



M-ELV BattBank Quick Installation Guide

Applicable models: MS-16K-U & MS-16K-Delta

Atmoce Battery Introduction

The ATMOCE M-ELV BattBank is a modular, AC-coupled, stackable energy storage system with a usable energy capacity of 16.08 kWh per unit, scalable up to 112.56 kWh per cluster, and designed for C&I applications. It supports both on-grid system and on/off-grid switch, and features multiple operating modes including self-powered, time of use, storm guard mode, and AI mode. This helps enterprises reduce energy costs, improve energy supply reliability, and enable participation in grid services.

The system includes the following:

- Microinverter
- M-CombinerX
- Grid (distribution panel)
- ATMOCE-Cloud & ATMOZEN
- C&I Battery

Pre-installation Requirements

a. BattBank Structure

Function	Recommendation
MS-SCU-CNI	Stack Control Unit (SCU) Cap of M-ELV BattBank for C&I Application.
MS-16K-U	16kWh M-ELV BattBank, Wye Grid.
MS-16K-Delta	16kWh M-ELV BattBank, Delta Grid (Line Voltage < 300Vac).
MS-ACCB-CNI	AC Connection Base of M-ELV BattBank for C&I Application.

b. Grid requirements

ATMOCE BattBank should connect to a three-phase grid. MS-16K-U is only applicable to the Wye grid type, and its line voltage only supports 380V, 400V, 415V. MS-16K-Delta is only applicable to the Delta grid type, and its line voltage only supports 202V, 210V, 220V, 230V.

c. Tools requirements

Tools: screwdriver, wire stripper, wire crimper, diagonal cutter, torque wrench, electrical drill, marker, hammer, forklift, lifting equipment, tape measure, spirit level, multimeter, etc.

Materials: tie wrap, wago connector, etc.

d. Installation site requirements

The equipment shall be installed on a concrete or non-combustible surface. The installation surface must be level, stable, flat, and provide sufficient load-bearing capacity. The equipment foundation is designed according to the total weight of the equipment. If the load-bearing capacity is insufficient, re-evaluation and reinforcement shall be carried out. The equipment shall be fixed to the foundation using drilled expansion bolts. The level error between the foundation and the equipment contact surface shall not exceed 3 mm to avoid local stress and insecure installation. When multiple clusters are installed side by side, the distance between them should be greater than 350mm.

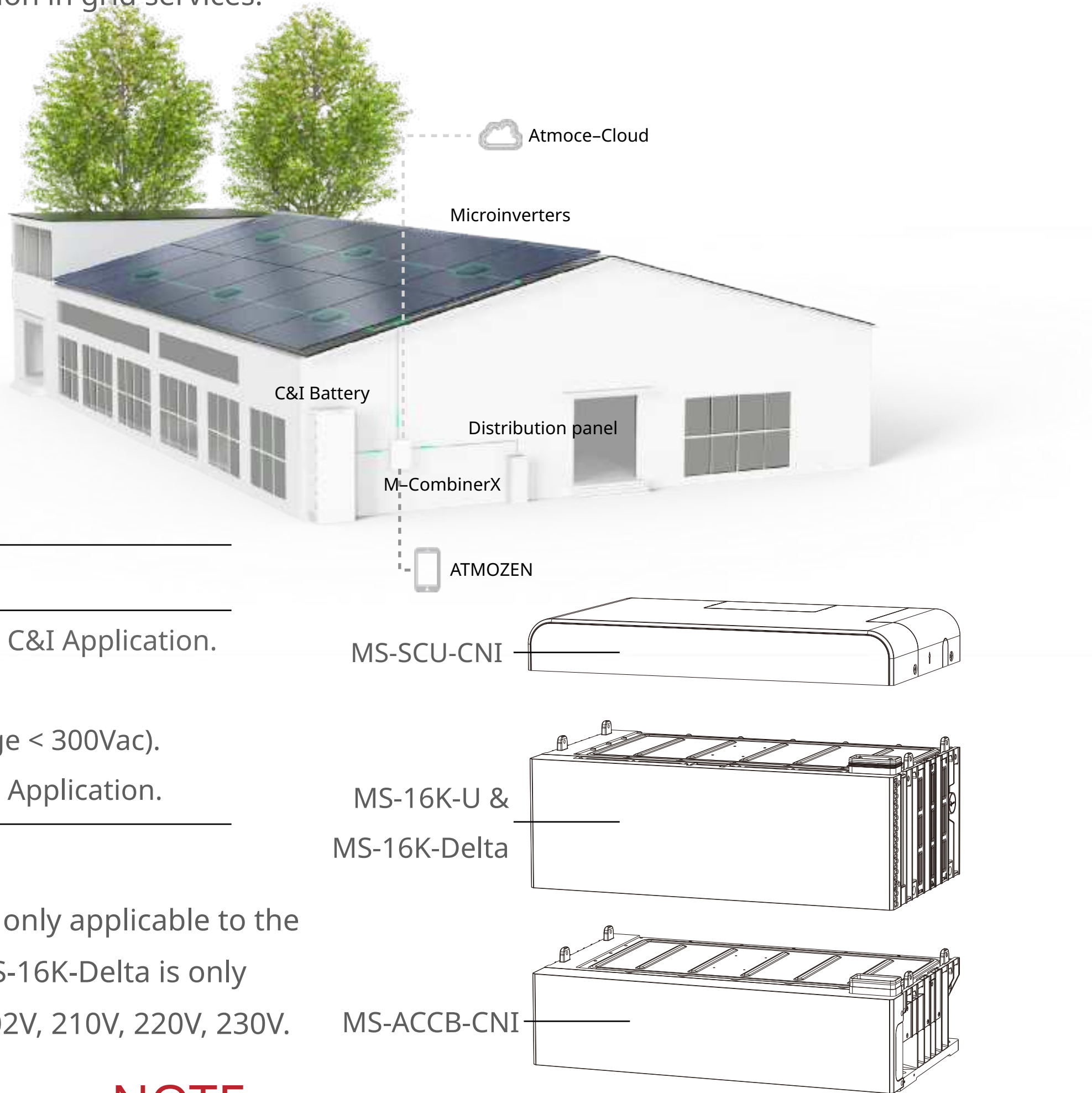
e. Cable requirements

To properly set up the system, it is necessary to select the appropriate cables, and aluminum cable is not supported. The table below shows the recommended cable requirements.

