



M-Backup Quick Installation Guide

Applicable model: MU100-S

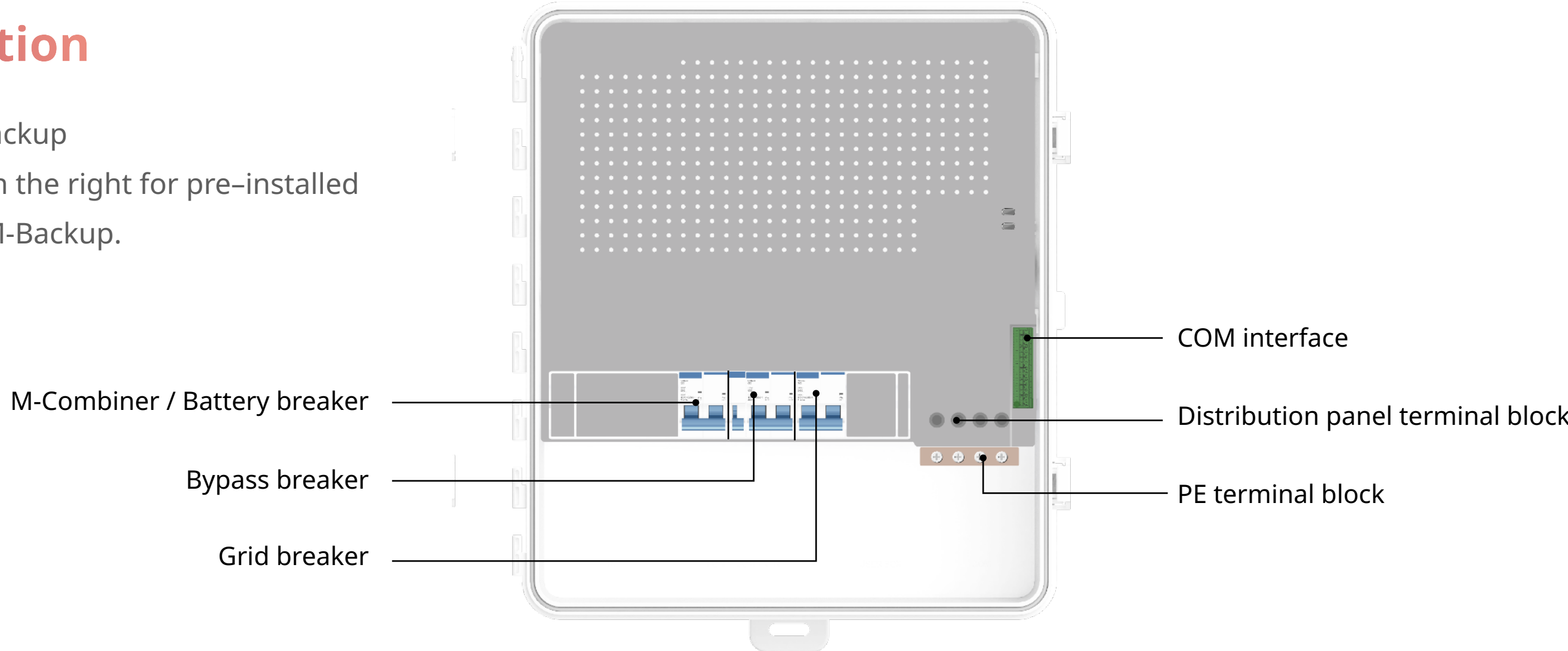
ATMOCE System Introduction

The single-phase M-Backup (MU100-S) is an integrated management and power equipment that enable automatic, seamless transitions between grid-connected and off-grid operation modes. During normal grid operation, it coordinates PV power generation for grid feeding or battery charging. During grid outages, it instantly switches to off-grid mode, utilizing solar and batteries to independently and stably power local loads. It ensures system safety, independence and energy utilization.

Pre-installation

a. What's in the M-Backup

Refer to the figure on the right for pre-installed components in the M-Backup.



b. Check the grid voltage

The M-Backup 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	
Grid	Power cable	6 to 25 mm², 2-core or 3-core
Distribution panel	Power cable	6 to 25 mm², 2-core or 3-core
M-Combiner / Battery	Power cable	6 to 25 mm², 2-core or 3-core
COM interface	Communication cable	0.25 to 0.75 mm²

d. Prepare the tools and materials

Tools: screwdriver, wire stripper, wire crimper, diagonal cutter, torque wrench, electrical drill, tape measure, multimeter, marker, etc.
Materials: wall anchors (Φ8) and screws (M6), corrugated protective pipe, cold-press terminal, tie wrap, etc.

