40020072A

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M–Backup Quick Installation Guide

Applicable model: MU100-T

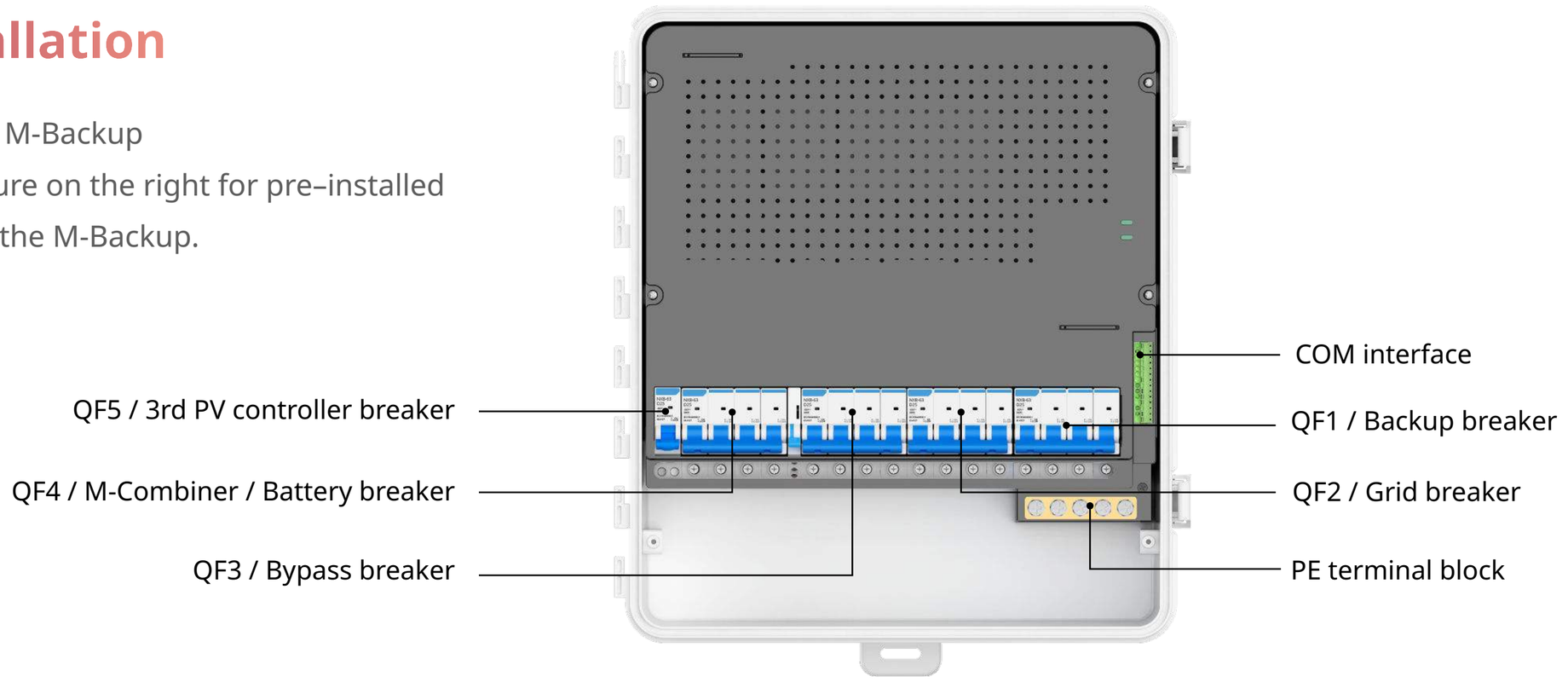
ATMOCE System Introduction

The three–phase M–Backup (MU100-T) 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 three–phase grid. Measure the AC voltage at the point of connection to confirm that it is within the range.

Phase setup	Voltage range	
Three–phase	L1, L2, L3 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 mm^2, 4–core or 5–core
Distribution panel	Power cable	6 to 25 mm^2, 4–core or 5–core
M-Combiner / Battery	Power cable	6 to 25 mm^2, 4–core or 5–core
COM interface	Communication cable	0.25 to 0.75 mm^2

NOTE:

- When connecting the cables to the M–Backup, you must cover the cable ends by using the proper cold–press terminal.
- When stripping the cable, remove 12mm of the insulation layer from the power cable and 8 mm 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, 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

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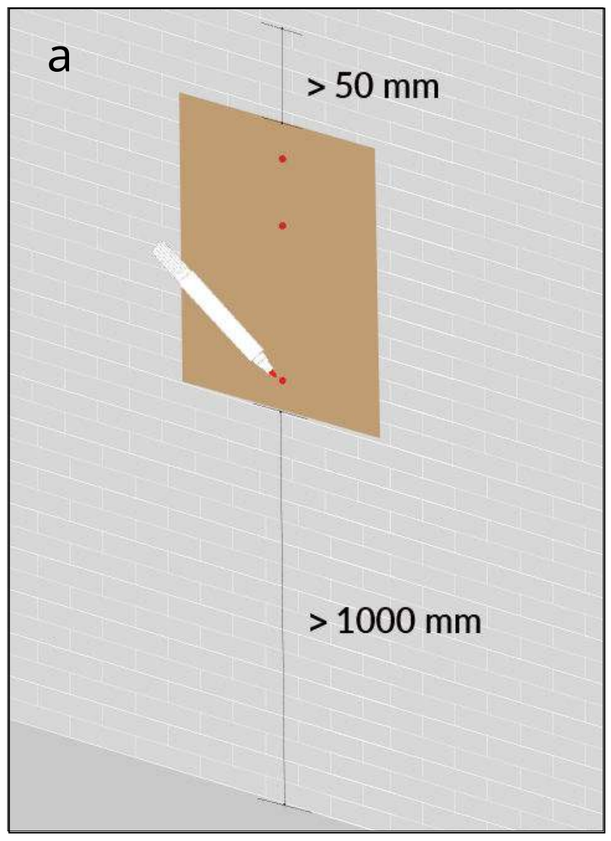
Installation

