



M-CombinerPRO Quick Installation Guide

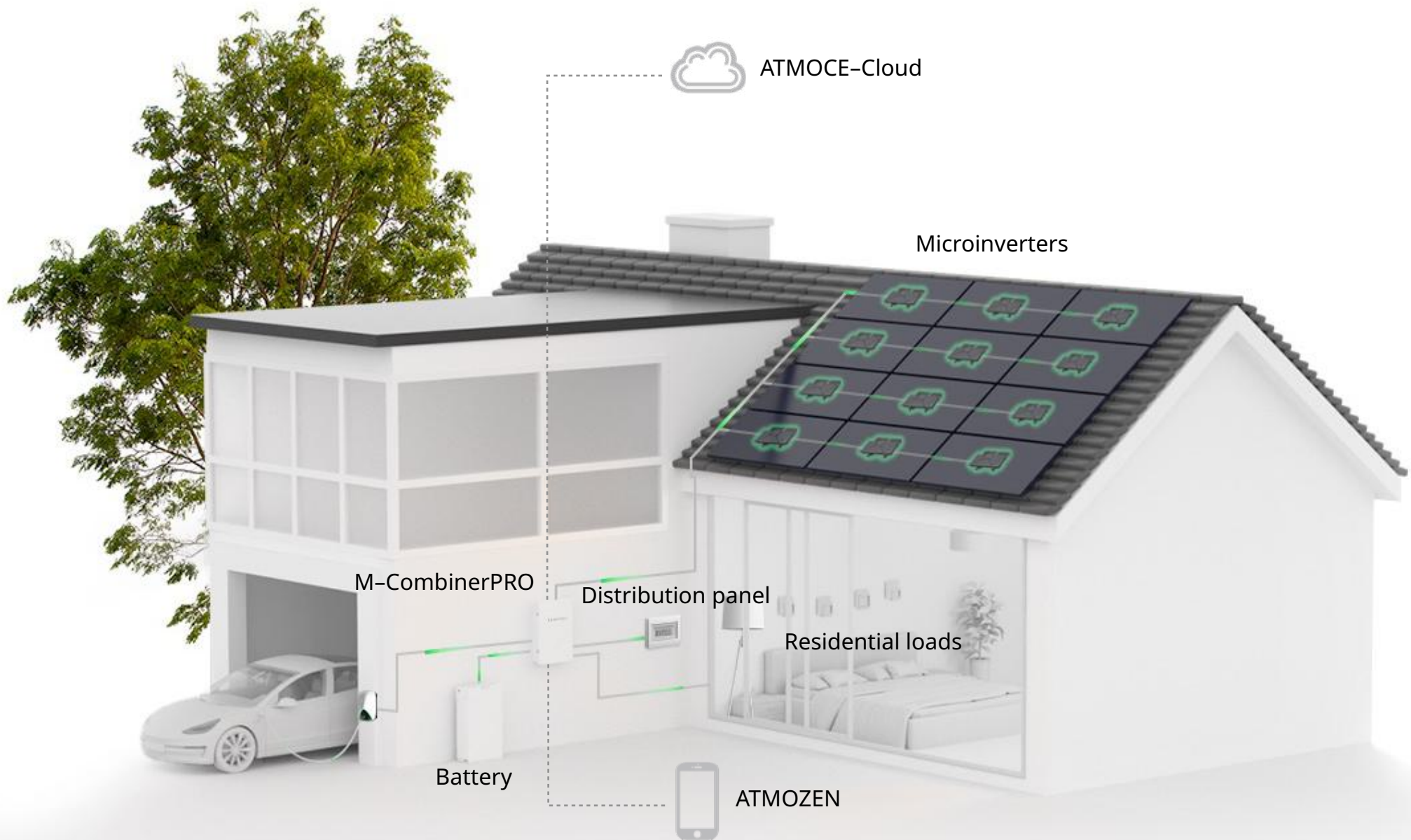
Applicable model: MC100PRO-S1P

ATMOCE System Introduction

The single-phase M-CombinerPRO (MC100PRO-S1P) is an integrated power management device for single-phase grid systems. It connects microinverters, batteries, and loads, enabling efficient energy distribution and grid interaction. With a built-in M-Gateway (MG100) smart controller, it manages solar production, battery storage, and power consumption. The system automatically switches between grid-connected and backup modes—using solar power to feed the grid or charge batteries during normal operation, and providing instant off-grid backup during outages. Users can monitor and optimize energy usage in real-time via the ATMOCE-Cloud and ATMOZEN APP. The MC100PRO-S1P offers enhanced safety, energy independence, and reliable performance in all conditions.

The system includes the following:

- Microinverter
- M-CombinerPRO
- Grid (distribution panel)
- ATMOCE-Cloud & ATMOZEN
- Battery (Optional)
- AC EV charger (Optional)
- Heat pump or other residential loads (Optional)



Pre-installation

a. What's in the MC100PRO-S1P

Refer to the figure on the right for pre-installed components in the MC100PRO-S1P.

b. Check the grid voltage

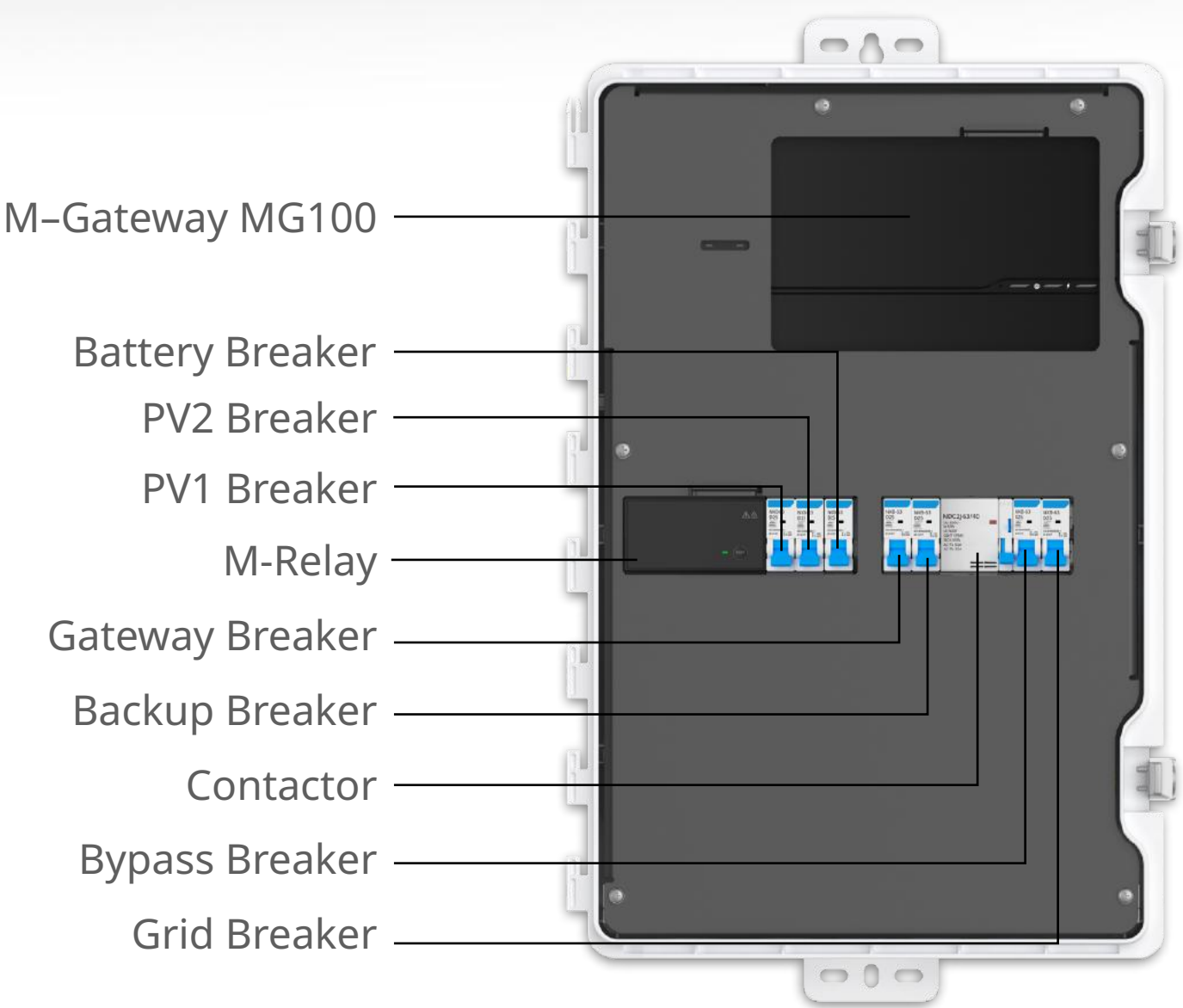
The MC100PRO-S1P should connect to a Single-phase grid. Measure the AC voltage at the point of connection to confirm that it is within the range.

Phase setup		Voltage range
Single-phase	L to N	176 to 276 Vac

c. 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.