e. Download the ATMOZEN APP

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



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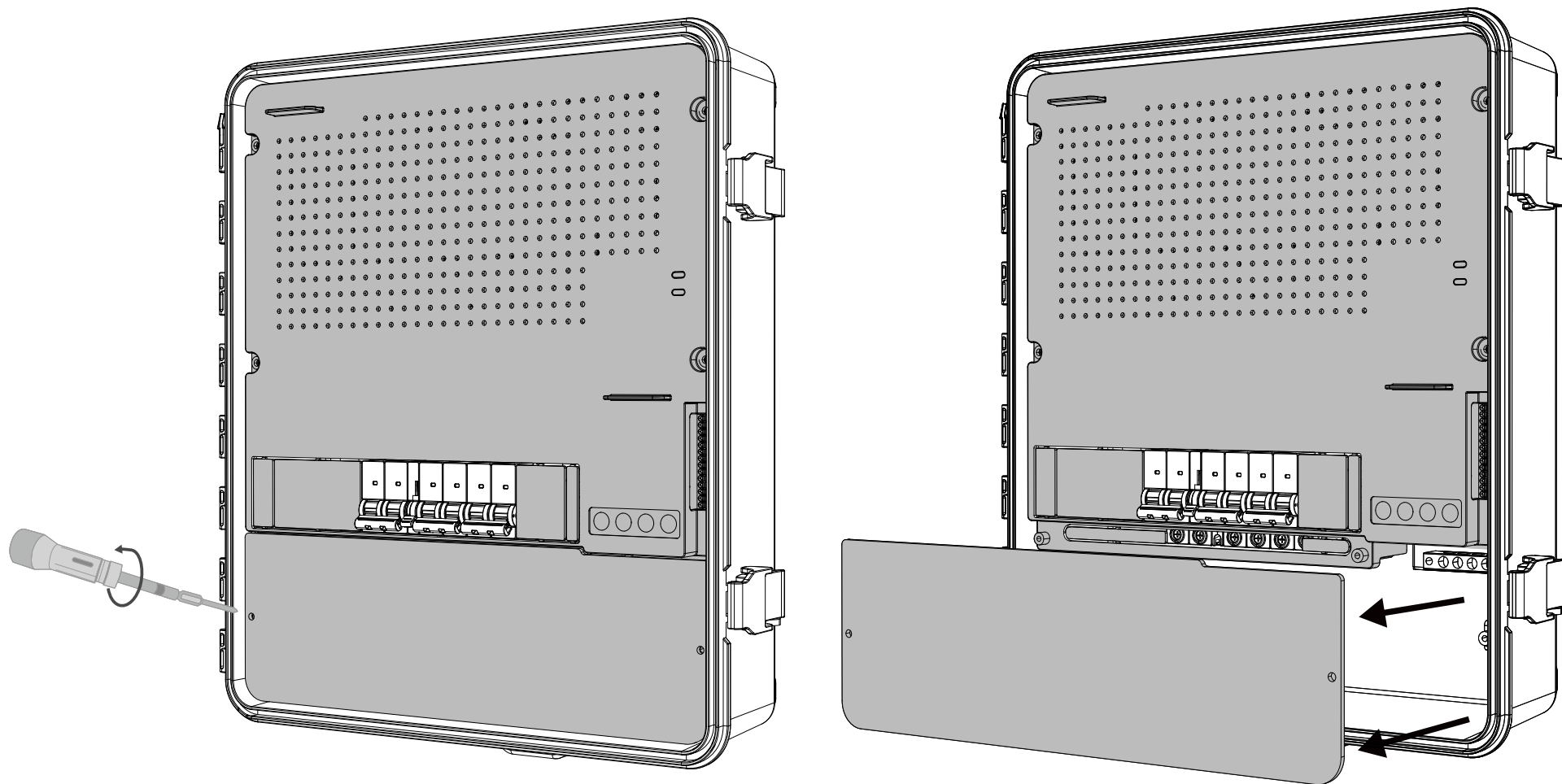


ATMOZEN APP

Installation

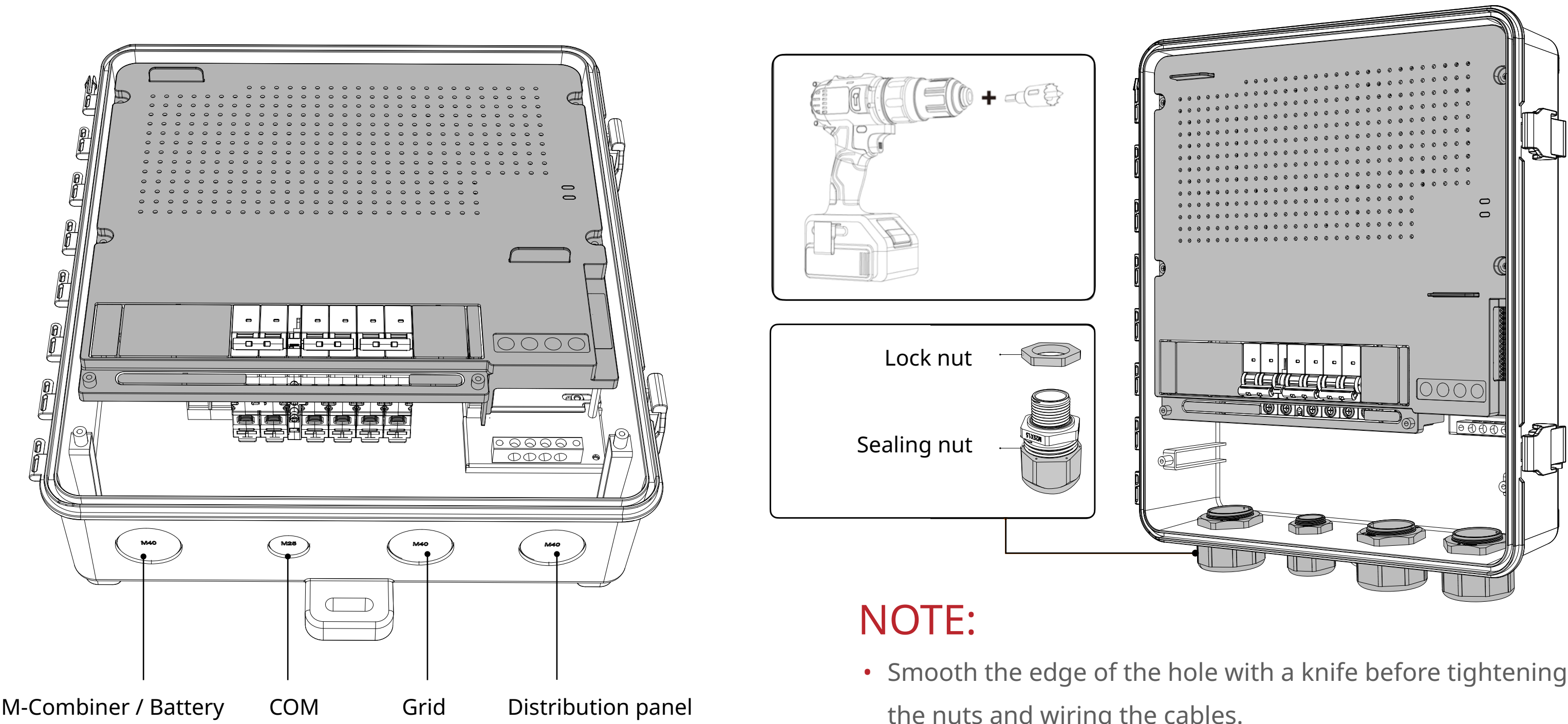
1. Remove the Protective Cover

- Open the door and use a Phillips #2 screwdriver to remove the protective cover
- Take out the accessories from the cabinet.
For accessory details, please refer to the "M-Backup delivery list" in the package.