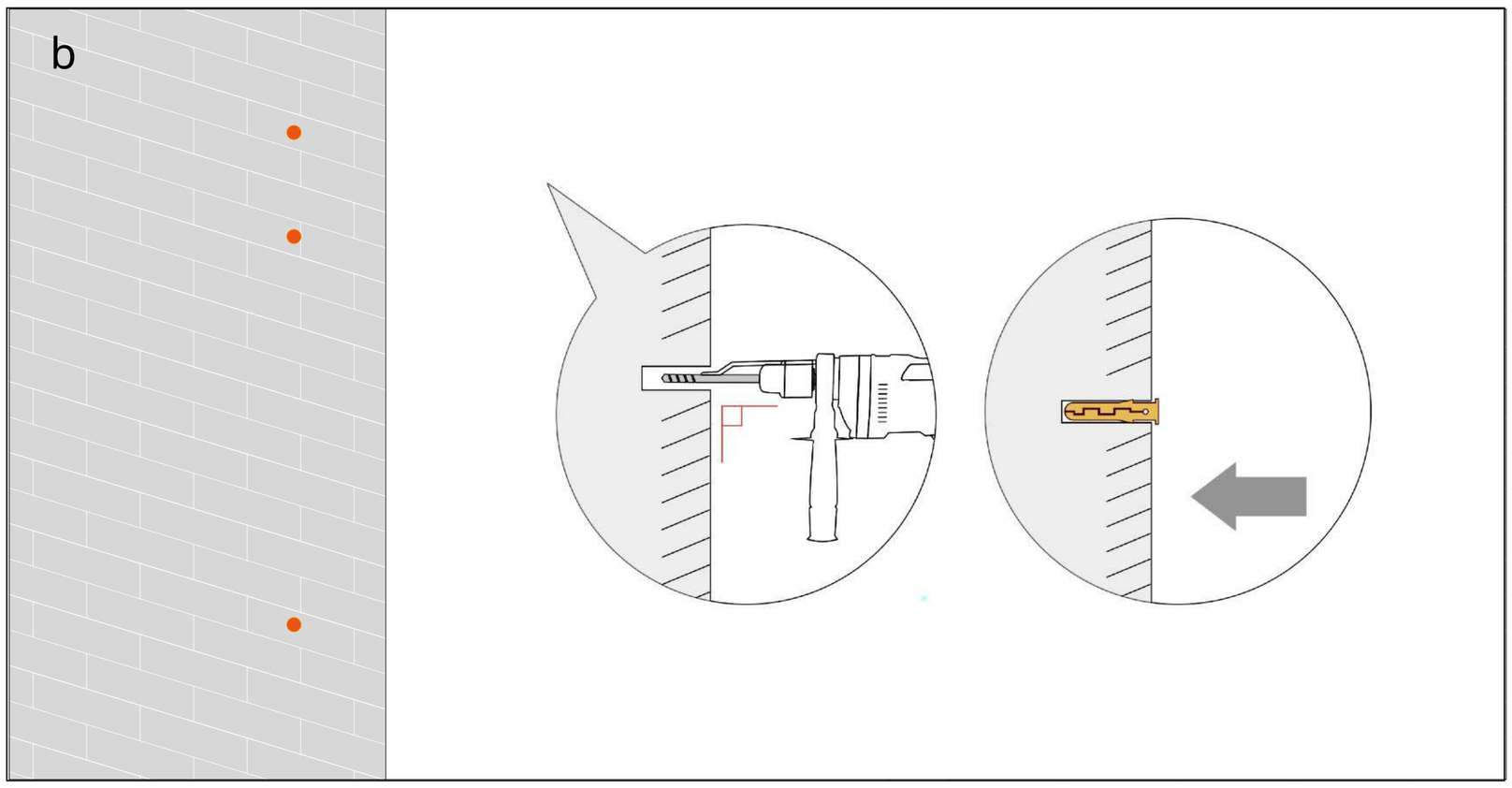
1. Mount the M–Backup

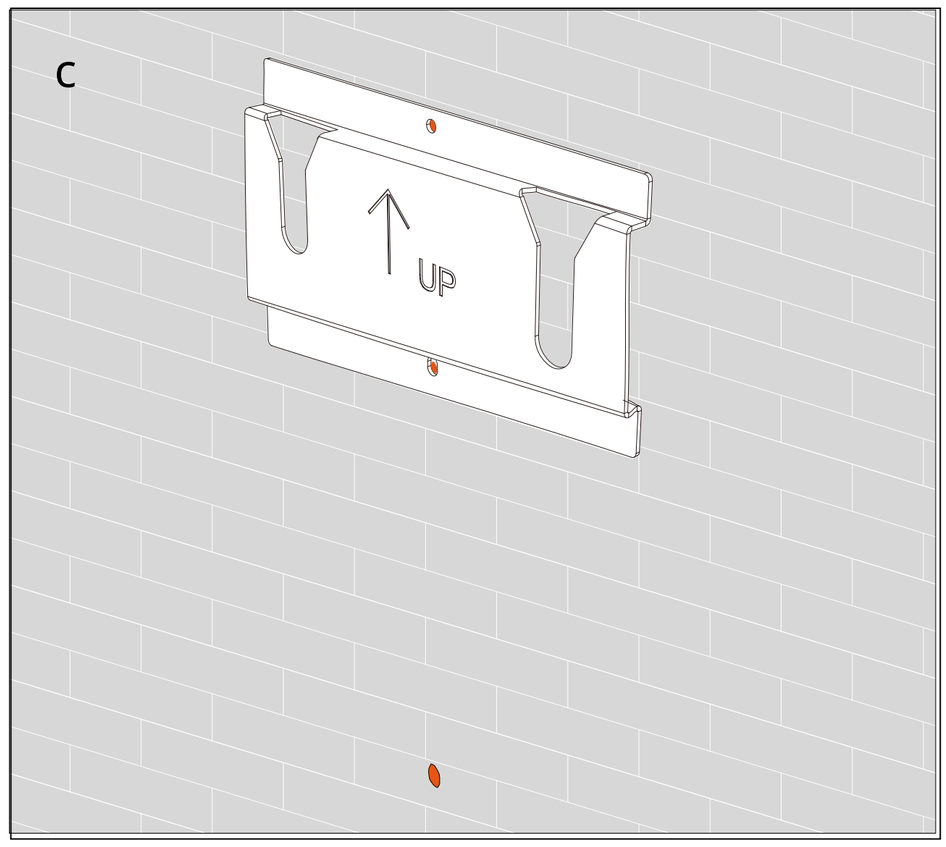
a. Take out the marking plate and place it on the wall. Use the spirit level to check that the plate is level, then make the marks.
b. Drill along these marks by using an electric drill with a bit (Φ8) and insert the wall anchors (along with the mounting plate) into the holes.
c. Take out the mounting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

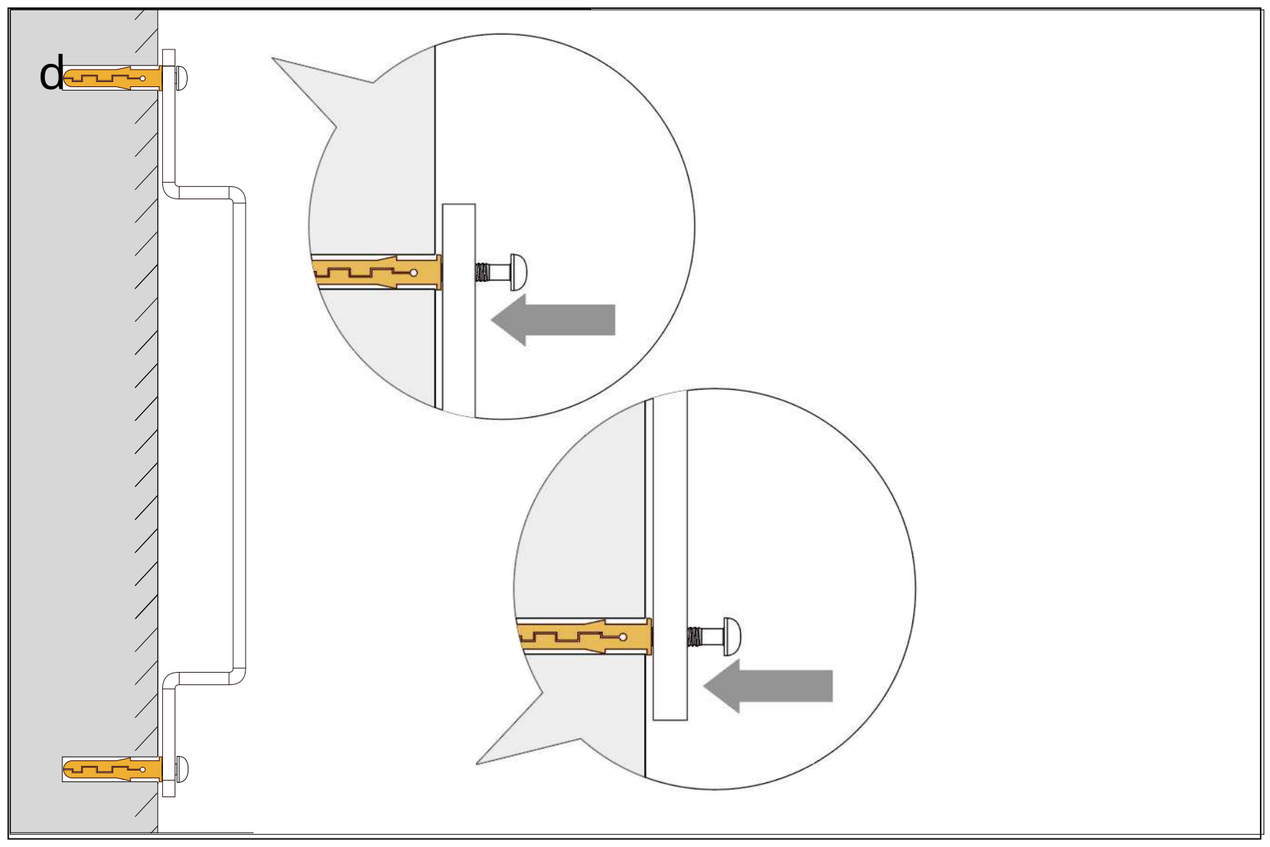
NOTE:

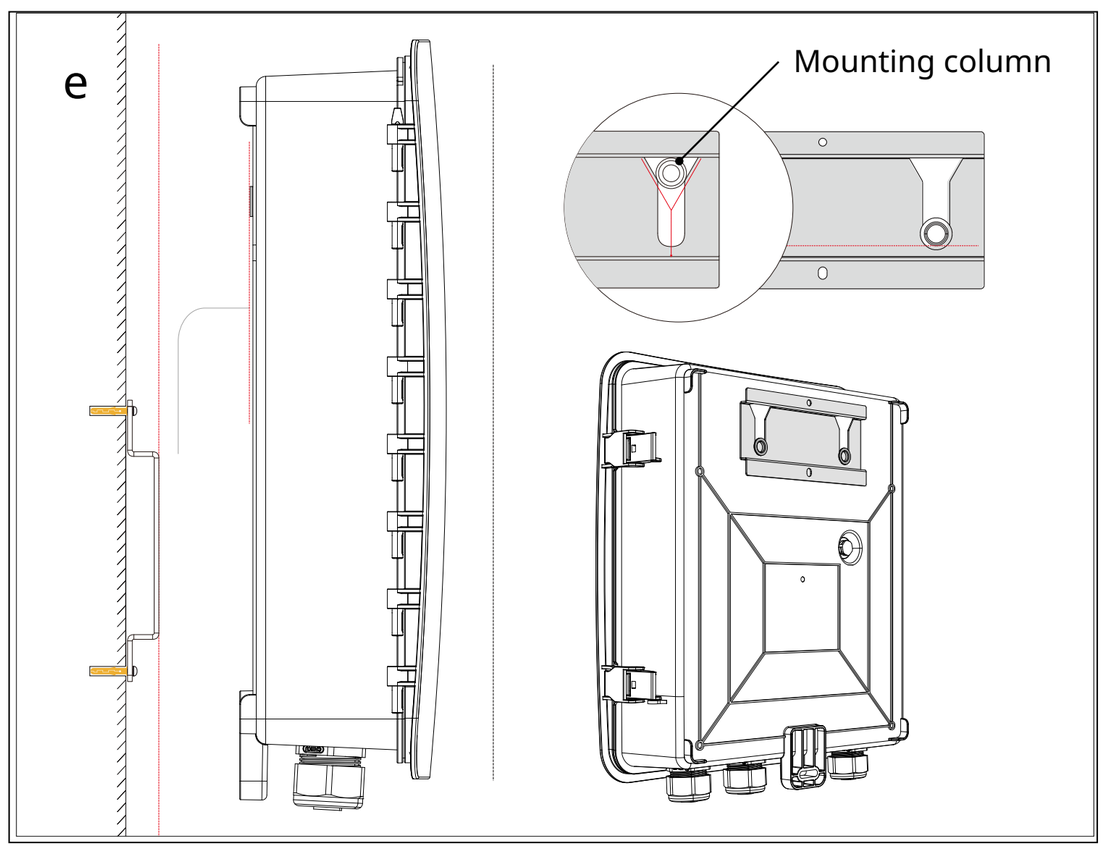
- Do not expose the M–Backup to direct sunlight, unless installing a sunshade.

