- The relative humidity should be maintained between 4% RH and 100% RH.
- Store the product in a clean and dry place, away from dust and moisture.
- Stack no more than 7 layers high. When stacking, please be careful when placing the packaging box to avoid personal injury or equipment damage caused by equipment tipping over.
- Regular inspections are required during storage (once every three months recommended). If the product has been placed in storage for two years or longer, it must be inspected and tested by qualified personnel before use.

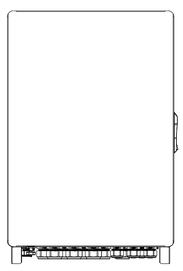
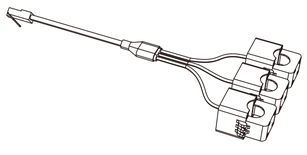
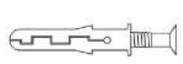
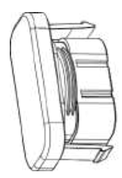
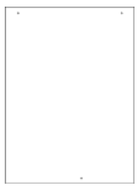
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Installation

4.1 Prepare for Installation

4.1.1 Check the Items in the Package

Please make sure that the following items are included in the package before installation.

Item	Catelog	Model	Description
	M-CombinerX	MC100-Wye-8in1	Three-phase of combinerX
	Key of the combiner	/	Lock the door of the combiner
	Consumption current transformer	SK9017	Measure electricity consumption in the home
	Wall anchors and screws	M8	Mount the combiner on the wall
	AC cable sealing cap	MA-002	Cover the unused connectors
	Mounting rail	/	/
	Marking plate	/	Determine the location of installation on the wall
	Delivery inspection report	/	/
	Quick installation guide	/	/

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4.1.2 Check the Grid Voltage

ATMOCE battery should connect to a single–phase or a three-phase grid. Measure AC line voltages at the point of connection to confirm that they are within the ranges.

Grid setup		Voltage range
Three–phase	L1, L2, L3 to N	176 to 276 Vac

4.1.3 Plan the Number of Microinverters on each PV AC Branch

The number of microinverters on each PV AC branch shall not exceed the following limits respectively:

Model	Max microinverters/per phase @ 32A branch
MI–1200-2M	4
MI–1000-2M	5
MI–900-2M	6
MI–800-2M	7

4.1.4 Prepare the Cables

To properly set up the system, it is necessary to select the appropriate cables. The table below shows the recommended cable requirements. The breakers and cables can be adjusted to meet local electrical codes.

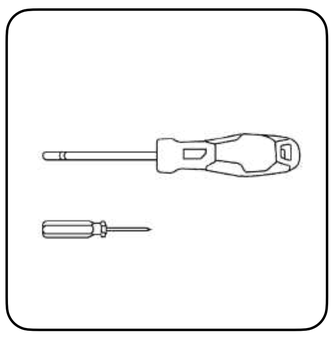
Connection	Recommended cable size		Terminal requirement
Microinverter	Power cable	4 to 6 mm^2, 4–core or 5-core	Cold–pressed Terminal
Grid	Power cable	95 to 120 mm^2	Cold–pressed Terminal
	PE	50 to 70 mm^2	Cold–pressed Terminal
	Consumption CT signal cable	Provided by ATMOCE	/
Battery	Power cable(C&I Battery)	35 to 50 mm^2, 4–core or 5-core	Cold–pressed Terminal
	CAN cable	0.25 to 0.75 mm^2, 3–core	Cold–pressed Terminal
	ETH cable	802.3, Cat 6 UTP ethernet cable	RJ45
Router	ETH cable	802.3, Cat 6 UTP ethernet cable	RJ45

NOTE:

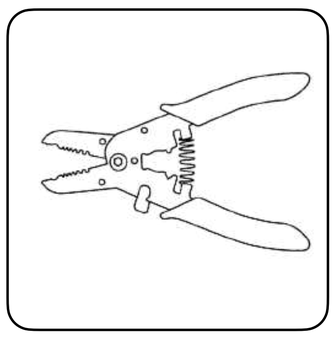
- **When connecting the cables to the M–CombinerX, you must cover the cable ends by using the proper cold–press terminal provided in the package.**
- **When stripping the cable, remove approximately 12–15 mm of the insulation layer from the power cable and 8 mm of the insulation layer from the communication cable.**

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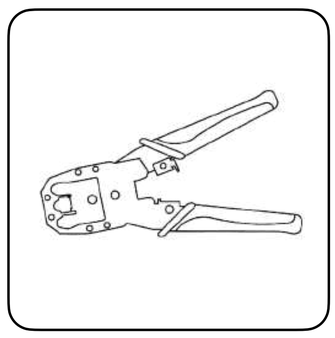
4.1.5 Prepare the Tools and Materials



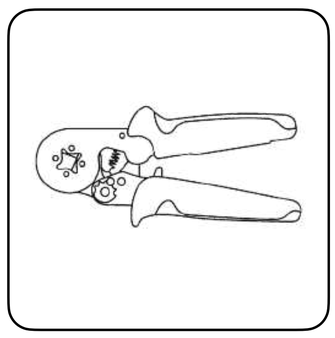
Screwdriver(M8)



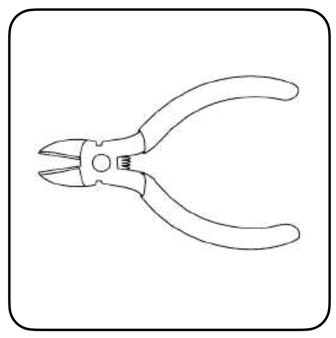
Wire stripper



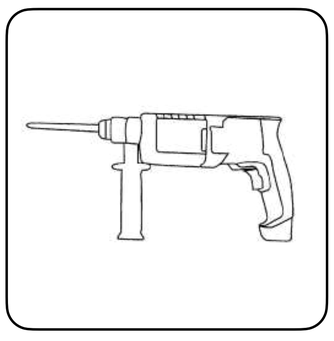
Power line crimper



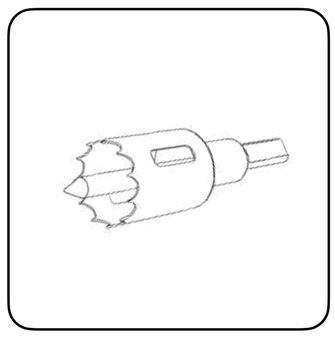
Communication line crimper



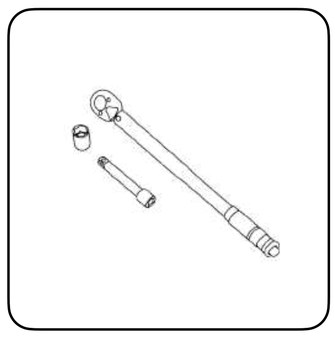
Diagonal cutter



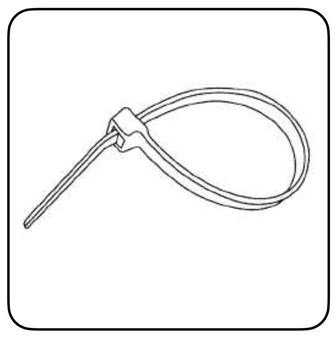
Drill



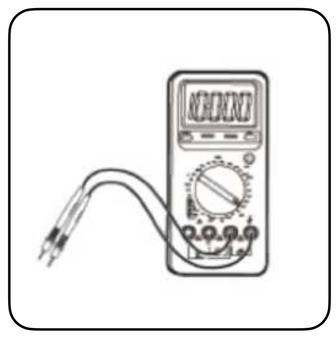
Hole cutter with pilot
(Φ40, Φ32 mm and Φ25 mm)



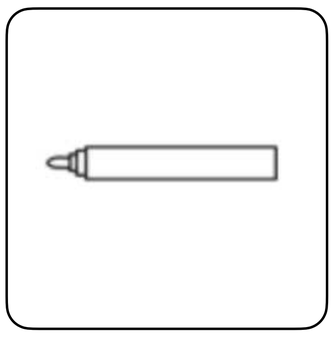
Torque wrench



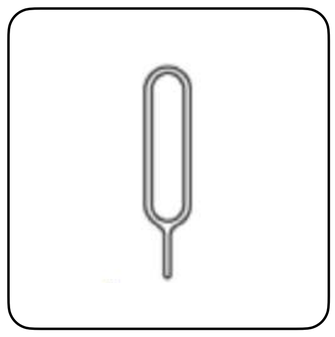
Tie wrap



Multimeter



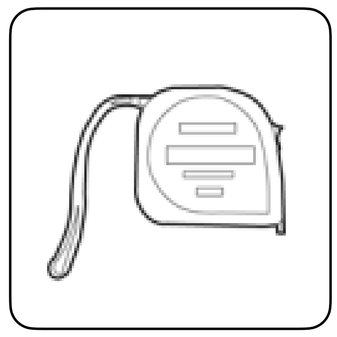
Marking pen



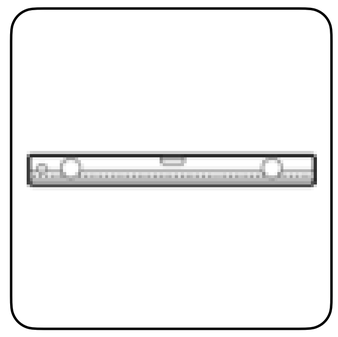
Needle



Corrugated protective pipe

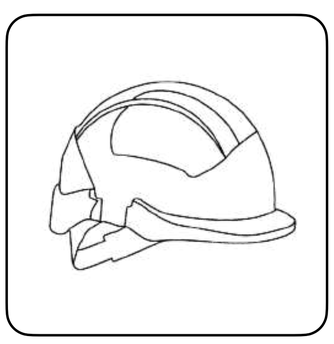


Tape measure

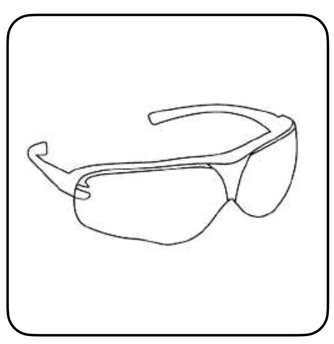


Spirit level

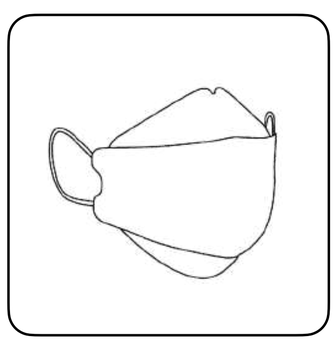
4.1.6 Prepare the Safety Equipment



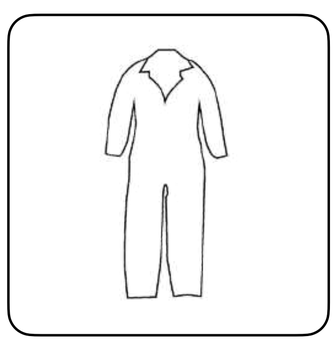
Safety helmet



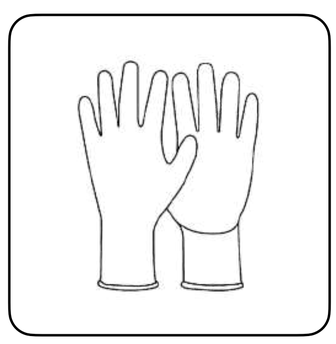
Protective goggles



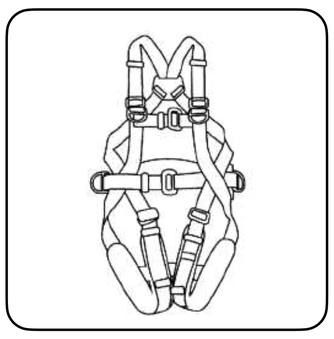
Mask



Safety clothing



Safety gloves



Safety belt



Safety shoes

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4.1.7 Download the ATMOZEN App

Download the latest version of the ATMOZEN App. Open and log in to your account. You can track the progress of system installation with this app.

4.1.8 Select How the Device Connects to the Internet

The installation environment should be:

- For Ethernet connection, use 802.3–compliant Cat 6 UTP Ethernet cables.
- For Wi–Fi connection, install the M–CombinerX within a 10–m radius from the home router to ensure strong Wi–Fi signals.

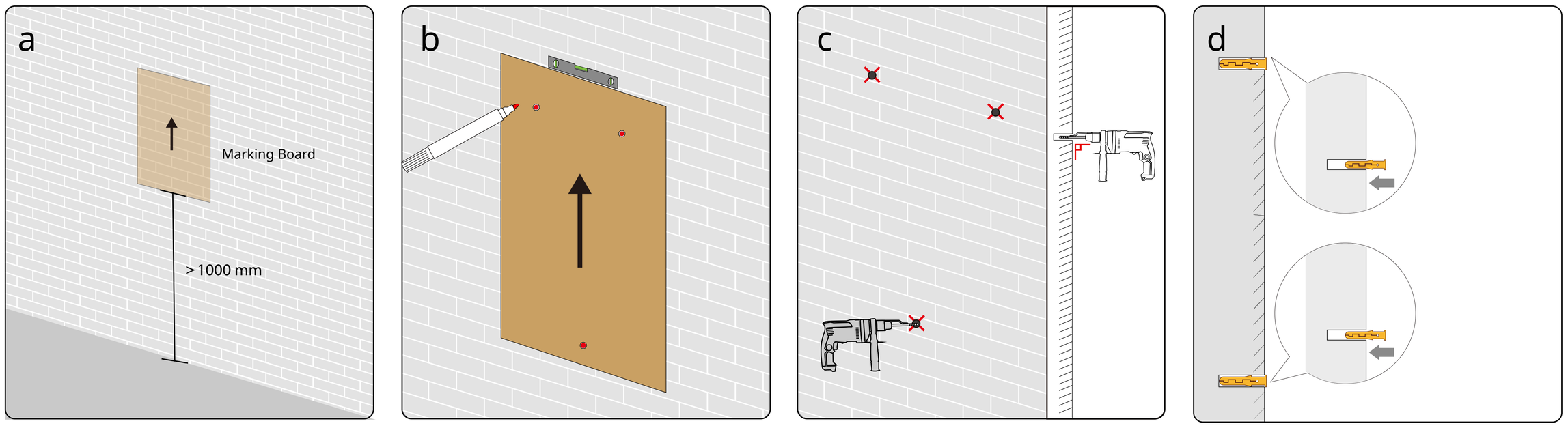
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4.2 Mount the M–CombinerX

a. Use a tape measure to locate the marking board on the wall. It should be at least 1,000 mm vertically from the floor.
b. Use a spirit level to check that the board is level, then mark three points on the wall.
c. Drill at the three marks by using an electric drill with a bit (Φ10).
d. Insert the wall anchors into the holes.
e. Insert the M8 screws to mount the rail, and then tighten the M8 screws by using a Phillips #2 screwdriver with a torque of 9–14 N·m.
f. Hang the top mounting tabs in the corresponding position of the rail.
g. Insert the screw into the bottom hole and tighten the M8 screws by using a Phillips #2 screwdriver with a torque of 9–14 N·m.