Connection		Recommendation
PV	Power cable	2.5 to 6 mm ² , 2-core or 3-core
Backup / Grid / Non-Backup	Power cable	2.5 to 25 mm ² , 3-core
Battery	Power cable	2.5 to 25 mm ² , 3-core
	CAN cable	0.25 to 0.75 mm ² , 3-core
COM interface	Control cable	0.25 to 0.75 mm ² , 2-core
	ETH cable	802.3, Cat 6 UTP Ethernet cable



NOTE:

- When stripping the cable, remove approximately 12 mm of the insulation layer from the power cable and 8mm of insulation layer from the communication cable.

d. Prepare the tools and materials

Tools: screwdriver, wire stripper, wire crimper, diagonal cutter, torque wrench, electrical drill, hole cutter with pilot, tape measure, multimeter, marker, etc.

Materials: wall anchors (Φ10) and screws (M8), corrugated protective pipe, cold-press terminal, tie wrap, etc.

e. Select how the device connects to the Internet

You can connect the combiner to the Internet through Wi-Fi and Ethernet.

- Ethernet connection: please use 802.3, Cat 6 UTP ethernet cable.
- Wi-Fi connection: install the M-CombinerPRO within 10 meters from the router to ensure stable Wi-Fi signal.

f. Download the ATMOZEN APP

You can download the app from Google Play or Apple App Store.

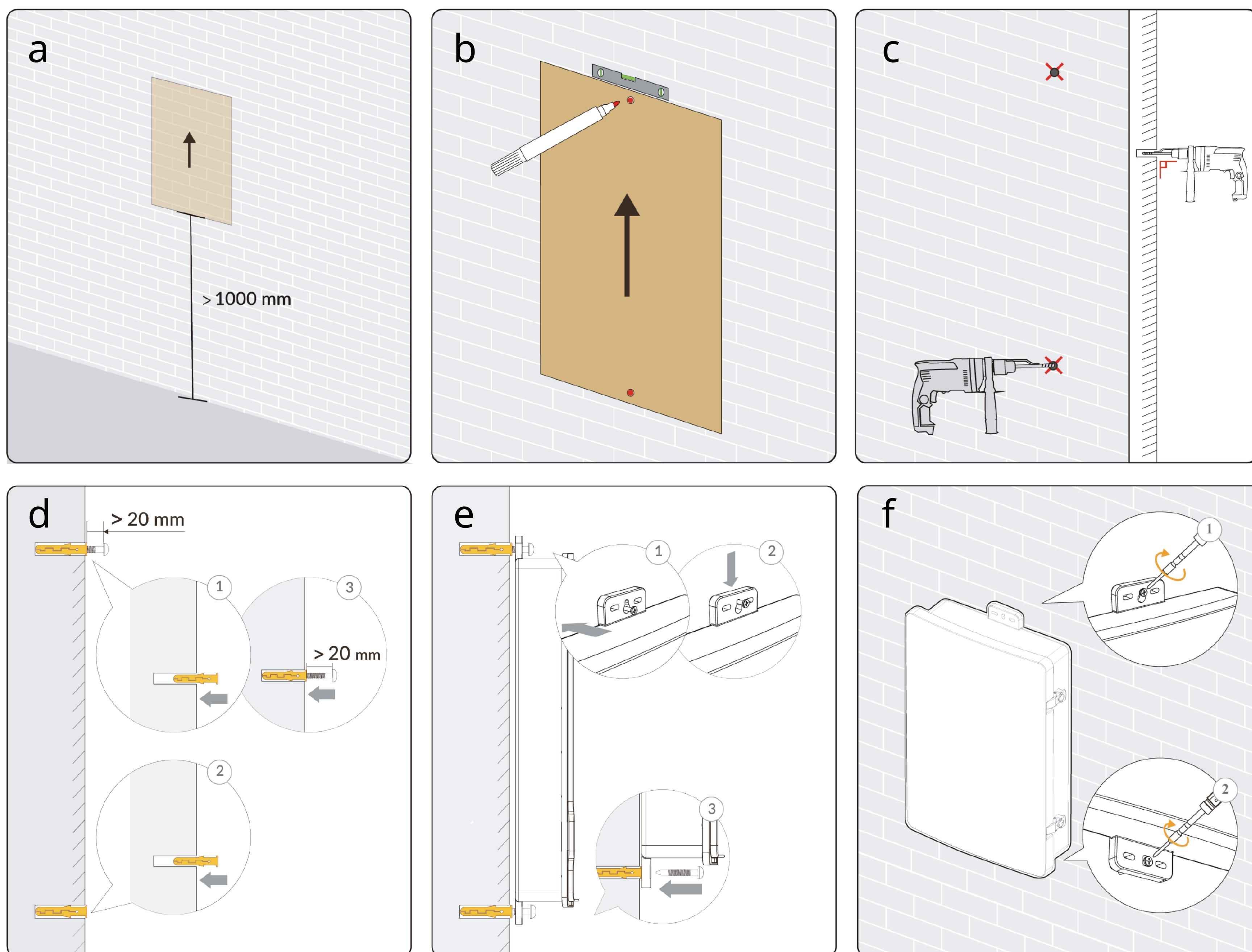
Installation

1. Mount the M-CombinerPRO

- Use a tape measure to locate the marking board on the wall. It should be at least 1,000 mm vertically from the floor.
- Use the spirit level to check that the board is level, then make two marks on the wall.
- Drill at the two marks by using an electric drill with a bit ($\Phi 10$).
- Insert the wall anchors (along with the guide) in to the holes, and then insert the M8 screw into the TOP hole but do not completely tighten it.
- Hang the top mounting tab on the screw, and then insert the screw into the bottom hole.
- Tighten the M8 screws by using a Phillips #2 screwdriver with a torque of 9–14 N·m.

NOTE:

- Do not expose the M-CombinerPRO to direct sunlight, unless installing a sunshade.

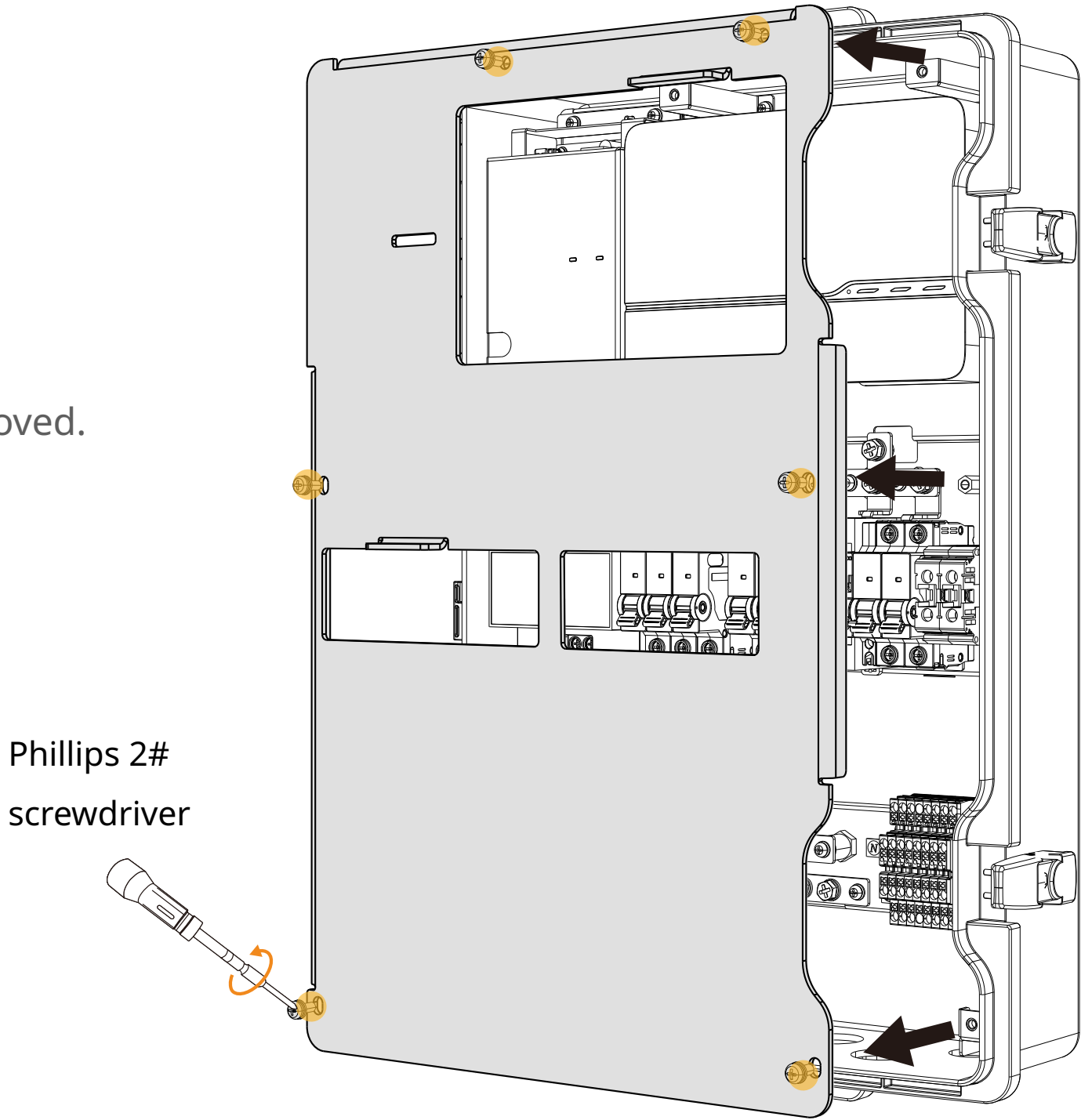


2. Remove the protective panel

- a. Open the cabinet door.
- b. Use a Philips 2# screwdriver to remove the protective panel.