2. Remove the Knockouts

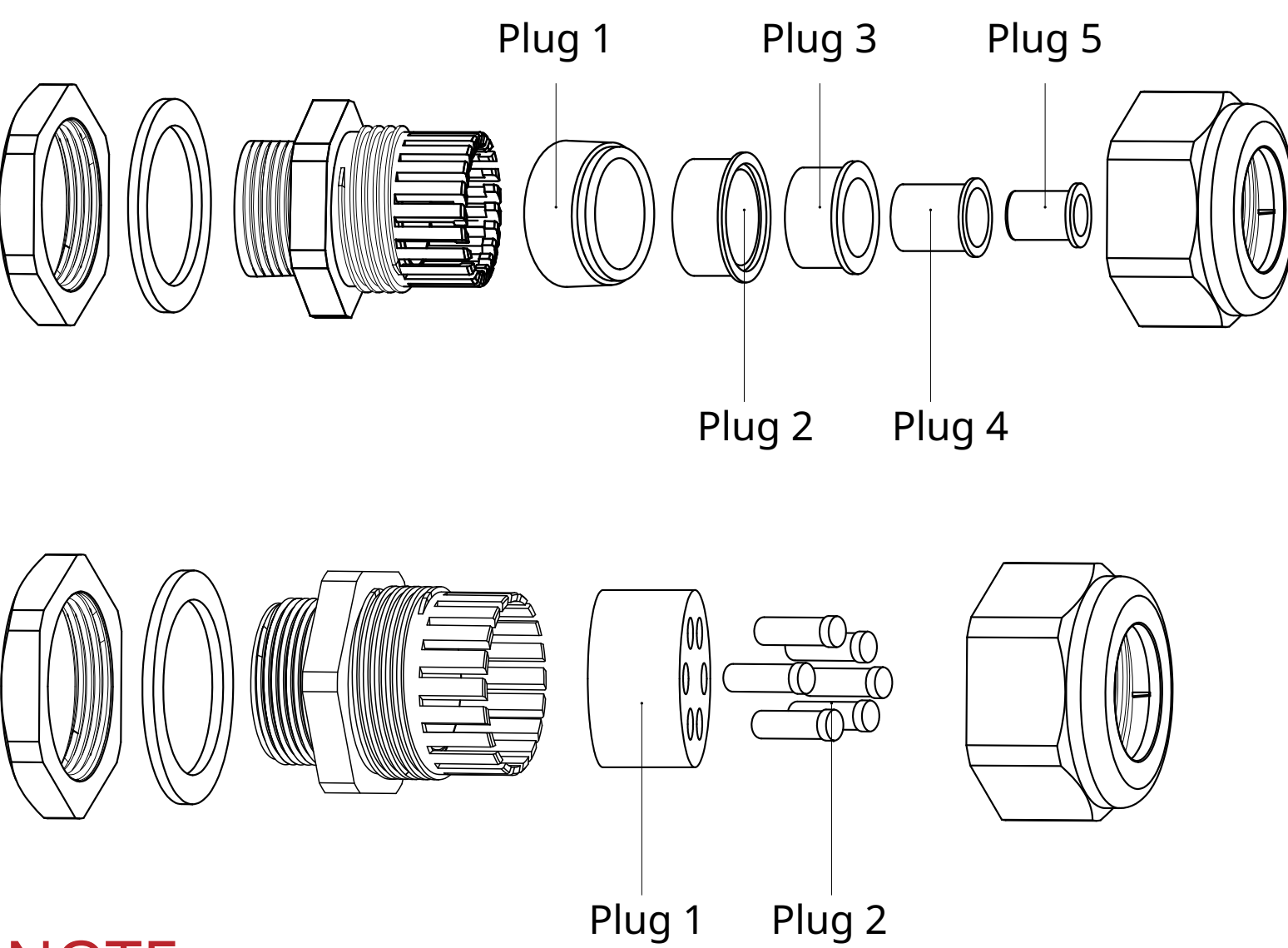
- Use the electrical hole cutter with a pilot drill bit to drill holes. The drilling area and recommended cable outlets can be found at the bottom of the M-Backup.



NOTE:

- Smooth the edge of the hole with a knife before tightening the nuts and wiring the cables.

- Mount the rain-tight fittings on the holes. 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.
- 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.



Item	Recommended diameter	Wire type
Plug 1	/	
Plug 1+2	3×25 to 3×35 mm²	
Plug 1+2+3	/	Power cable
Plug 1+2+3+4	3×10 mm²	
Plug 1+2+3+4+5	3×6 mm²	
Plug 1	0.25 to 0.75 mm²	COM
Plug 2	Cover the unused cable holes on plug1	

NOTE:

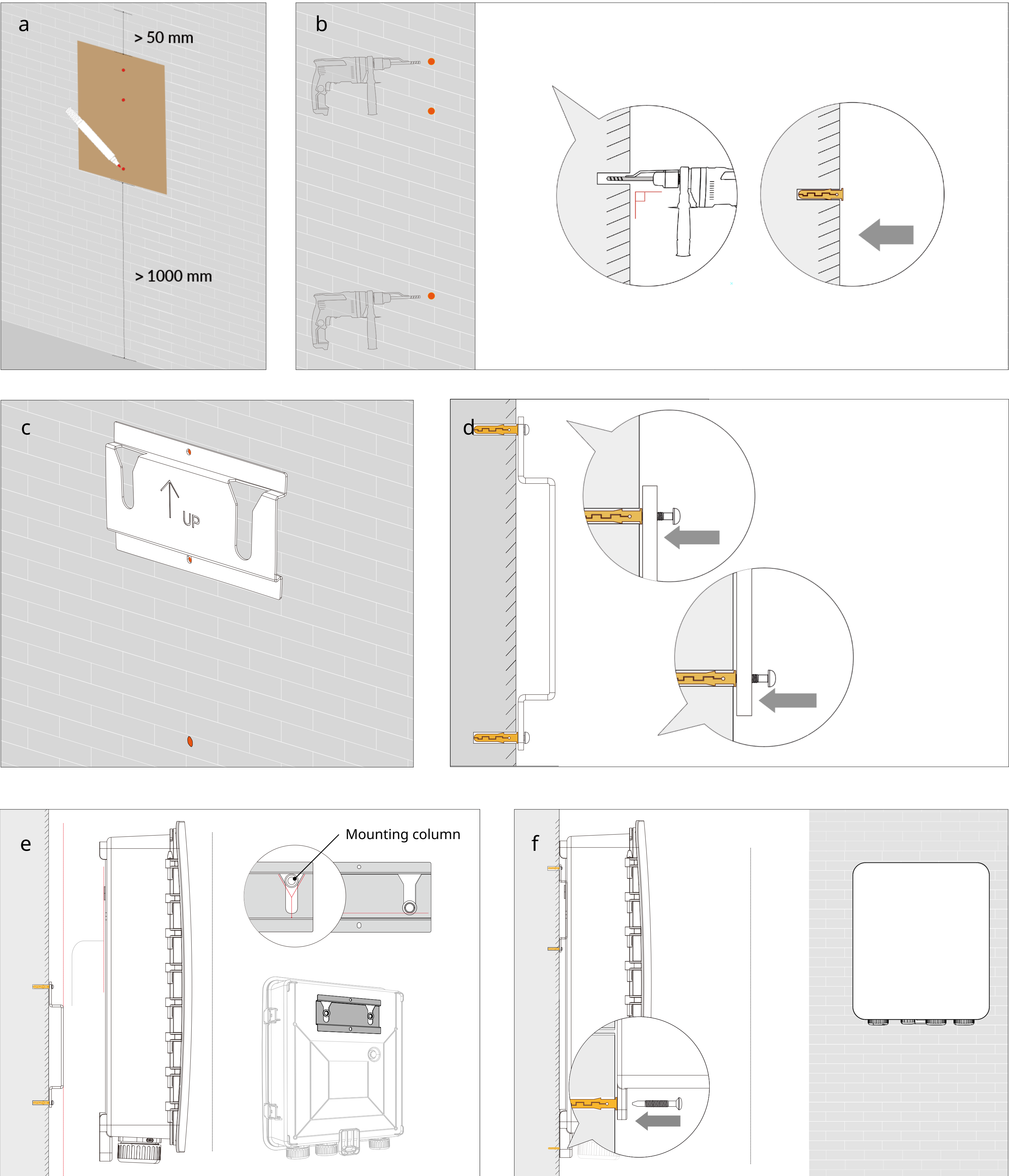
- Recommended values are subject to local regulations. Adjust for cable diameter deviations per site conditions. For two Combiners to one Backup, site-specific sealing is required.