NOTE:

- **Do not expose the M–CombinerX to direct sunlight, unless installing a sunshade.**
- **The signal cable of the consumption CT is 5 meters long. Therefore the M–CombinerX must be installed closed to the distribution panel.**

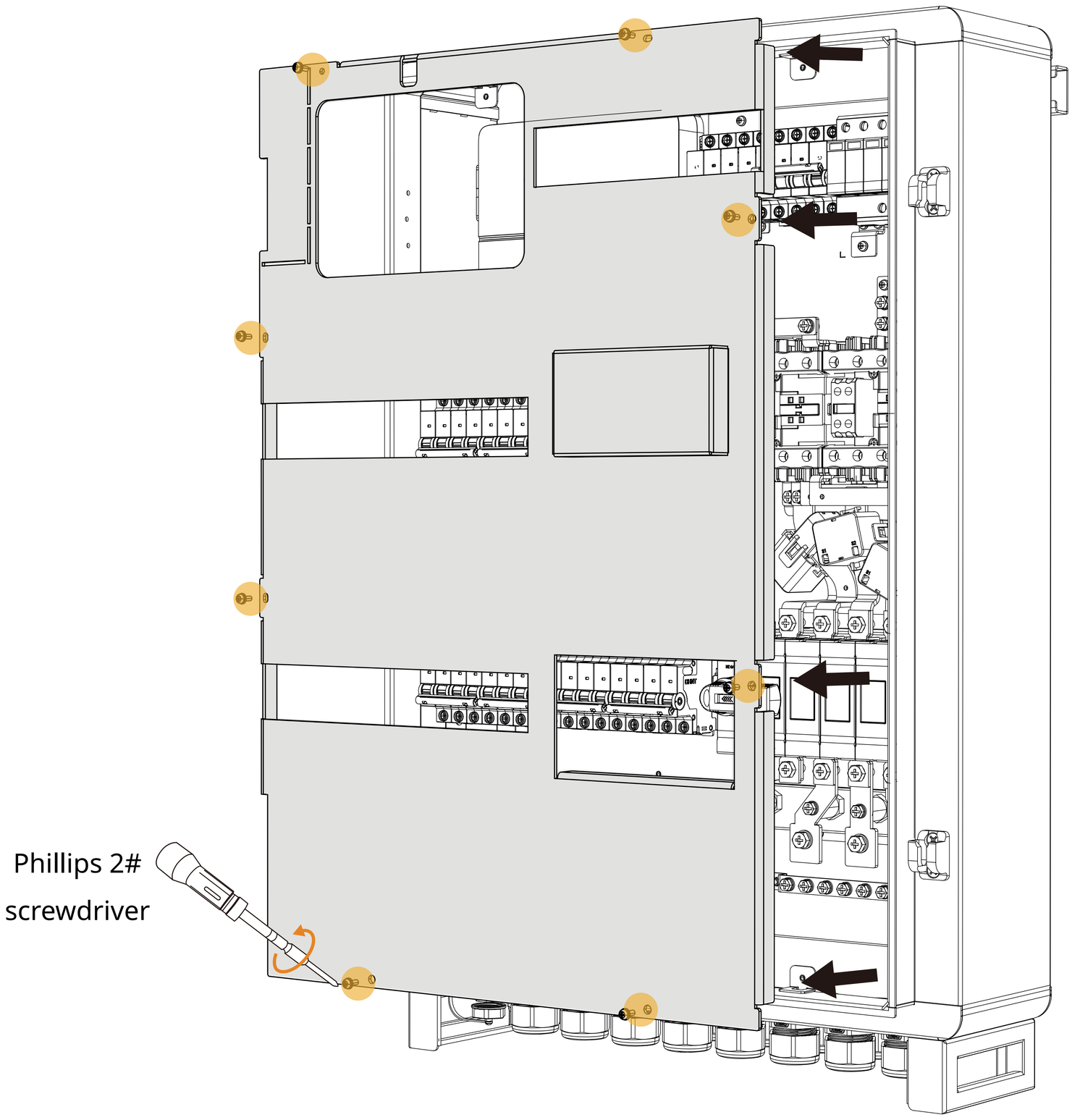


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4.3 Remove the Protective Panel

a. Open the combiner door. If necessary, use the key provided in the package with this guide.

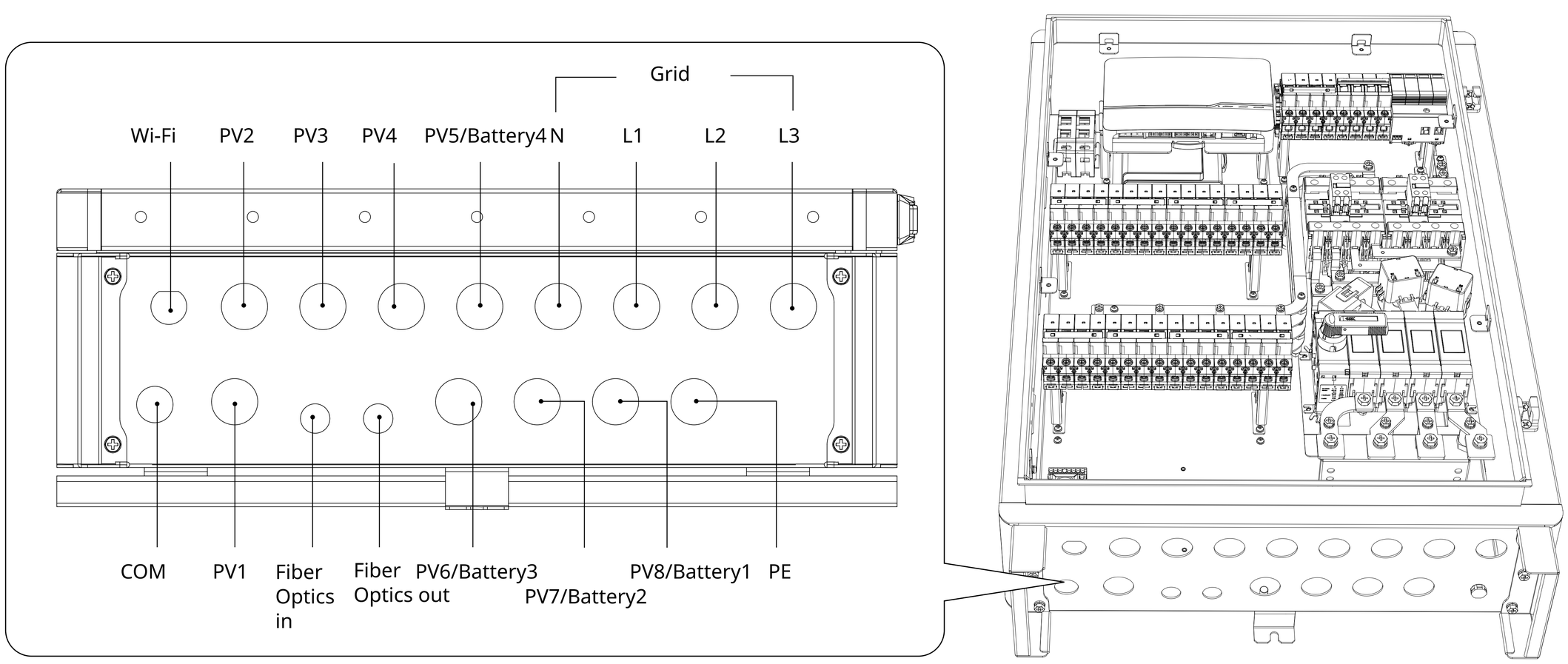
b. Use a Philips 2# screwdriver to remove the protective panel.



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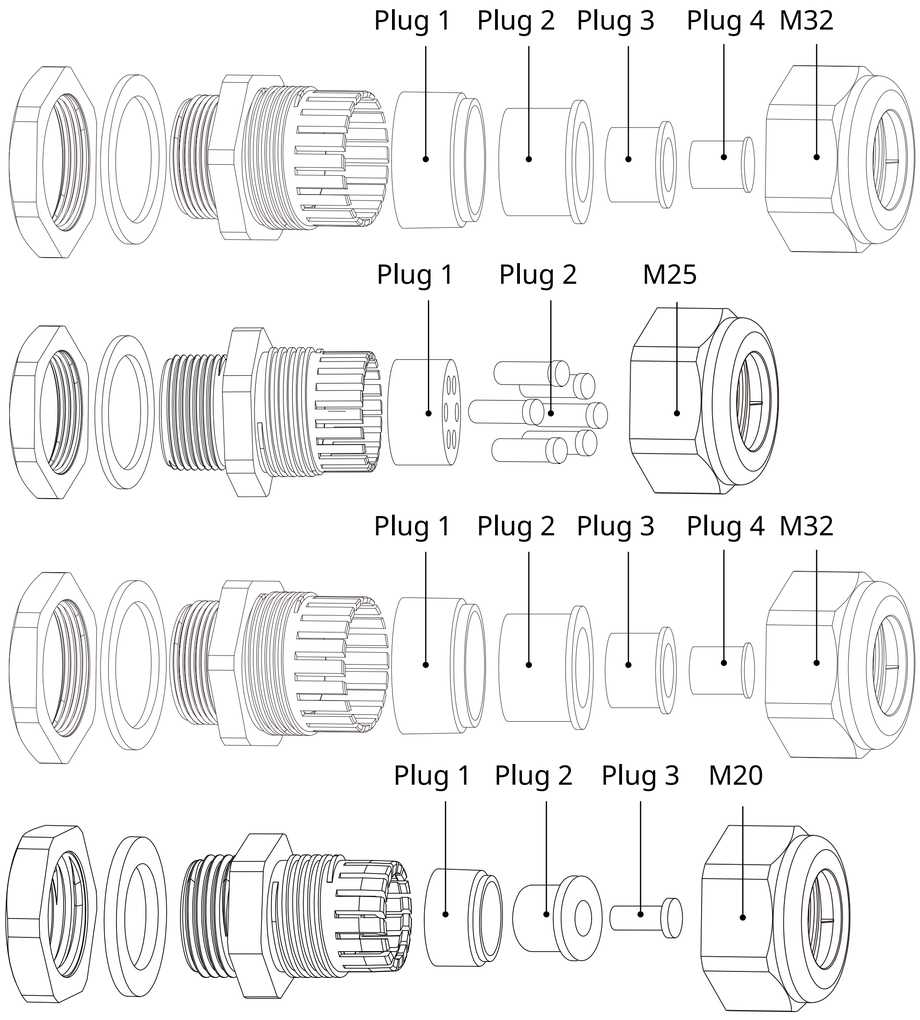
4.4 Check the wiring interface

a. The wiring area and recommended cable outlets can be found at the bottom of the M-CombinerX.



b. Loosen the plug as needed and thread the cable through the appropriate plug. The relationship between the plug and the wire diameter is shown in the table below.

c. Tighten the first three kinds of lock nuts of the glands with a torque of 4–5 N·m and the sealing nuts with a torque of 7–7.5 N·m. Tighten the M20 lock nuts of the glands with a torque of 1.75–2.5 N·m and the sealing nuts with a torque of 4–5 N·m.



Function	Item	Recommended wire diameter
PV / Battery	Plug 1	4 × 4 to 5 × 6 mm²
	Plug 1 + 2 + 3	1 × 50 mm² for C&I BattBank 1 × 35 mm² for C&I BattBank
	Plug 4	Cover the unused cable holes
COM	Plug 1	0.25 to 0.75 mm²
	Plug 2	Cover the unused cable holes on plug1
Grid / PE	Plug 1	95 to 120 mm²
	Plug 1 + 2	50 to 70 mm²
	Plug 1+ 2 + 3	16 × 25 mm² for C&I BattBank PE
	Plug 4	Cover the unused cable holes
Fiber	Plug 1	5 to 12 mm²
	Plug 1 + 2	Cover the unused cable holes
	Plug 3	Cover the unused cable holes

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4.5 Wire to the M–CombinerX

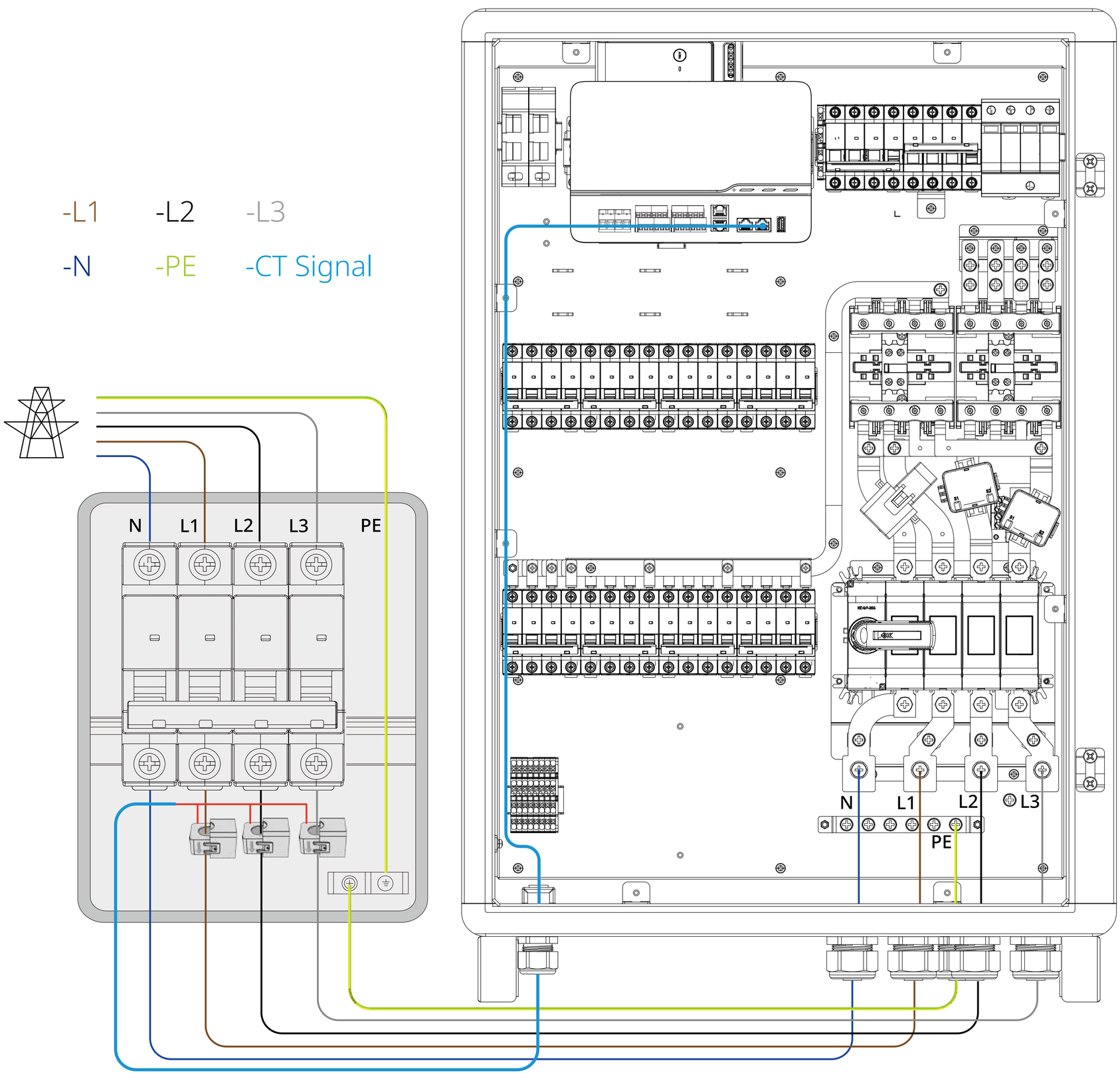
4.5.1 Wire from the grid (distribution board)

Section A. Wire the power cables

a. Bring in the cables from the grid through the grid holes of the combiner.
b. Connect the cables (N, L1, L2, and L3) to the grid breaker and connect the ground cable to the PE terminal block as shown.
c. Tighten the screws by using a Phillips #2 screwdriver with a torque of 3.5–4 N·m.

NOTE:

- **Ensure that the cable sequence (N, L1, L2, and L3) of the breaker in the M-CombinerX is consistent with that of the grid.**



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Section B. Wire the consumption CT

a. Install the consumption CT for electricity metering. You can find the CT in the box.

b. To install the CT, perform the following steps:

- Connect the CT signal cable to the reserved RJ45 terminal as shown above.
- Locate the arrows on the CTs' labels and clamp the the CTs with labels “L1", “L2" and "L3" into the L1, L2 and L3 cables respectively. The CTs' arrows must point away from the grid.