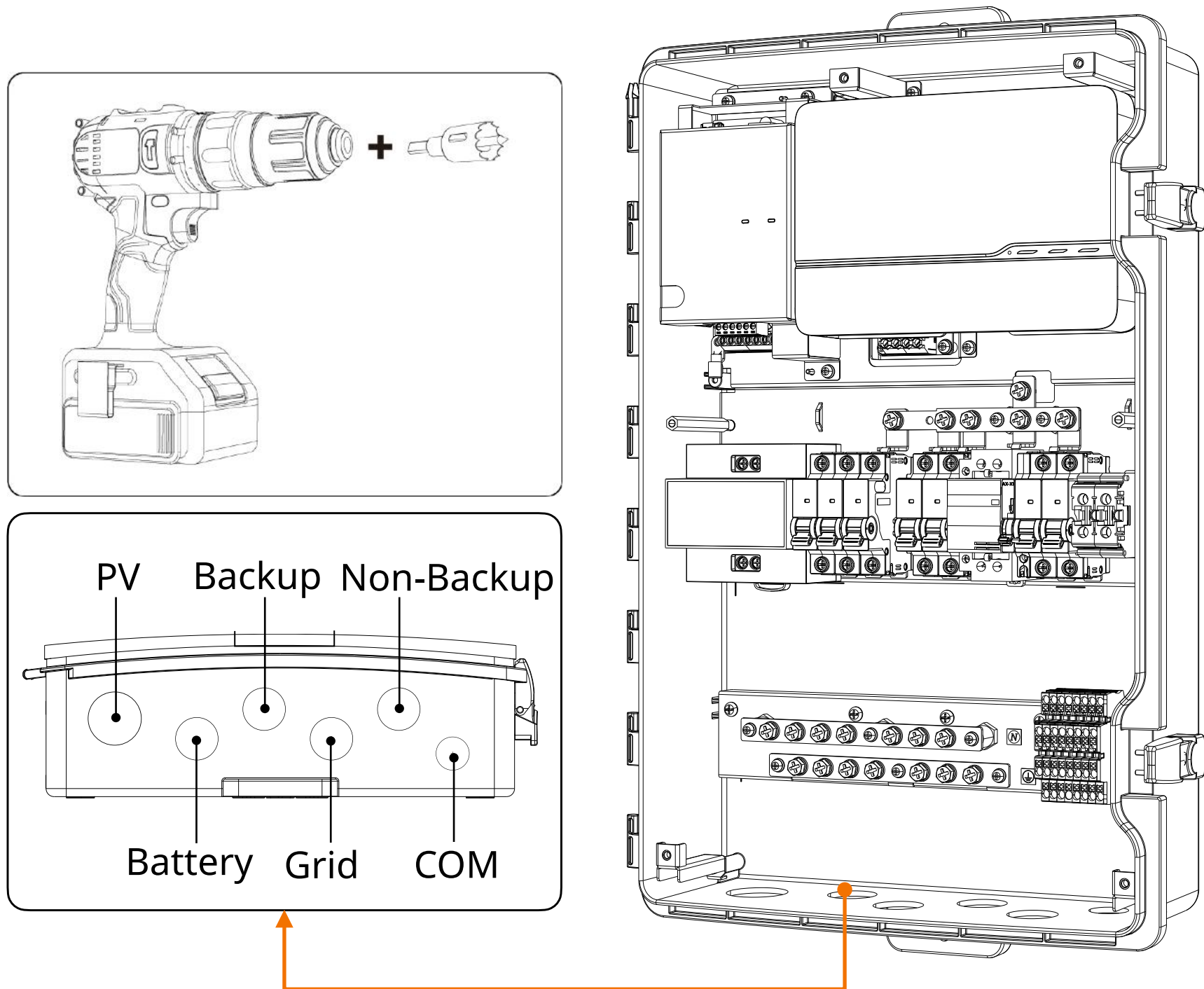
NOTE:

- If not necessary or if no meter connection is required, the top cover should not be removed.



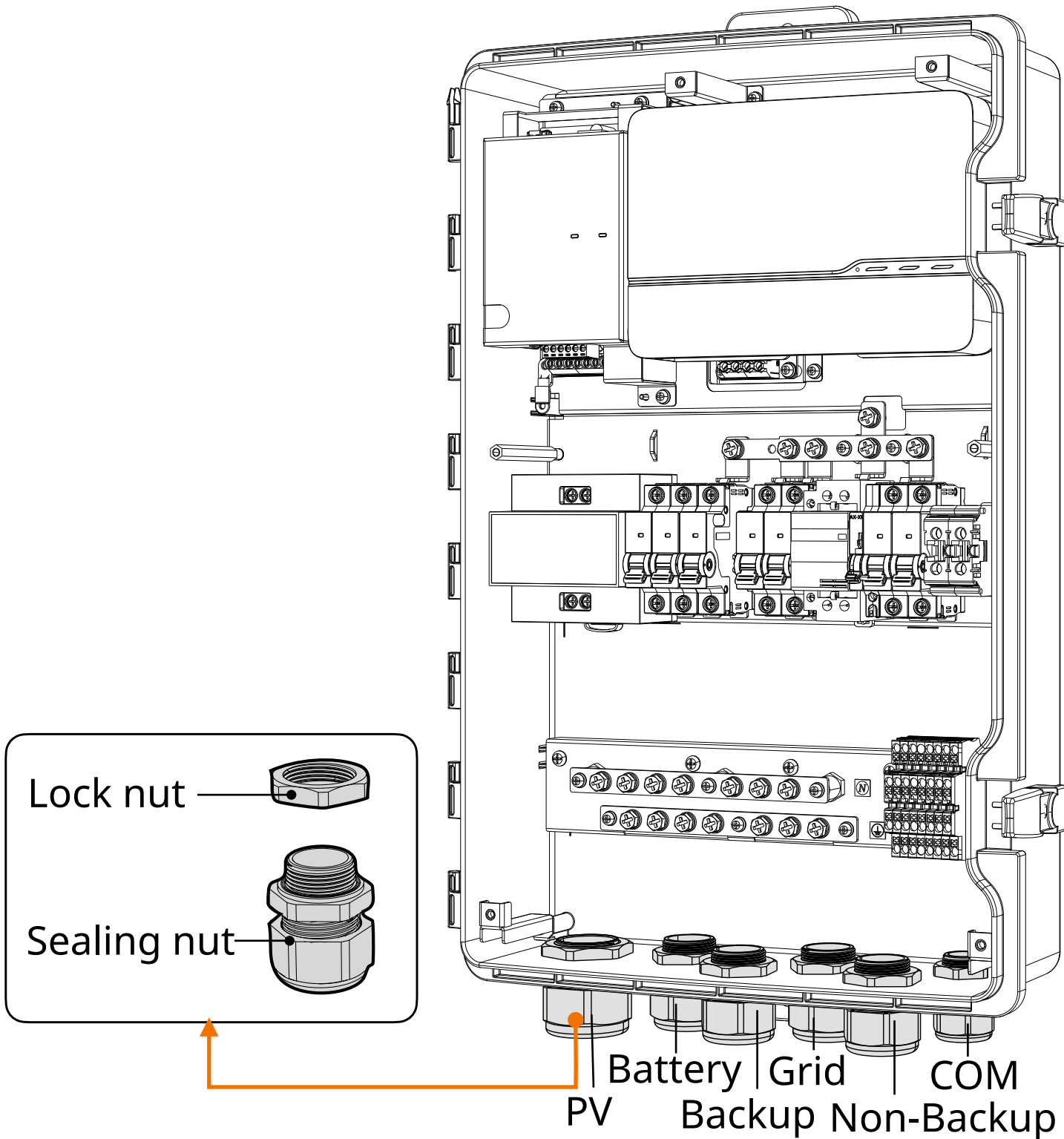
3. Drill on the M-CombinerPRO

- a. Use the electrical hole cutter with a pilot drill bit to to remove the knockout and mount the waterproof fittings on the holes. The drilling area and recommended cable outlets can be found at the bottom of the MC100PRO-S1P.