Function	Recommendation
Power cable	16 to 25 mm ² (PE), 35 to 50 mm ² (L+N)
COM cable	0.25 to 0.75 mm ²

f. Download the ATMOZEN APP

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



NOTE:

- Installation must be carried out in strict compliance with official grid specifications and standards. Any non-compliant installation may cause irreversible equipment damage and shall not be covered by after-sales support.

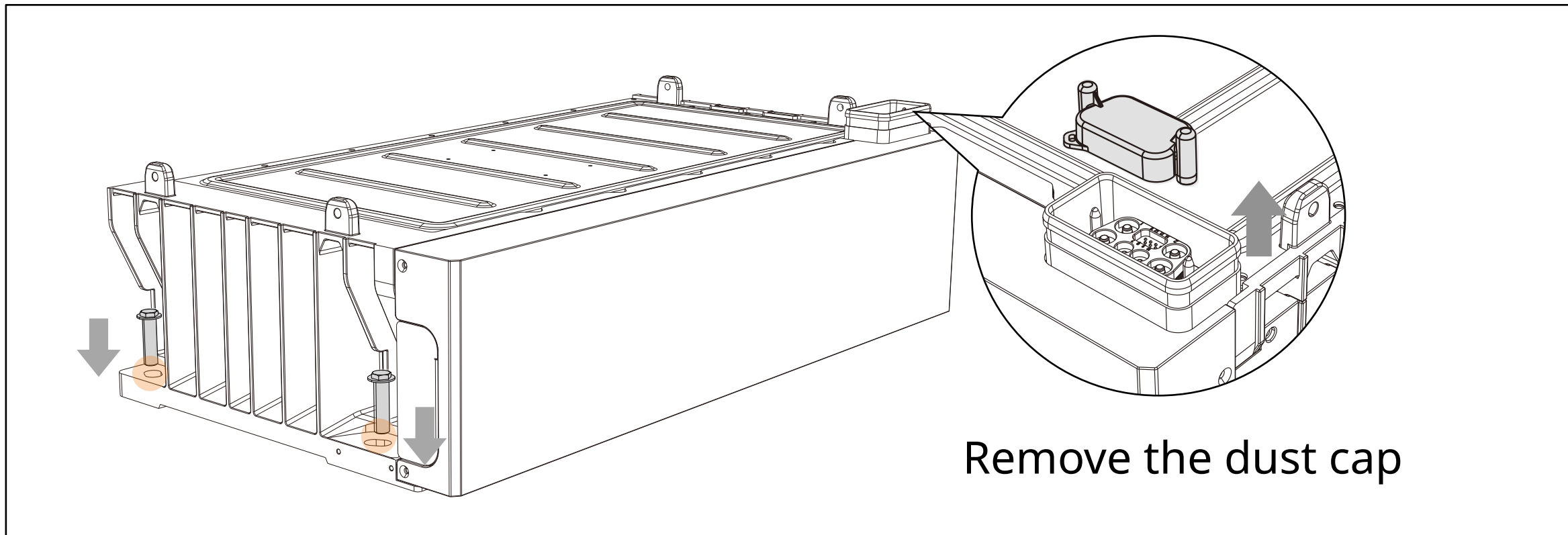
NOTE:

- When connecting the cables to the M-ELV BattBank, you must cover the cable ends by using the proper cold-press terminal provided in the package.
- When stripping the cable, remove approximately 25 mm of the insulation layer from the power cable, 18mm of insulation layer from the PE cable, and 8mm of insulation layer from the communication cable.
- It is recommended to adjust the cable size based on local regulation and the installation scenario.