NOTE:

To guarantee the correct measurement of home energy consumption, the following items must be complied with:

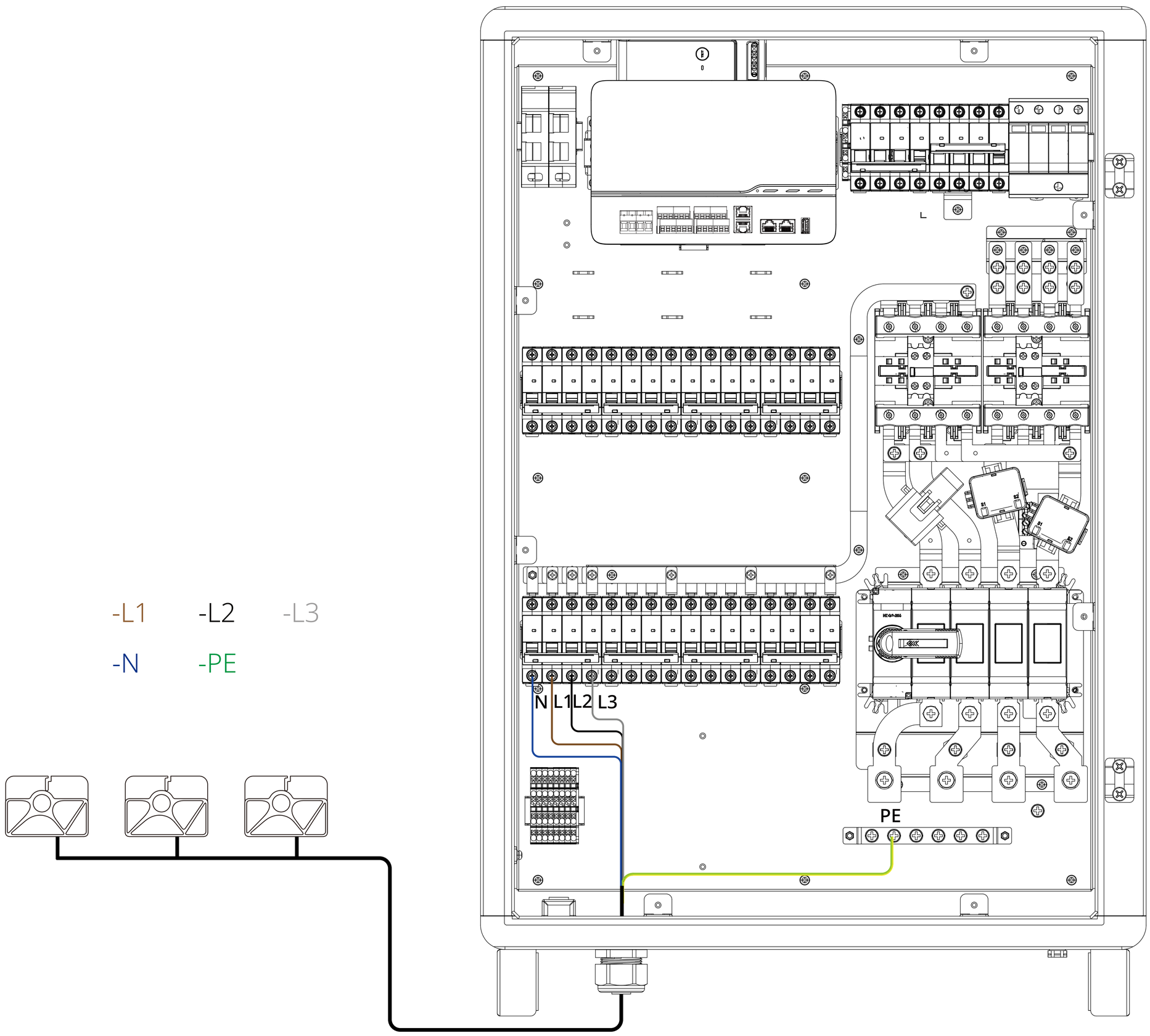
- The CT's arrow must point away from the grid.
- Ensure that the CTs with with labels “L1", “L2", and "L3" are installed on the same power line as the L1, L2 and L3 of the breaker in the M–CombinerX respectively.

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4.5.2 Wire from the PV branch (microinverter)

Supports 8 PV inputs, of which only 4 can be retrofitted for Battery input, with PV1 wiring shown as an example.

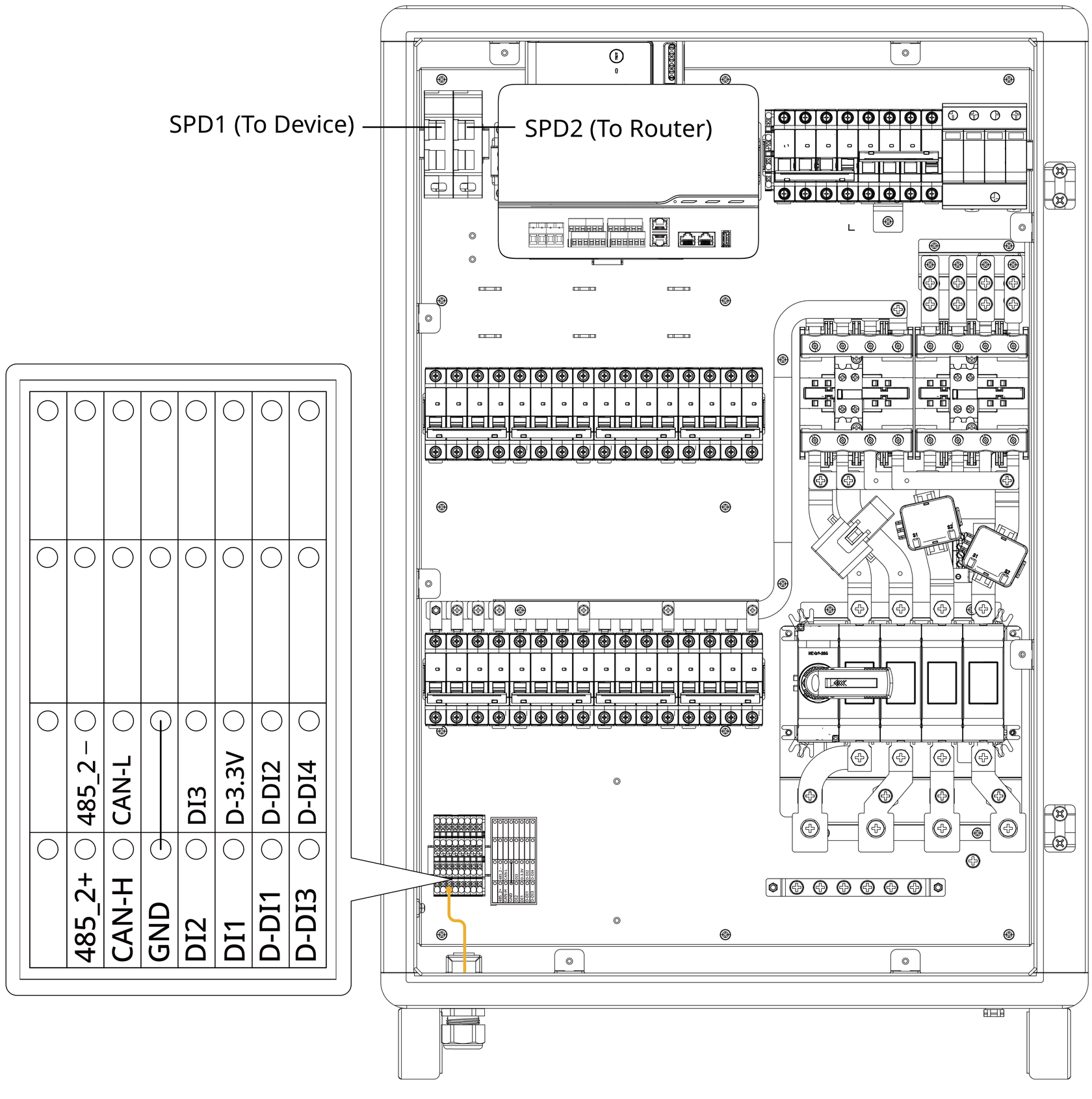
a. Bring in the cables from the PV branch circuit through the PV hole of the combiner.
b. Connect the cables (N, L1, L2, and L3) to the PV breakers.
c. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.
d. Optional: Connect the PE cable from the PV rack system to the PE terminal block in M-CombinerX.



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4.5.3 (Optional) Communication interface

a. The M-CombinerX supports ETH, RS485, CAN and DI CTRL interfaces, etc. Connect the cables from the devices to the communication terminal block as the wire diagram in the M-CombinerX.

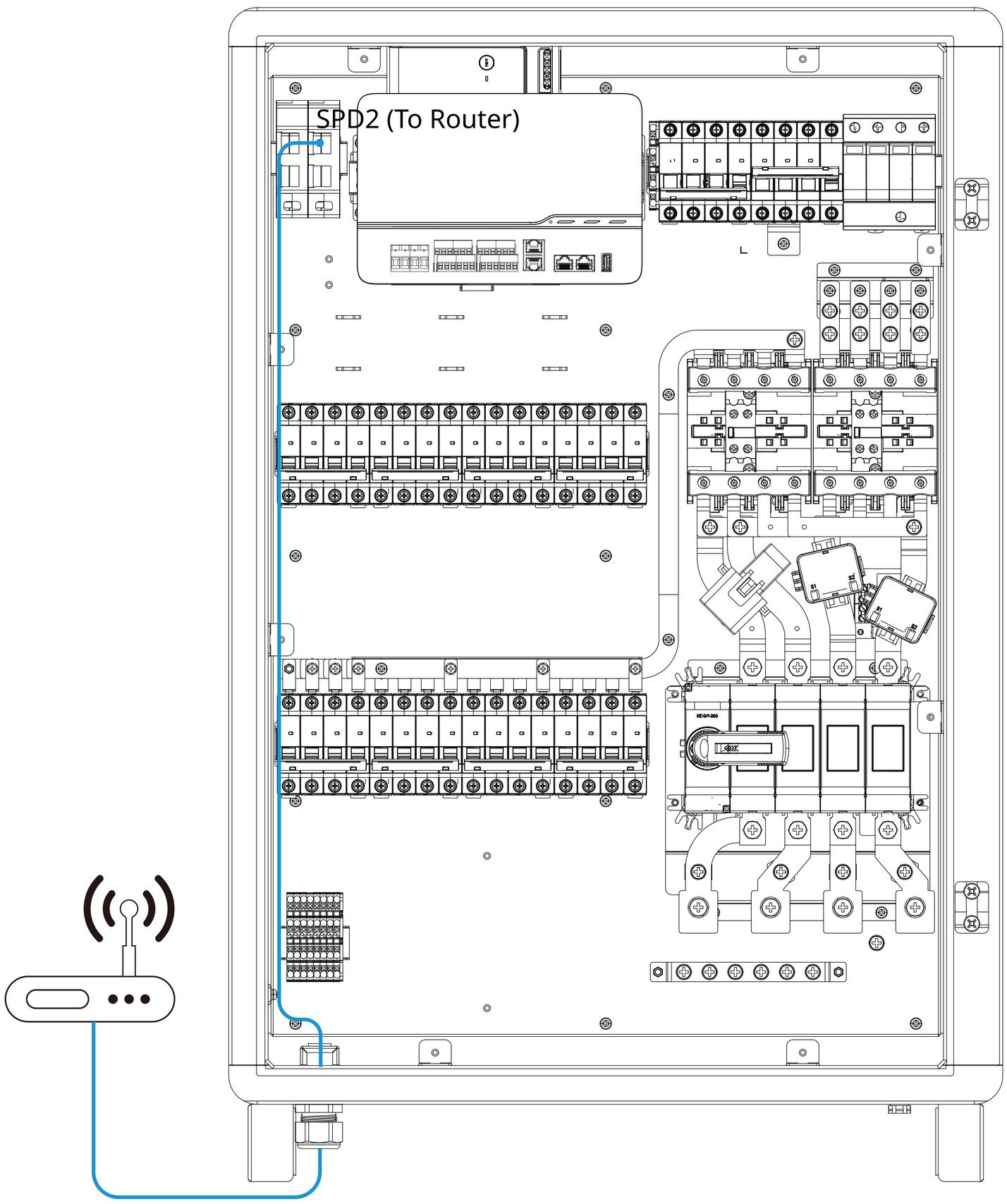


-CAN–COM

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4.5.4 (Optional) Wire from the Router

a. When you use ETH to connect to ATMOCE–Cloud, bring in the cable from the router through the COM hole of the box.
b. Connect the 802.3 Cat 6 UTP ethernet cable to the RJ45 terminal in the combiner as shown in the figure.



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4.5.6 (Optional) Wire from the M-ELV BattBank

Section A. Wire the power cables

a. Remove the original battery breakers, terminal blocks, and connected cables as shown in Fig.1. Install a 125 A breaker in the position shown in Fig.2. The max installable breaker number could be up to two.
b. Bring in the cables (L1, L2, L3, N) from the battery through the Battery1 / Battery2 / Battery3 / Battery4 hole of the combinerX separately and connect to bottom terminals of the newly installed breaker. And then connect the top terminals of the newly installed breaker to the right busbar as shown in Fig.3..
c. Bring in the PE cable from the battery through the PE hole. Connect the ground cable to the PE terminal block.
d. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.
e. Connect the Ethernet cable of the battery to the SPD1 terminal through the COM hole.

Section B. Wire the Battery CTs

a. To install the CTs, perform the following steps:

- Connect the signal cable of the CTs to the Gateway as shown below.
- Locate the arrows on the CTs' labels and clamp the CTs with labels "L1,""L2," and “L3," on the the L1, L2 and L3 cables respectively. The CTs' arrows must point away from the battery.

NOTE:

- **The current through the breaker must be equal or less than 100A.**

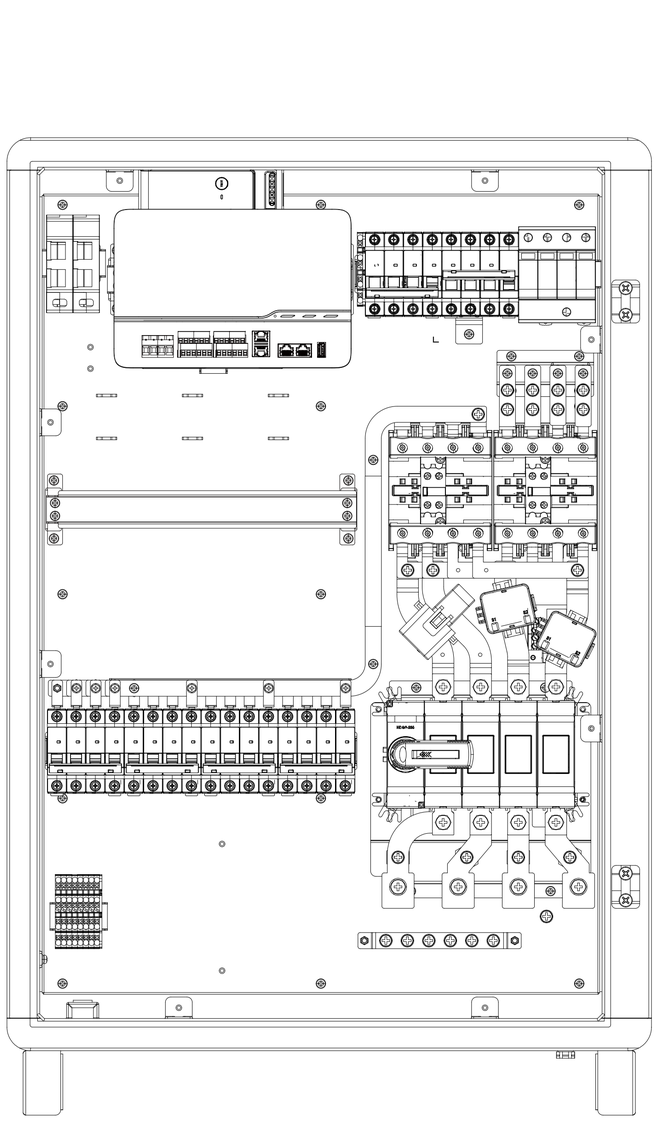


Fig.1.