3. Mount the M-Backup

- Take out the marking plate and place it on the wall. Use the spirit level to check that the plate is level, then make the marks.
- Drill along these marks by using an electric drill with a bit (Φ8) and insert the wall anchors (along with the mounting plate) into the holes.
- Take out the mounting plate and align the screw holes with the wall anchors.
- Insert and tighten the M6 screws by using a Phillips #2 screwdriver with a torque of 2.5-3.5 N·m.
- Insert the two mounting columns at the bottom of the M-Backup into the sliding rail and slide them to the end.
- Insert the M6 screws into the bottom hole and tighten the screws by using a Phillips #2 screwdriver with a torque of 2.5-3.5 N·m.

NOTE:

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

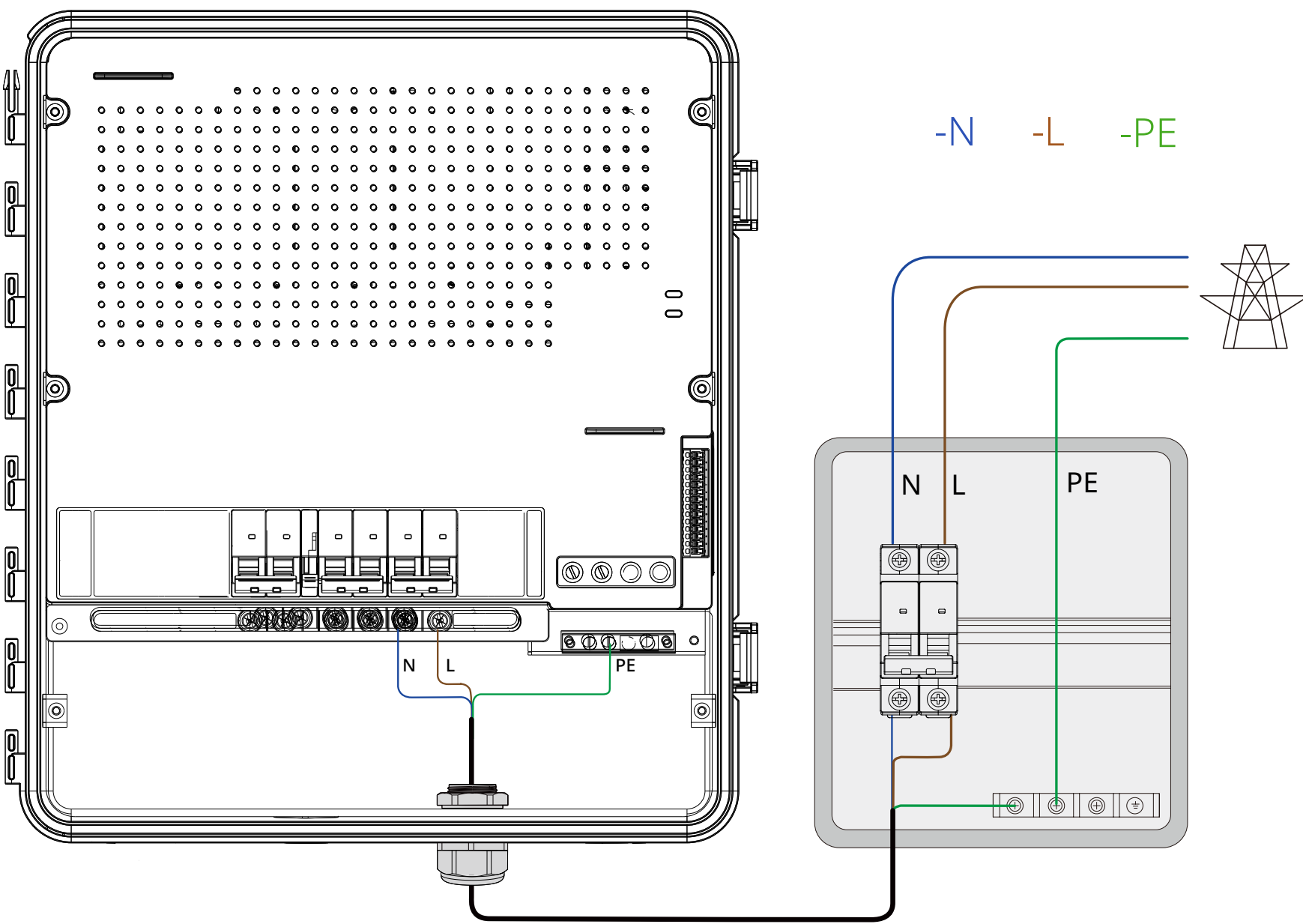


4. Wire to the M-Backup

4.1 Wire from the grid

Section A. For the grid with L, N and PE (TN-S)

- a. Disconnect the breaker from the grid.
- b. Bring in the cables from the grid through the grid hole.
- c. Connect the cables (N and L) to the grid breaker and connect the PE cable to the PE terminal.
- d. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.