Installation

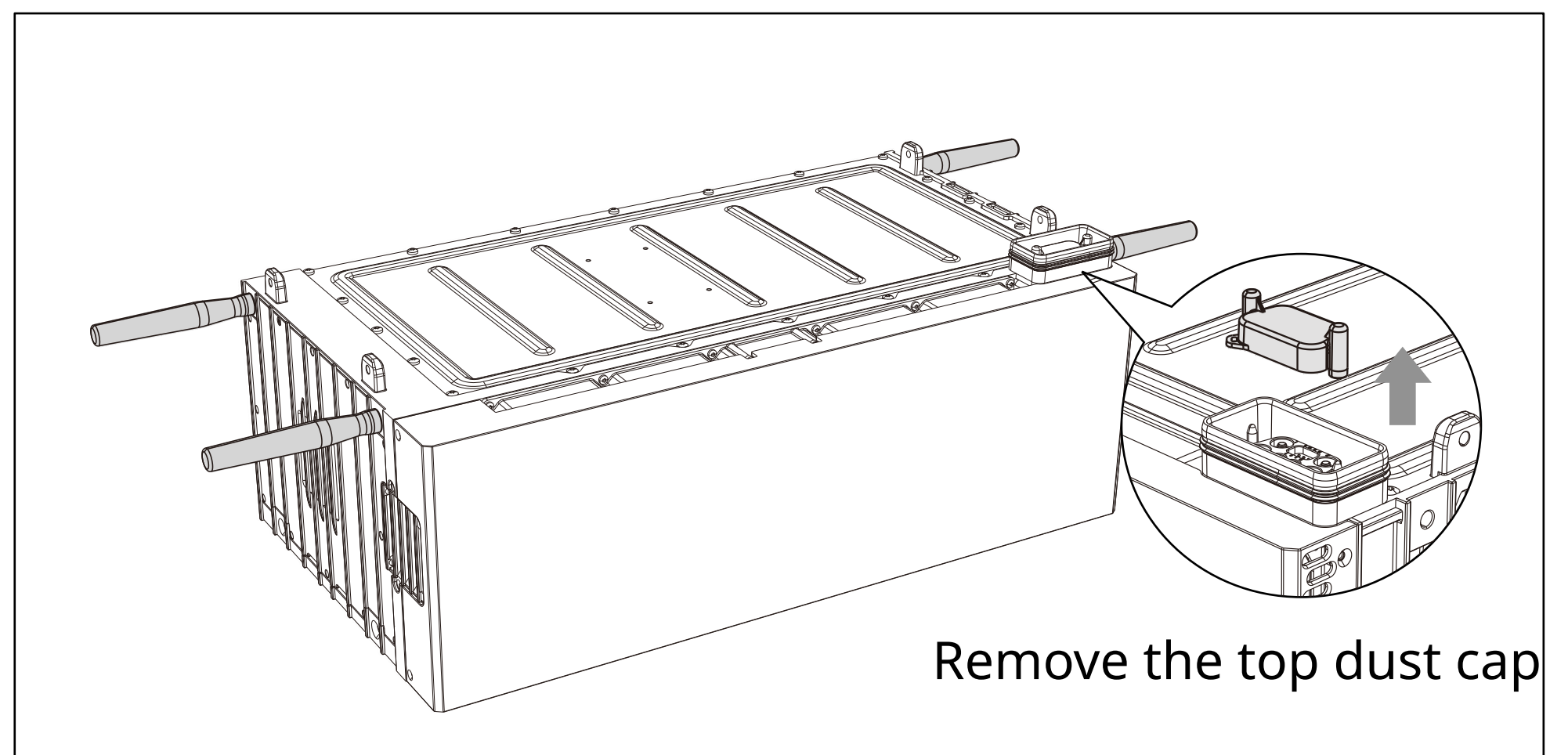
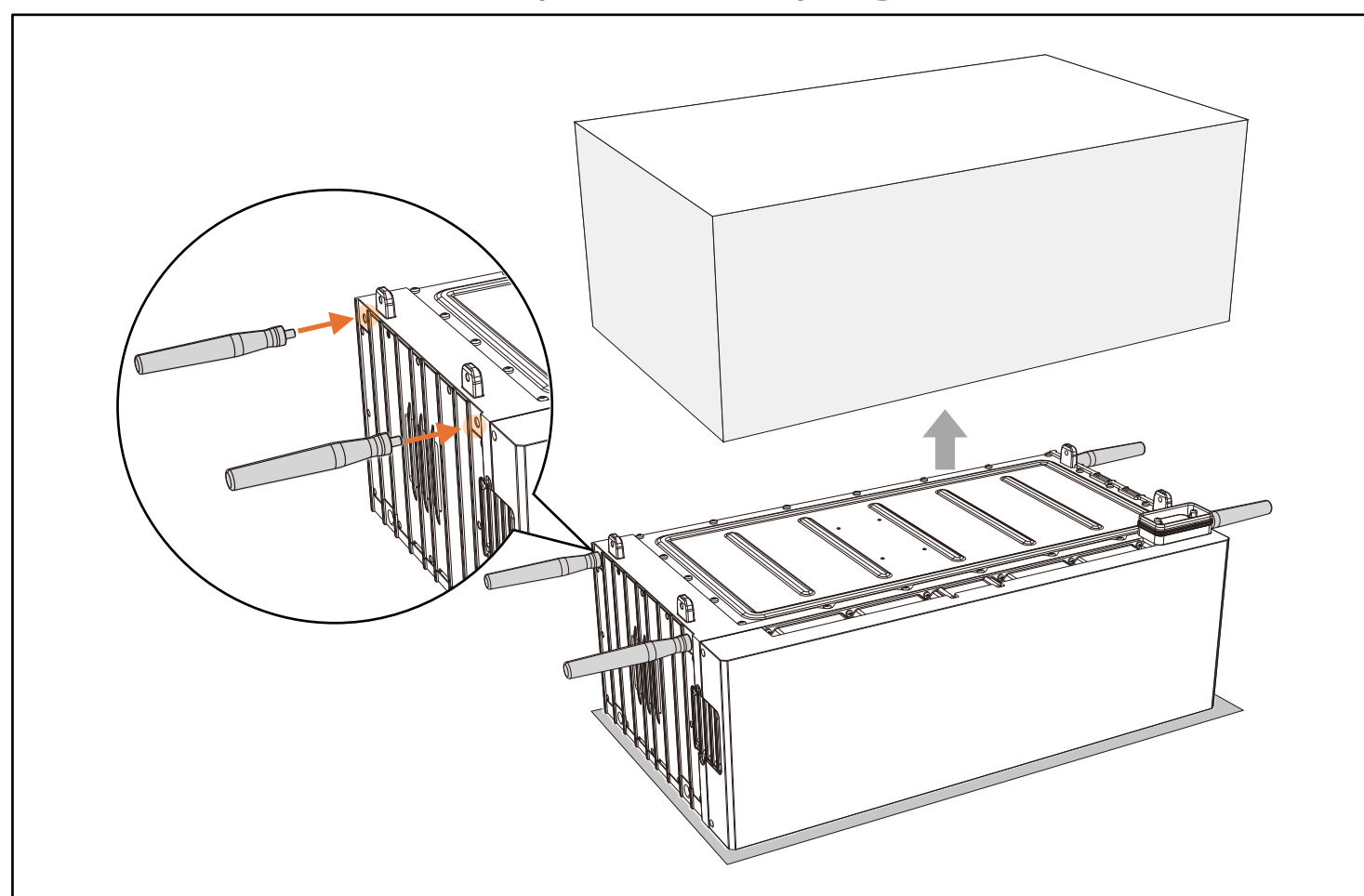
1. Mount the MS-ACCB-CNI on the floor

- Use the spirit level to check that the plate is level. Take out the MS-ACCB-CNI and place it on the floor, then make the marks.
- Remove the MS-ACCB-CNI, then drill the four marked positions to a depth of 130 mm using a 16 mm drill bit.
- Reinstall the MS-ACCB-CNI in place, remove the expansion bolts, and align them with the pre-drilled holes. Hammer the bolts into the ground, then tighten them with a torque of 55–65 N·m
- Remove the dust cap from the plug before connection.