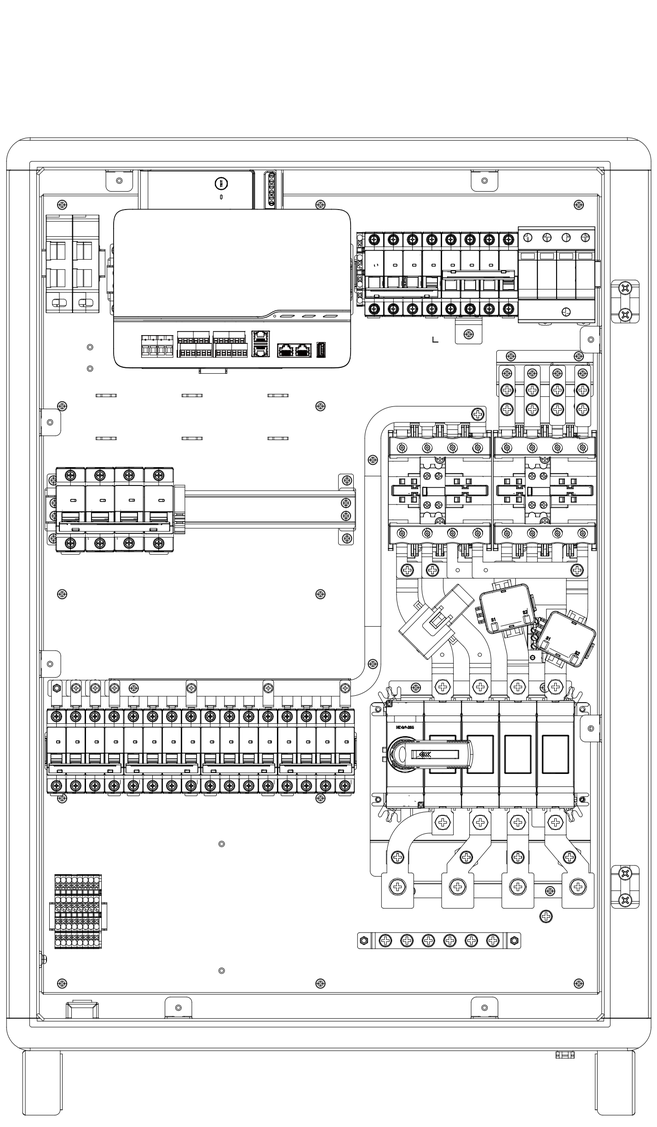


Fig.2.

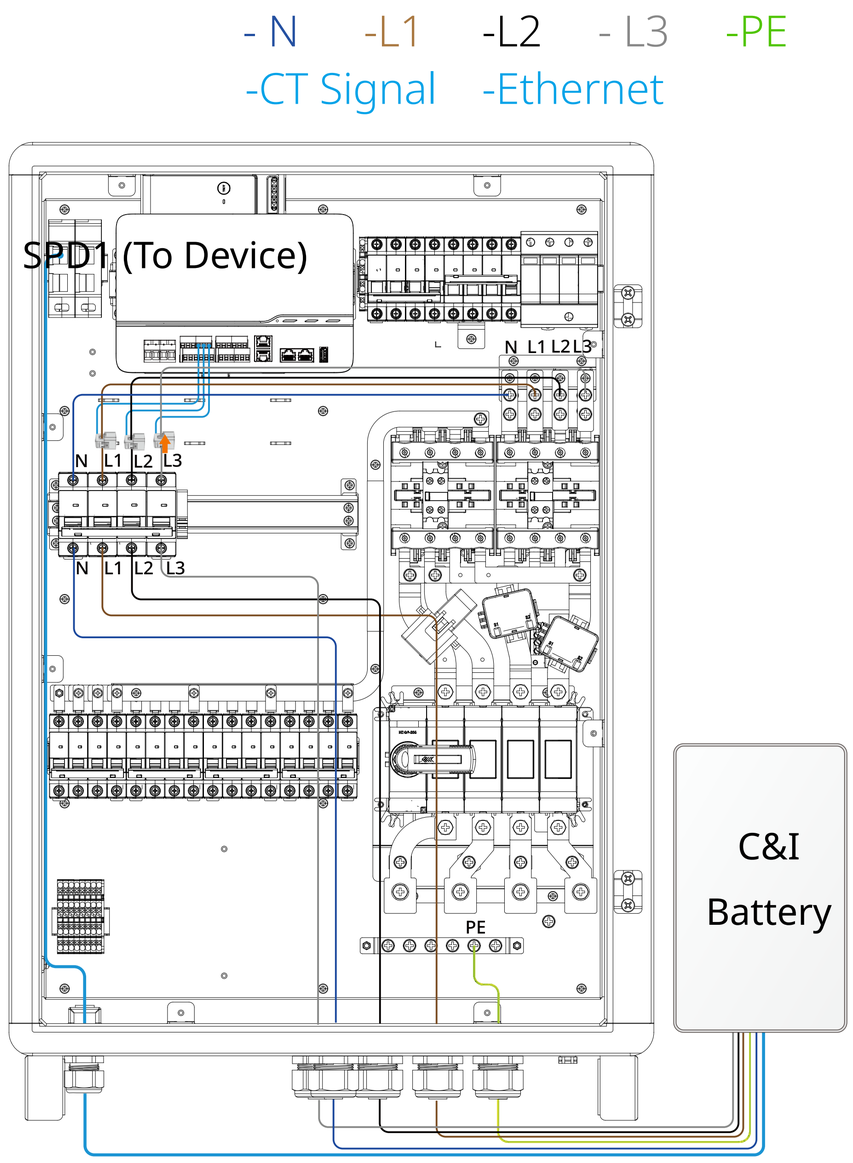
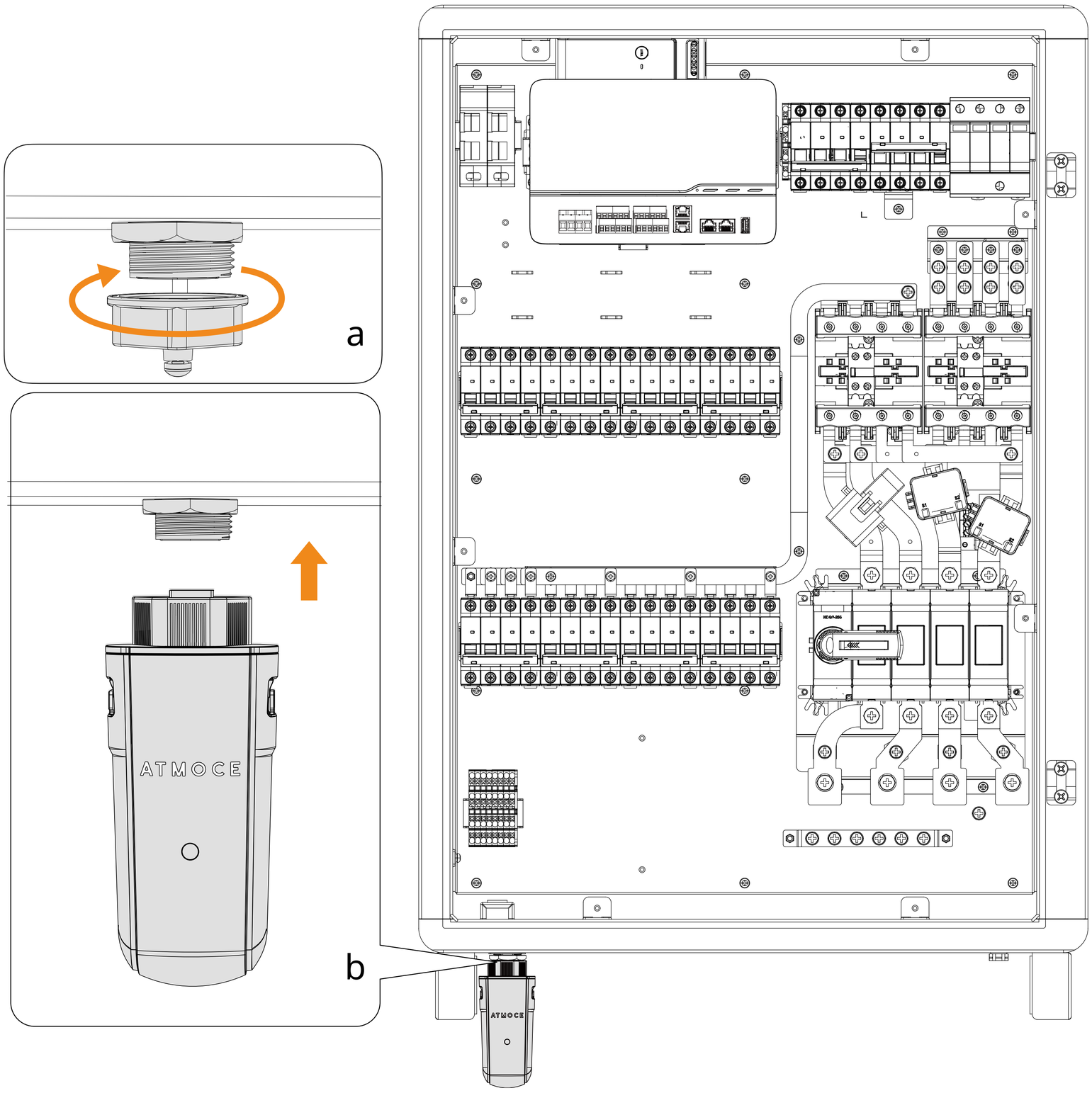


Fig.3.

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4.6 (Optional) Install the Wi-Fi dongle

a. When you use Wi-Fi dongle to connect to ATMOCE–Cloud, remove the sealing cap of the Wi-Fi interface.
b. Insert the Wi-Fi dongle as shown in the figure.



4.7 (Optional) Wire for master-slave operation

a. For details, please refer to the relevant section of the user manual.

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4.8 Power on the System

a. Turn on the main breaker in the distribution board.

b. To check the phase sequence, perform the following steps:

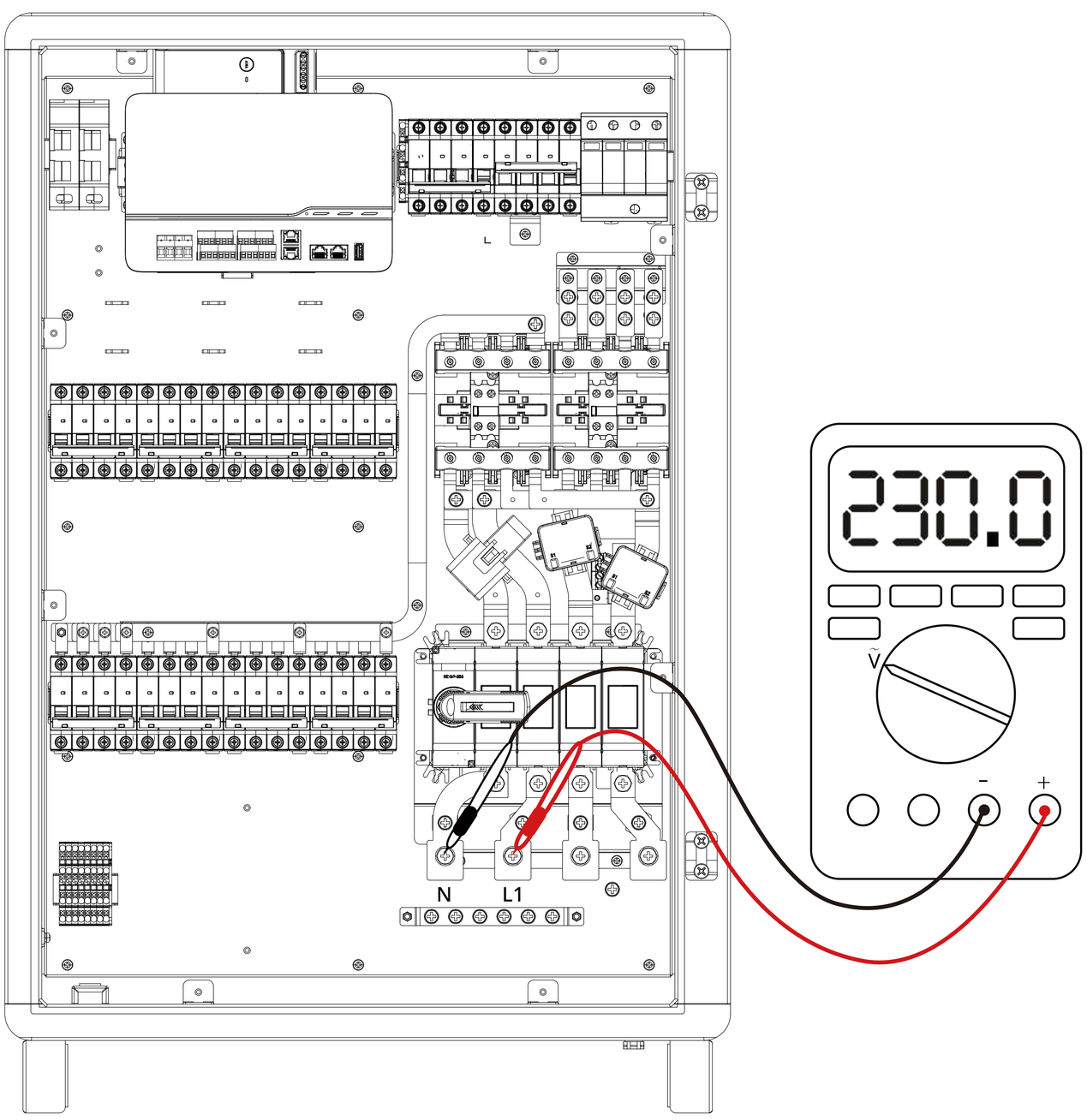
- Use the multimeter to measure the voltage between the N pole and L1 pole of grid breaker as shown in the figure.
- Measure the voltage between the N pole and L2 pole.
- Measure the voltage between the N pole and L3 pole.

c. If the voltage value is approximately the nominal phase voltage, e.g. 220 V, 230 V and 240 V, re–install the protective panel.

d. Turn on the grid and other breakers in the combinerX, and the LEDs on the gateway will be on.

NOTE:

- **If the voltage value is outside the range (176 to 276 V), do not switch on the grid breaker inside the M-CombinerX. Check the cable connection to avoid damaging the device and voiding the warranty.**



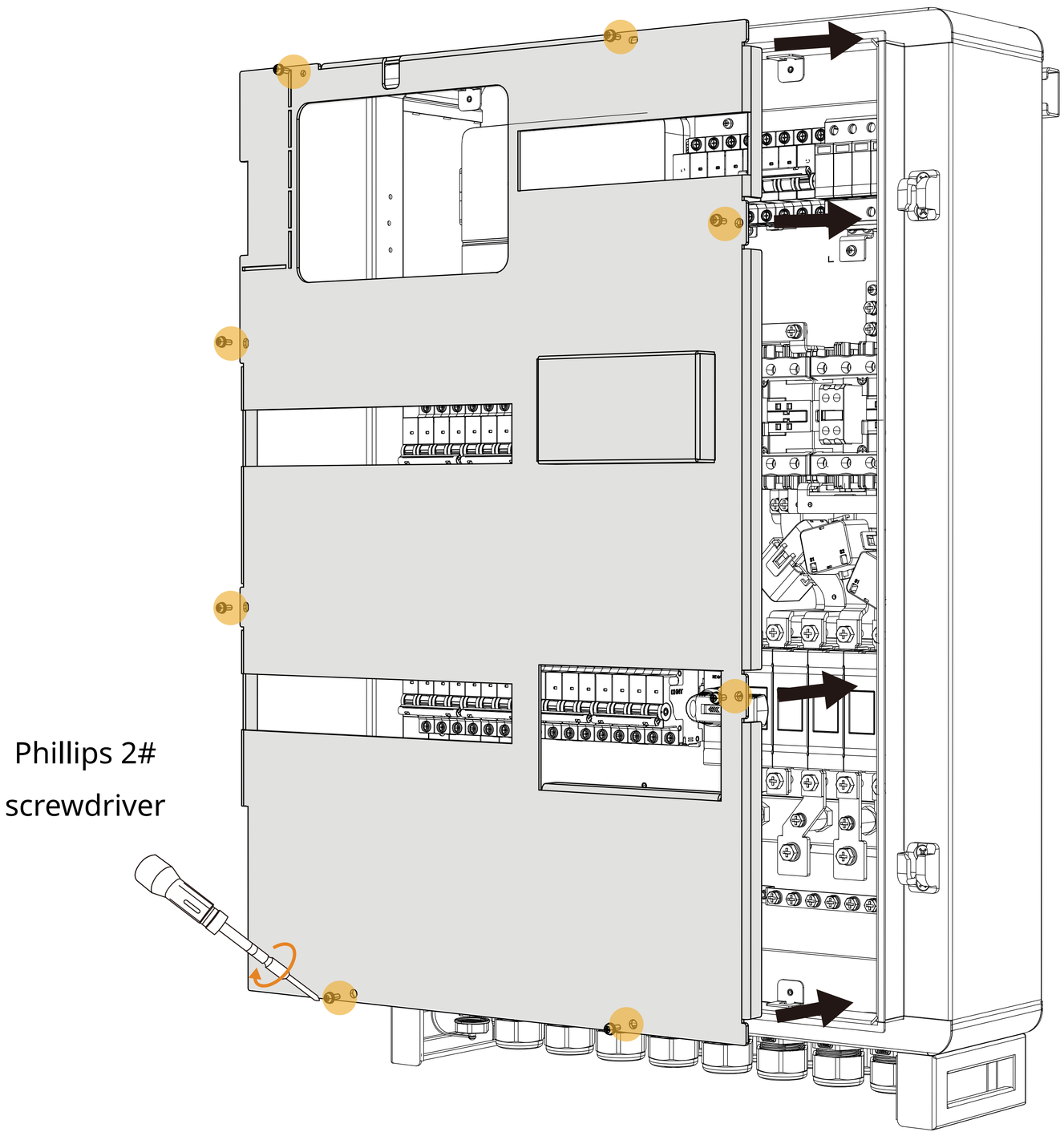
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4.9 Activate the System

a. Log in to the ATMOZEN App on your mobile phone and follow the deployment guide in the app to activate the system. Details of the deployment guide can be found in the following section.
b. After the system is activated, all LEDs will be solid green.