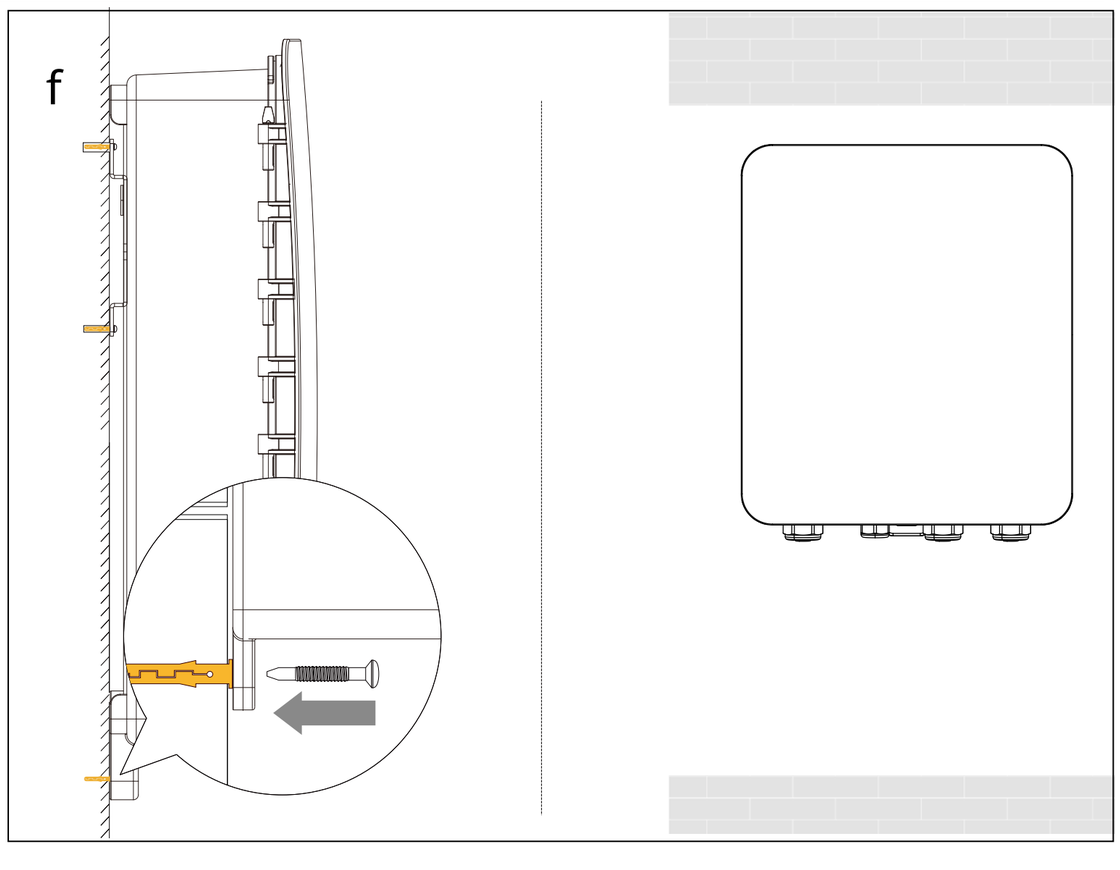






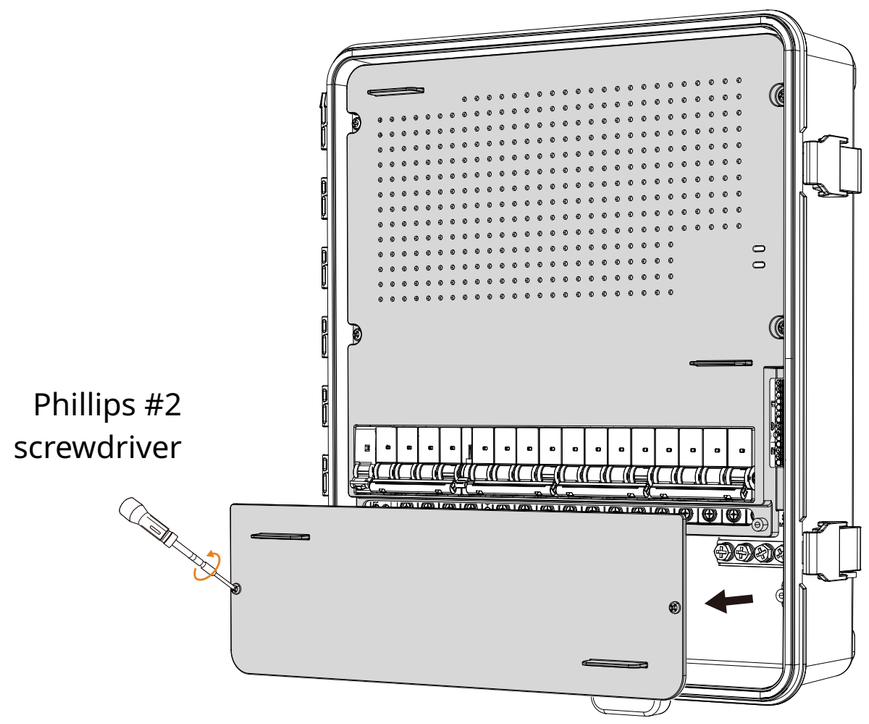






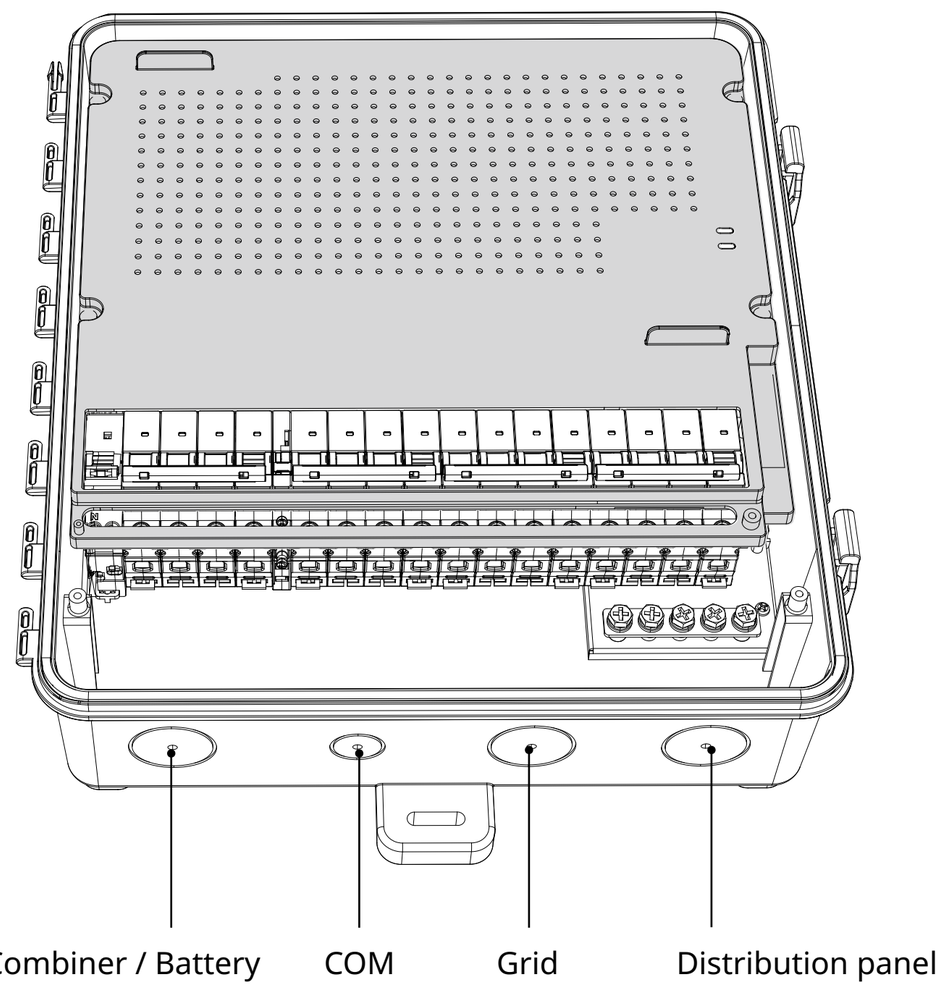
2. Remove the Protective Cover

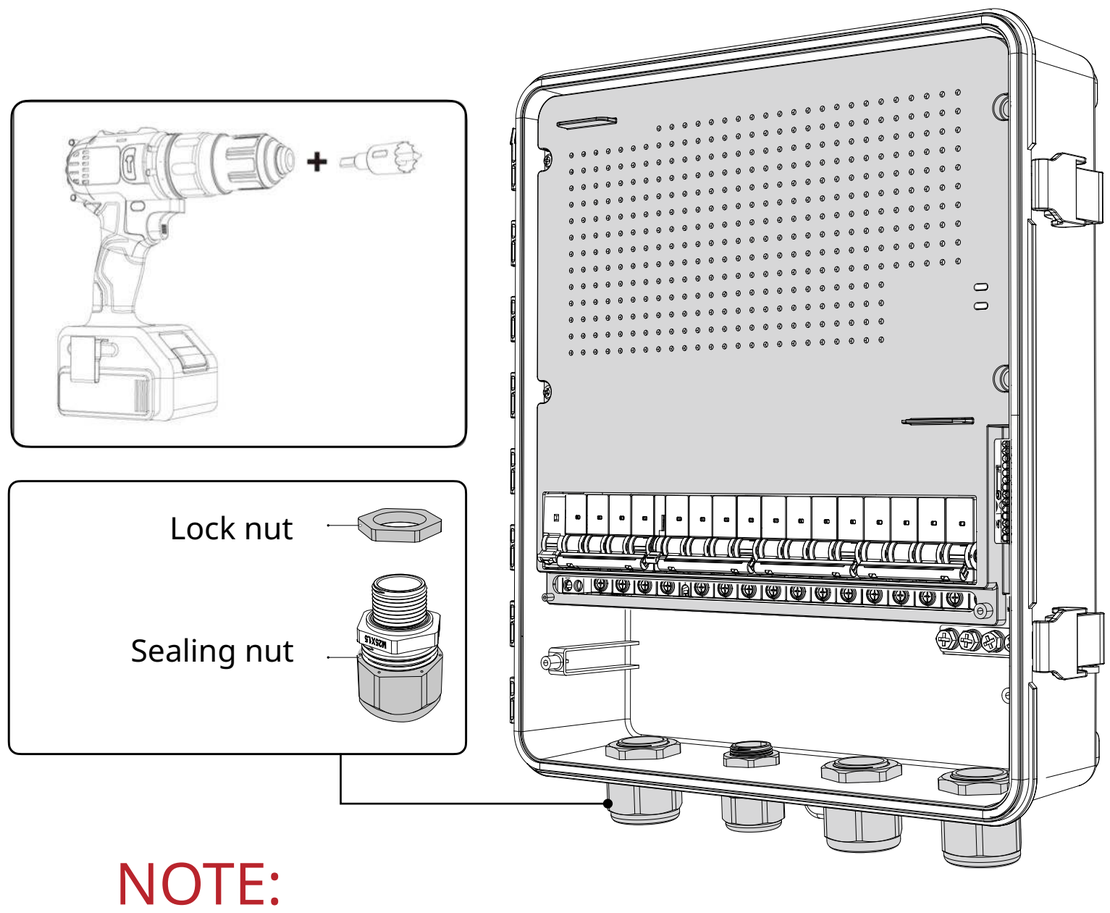
a. Open the door and use a Phillips #2 screwdriver to remove the protective cover.
b. Take out the accessories from the cabinet. For accessory details, please refer to the “M-Backup delivery list" in the package.



3. Remove the Knockouts

a. 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.