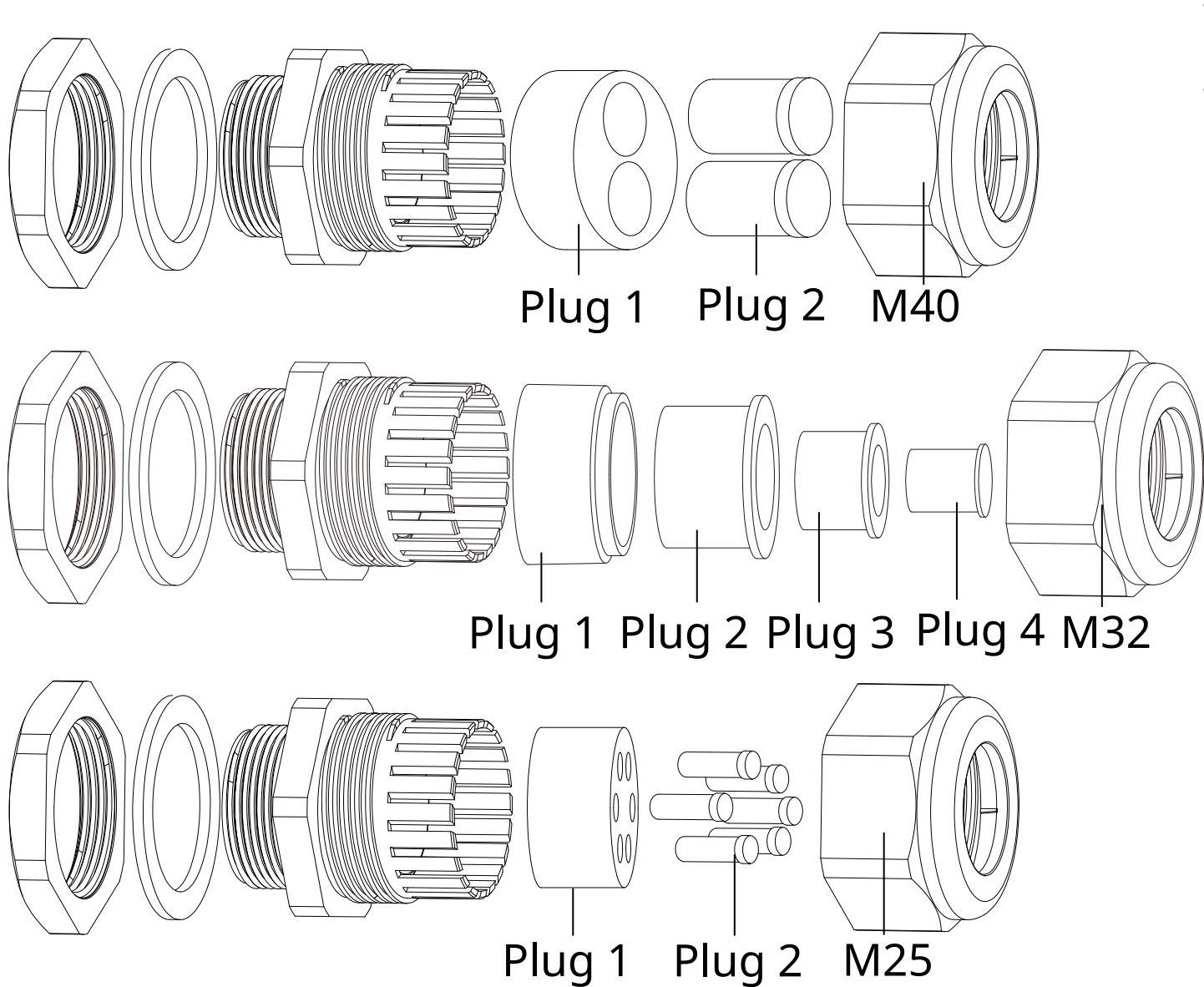


NOTE:

- Ensure that the edge of the holes do not exceed the indicated circle.



- b. Remove 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 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.



Function	Item	Recommended wire diameter
PV	Plug 1	2 × 2.5 to 3 × 6 mm ²
	Plug 2	Cover the unused cable holes on plug1
Battery / Backup / Grid / Non-Backup	Plug 1	3 × 16 to 3 × 25 mm ²
	Plug 1+2	3 × 4 to 3 × 10 mm ²
	Plug 1+2+3	3 × 2.5 to 3 × 4 mm ²
	Plug 4	Cover the unused cable holes on plug3
COM	Plug 1	1) Battery CAN cable: 0.25-0.75mm ² , 3-Core 2) Control cable: 0.25-0.75 mm ² , 2-core 3) Router ETH cable : 802.3 Cat6 UTP
	Plug 2	Cover the unused cable holes on plug1

NOTE:

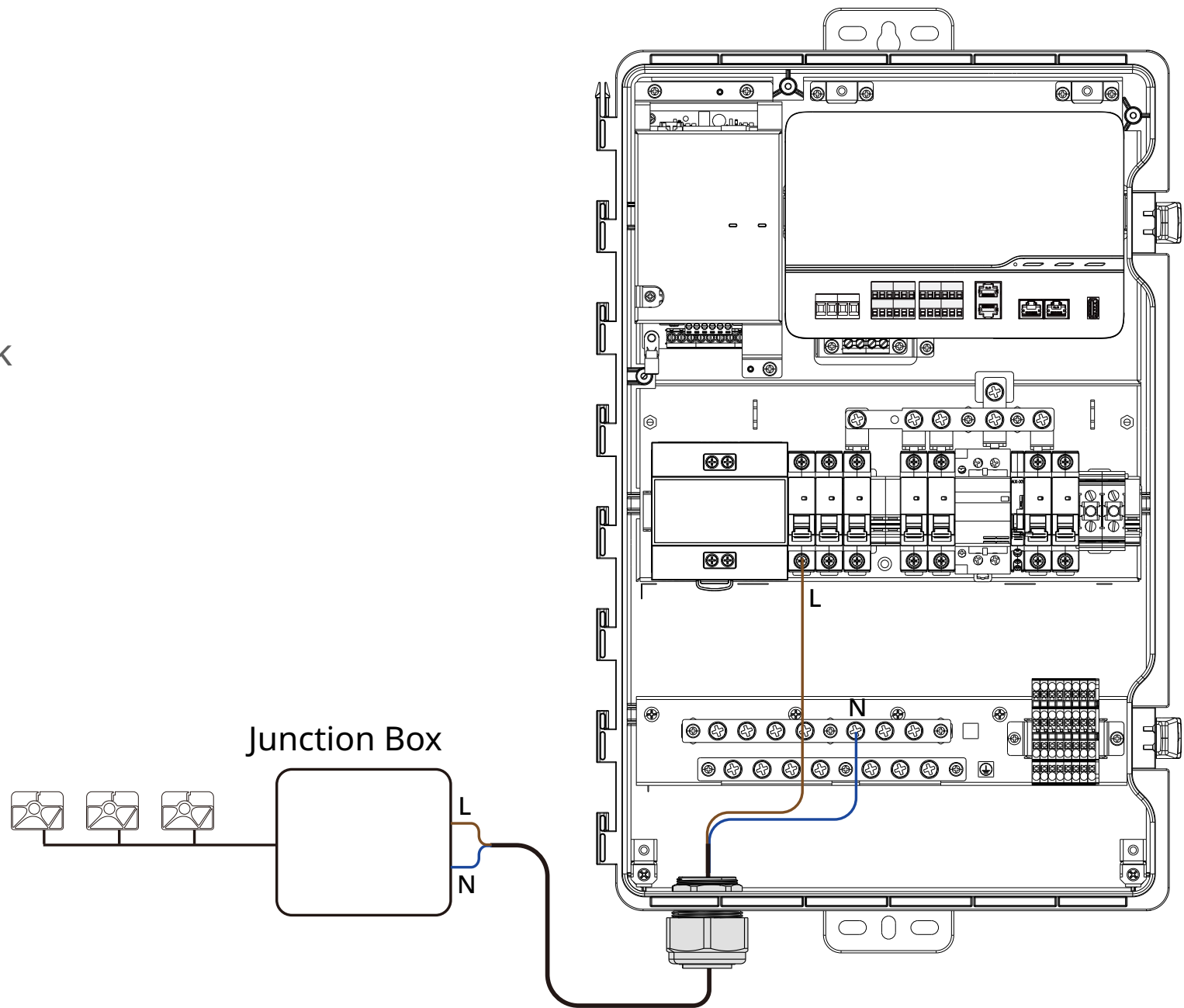
- Wire size values are provided for reference. Cable selection shall comply with local regulations and installation conditions.

4. Wire to the M-CombinerPRO

4.1 Wire from the PV branch

- a. Bring in the cables from the PV branch circuit through the PV hole of the cabinet.
- b. Connect the L cable to the PV breakers. Connect the N cable to the N terminal block in MC100PRO-S1P.
- 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 MC100PRO-S1P.