4.10 Close the M–CombinerX

a. Close the door of the M-CombinerX.
b. Optional: Lock the combiner in accordance with local electrical regulations.



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Deployment Guide

Note

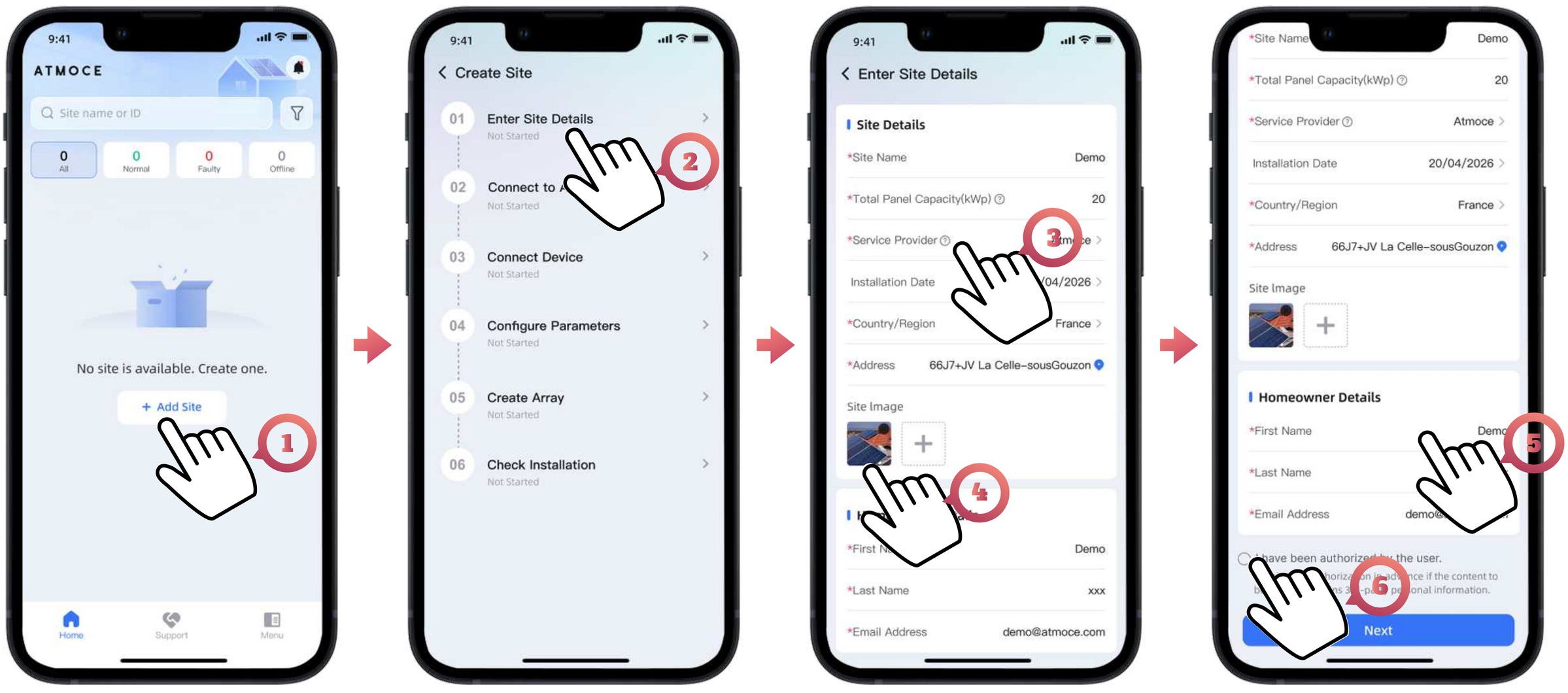
- Ensure that your phone's operating system meets the following requirements: iOS 16.3.1 or later, or Android 11 or later.
- Complete the creation of the installer role following the registration process on the app.
- Before the configuration, confirm that all microinverters, gateways, batteries, and other loads have been installed and powered on.

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5.1 Enter Site Details

a. Log in to your installer account and tap + to create a site.

b. Specify site details. Parameters marked with * are required



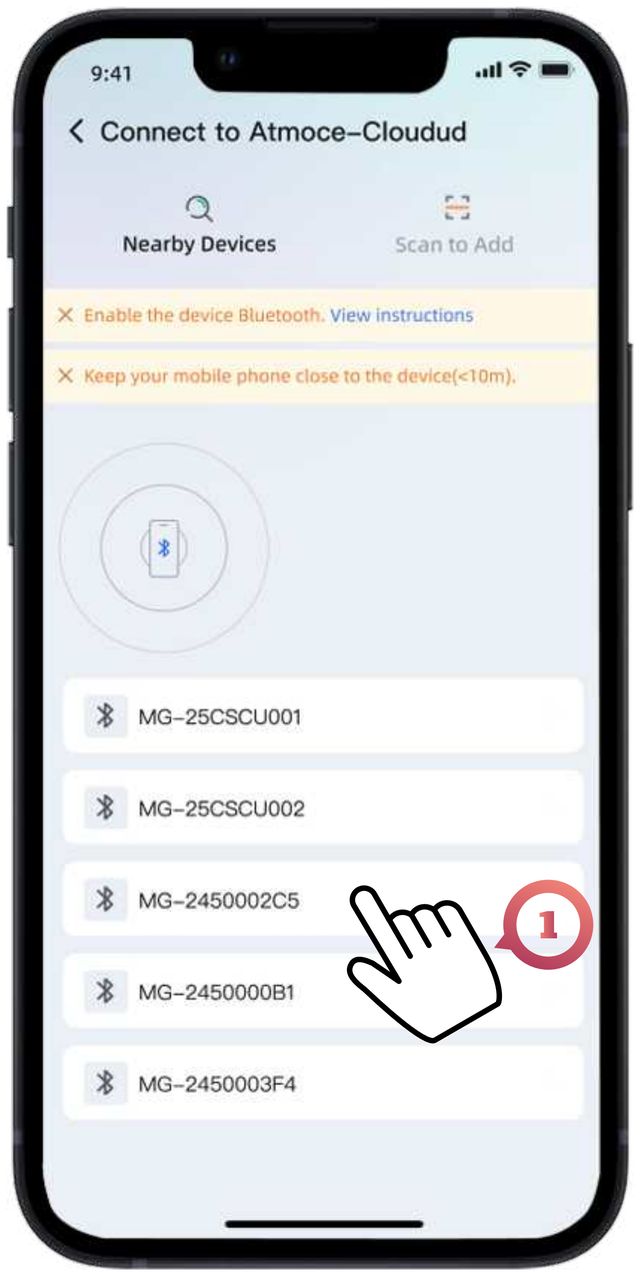
NOTE:

- **Help the homeowner complete the registration process on the app, and specify the homeowner details based on the registered information.**

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5.2 Connect the Gateway to ATMOCE–Cloud

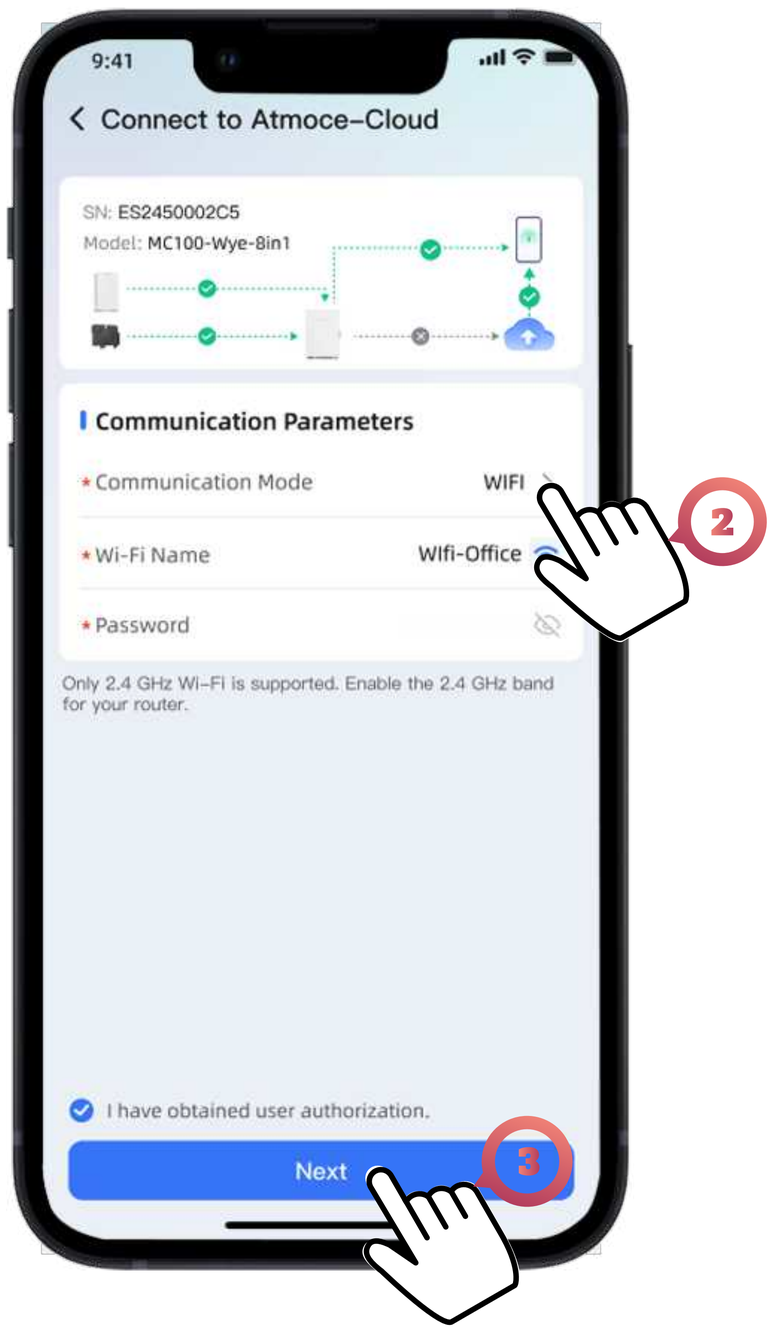
a. Enable Bluetooth on your phone, and keep your mobile phone close to the M–Gateway (<10 m).
b. There are three methods to create a Bluetooth link:
   - **Nearby Device:** the default method. Check the Bluetooth device list, and select the SN number of the M–Gateway, whose name usually starts with "M".
   - **Scan to Add:** Scan the device serial number (QR code) on the M–Gateway.
   - **Add Manually:** Enter the device serial number of the M–Gateway.



NOTE:

- **It is only after the M-Gateway has been connected to the cloud once that the Add Manually function can be used.**

c. Configure a home network for your device and ensure proper network connection. There are two methods to create a connection:
   - **Wi–Fi:** select **Wi–Fi Name** and input **Password**.
   - **Ethernet:** connect the router to the combiner through a Cat 6 UTP ethernet cable. For more information, see Section 4.5.4 "(Optional) Wire from the Router."



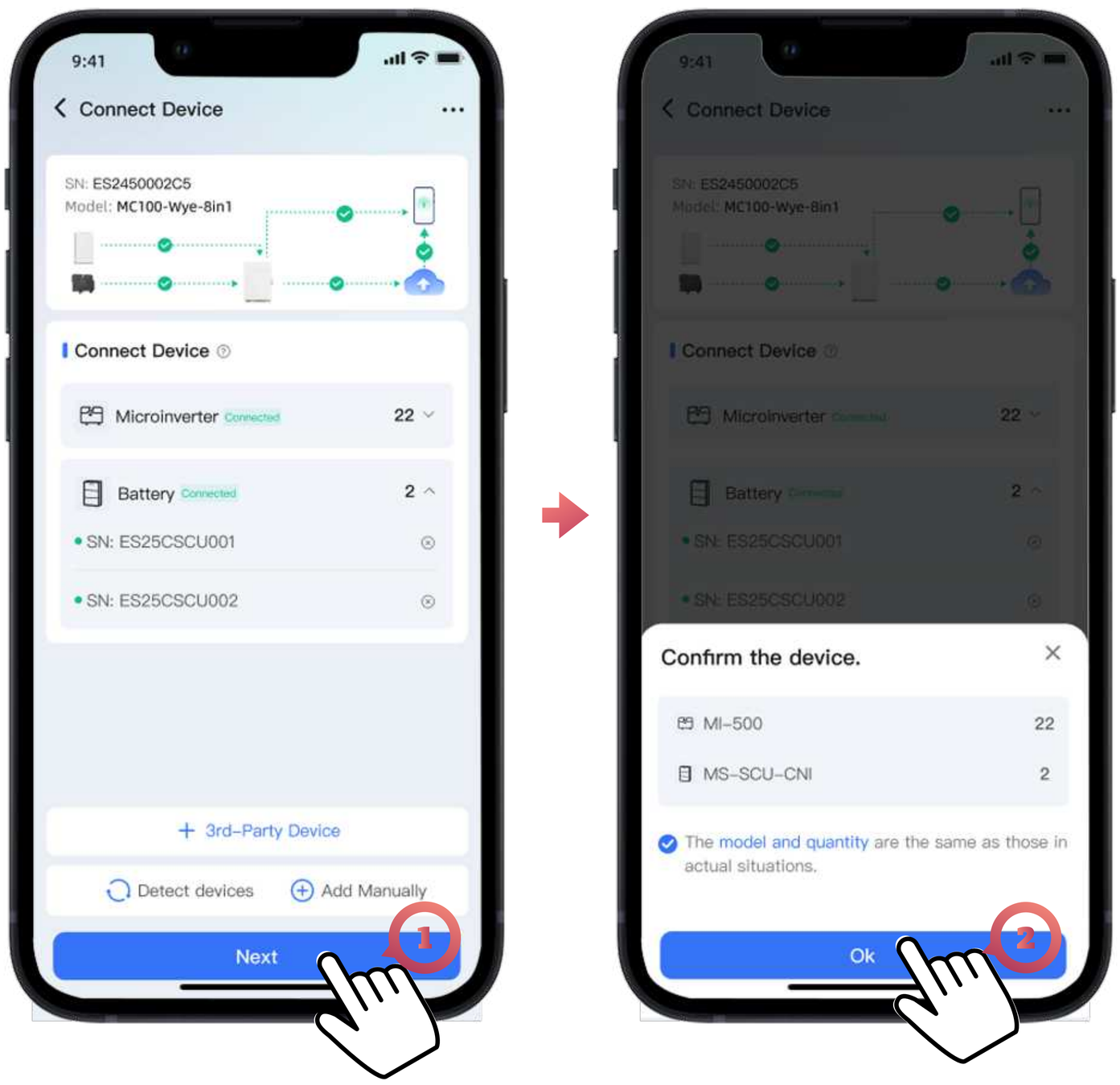
NOTE:

- **The M–Gateway integrated Wi–Fi operates at 2.4 GHz and supports IPv4 and a number of wireless security protocols, including WPA–PSK and WPA2–PSK.**
- **The M–Gateway does not support Wi–Fi WPS.**

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5.3 Connect Devices to the Gateway

a. The M–Gateway automatically searches for microinverters that are installed.
b. Check the serial numbers of microinverters listed on the app against the installation map. If you find that not all devices are connected, you can tap **Detect Devices** to initiate a search again or tap **Add Manually** to add devices.