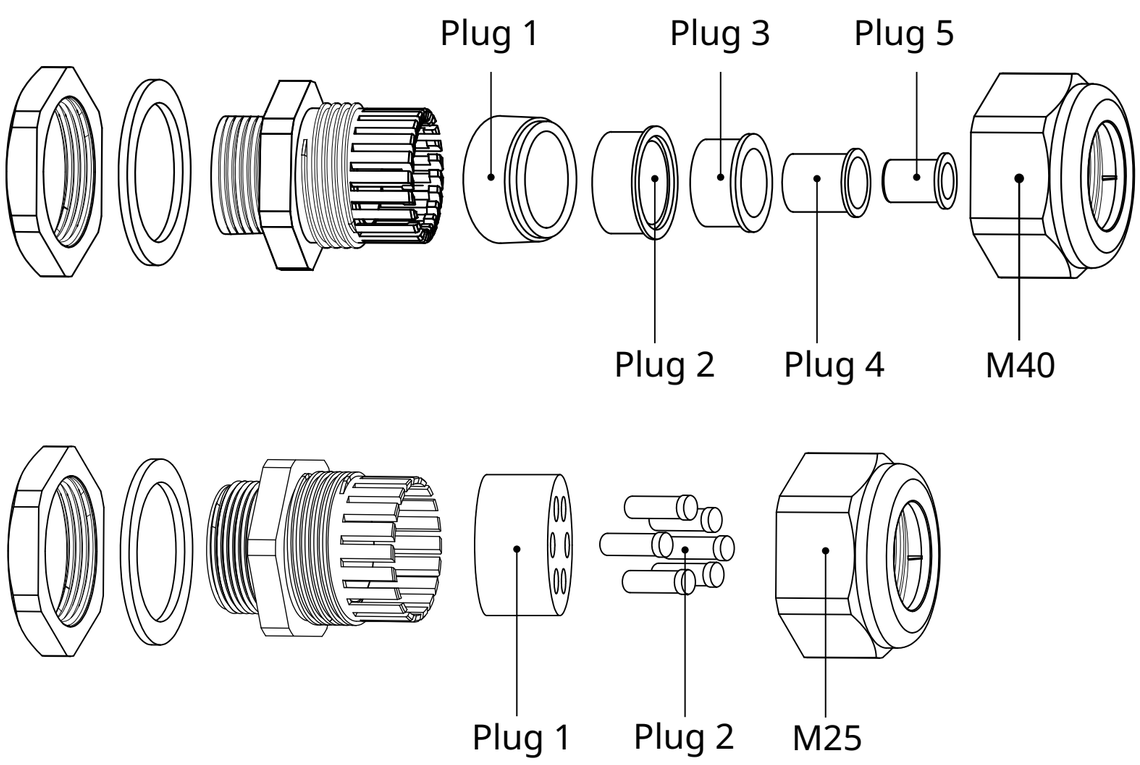




NOTE:

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

b. 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.
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.



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

NOTE:

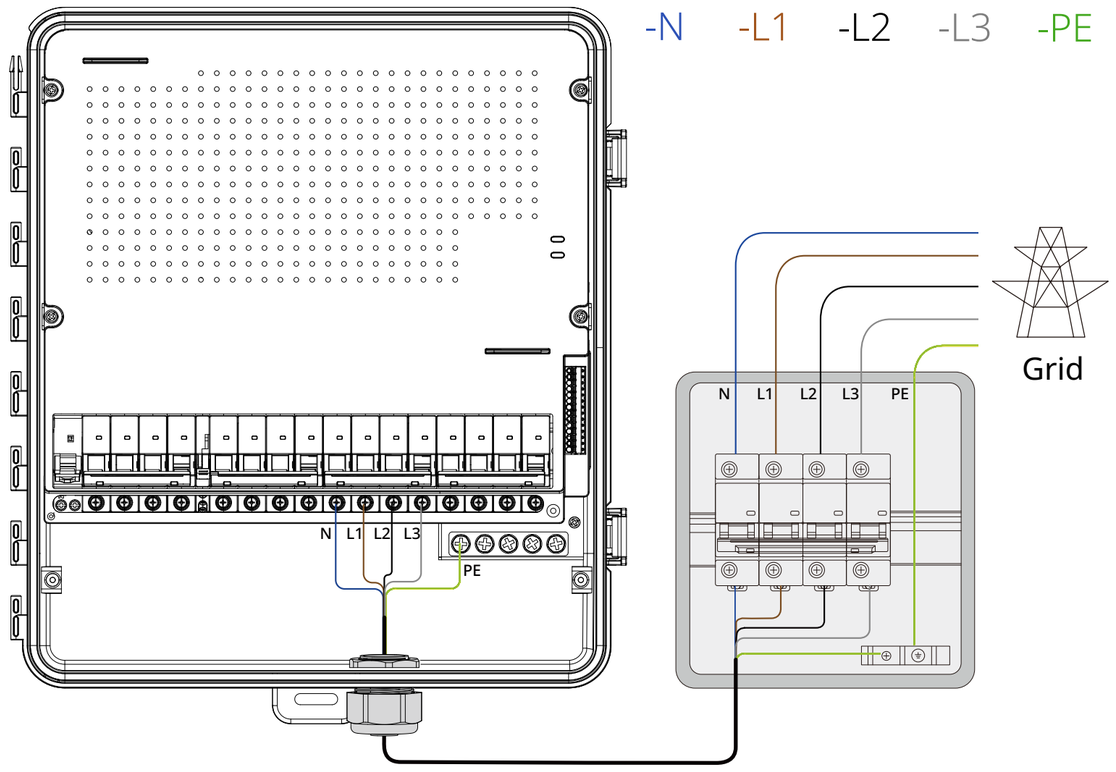
- Recommended values are subject to local regulations. Adjust for cable diameter deviations per site conditions.

4. Wire to the M–Backup

4.1 Wire from the grid

For the grid with L1, L2, L3, N and PE

a. Disconnect the breaker from the grid.
b. Bring in the cables from the grid through the grid hole.
c. Connect the cables (N, L1, L2 and L3) 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.



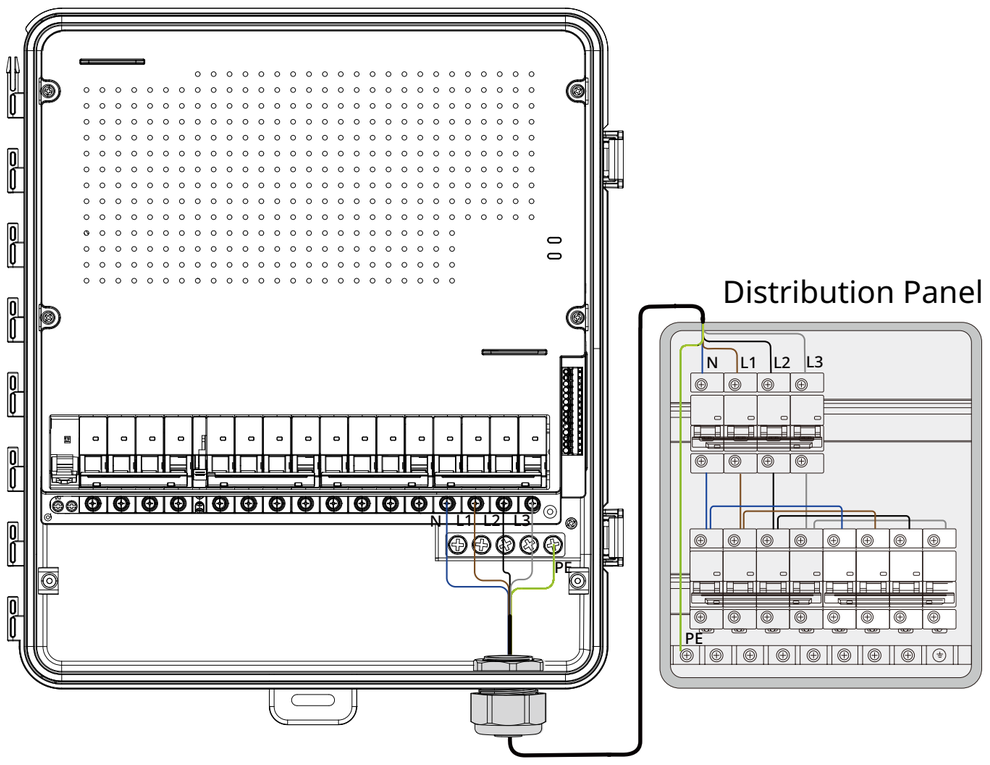
NOTE:

- Before connecting to the power grid, it is necessary to determine the power grid configuration.
- Ensure that the cable sequence (N, L1, L2 and L3) of the breaker in the M-Backup is consistent with that of the breaker from grid.

4.2 Wire from the Backup

a. Disconnect the main breaker in the distribution panel.
b. Bring in the cables from the distribution panel through the Backup hole.
c. Connect the cables (N, L1, L2 and L3) to the Backup power block.
d. Connect the PE cable to the PE terminal.
e. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.