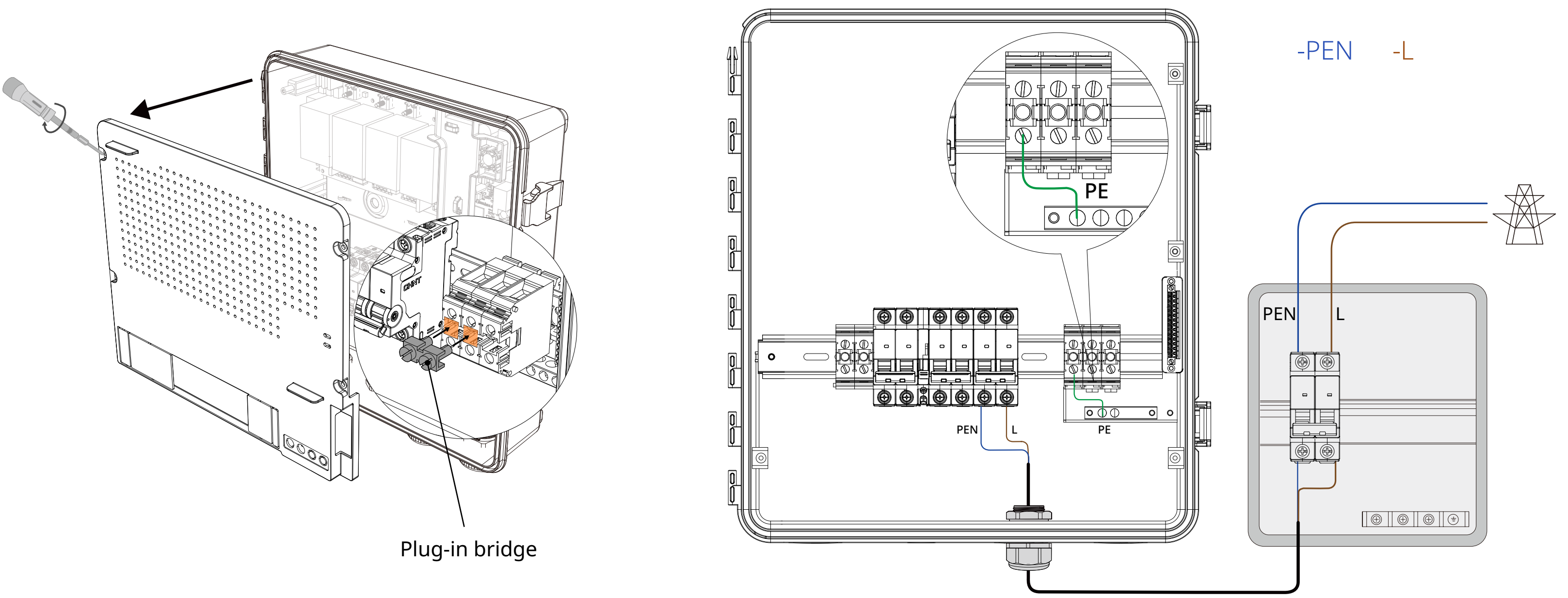


NOTE:

- Before connecting to the power grid, it is necessary to determine the power grid configuration.

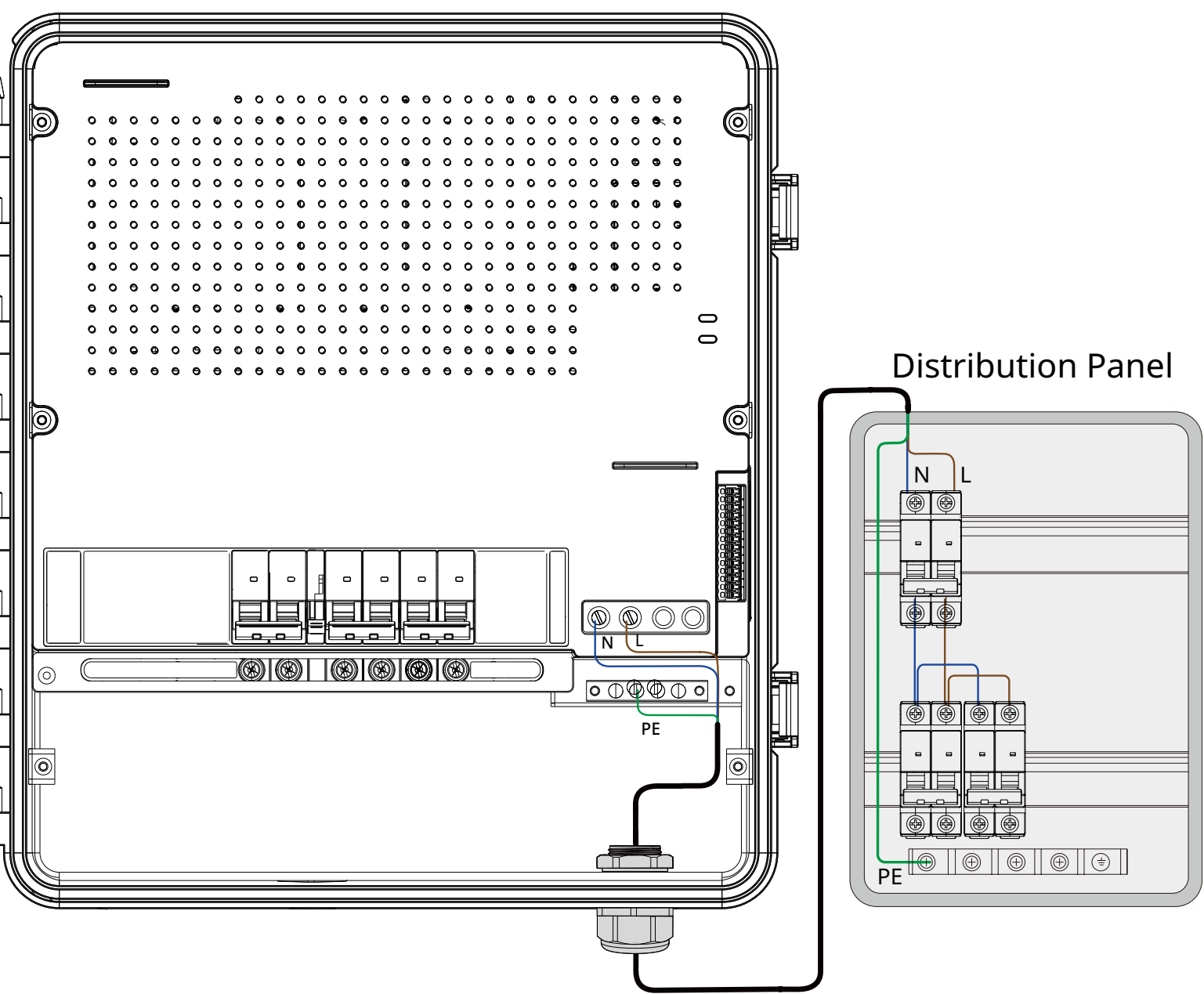
Section B. For the grid with L and PEN (TN-C)