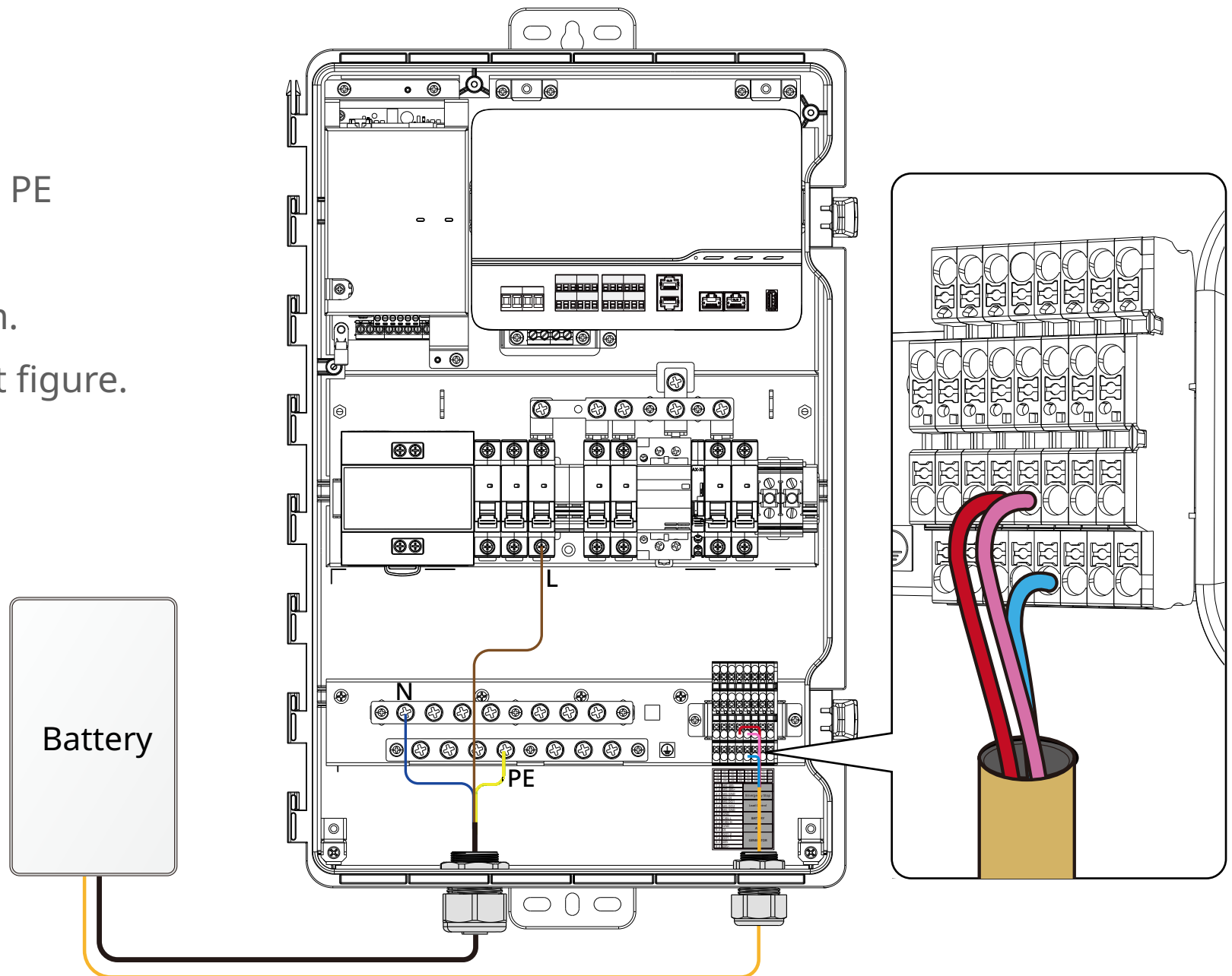
-L - N



4.2 (Optional) Wire from the battery

- a. Bring in the cables from the battery through the battery hole of the cabinet.
- b. Connect the L cable to the battery breaker and connect the ground cable to the PE terminal block as shown. Connect the N cable to the N terminal block.
- c. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.
- d. Connect the CAN COM cable of the battery to the terminal as shown in the right figure.

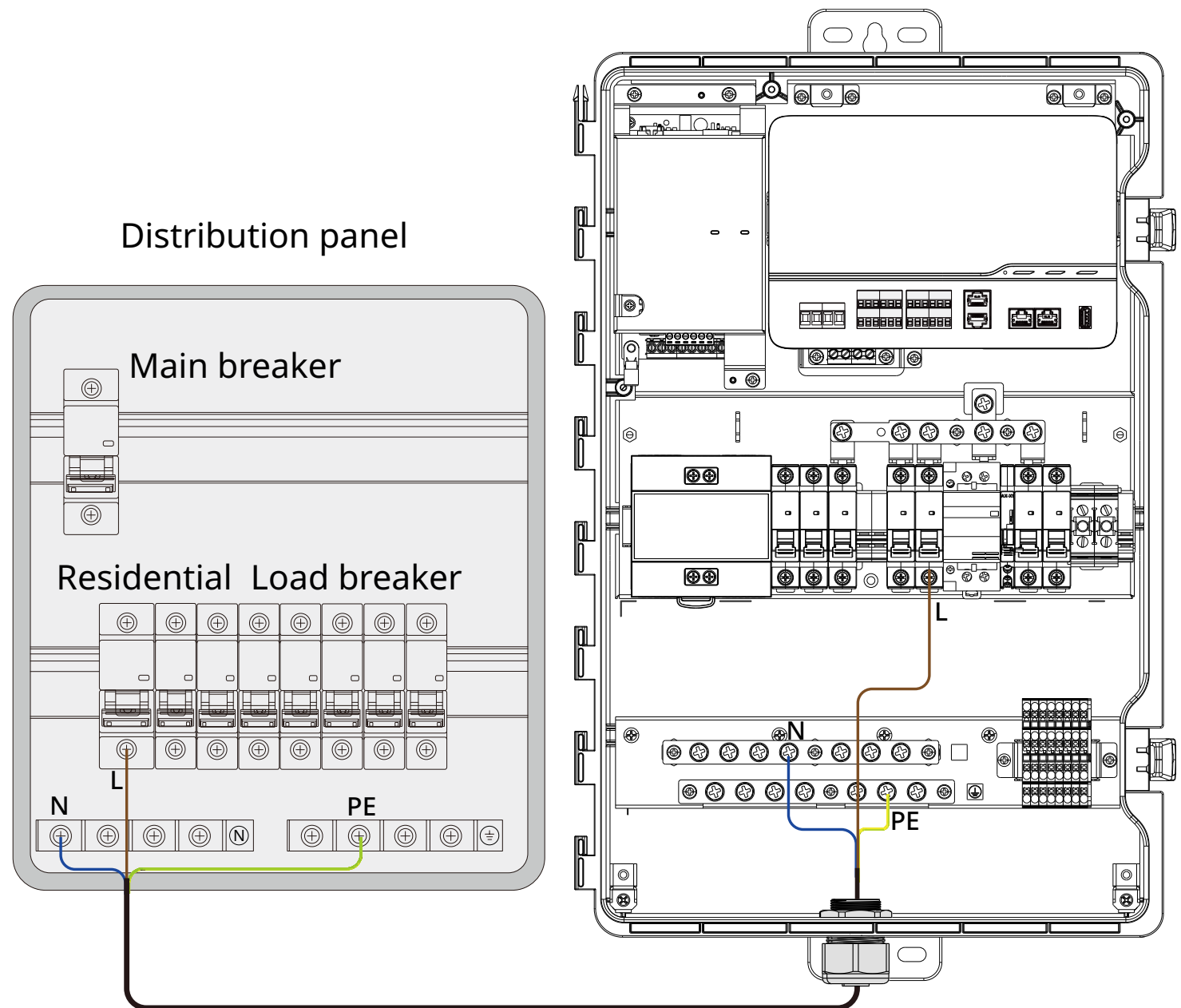
-L - N -PE -CAN-COM
-CAN-L -CAN-H -CAN-GND



4.3 Wire from the Backup

- a. Bring in the cables from the distribution panel through the Backup hole of the cabinet.
- b. Connect the L cable to the Backup breakers. Connect the N cable to the N terminal block.
- c. Connect the PE cable from the Distribution Panel to the PE terminal block in MC100PRO-S1P.
- d. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.