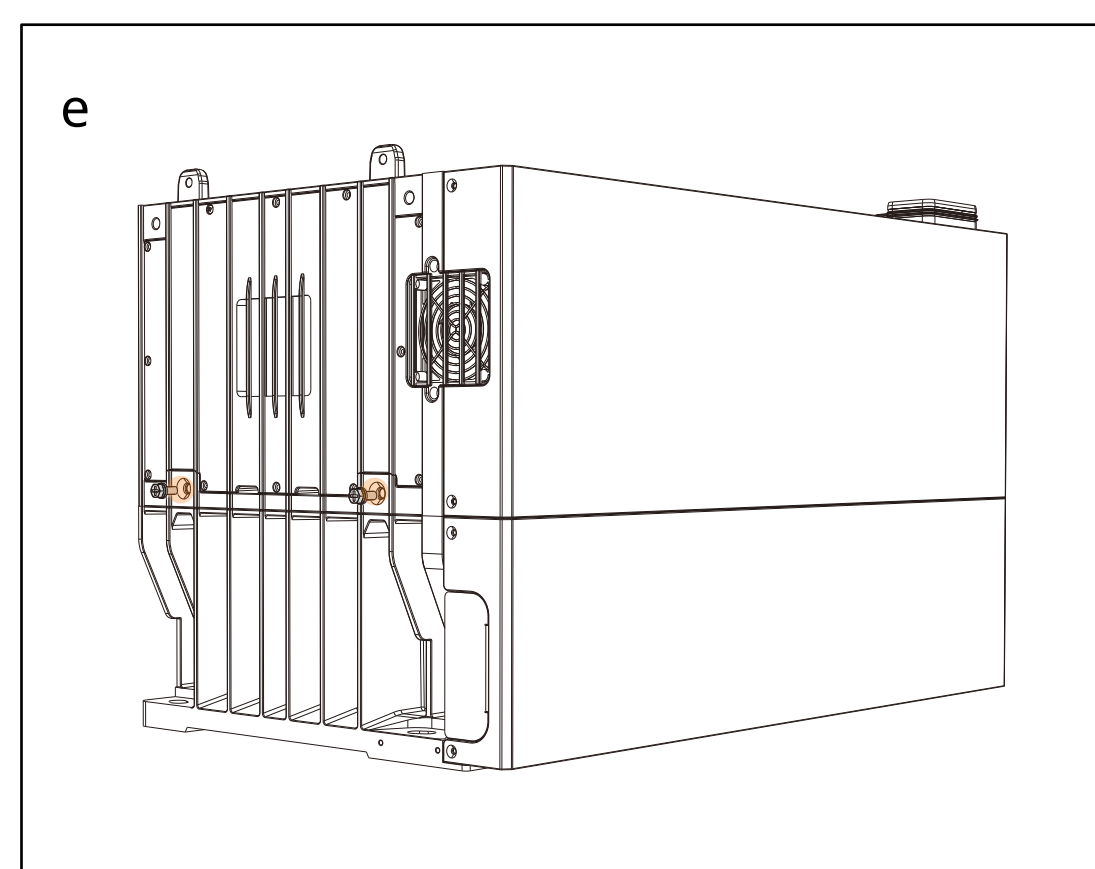
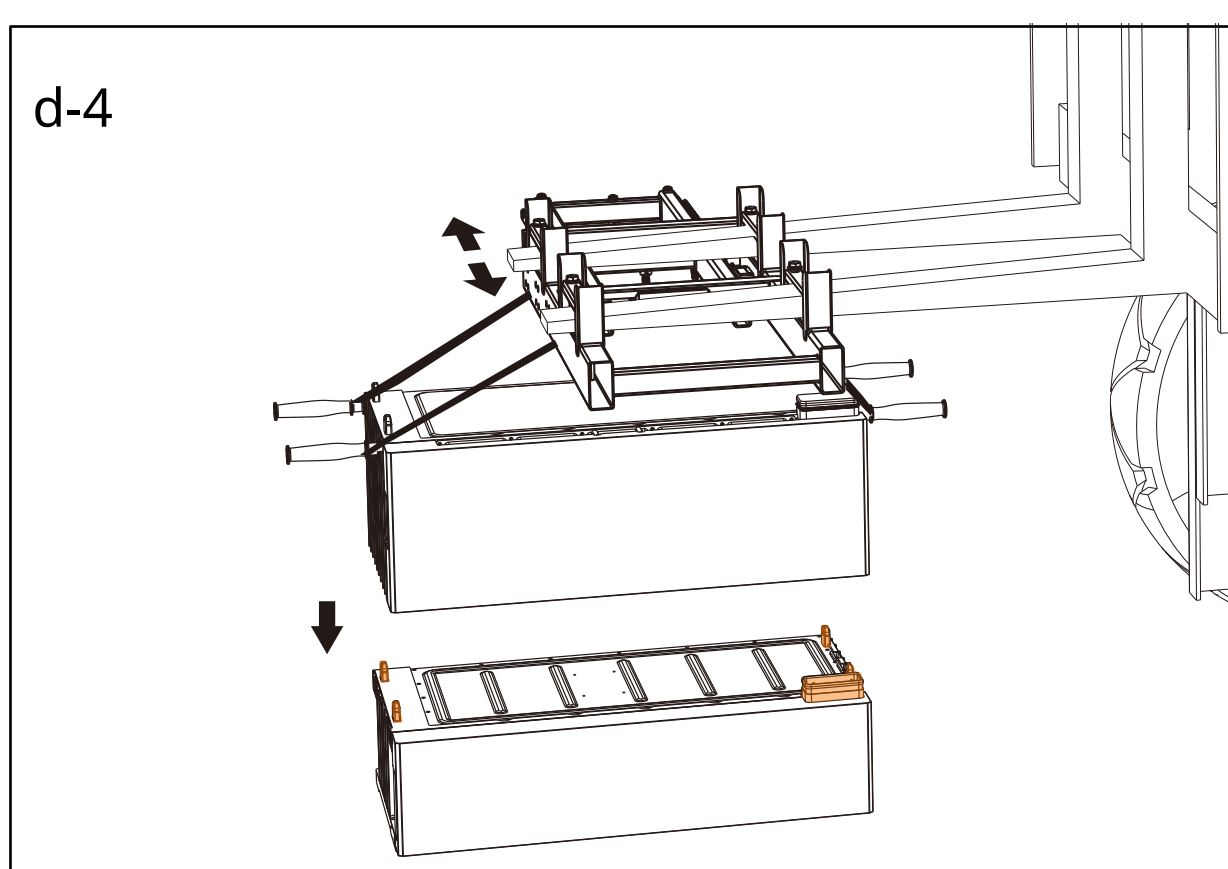
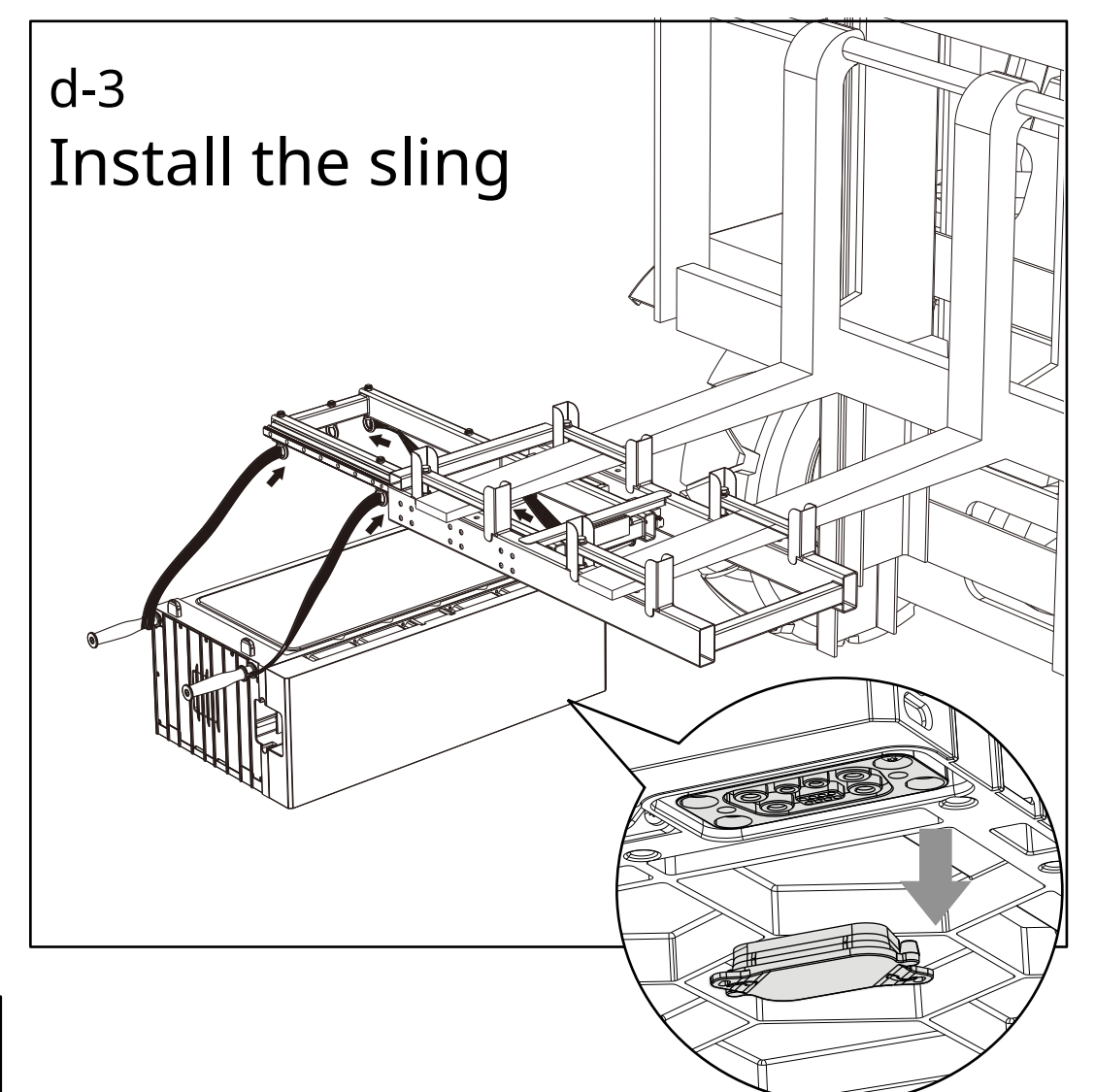