- a. Remove the top protective panel and insert the plug-in bridge into the terminal block.
- b. Bring in the cables from the grid through the hole.
- c. Connect the cables (PEN and L) to the grid breaker.
- d. The PE terminal block inside the M-Backup must be connected to the PEN terminal block.
- e. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.
- f. Reinstall the top protective panel.



4.2 Wire from the distribution panel

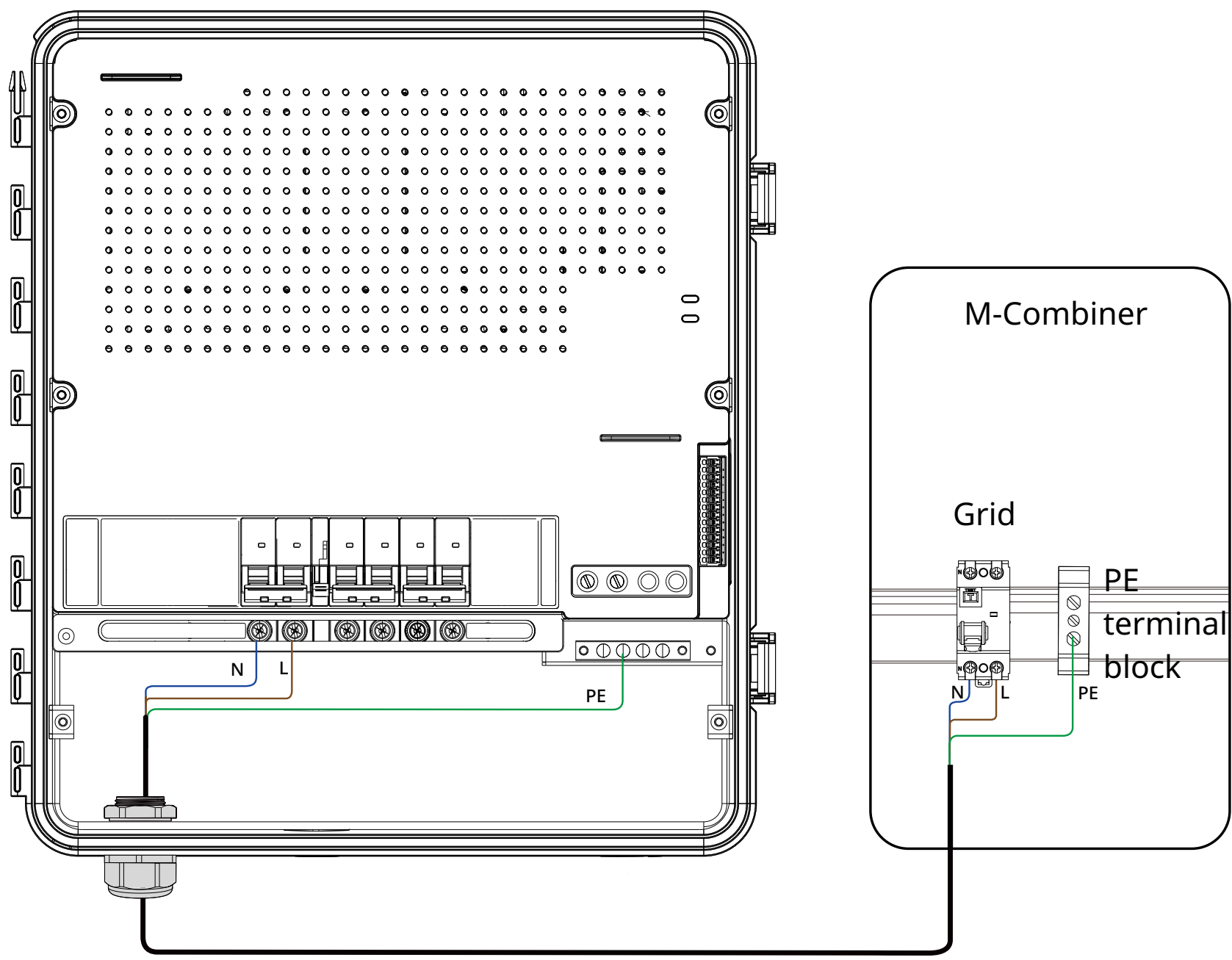
- a. Disconnect the main breaker in the distribution panel.
- b. Bring in the cables from the distribution panel through the hole.
- c. Connect the cables (N and L) to the distribution panel power block.
- d. Connect the PE cable to the PE terminal. If the grid is with L and PEN, the PE cable is not necessary to be connected.
- e. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.



4.3 Wire from the M-Combiner / Battery

- a. Bring in the cables from the M-Combiner / Battery through the hole.
- b. Connect the cables (N and L) to the RCD inside the M-Combiner.
- c. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.