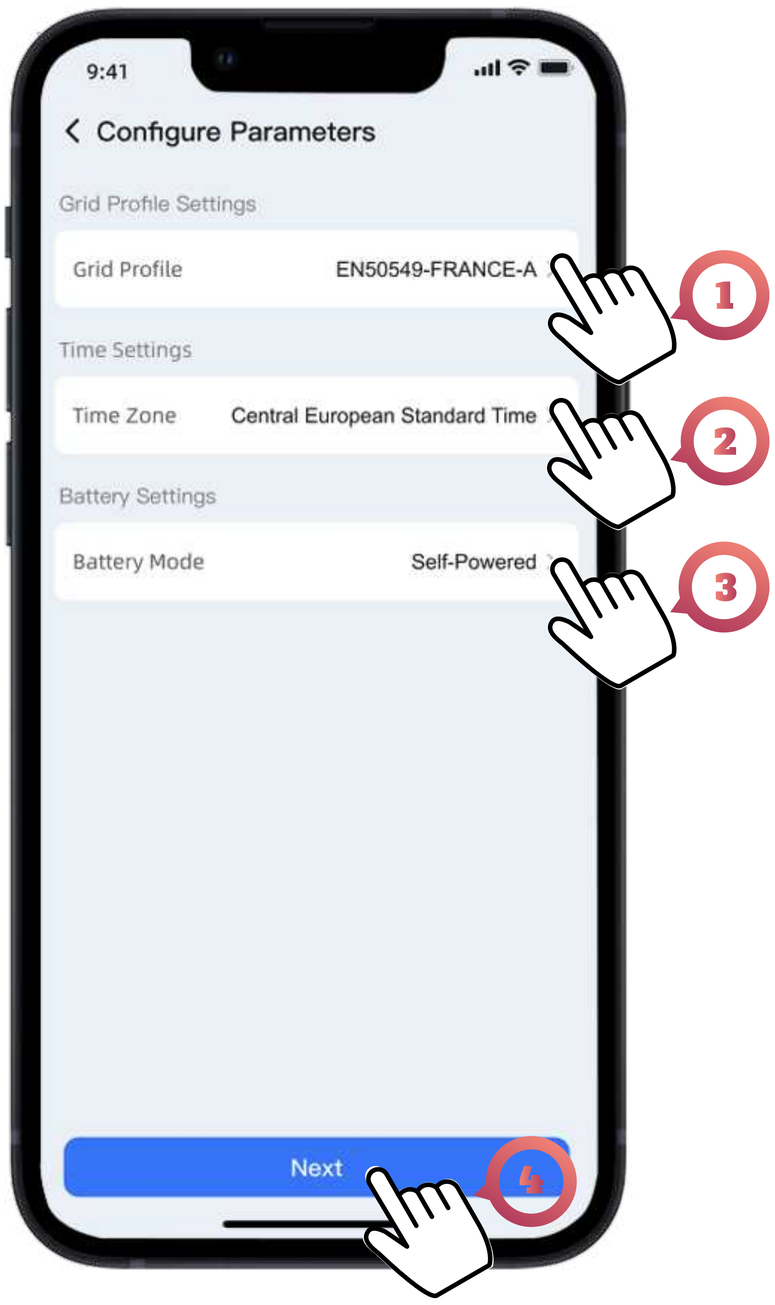
NOTE:

- If all or part of the microinverters cannot be added in the evening after the site has been installed, please refer to the "ATMOZEN App & ATMOCE Cloud User Manual".
- If a device is deleted by mistake, it can be added again only by clicking **Add Manually.**

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5.4 Configure Parameters

a. Ensure that the settings of **Grid Profile** and **Time Zone** match the country or region where the site is located.



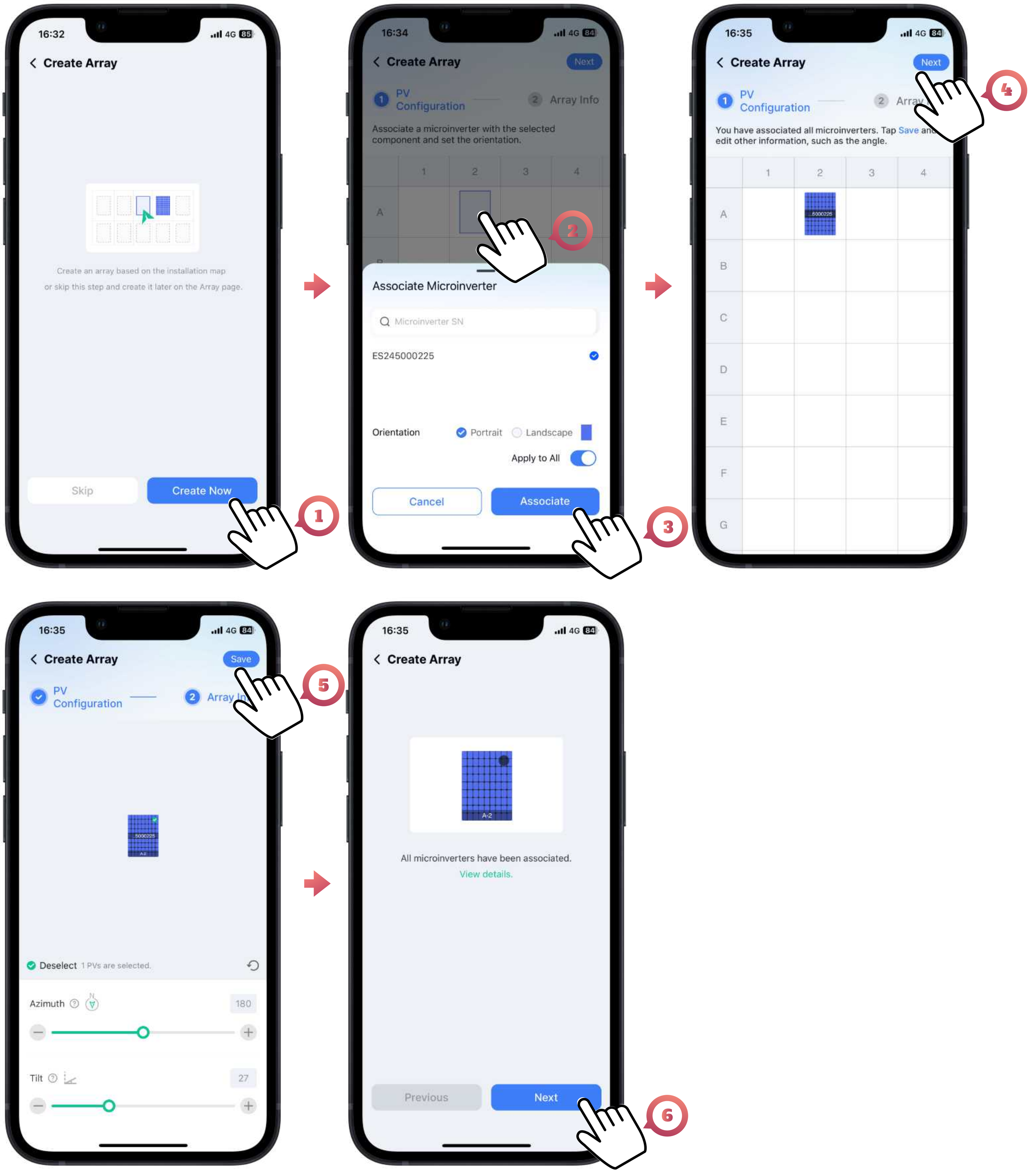
NOTE:

- **If there is no grid profile that meets the local electricity authority requirements, please contact ATMOCE Technical Support and request a new grid profile.**

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5.5 Create an Array

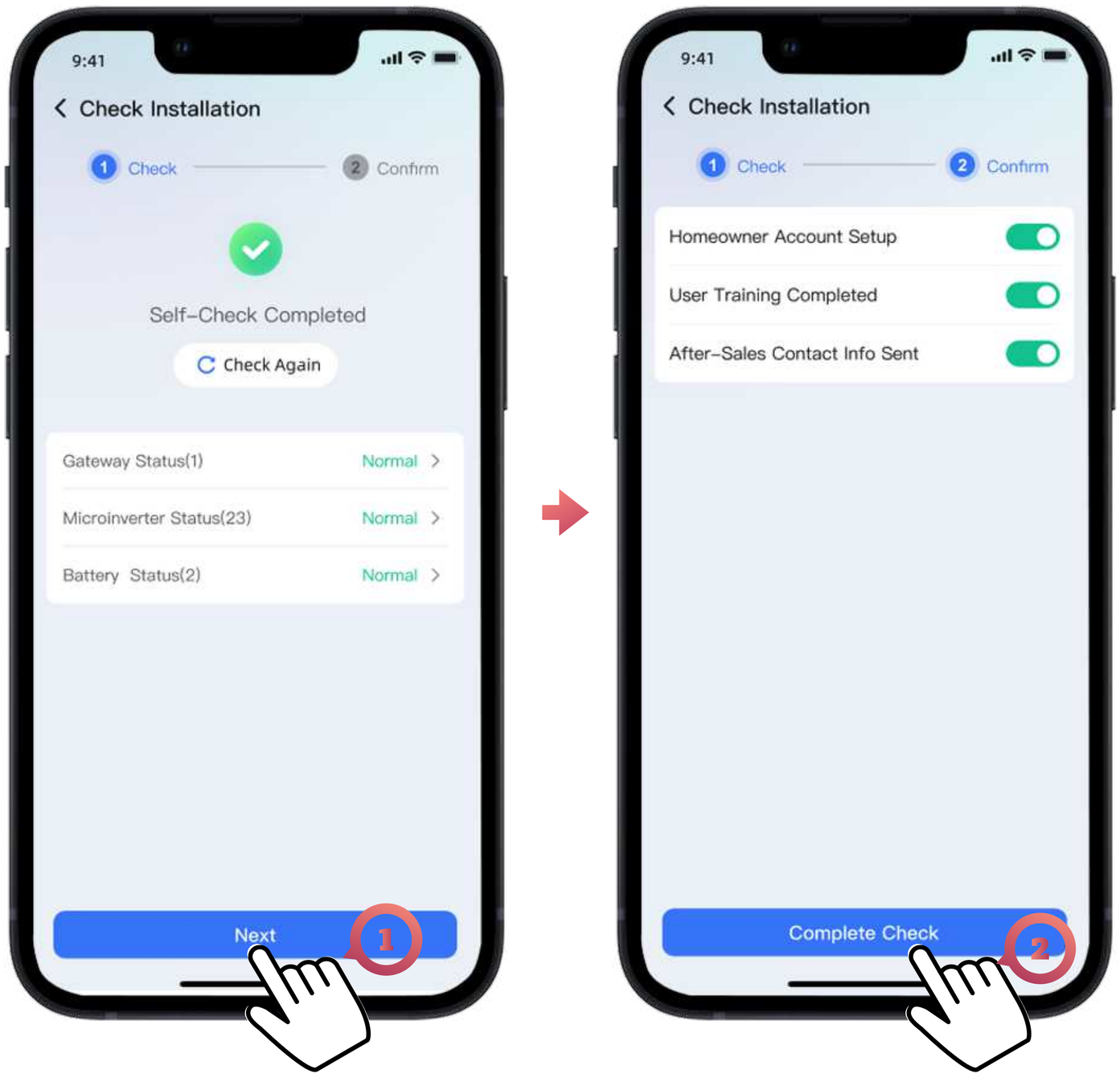
a. Create the array diagram for module–level management.
b. Please follow the steps shown below to complete the deployment of the array and the setting of the **azimuth** and **tilt** angle.



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5.6 Check the Installation

a. The system status is automatically diagnosed to ensure proper site running. Ensure that all devices are in a normal state.
b. Tap **Complete Check** to finish the activation.



NOTE:

- **Once the M–Gateway is connected to the ATMOCE–Cloud, the network service is activated. The ATMOCE–Cloud will support updates and upgrades for all connected devices in the future.**

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Troubleshooting

6.1 MG100-Wye LED Indicator Description

a. LED indicators can provide critical information on the operational status of devices. The status of LED indicators helps to solve related problems during on–site installation, configuration and troubleshooting.

b. MG100-Wye has three LED indicators, which are described as follows:

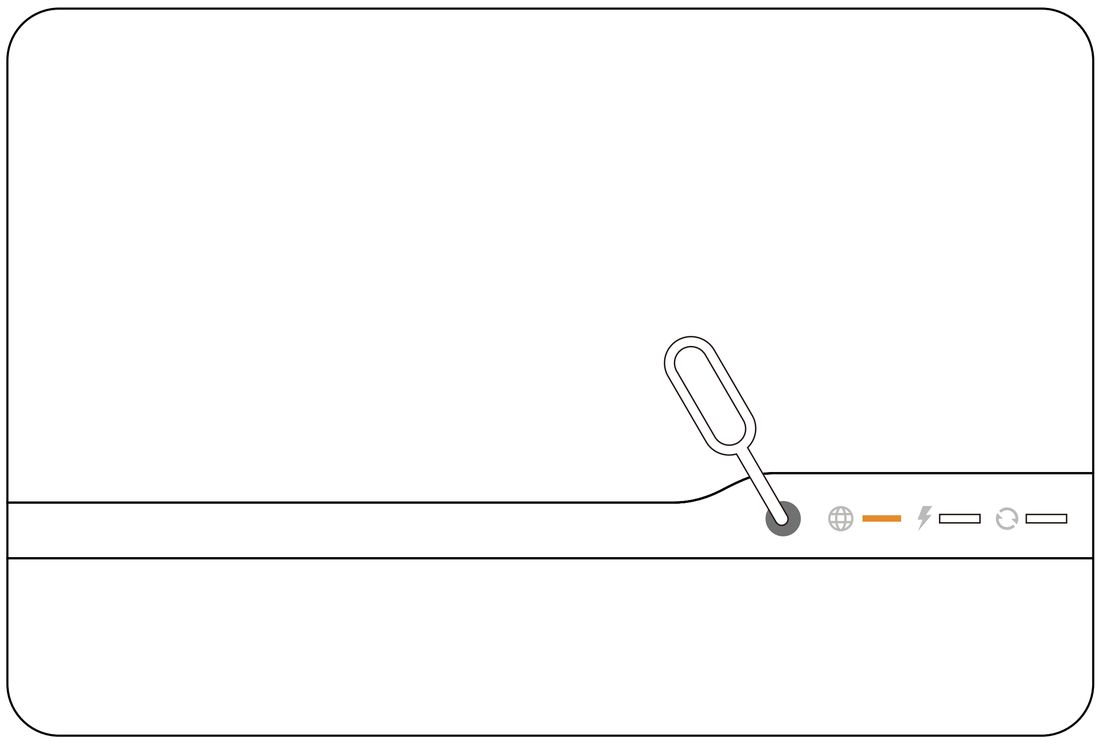


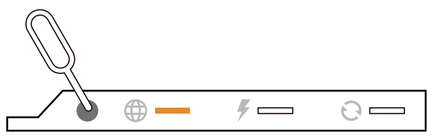
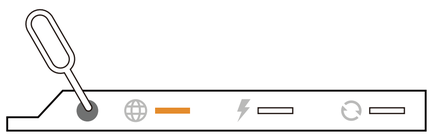
LED indicator	Colour	Description
Network Status	Solid Green	Connecting to ATMOCE–Cloud.
	Quick Flash Green	Connecting to ATMOZEN APP via Bluetooth.
	Slow Flash Red	No network available.
Microinverter Power Status	Solid Green	All communicating microinverters are generating power.
	Slow Flash Orange	At least one microinverter is not generating power.
	Dimmed	All microinverters are not generating power.
Microinverter Communication Status	Solid Green	All microinverters are communicating normally.
	Quick Flash Green	The MG100-Wye is detecting microinverters.
	Slow Flash Orange	At least one microinverter is not communicating.
	Slow Flash Red	All microinverters are not communicating (not due to low light or night time).
	Dimmed	All microinverters are not communicating (due to low light or night time).
ALL	Slow Flash Green	Software update is in progress.