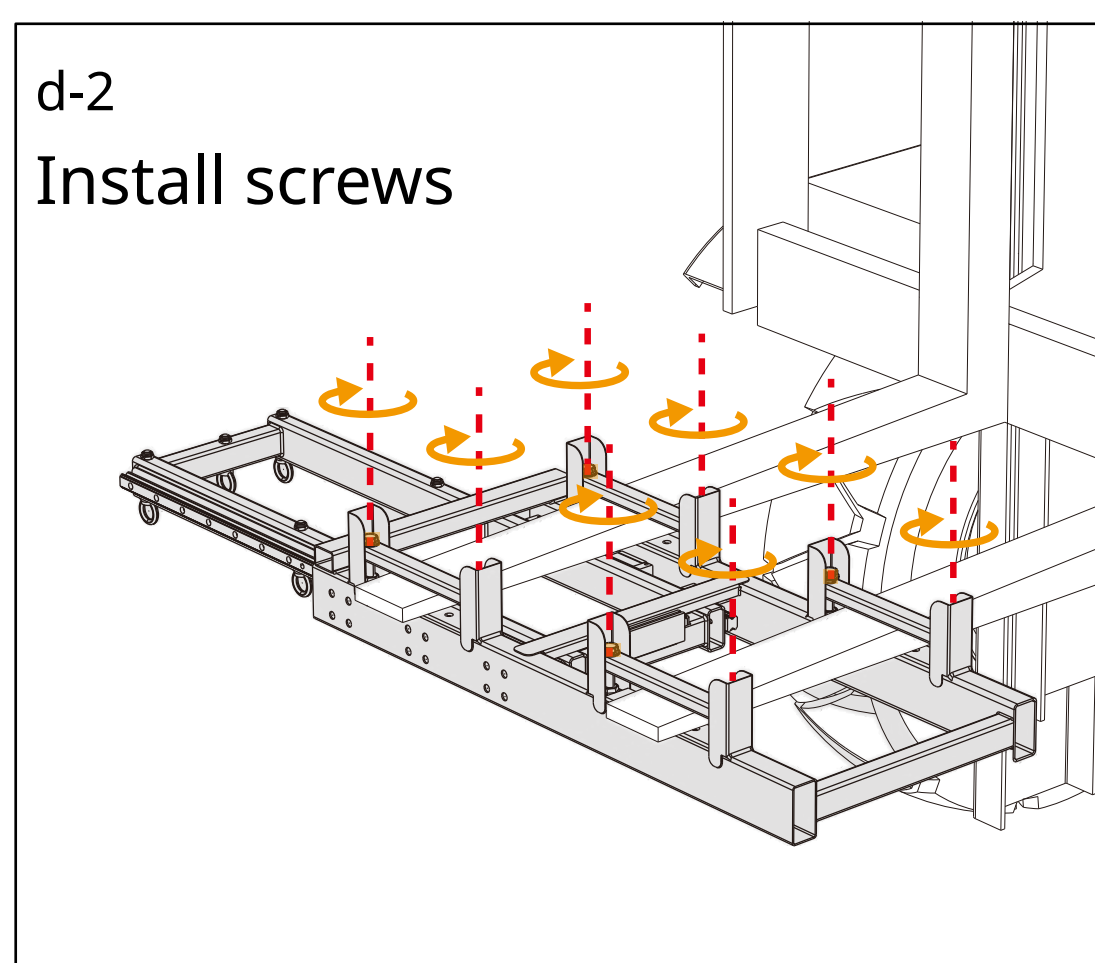
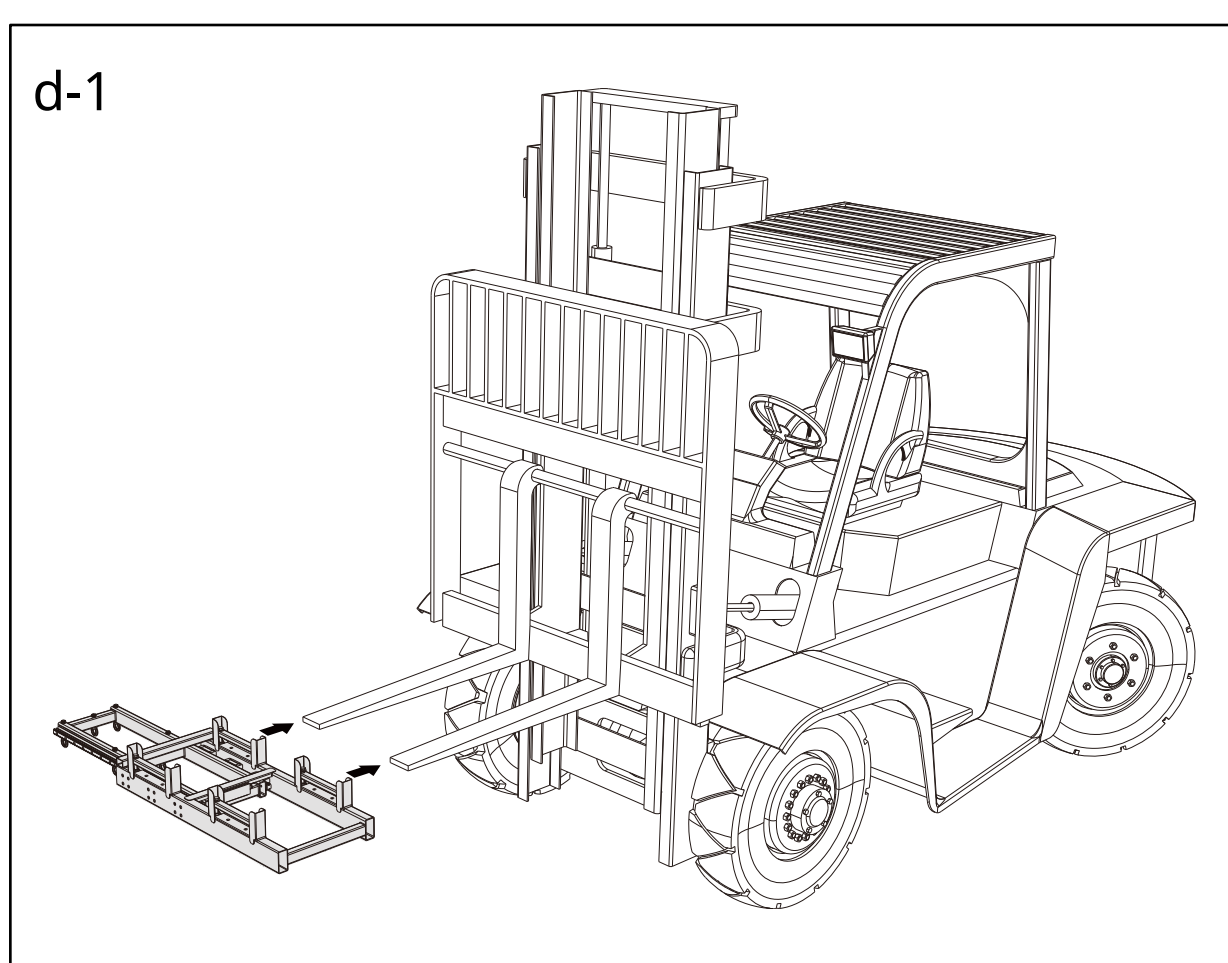