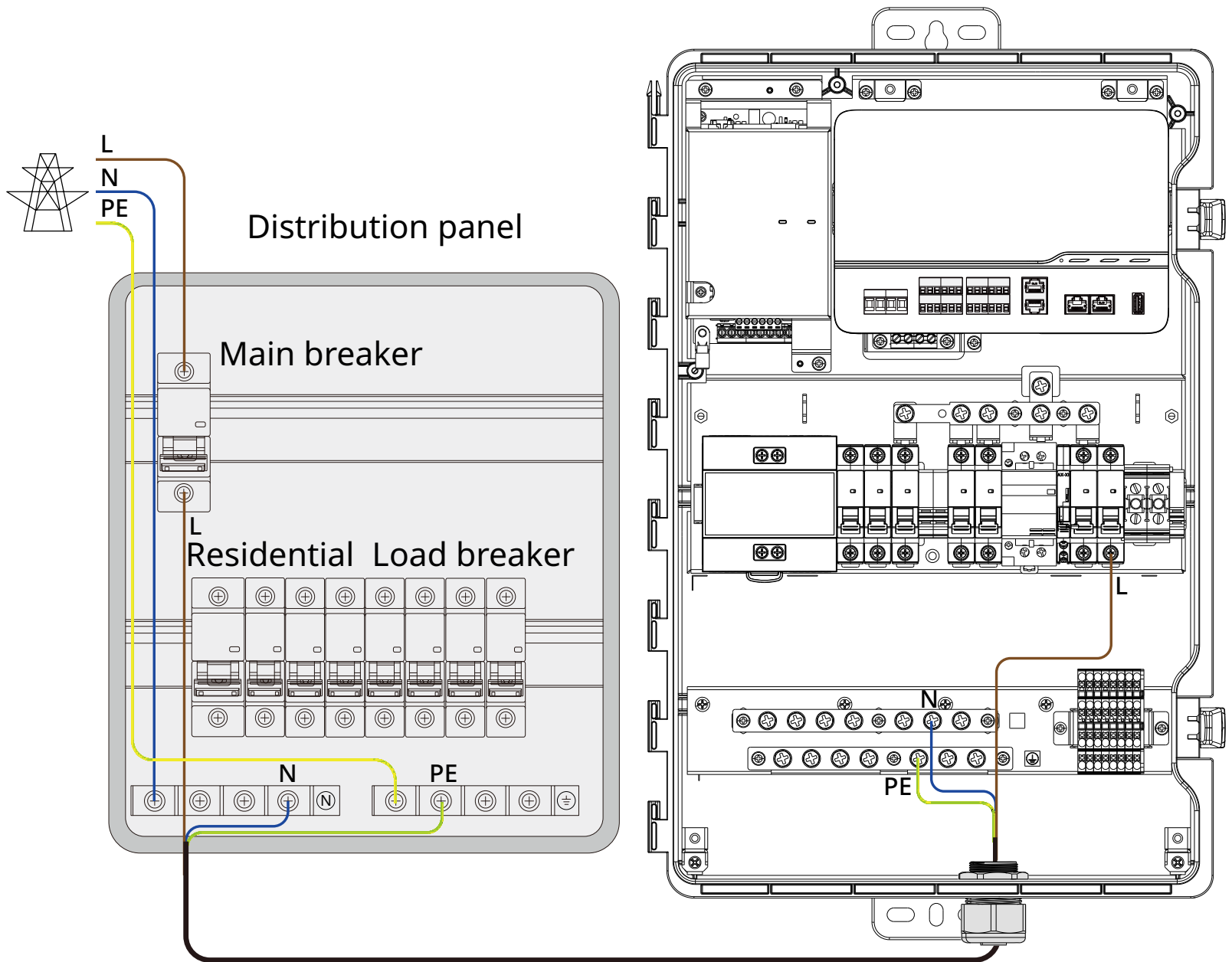
-L - N -PE



4.4 Wire from the Grid

- a. Bring in the cables from the grid through the grid hole of the cabinet.
- b. Connect the L cable to the grid breaker, and connect the ground cable to the PE terminal block as shown. Connect the N cable to the N terminal block.
- c. Tighten the screws by using a Phillips #2 screwdriver with a torque of 3.5–4 N·m.

-L - N -PE

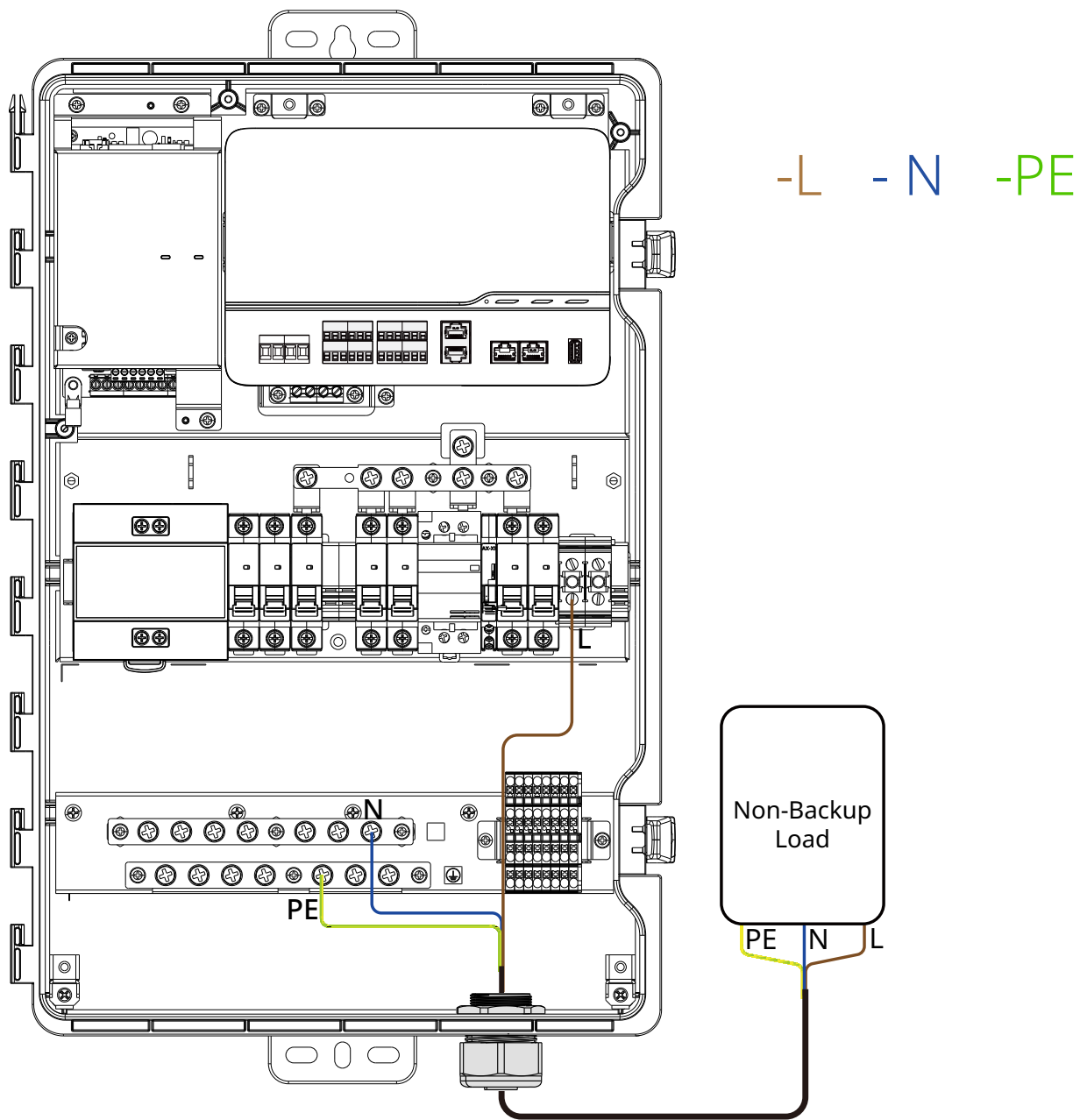


NOTE:

- The consumption CTs are already built-in.

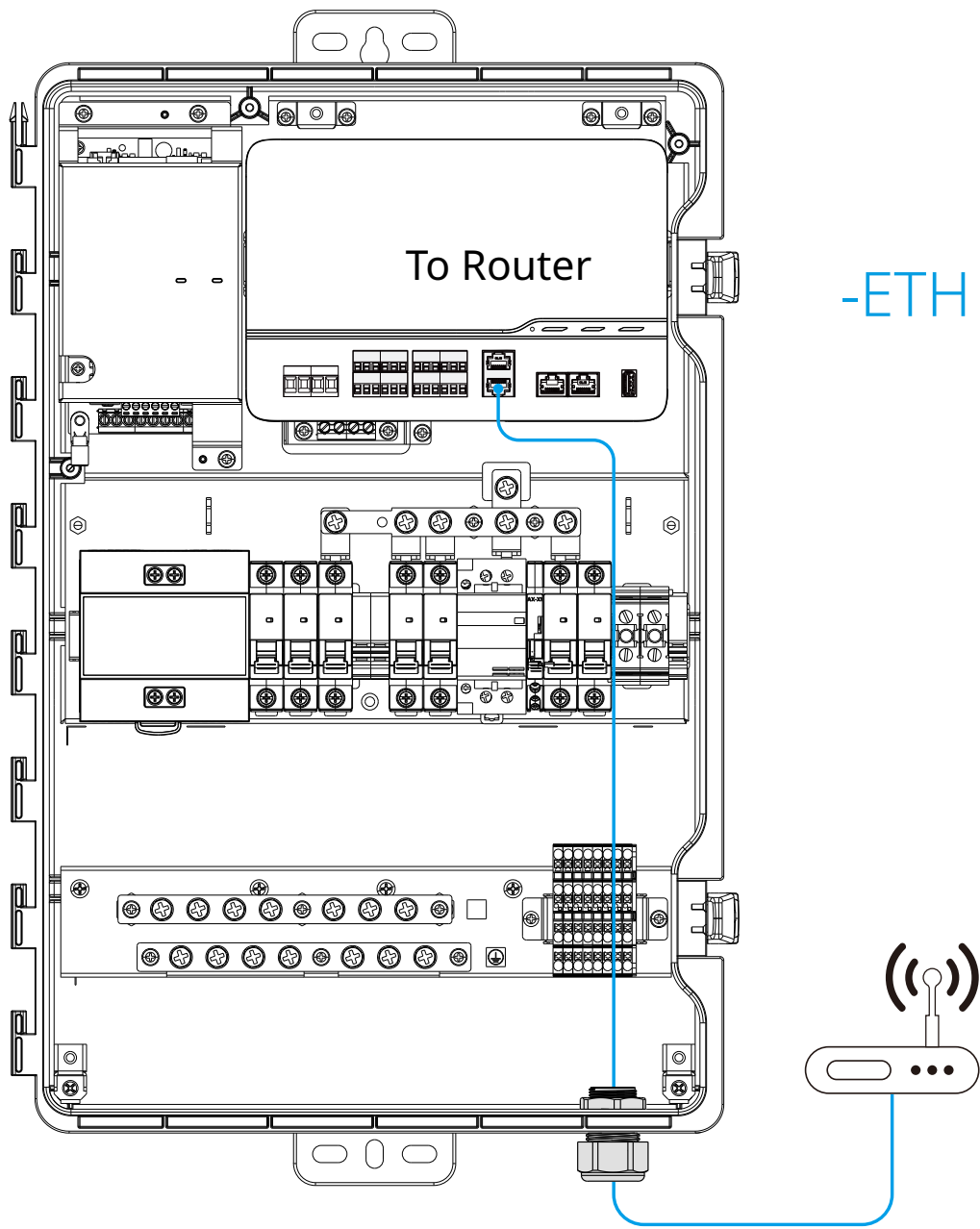
4.5 (Optional) Wire from Non-Backup Load

- a. Bring in the cable from the Non-Backup Load through the Load hole of the cabinet.
- b. Connect the L cable to the Non-Backup breaker.
- c. Connect the ground cable to the PE terminal block as shown. Connect the N cable to the N terminal block.