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6.2 MG100-Wye Reset Button

a. The MG100-Wye has a reset button. The location of the button and the reset operation are shown as below.



	Function	Operation	Duration
1	Turn On Bluetooth		Press until the network indicator quickly flashes orange three times.	3s < Press < 10s
2	Turn On Bluetooth		Press until the network indicator slowly flashes orange three times.	3s < Press < 10s
3	Restart the MG100-Wye		Step1: Press until all indicators are solid orange. Step2: Release the button. Step3: Press until all indicators are dimmed.	10s < Press < 20s 0s < Wait < 5s 10s < Press < 20s

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6.3 MG100-Wye Issue Troubleshooting

When an on–site problem occurs, the LED indicators on the MG100-Wye can provide troubleshooting guidance. The following content will introduce common on–site problems and their solutions.

If you have any questions about the fault diagnosis, please contact ATMOCE Technical Support (https://www.atmoce.com/contact-us).

6.3.1 If the network status LED is flashing red.

Issue 1: The Wi–Fi communication is disconnected.

Code	Reason	Solution
1	The Wi–Fi name or password is incorrect.	• Reconfigure the Wi–Fi name and password through the Wi–Fi settings on the mobile app.
2	The Wi–Fi band is not 2.4GHz.	• Please contact your network service provider or check the router user manual for assistance. • Use a broadband router that supports the 2.4 GHz band.
3	The M–CombinerX is outside the Wi–Fi coverage range.	• Place the M–CombinerX nearer to the router or add a wireless repeater to expand the Wi–Fi coverage range.
4	DHCP server issues.	• If the Dynamic Host Configuration Protocol (DHCP) server is disabled, enable it. • Confirm that you are using a broadband router, not a switch or hub. Many hubs and switches cannot provide a DHCP server and may not allow devices to connect to Ethernet or wireless networks.
5	Broadband router issues.	• If the SSID is hidden, turn off "Hide SSID". • Select "WPA–PSK" or "WPA2–PSK" for "Security Mode". • Select "AES" for "Encryption".
6	Unable to connect to the router.	• Check if other devices connected to the router are communicating properly. • Please contact your network service provider or check the router user manual for assistance.
7	The home broadband router has been replaced.	• Reconfigure the Wi–Fi name and password through the Wi–Fi settings on the mobile app.

Issue 2: The ETH communication is disconnected.

Code	Reason	Solution
1	The Ethernet cable connection of the router is incorrect/unplugged.	• Replug the Ethernet cable. • Restart the router and MMG100-Wye. If the problem persists, please replace the Ethernet cable.
2	DHCP server issues.	• If the DHCP server of the router is disabled, enable it. • Comfirm that you are using a broadband router, not a switch or hub. Many hubs and switches cannot provide a DHCP server and may not allow devices to connect to Ethernet or wireless networks.
3	The broadband router has been replaced.	• Connect the Ethernet cable from the M–CombinerX to the new router.

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6.3.2 If the microinverter power status LED is dimmed.

Issue 1: The system does not generate power.

Code	Reason	Solution
1	A grid error, such as an abnormal grid voltage or grid frequency, leads to system protection.	• Check the alert type in the app and resolve the alert based on the recommendations.
2	The alternating current cable is abnormal.	• Check whether the cables are connected properly in the combiner as indicated in the user manual. • Check whether the alternating current cables between the combiner and microinverters are connected properly.
3	Device protection is triggered in the combiner.	• Check whether each circuit breaker in the combiner is closed. • If there are some errors inside the device, contact your local installer.
4	Poor sunlight	• Wait until there is sufficient sunlight.

6.3.3 If the microinverter power status LED is flashing orange.

Issue 1: One or more microinverters in the system do not generate power.

Code	Reason	Solution
1	The alternating current cable is abnormal.	• Check whether the cables are connected properly in the combiner as indicated in the user manual. • Check whether the alternating current cables between the combiner and microinverters are connected properly.
2	Device protection is triggered in the combiner.	• Check whether the cables are connected properly in the combiner as indicated in the user manual. • Check whether the alternating current cables between the combiner and microinverters are connected properly.
3	Active protection inside microverter is triggered due to abnormal solar voltage or grid voltage.	• Check the fault type in the app and resolve the fault based on the recommendations. • Contact your installer to replace the faulty microinverter.

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6.3.4 If the microinverter communication status LED is flashing red.

Issue 1: All microinverters communicates abnormally.

Code	Reason	Solution
1	The alternating current cable is abnormal.	• Check whether the cables are connected properly in the combiner as indicated in the installation manual. • Check whether the alternating current cables between the combiner and microinverters are connected properly.
2	Device protection is triggered in the combiner.	• Check whether each circuit breaker in the combiner is closed. • If there are some errors inside the device, contact your local installer.
3	A gateway fault occurred.	• Try to turn off the grid breaker in the combiner or reset the gateway by referring to Section 6.2 "MG100-Wye Reset Button." • If there are some errors inside the device, contact your local installer.

Issue 2: All microinverters have internal faults.

a. Check whether the status of LED indicator on the microinverter is solid red. if so, disconnect the DC inputs from PV modules, wait for 5 to 10 minutes, and then reconnect the DC inputs.
b. If the LED indicator is still solid red, please contact ATMOCE Technical Support.

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6.3.5 If the microinverter communication status LED is flashing orange.

Issue 1: Only one or scattered microinverters are not communicating.

Code	Reason	Solution
1	A connection fault occurs between the PV modules and the microinverters.	• Check whether the cables are connected properly in the combiner as indicated in the user manual. • Check whether the alternating current cables between the combiner and microinverters are connected properly.
2	The alternating current cable is abnormal.	• Check whether each circuit breaker in the combiner is closed. • If there are some errors inside the device, contact your local installer.

Issue 2: The microinverter has an internal fault.

a. Check the alerts in the ATMOZEN App to confirm which microinverter is in the faulty state.
b. Disconnect the DC input of the faulty microinverter from the PV module, wait for 5 to 10 minutes, and then reconnect the DC input of the microinverter.
c. If the LED indicator is still solid red, please contact ATMOCE Technical Support.

6.3.6 If all the LEDs are dim

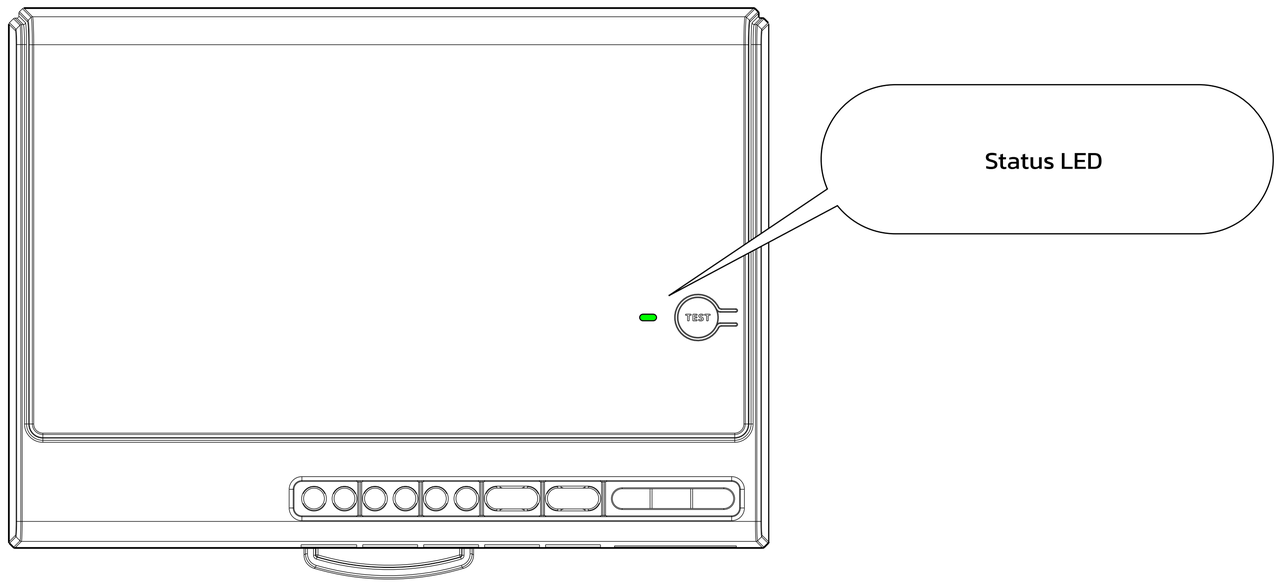
Issue 1: The MG100-Wye is not powered on.

Code	Reason	Solution
1	The MG100-Wye is not powered on.	• Check that the grid circuit breaker is "on". • Check that the voltage of the L and N lines of the MG100-Wye is within the voltage range (usually 176 Vac to 276 Vac).
2	Grid power outage occurred.	• Check whether the system generates power after grid recovery.

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6.4 NSP Controller LED Indicator

a. The NSP controller has one LED and the following table describes their status.



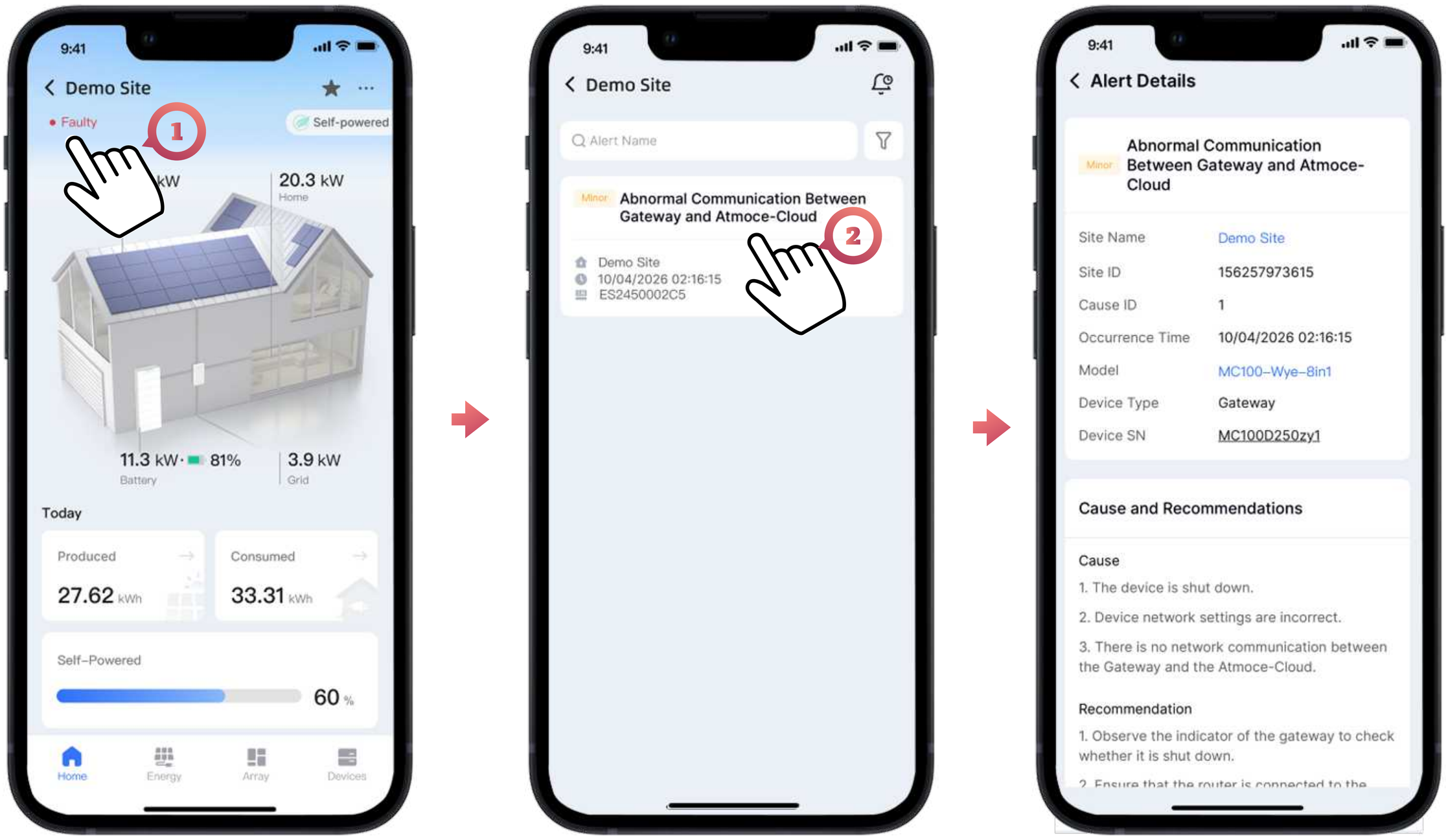
Purpose	Colour		Description
Status	Solid Green		The controller is working normally
	Slow Flash Green		The controller is waiting for upgrade or is being upgraded
	Quick Flash Orange		The controller is self-testing
	Slow Flash Red		The controller is in a faulty state

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6.5 Check the Alert Codes

The device error codes can be viewed through the following steps in the ATMOZEN App:

a. The alert code check can be performed only after the system has been activated via the ATMOZEN App.
b. Alert codes can be checked only when the site status is 'Faulty' or 'Offline'.



NOTE:

- The alert code check can be performed only after the system has been activated via the ATMOZEN App.
- Alert codes can be checked only when the site status is 'Faulty' or 'Offline'.

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6.6 Alert Codes List

a. The information about alerted issues of the ATMOCE system can be found in the table below:

Code	Issue	Cause	Solution
1	High Direct Current Input Voltage	The open–circuit voltage of the PV module is set to a value higher than the maximum operating voltage of the device.	• Check whether the open–circuit voltage of the PV module is higher than the maximum input voltage of the device specified in the user manual. If so, configure the PV module according to the user manual to ensure that the open–circuit voltage is within the allowed range. Then, the alert will be automatically cleared.
2	Grid Power Outage	Grid power outage occurred.	• Check whether the grid is normally powered. • Check whether the alternating current cable or switch is disconnected.
3	Grid Undervoltage	The grid voltage is lower than the lower limit.	• Check whether the grid voltage is within the allowed range. If not, contact your local electric system operator. If so, modify the grid undervoltage protection threshold after obtaining consent from your local electric system operator. • If the fault persists, check whether the alternating current switch and cable are connected properly.
4	Grid Overvoltage	The grid voltage is higher than the upper limit.	• Check whether the grid voltage is within the allowed range. If not, contact your local electric system operator. If so, modify the grid overvoltage protection threshold after obtaining consent from your local electric system operator. • If the fault persists, check whether the alternating current breaker and cable are connected properly, or whether the cable complies with the recommended specifications.
5	Grid Underfrequency	The grid frequency is lower than the lower limit.	• Check whether the grid frequency is within the allowed range. If not, contact your local electric system operator. If so, modify the grid underfrequency protection threshold after obtaining consent from your local electric system operator.

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Code	Issue	Cause	Solution
6	Grid Overfrequency	The grid frequency is higher than the upper limit.	• Check whether the grid frequency is within the allowed range. If not, contact your local electric system operator. If so, modify the grid overfrequency protection threshold after obtaining consent from your local electric system operator.
7	High Output Direct Current Component	The output direct current component is higher than the upper limit.	• The device automatically manages external working conditions in real time and returns to normal after the fault is resolved. • If the fault occurs frequently, contact your Distributor or Customer Service.
8	Low Direct Current–Side Insulation Resistance	The insulation between the PV module and the ground is poor.	• Check the insulation between the PV module and the ground. If there is a short circuit or poor insulation, rectify it.
9	Internal Device Error	The internal circuit of the microinverter failed.	• Wait for the inverter to power on again until the next day. If the fault persists, contact your Distributor or Customer Service.
		The internal circuit of the gateway failed.	• Power off and then repower the gateway by using the grid breaker inside the M–CombinerX. If the fault persists, contact your Distributor or Customer Service.
		The internal circuit of the M–Relay failed.	• Power off and then repower the generation system by using the breaker inside the M–CombinerX. If the fault persists, contact your Distributor or Customer Service.
		The M–Relay is disconnected from the gateway.	• Check whether the indicator of the M–Relay flashes in red or is off. If so, contact your Distributor or Customer Service. • Power off and then repower the gateway by using the grid breaker inside the M–CombinerX. If the fault persists, contact your Distributor or Customer Service.
10	Active Device Protection	The operating environment of the inverter is abnormal.	• The device automatically checks external working conditions and returns to normal after the fault is resolved. • If the alert is reported frequently, contact your Distributor or Customer Service.