-N -L -PE

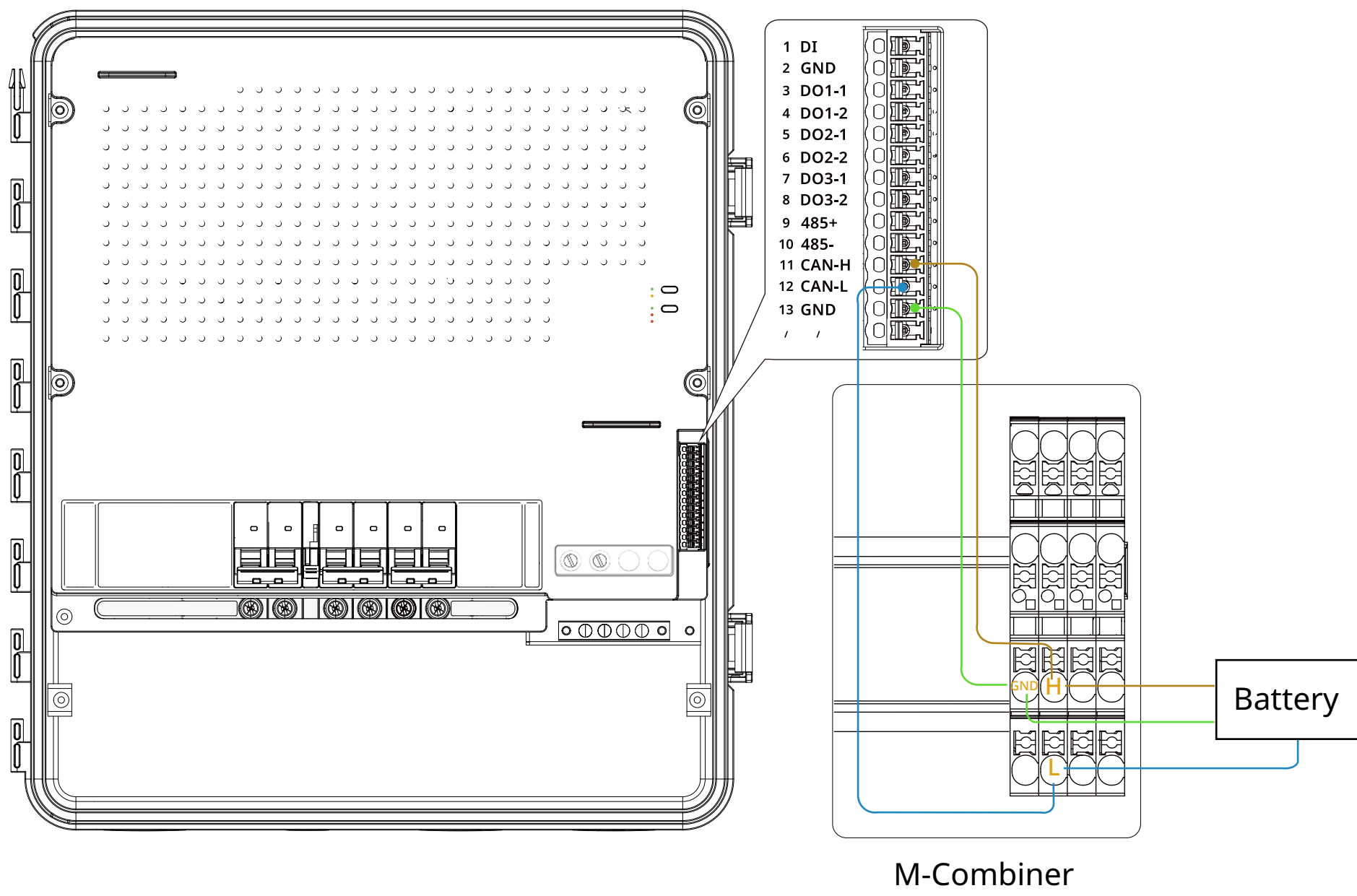


4.4 Wire to the COM interface

The M-Backup supports CAN, RS485, DI CTRL, and DO CTRL interfaces, etc. For both Battery and Backup CAN cables:

- a. Strip the ends of CAN-H, CAN-L, and GND wires
- b. Crimp matching wires together using cold-press terminals (CAN-H to CAN-H, CAN-L to CAN-L, GND to GND)
- c. Connect the combined wires to the M-Combiner at the designated location (as shown in the diagram)

1	DI	
2	GND	Feedback signal from ATS
3	DO1-1	
4	DO1-2	Start/stop control signal for generator
5	DO2-1	
6	DO2-2	Control signal for 3 rd party PV
7	DO3-1	
8	DO3-2	Control signal for load
9	RS485+	
10	RS485-	Reserved
11	CAN-H	
12	CAN-L	CAN signal (requires connection to gateway)
13	GND	
14	/	Invalid



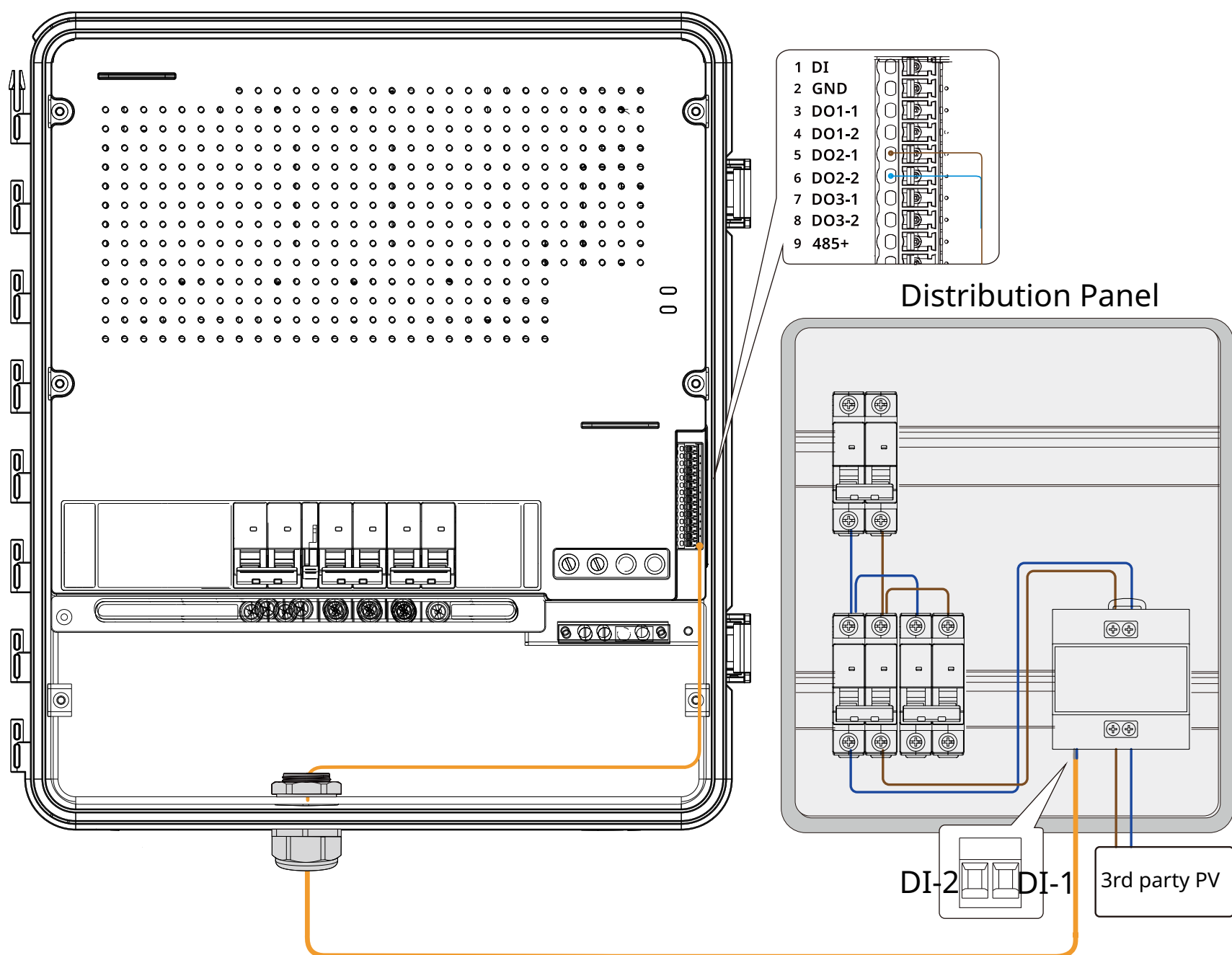
4.5 (Optional) Wire from the 3rd party PV