2. Mount the MS-16K-U, MS-16K-Delta and MS-SCU-CNI

- Remove the MS-16K-U or MS-16K-Delta out of the box.
- Take out the handlebars from the box of MS-ACCB-CNI and insert them into the designated slots on the both sides of the MS-16K-U or MS-16K-Delta.
- Remove the dust cap from the plug before connection.



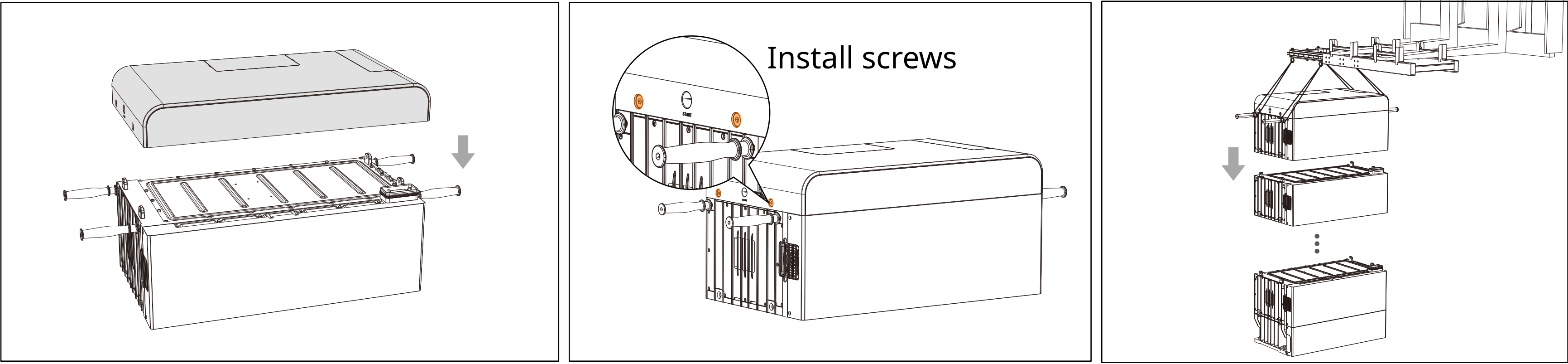
- Lift MS-16K-U / MS-16K-Delta via forklift and lifting equipment, then place it on MS-ACCB-CNI, MS-16K-U or MS-16K-Delta.
- Install the screws at the locations shown in the figure e, and tighten the screws with a torque of 9–14 N·m.



NOTE: Remove the bottom dust cap

- Ensure the pack is correctly oriented to allow proper plug connection.
- Keep the battery stable during installation. Lifting equipment may slip; use hooks for assistance.