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Code	Issue	Cause	Solution
256	Abnormal Communication Between Gateway and Device	• The device is shut down. • The AC cable between the microinverter and gateway is abnormal.	• Check whether the AC switch is disconnected. If the AC switch is disconnected, close the AC switch. • Wait for the inverter to be powered on again the next day and confirm the communication status. If the fault still exists, check whether the AC line is disconnected and whether the AC wiring and mating terminals are abnormal.
257	Abnormal Communication Between Gateway and ATMOCE–Cloud	• The gateway is shut down. • The gateway network is improperly configured. • The network between the gateway and ATMOCE–Cloud is abnormal.	• Observe the indicator of the gateway to check whether it is shut down. • Check whether the router is connected to the Internet. • If the gateway is connected to the Internet via Wi–Fi: 1. Check whether the Wi–Fi name and password are changed. 2. Check whether Wi–Fi signals are strong. • If the gateway is connected to the Internet via a network cable: 1. Check whether the router network and cable are normal. 2. DHCP mode: Check whether DHCP mode is enabled for the router. 3. Manual mode: Check whether the IP address, gateway, and DNS are properly configured for the router.
258	Upgrade Failure	• Microinverter upgrade failed. • M–Relay upgrade failed. • Gateway upgrade failed.	• Try to upgrade again. If the fault persists, contact your Distributor or Customer Service.

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Maintenance

7.1 Remove MC100–Wye-8in1

If, after the above troubleshooting, the M–CombinerX still does not operate normally, please contact ATMOCE Technical Support. If the warranty conditions are met, the M–CombinerX can be removed and replaced.

The removement procedure is as follows:

a. Disconnect the main circuit breaker in the distribution panel.
b. Open the door of the MC100–Wye-8in1 and turn off all the breakers in the combiner.
c. Remove the protective panel of the MC100–Wye-8in1.
d. Remove the power and communication cables from the breakers and terminal blocks in the MC100–Wye-8in1.
e. Unscrew the screws for that fasten the mounting tabs and remove the MC100–Wye-8in1 from the wall.
f. Reinstall the protective panel and close the door.

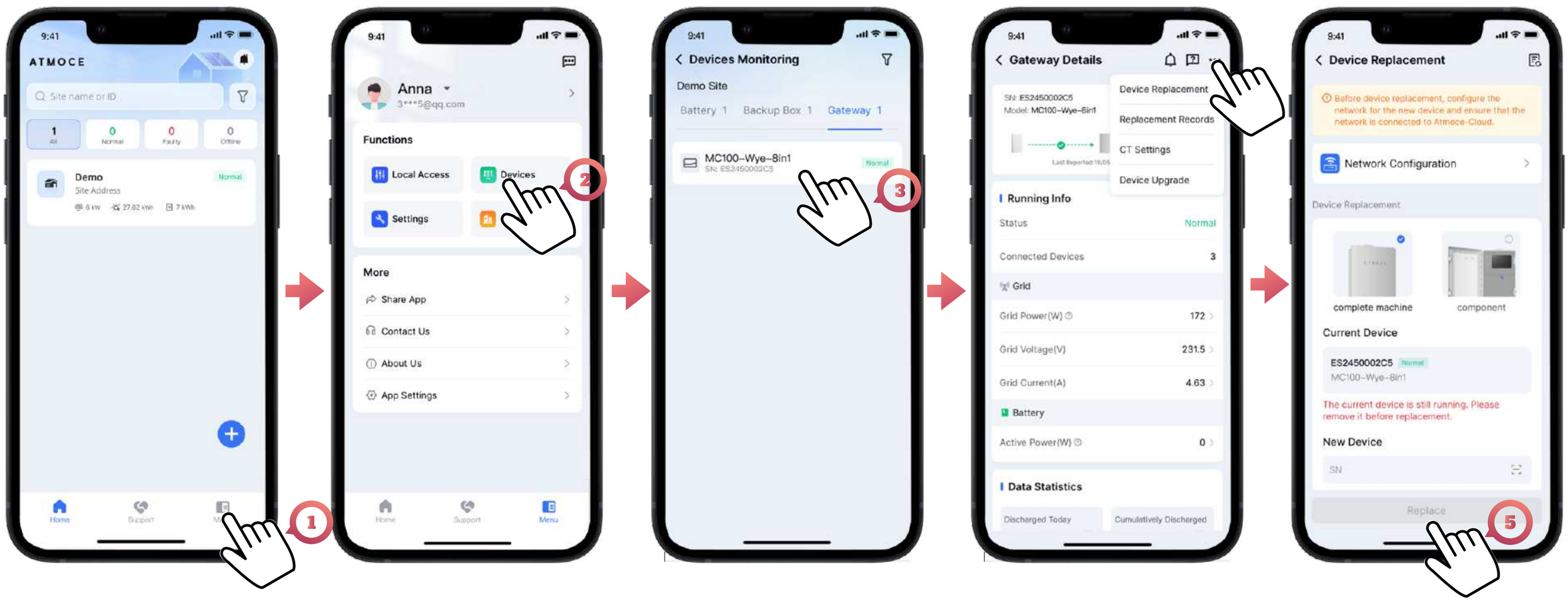
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7.2 Replace MC100–Wye-8in1

If, after the above troubleshooting, the M–CombinerX still does not operate normally, please contact ATMOCE Technical Support. If the warranty conditions are met, the M–CombinerX can be removed and replaced.

The replacement procedure is as follows:

a. Remove the MC100–Wye-8in1 (refer to the "Remove MC100–Wye-8in1" section).
b. Secure the replaced MC100–Wye-8in1 to the wall (refer to the "Installation" section).
c. Turn on the circuit breakers in the distribution panel and MC100–Wye-8in1.
d. Retrieve the serial number of the removed combiner from the device list in the ATMOZEN App and replace the device. Specifically, perform the following steps:
   - Tap Menu – Devices.
   - Select the replaced device to check the details.
   - Tap Replacement – Enter the SN of new device.



e. Check the operating status and the device information of the device in the ATMOZEN App to confirm that the new combiner is operating normally.

NOTE:

- **If both the MC100-T and the microinverter need to be replaced, the MC100-T must be replaced first.**

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Technical Data

8.1 MC100–Wye-8in1 Data Sheet

Items	Unit	MC100-Wye-8in1
What's in the CombinerX		
M-Gateway		1 × M-Gateway
SPD		1 × unit, In: 20 kA, 4-pole
SPD breaker		1 × unit, 25 A, 4-pole
Gateway breaker		1 × unit, 10 A, 4-pole
PV/Battery breaker		8× units, 32 A, 4-pole
Grid switch		1 × unit, 250 A, 4-pole
PV CT		3 × 250 A CTs, accurate up to 0.5%
NSP controller[b]		1 × unit
NSP contactor		1 × unit
Signal SPD		2 x units, Up≤30V
Electrical parameters		
Grid setup		Three-phase
Nominal voltage	V	220/380 Va.c., 230/400 Va.c., 240/415 Va.c., 3/N~
Operating voltage range (L to N)	V	176 to 276
Nominal frequency	Hz	50/60
Extended frequency range	Hz	45 to 65
Overvoltage category		III
Mechanical parameters		
Dimensions (W x H x D)	mm	600 × 850 × 200
Weight	kg	42
Ambient temperature range	℃	-30 to 50
Cooling		Natural convection
Enclosure environmental rating		Outdoor, IP65
Wire sizes[a]	mm^2	PV side: 4 to 6 | Grid side: 95 to 120
Communication cable sizes	mm^2	0.25 to 0.75
Noise	dB	<25
Altitude	m	3000
Protection class		I
Pollution degree		III
Communication interfaces		
PV side	PLC	Support
Device side	ETH	1 × interface, 100 Mb/10 Mb auto-adaptability Communication range: 400m at 100Mb, 800m at 10Mb
	RS485	Support
Atmoce-Cloud	Wi-Fi	2.4 GHz
	ETH	1 × interface, 100 Mb/10 Mb auto-adaptability
ATMOZEN App	BLE	2.4 GHz
Compliance		
Safety		IEC 61439-1/-2
Health		IEC 62311
EMC		IEC 61000-6-1/-2/-3/-4
Radio spectrum		EN 301 489-1/-17, EN 300 328
PLC		EN 50065-1/-2

a. Refer to the local electrical regulations to select the cable size.

b. Network and system protection controller.

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Items	Unit	MC100-T
Load side	ETH	1 × interface, 100 Mb/10 Mb auto-adaptability
	Digital I/O	4 × 12 V DO, 3 × DI
	RS485	Support
ATMOCE-Cloud	Wi-Fi	2.4 GHz
	ETH	1 × interface, 100 Mb/10 Mb auto-adaptability
ATMOZEN APP	BLE	2.4 GHz
Indicators		3 × LEDs
Compliance		
Safety		IEC 61439-1/-2
Health		IEC 62311
EMC		EN 301 489-1/-17, IEC 61000-6-1/-2/-3/-4
Radio spectrum		EN 300 328
PLC		EN 50065-1/-2

a. The standard configuration of the PV-side breaker is 20A, which can be replaced with a 25A rated circuit breaker, supporting a maximum of 30kW.

b. The maximum current is 50A, for further technical specifications please refer to the 'M-Relay Data Sheet'.

c. The capacity of the PV branch current can be increased to 25A by replacing the PV side breaker to 25A.

d. Refer to the local electrical regulations to select the cable size.

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8.2 MG100-Wye Data Sheet

Items		Unit	MG100-Wye
Electrical parameters			
Grid setup			Three-phase
Nominal voltage		V	220/380 Va.c., 230/400 Va.c., 3/N~
Operating voltage range (L to N)		V	176 to 276
Nominal frequency		Hz	50/60
Extended frequency range		Hz	45 to 65
Power consumption		W	<9 (without USB device) | < 25 (with USB device)
Overvoltage category			III
AC surge protection			TYPE II
Mechanical parameters			
Dimensions (W x H x D)		mm	221 × 148 × 42
Weight		kg	0.6
Ambient temperature range		°C	-30 to 65
Cooling			Natural convection
Enclosure environmental rating			IP30
Communication			PLC, Wi-Fi, BLE, ETH, CAN, RS485
Noise		dB	<25
Altitude		m	3000
Protection class			II
Pollution degree			II
Communication interfaces			
PV side	PLC		Support
	Microinverter CT		3 × CT interfaces
Grid side	Consumption CT		1 × CT interface
Battery side	CAN		Support
	Battery CT		3 × CT interfaces
Load side	ETH		1 × interface, 100 Mb/10 Mb auto-adaptability
	Digital I/O		1 × 12V DO, 4 × DI
	RS485		Support
M-Relay	RS485		Support
Atmoce-Cloud	Wi-Fi		2.4 GHz
	ETH		1 × interface, 100 Mb/10 Mb auto-adaptability
ATMOZEN App	BLE		2.4 GHz
Indicators			3 × LEDs
Compliance			
Safety			IEC 61439-1/-2
Health			IEC 62311
EMC			EN 301 489-1/-17, IEC 61000-6-1/-2/-3/-4
Radio spectrum			EN 300 328
PLC			EN 50065-1/-2

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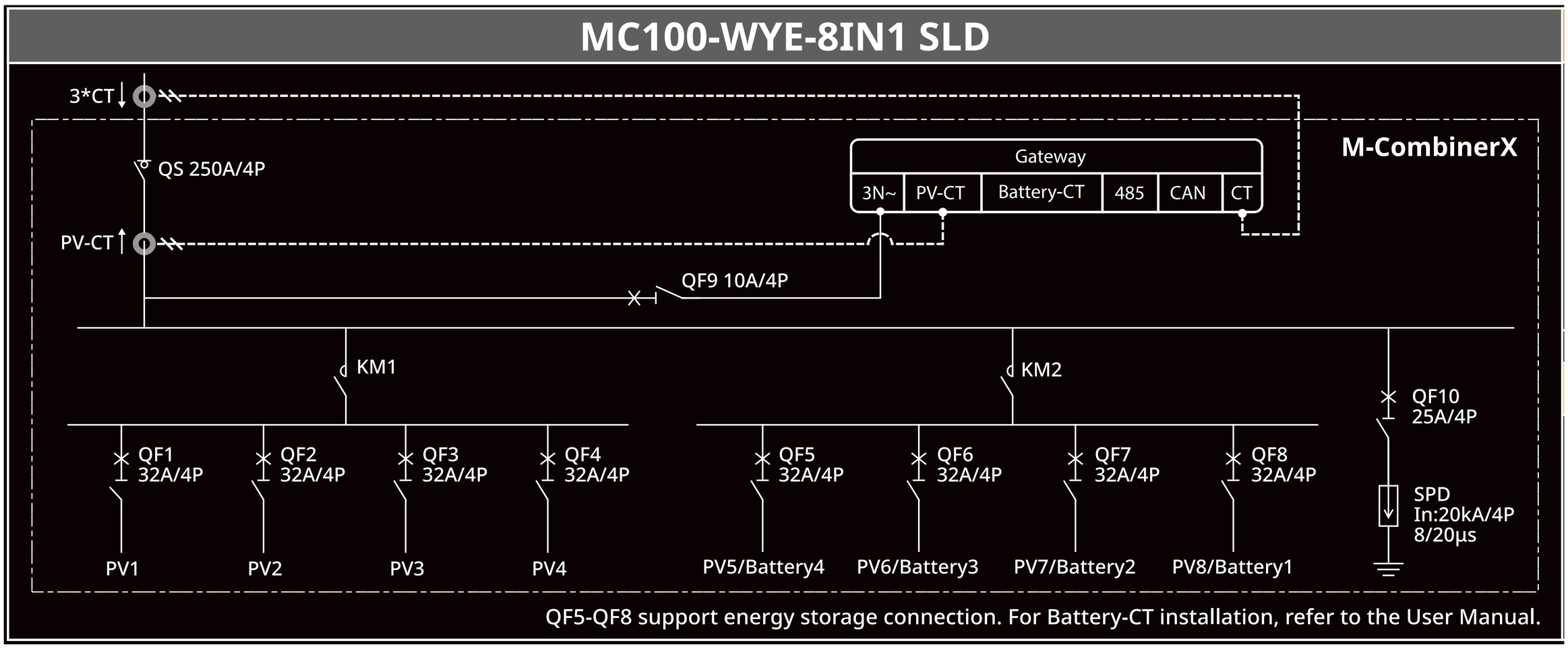
8.3 MA-NSP-Ctrl Data Sheet

Items	Unit	MA-NSP-Ctrl
Electrical parameters		
Grid setup		Three-phase
Nominal voltage	V_{ac}	220/380 Va.c., 230/400 Va.c., 240/415 Va.c., 3/N~
Operating voltage range (L to N)	V_{ac}	176 to 288
Nominal output voltage	V_{dc}	220
Nominal output power	W	12
Nominal frequency	Hz	50/60
Extended frequency range	Hz	45 to 65
Power consumption*	W	< 25
Overvoltage category		III
AC surge protection		TYPE II
Mechanical parameters		
Dimensions (W x H x D)	mm	190 × 135 × 63.1
Weight	kg	0,9
Ambient temperature range	°C	-30 to 70
Enclosure environmental rating		IP20
Noise	dB	< 25
Altitude	m	3000
Protection class		II
Pollution degree		II
Communication interfaces		
Communication		RS485, DI, DO
Indicators		1 × LED
Test button		Yes
Compliance		
Safety		IEC 61439-1/-2
EMC		IEC 61000-6-1/-2/-3/-4

* This value represents the power consumption of the NSP controlling two AC contactors.

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Appendix 1: Wire Diagram



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Appendix 2: Terms and Abbreviations

AC	Alternating current
APP	Application
CAT 6	Category 6
DC	Direct current
DI	Digital input
DO	Digital output
EMC	Electromagnetic Compatibility
ETH	Ethernet
MPPT	Maximum power point tracking
PE	Protective earthing
PV	Photovoltaic
RH	Relative humidity
SN	Serial number
WEEE	Waste electrical and electronic equipment

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