4.5.1 Primary plan

- a. Install an MR100SD-S in the distribution panel and connect to the 3rd party PV system as the diagram.
- b. Bring in the DO CTRL cables from MR100SD-S through the hole.
- c. Connect the cables to the DO2-1 and DO2-2 inside the M-Backup.

NOTE:

- Relay branch must connect to breaker
- Warning: 'Grid' and 'PV / LOAD' terminals must be correctly connected. Reversed wiring causes system malfunction.

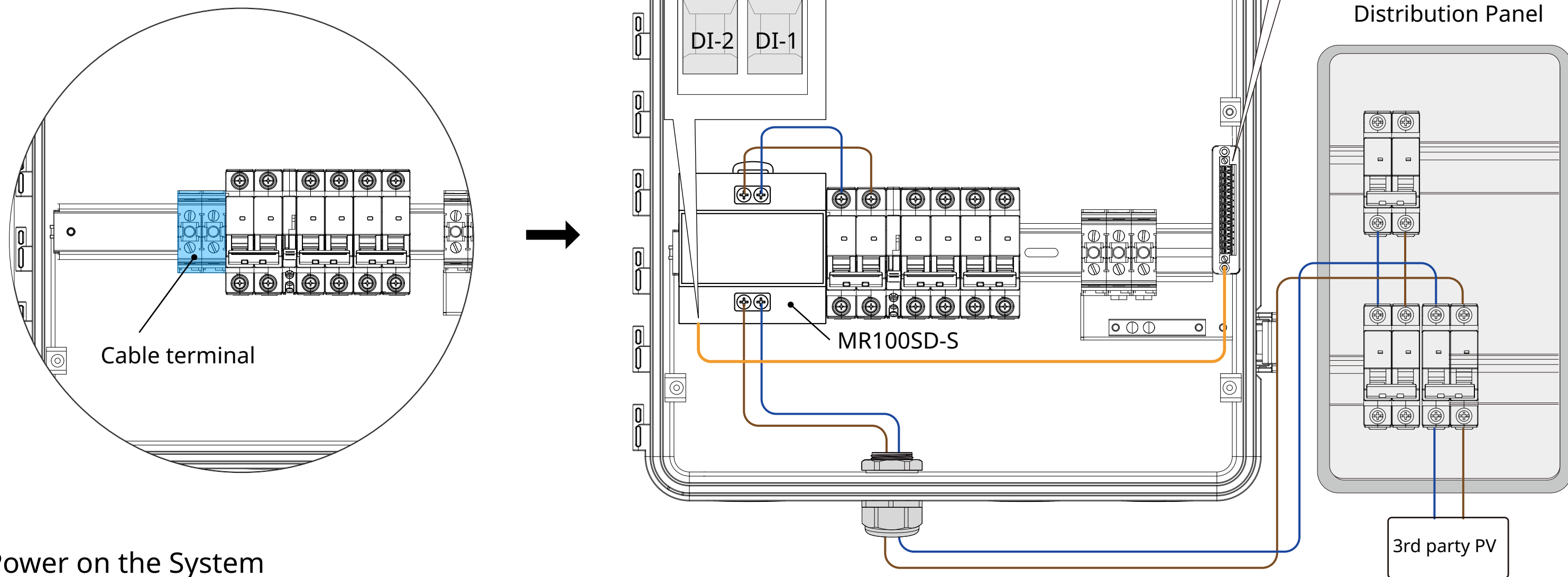


4.5.2 Alternative plan

- a. Connect the cable from the breaker in the distribution panel to the third-party PV system as shown in the diagram.
- b. Disconnect the cable that connects the cable terminal and its side breaker from the terminal side. Replace the original cable terminal in the Backup Box with the MR100SD-S. Connect cables from the side breaker (The cable was originally connected to the cable terminal that was just removed) to the top of the MR100SD-S
- c. Bring the cables on the bottom of the MR100SD-S through the hole on the bottom of the Backup Box and connect them to the breaker (For protecting the Third Party PV system) in the distribution panel, as shown in the diagram.
- d. Connect the DO CTRL cable between DO2-1, DO2-2, and MR100SD-S

NOTE:

- Replace the original cable terminal in the Backup Box with the MR100SD-S.



5. Power on the System

- a. Turn on the breaker in the grid.
- b. To check the phase sequence, perform the following steps:
 - Use the multimeter to measure the voltage between the N pole and L pole of grid breaker.
- c. If the voltage value is approximately the nominal phase voltage, e.g. 220 V, 230 V and 240 V, turn on the grid and other breakers in the combiner and the LEDs will be on.
- d. Re-install the cover to close the M-Backup.

NOTE:

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

LED indicator description

- a. The M-Backup has two LEDs, and the following table describes their 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