4.6 (Optional) Wire from the router

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

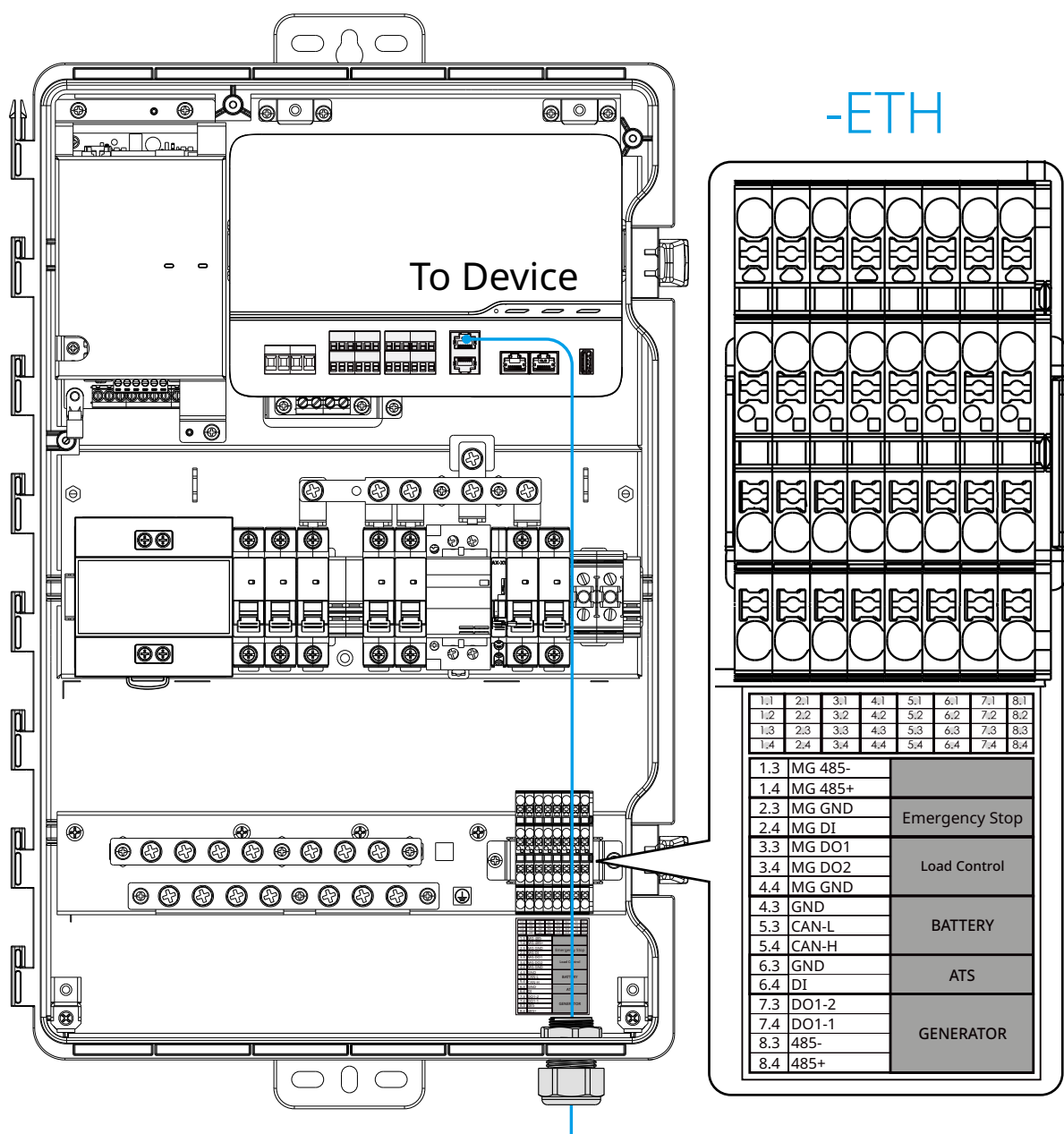


4.7 (Optional) Communication interface

- a. The MC100PRO-S1P supports ETH, RS485 and DO CTRL interfaces, etc. Connect the cables from the devices to the communication terminal block as the wire diagram in the cabinet. Bring in the cable from COM hole is recommended.

NOTE:

- M-Gateway supports more flexible and smart control by integrated communication interfaces. Refer to "M-Gateway User Manual" for more information.

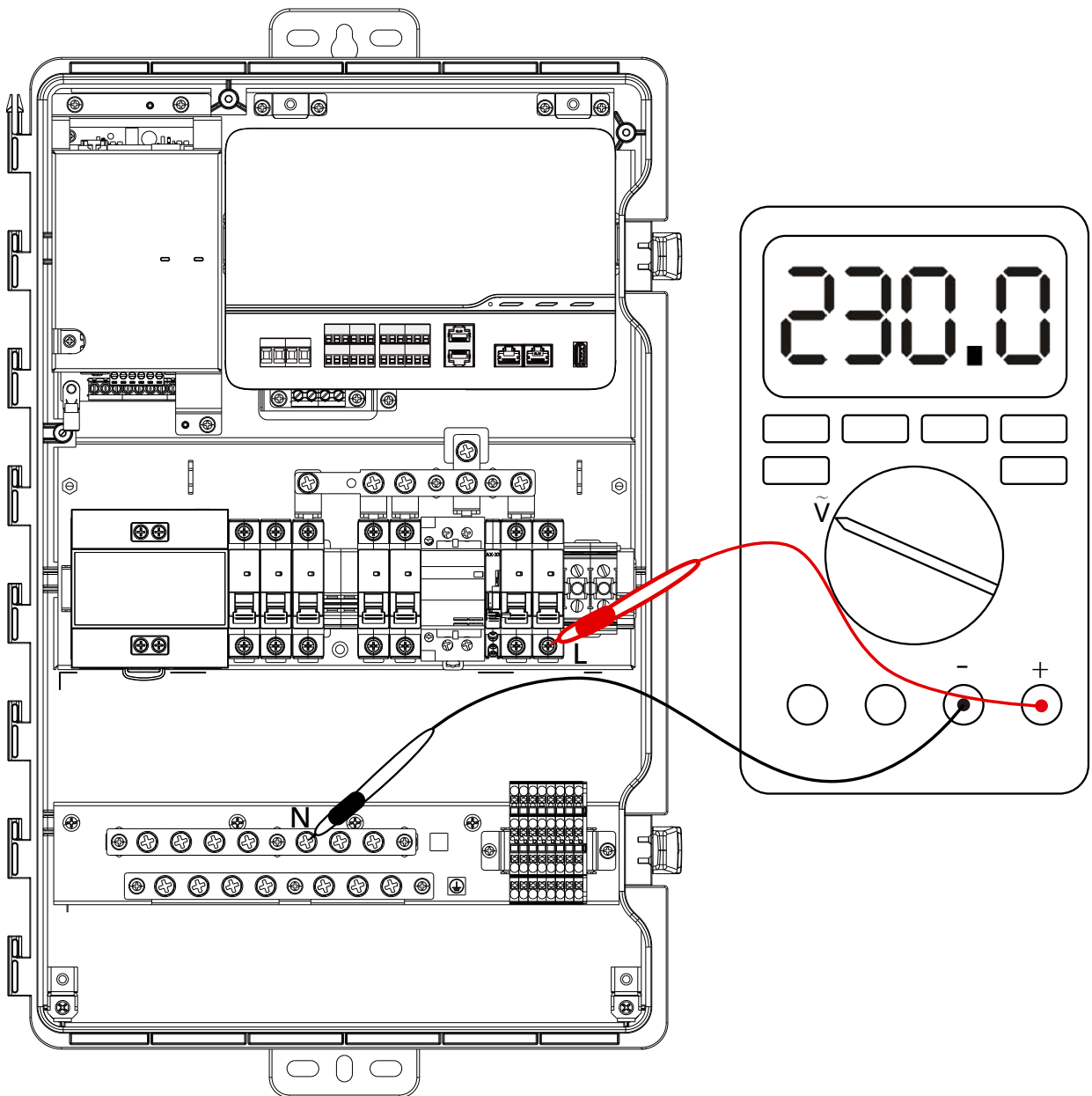


5. Power on the system

- a. Turn on the main breaker and M-CombinerPRO breaker in the distribution panel.
- b. Use the multimeter to measure the voltage between the N pole and L pole of the grid breaker as shown in the figure.
- 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 combinerPro, and the LEDs on the MG100 will be on.

NOTE:

- If the voltage value is outside the range (184 to 276 V), do not switch on the grid breaker inside the combinerPro. Check the cable connection to avoid damaging the device and voiding the warranty.