-N -L1 -L2 -L3 -PE

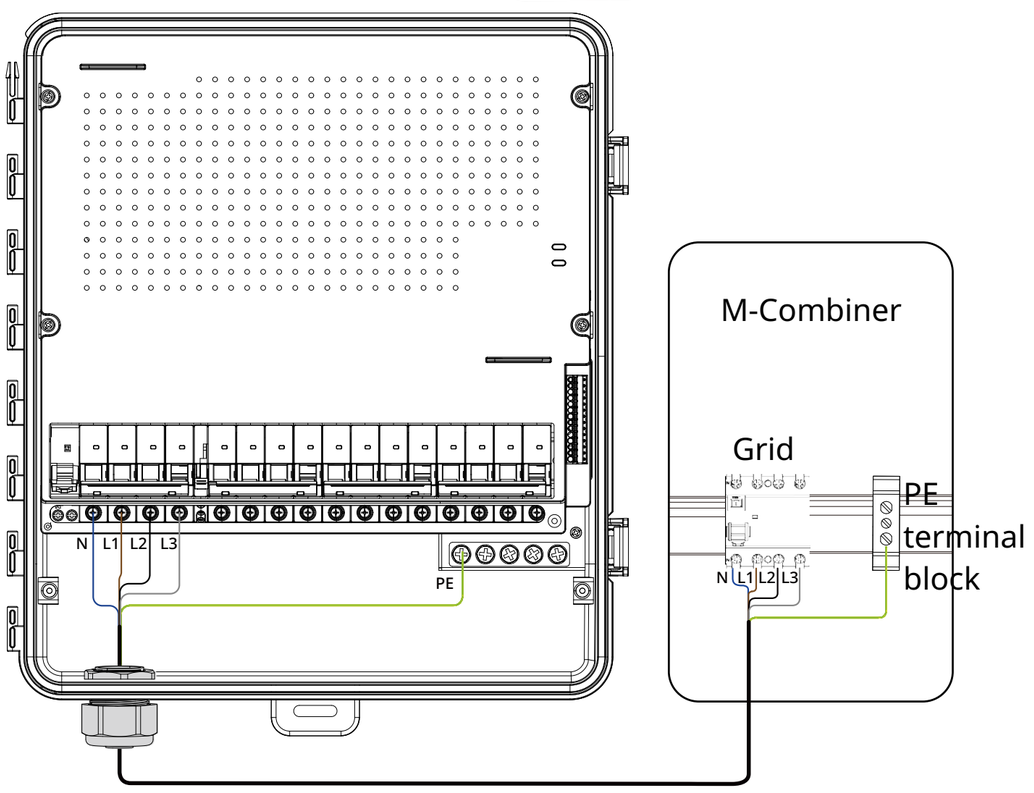


4.3 Wire from the M-Combiner / Battery

4.3.1 Wire from the M-Combiner

a. Bring in the cables from the M-Combiner through the hole.
b. Connect the cables (N, L1, L2 and L3) 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.

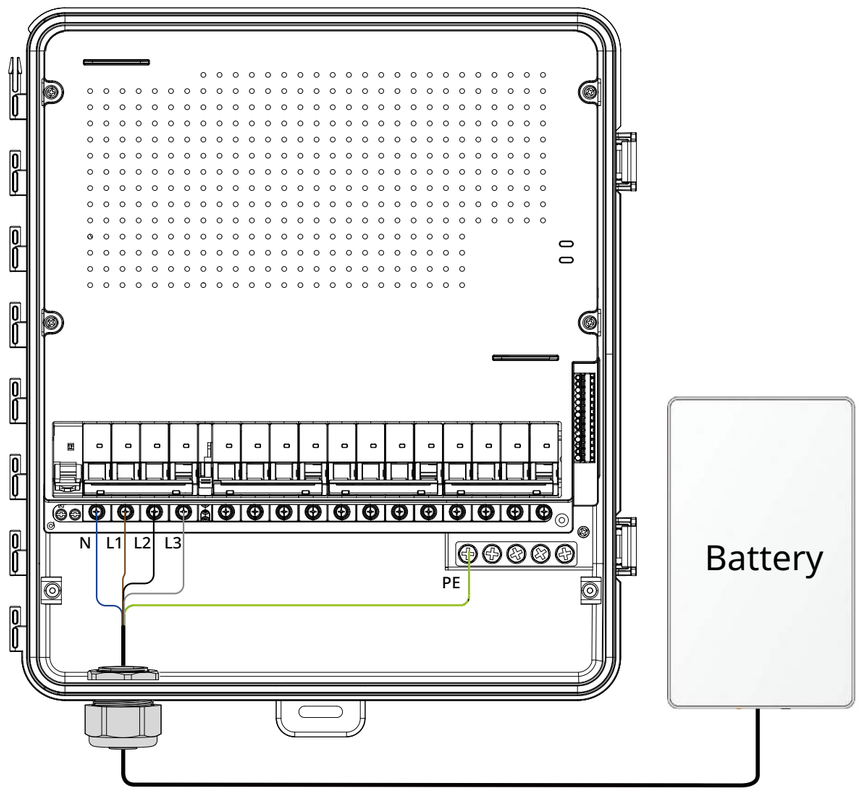
-N -L1 -L2 -L3 -PE



4.3.2 Wire from the Battery(not using Combiner, use ESS Kits)

a. Bring in the cables from the Battery through the hole.
b. Connect the cables (N, L1, L2 and L3) to the M-Combiner / Battery breaker and connect the PE cable to the PE terminal.
c. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.