6. 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.
- b. After the system is activated, all LEDs will be solid green.

NOTE:

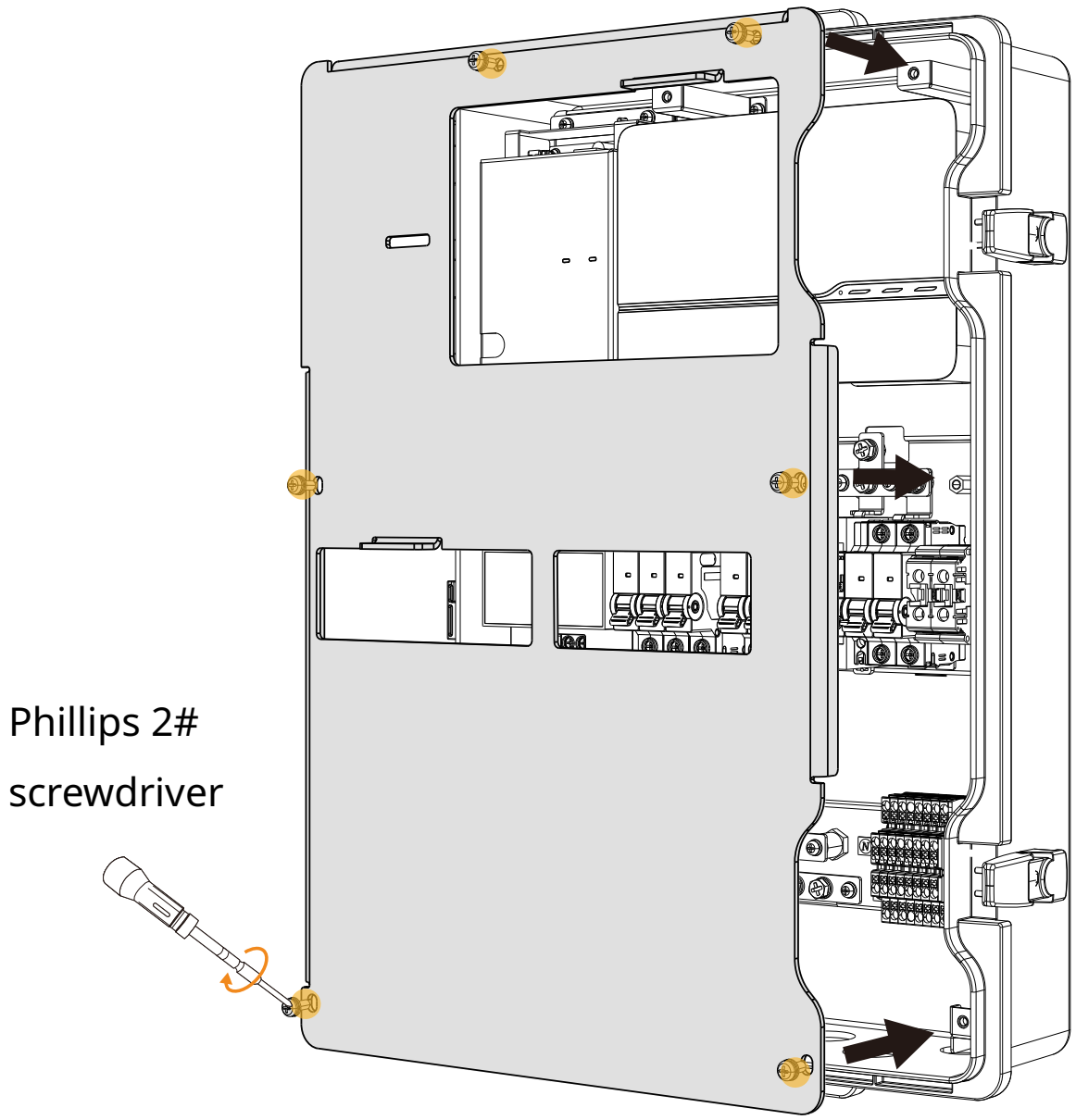
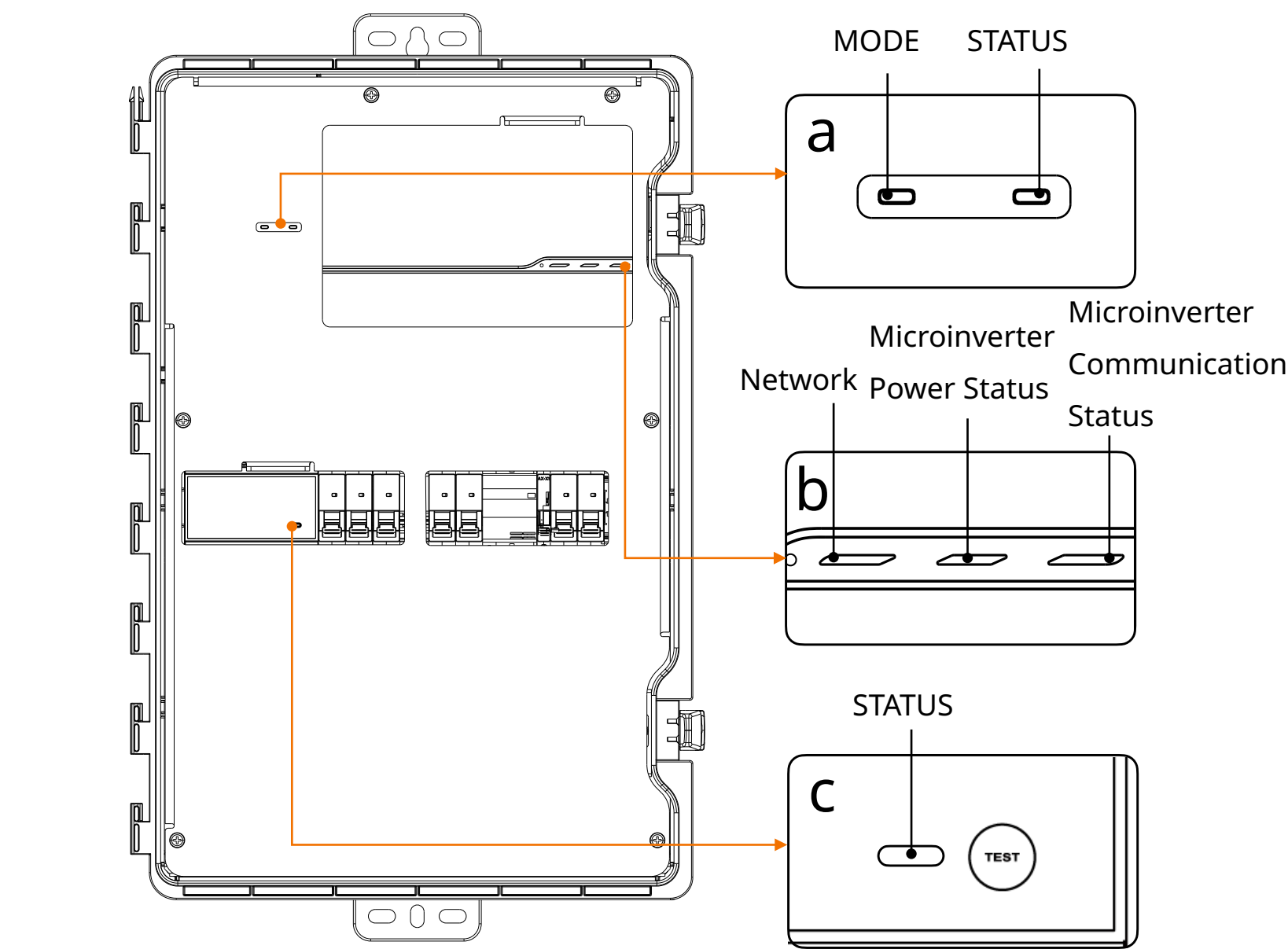
- If no microinverter is connected, only the leftmost light on the Gateway will turn green. The lights for the M-Relay and the on-grid/off-grid section will still show green normally.

7. Close the M-CombinerPRO

- a. Close the door of the MC100PRO-S1P.

LED indicator description

- a. The above two LEDs reveal the status and mode of the backup part. The left LED represents Mode and the right one represents Status.



Function	Colour		Description
Mode	Solid Green		On-grid mode
	Solid Orange		Off-grid mode
	Slow Flash Green		Generator mode
Status	Solid Green		Normal
	Quick Flash Orange		Upgrading mode
	Slow Flash Red		Communication fault
	Solid Red		System fault

- b. The three LEDs on the Gateway reveal ‘Network’ ‘Microinverter Power Status’ ‘Microinverter Communication Statu’ from left to right.

	Function	Colour		Description
	Network	Solid Green		Connecting to cloud.
		Quick Flash Green		Connecting to 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 microinverters is not generating power.
		Dim		All microinverters are not generating power.
	Microinverter Communication Status	Solid Green		All microinverters are in communication normally.
		Quick Flash Green		The MG100 is detecting microinverters.
		Slow Flash Orange		At least one microinverters is not in communication.
		Slow Flash Red		All microinverters are not in communication (not due to low light or night time).
		Dim		All microinverters are not in communication (due to low light or night time).
	All LEDs	Slow Flash Green		Software update is in progress.

- c. The M-Relay has one LED indicator, which is described as follows:

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