-N -L1 -L2 -L3 -PE



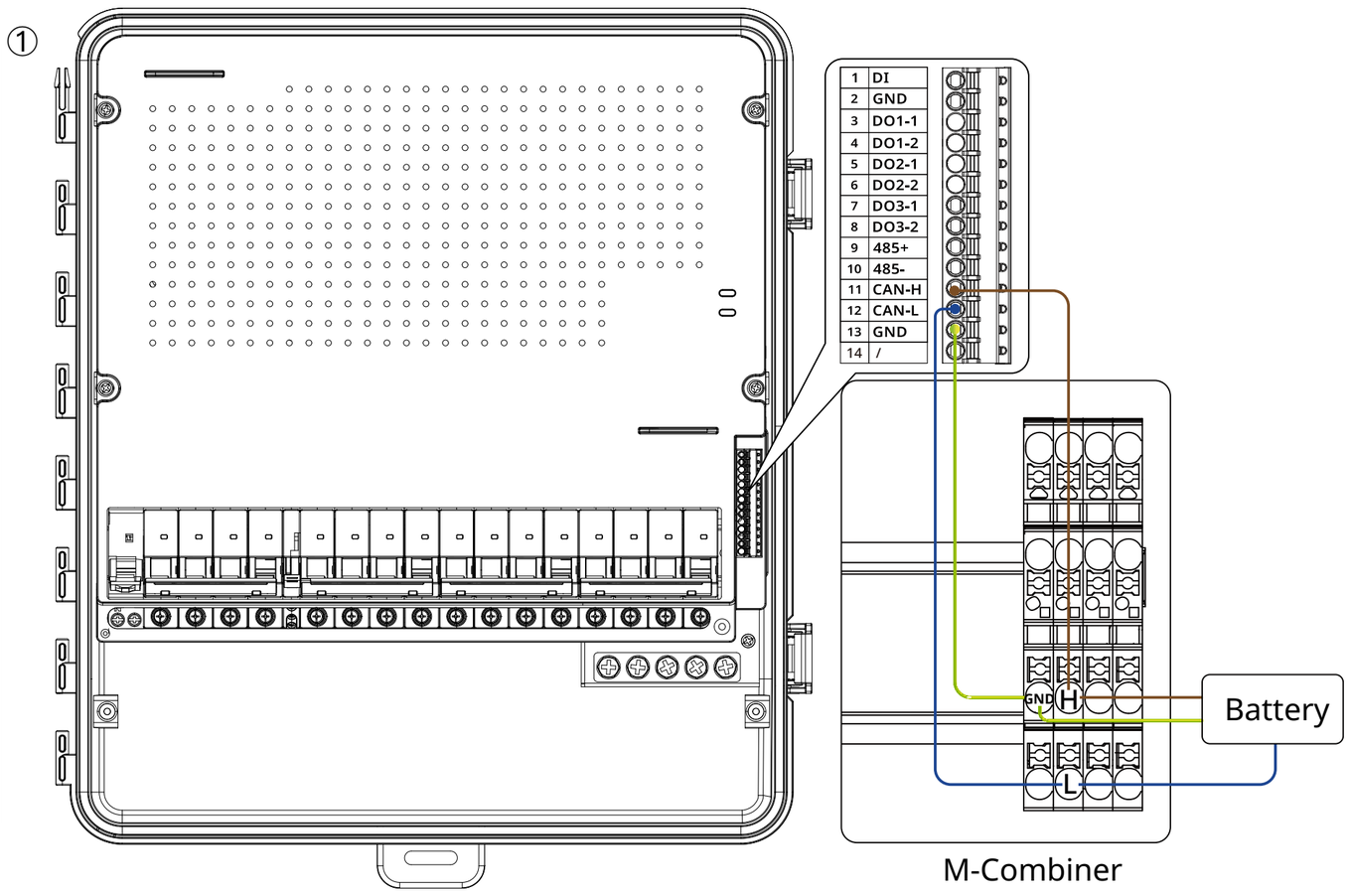
4.4 Wire to the COM interface

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

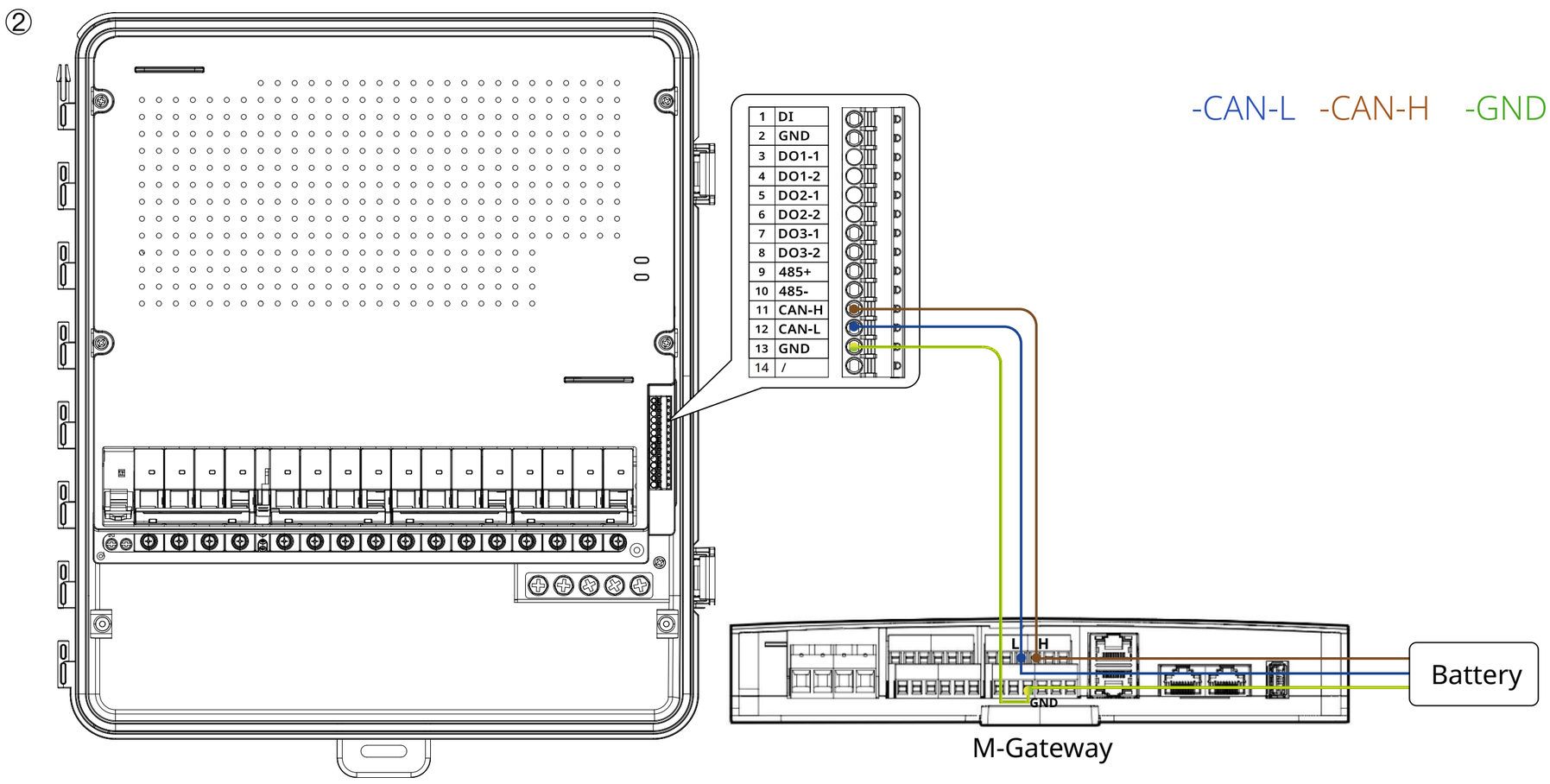
a. Strip the ends of CAN-H, CAN-L, and GND wires.
b. Crimp matching wires together using cold-press terminals (CAN-H to CAN-H, CAN-L to CAN-L, GND to GND).
c. If using M-Combiner, connect the combined wires to the M-Combiner at the designated location (as shown in the diagram ①).
d. If using ESS Kits, connect the combined wires to the M-Gateway at the designated location (as shown in the diagram ②).

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

①



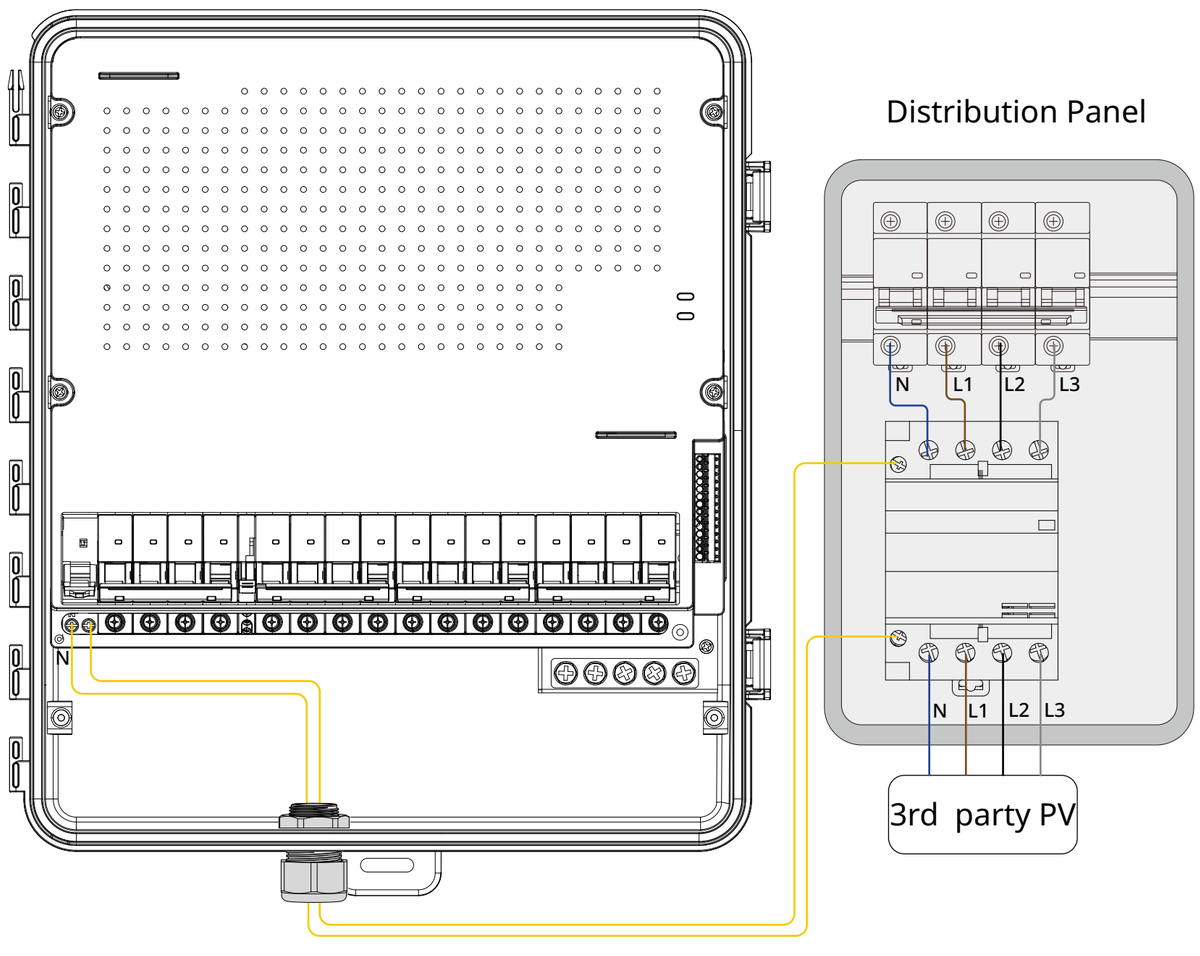
②



4.5 (Optional) Wire from the 3rd party PV

a. Install the contactor in the distribution panel and connect the cables (N, L1, L2 and L3) to the 3rd party PV system and the breaker in distribution panel as the diagram.
b. Connect the two cables to the 3rd party PV breaker in the Backup box through the COM hole as diagram. The sequence of the two cables is not important.
c. Tighten the screws by using a Phillips #2 screwdriver with a torque of 2–2.5 N·m.

-N -L1 -L2 -L3 -Control cable

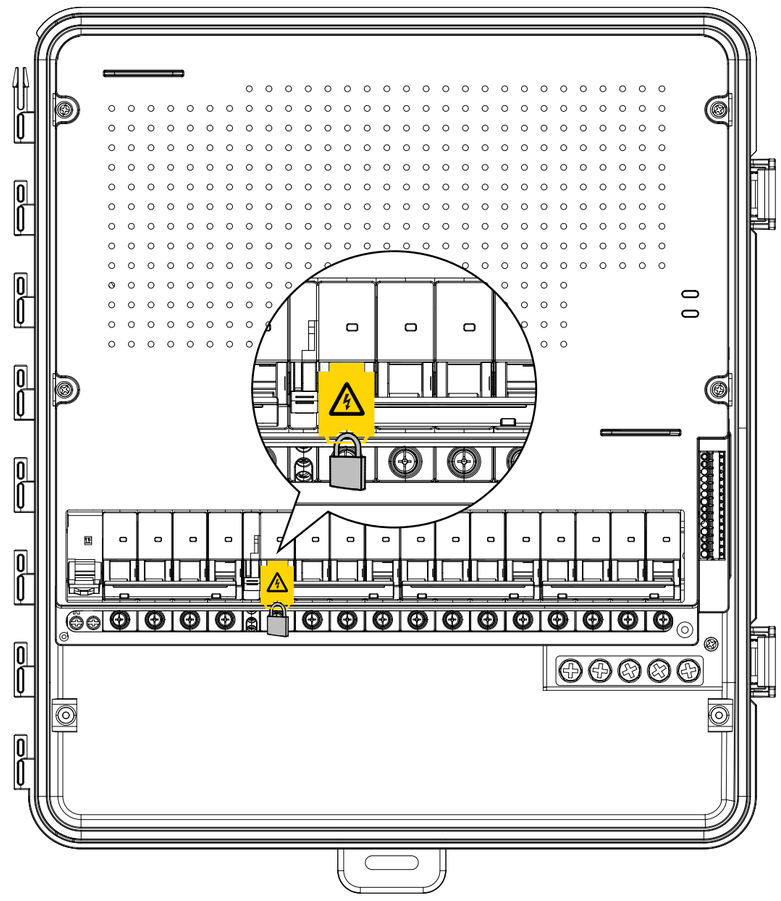


NOTE:

- The control cable size should be limited from 1 to 1.5 mm².

4.6 Lockout the bypass

a. Secure the bypass access with a lock.



5. Power on the System

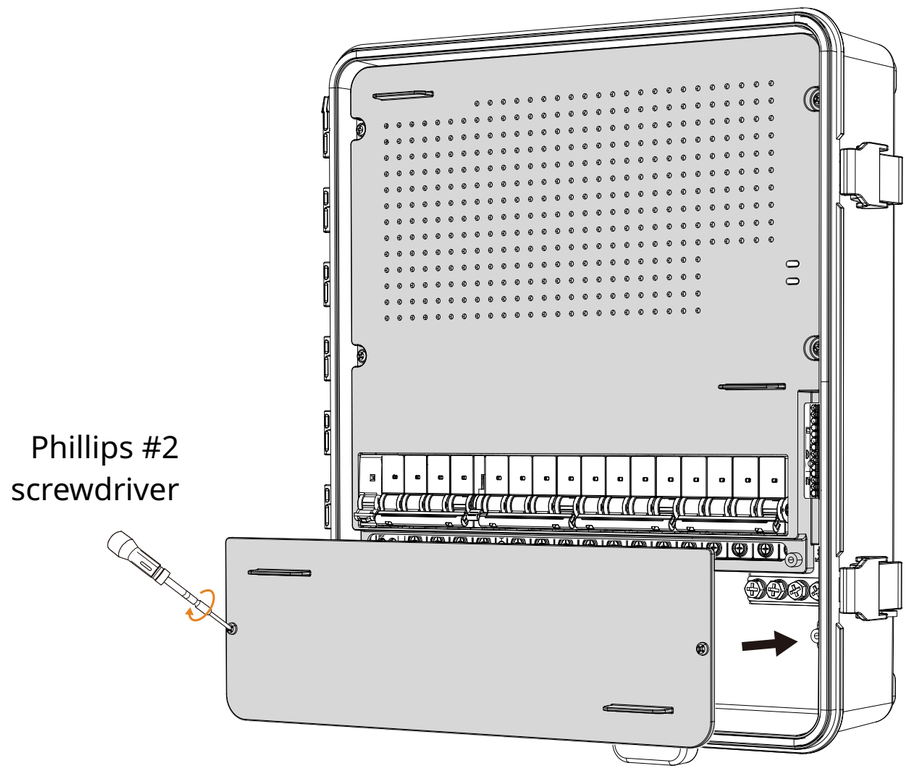
a. Turn on the breaker in the grid.
b. To check the phase sequence, perform the following steps:
    - Use the multimeter to measure the voltage between the N pole and L1 pole of grid breaker.
    - Measure the voltage between the N pole and L2 pole.
    - Measure the voltage between the N pole and L3 pole.
c. If the voltage value is approximately the nominal phase voltage, e.g. 220 V, 230 V and 240 V, 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.

6. Close the M–Backup

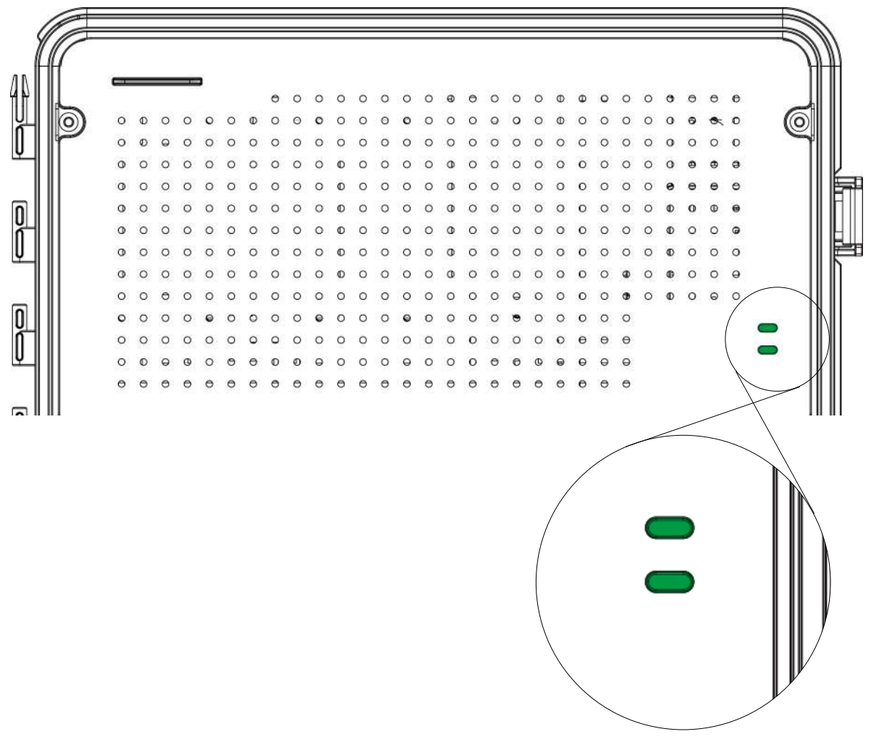
a. Re–install the cover to close the M-Backup.



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



Rev. 1.0.0 Data subject to change.
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