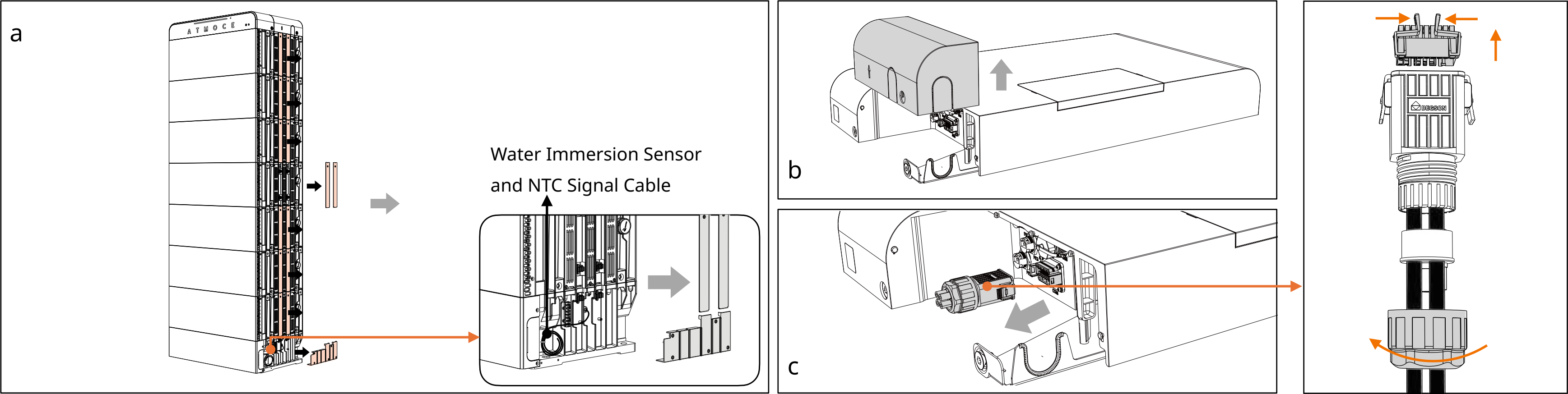
- f. Stack all required MS-16K-U or MS-16K-Delta in compliance with installation requirements.
- g. For the final MS-16K-U or MS-16K-Delta installation, mount the MS-SCU-CNI on top first and tighten the screws.
- h. Lift and position the assembly onto the upper level using a forklift and lifting equipment.



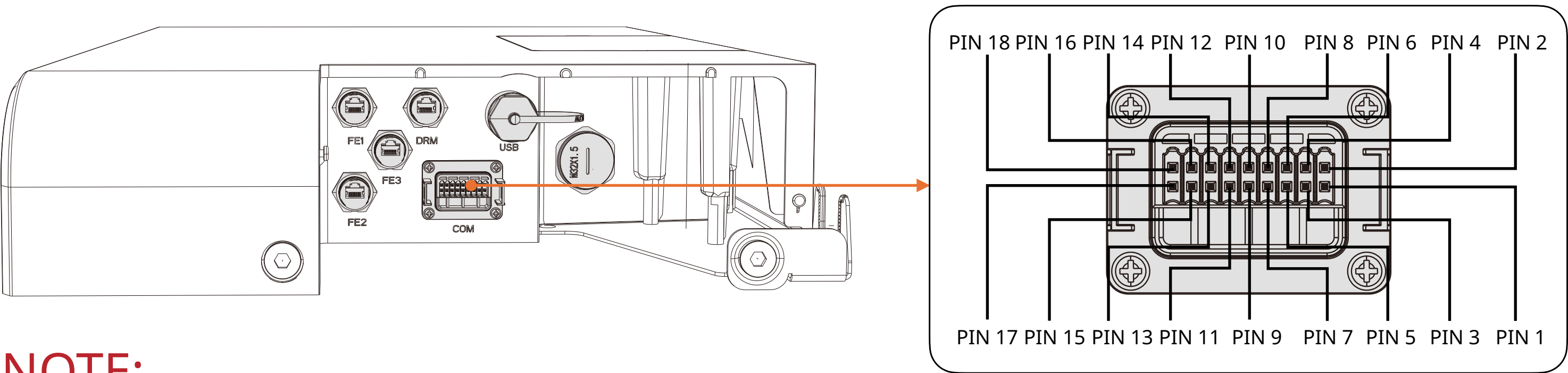
3. Wire the communication cable

3.1 Remove the cover plate

- a. Remove the side wiring cover before wiring.
- b. Remove the cover plate of the MS-SCU-CNI.
- c. Disconnect the COM connector.



- d. Assemble the wiring harness and connect the corresponding connectors.
- e. Pull out the water immersion and NTC signal cables from the MS-ACCB-CNI and connect the water immersion sensor to pins 17, 18 and the NTC cable to pins 13, 14.



PIN 1	485+
PIN 2	485-
PIN 3	485_1+
PIN 4	485_1-
PIN 5	GND2
PIN 6	GND3
PIN 7	DI-1
PIN 8	GND
PIN 9	DN_S
PIN 10	GND
PIN 11	DO_12V_3
PIN 12	GND
PIN 13	NTC+
PIN 14	GND
PIN 15	AI_1+
PIN 16	AI_2+
PIN 17	Water-1
PIN 18	Water-2

NOTE:

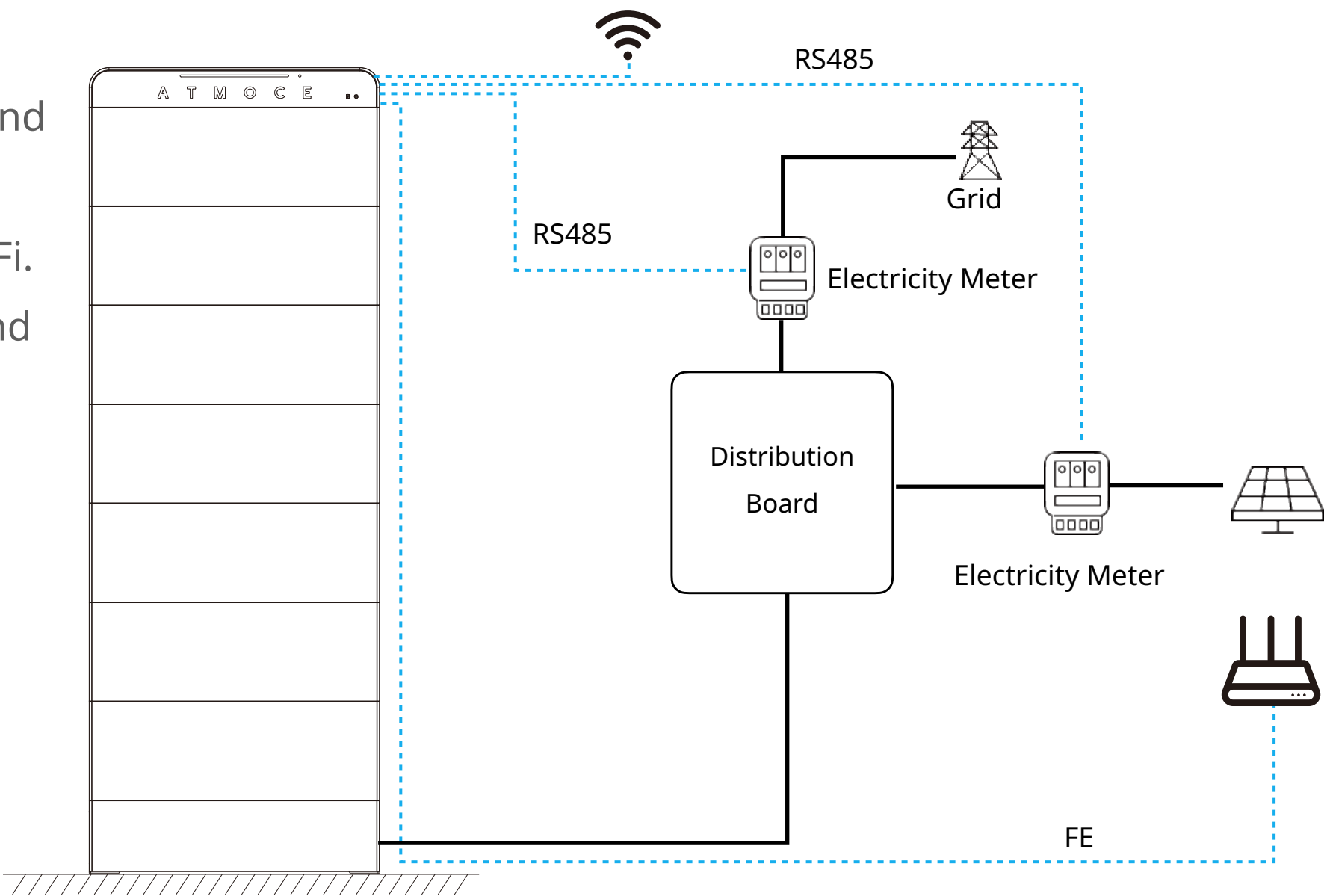
- FE1, FE2, connects to other MS-SCU-CNI or devices, FE3 connects to the gateway or a third-party EMS.
- USB: Support 4G-Dongle. DRM: Support Demand Respond Modes.

3.2 Gateway-Free scenario

- a. Connect the electricity meter to the grid interconnection point, and connect the other end to the 485 pin of the COM port.
- b. The MS-SCU-CNI supports cloud connection via either FE3 or Wi-Fi.
- c. Optional : connect the electricity meter to the PV access point, and connect the other end to the 485 pin of the COM port.

NOTE:

- Refer to the user manual for supported electricity meter models.



3.3 With ATMOCE gateway or third-party EMS

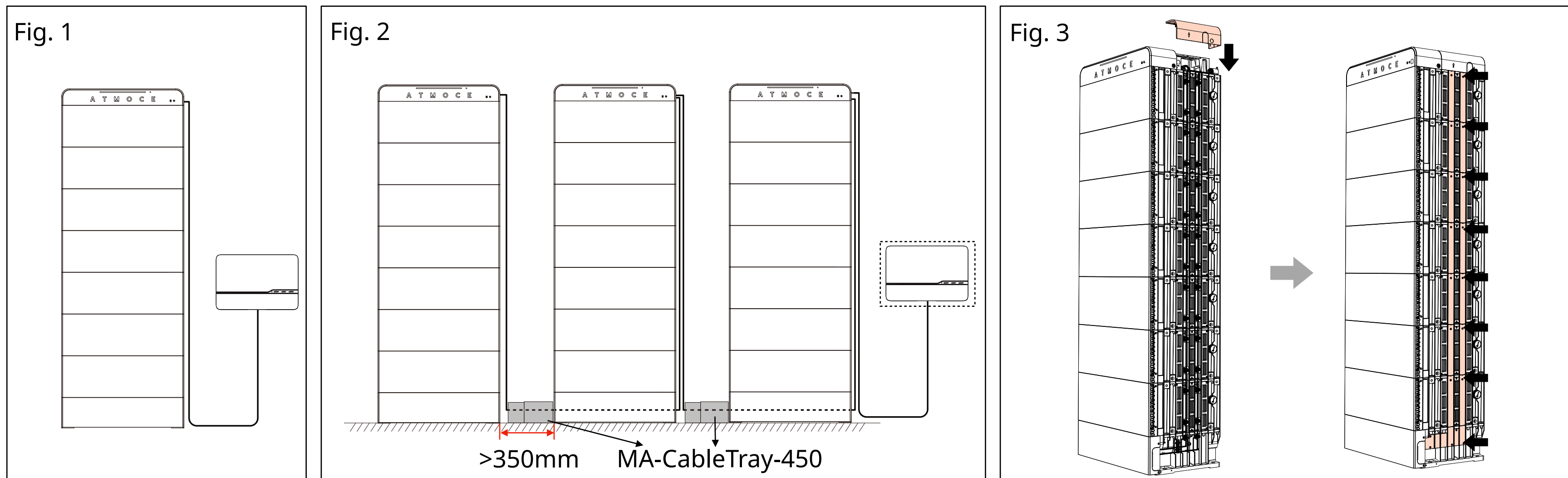
- Connect the communication line FE3 to the gateway, or a third-party EMS. As shown in the fig. 1.
- For installation and operation guidelines of CT and gateway, please refer to the gateway user manual.

3.4 Multi-cluster scenario

- Battery clusters shall be connected sequentially through the FE1 and FE2 ports using FE cables. As shown in the fig. 2.
- Route inter-cluster cables into MA-CableTray-450. Refer to its installation instructions for details.
- If a gateway or a third-party EMS is equipped, refer to section 3.3; if not, refer to section 3.2.

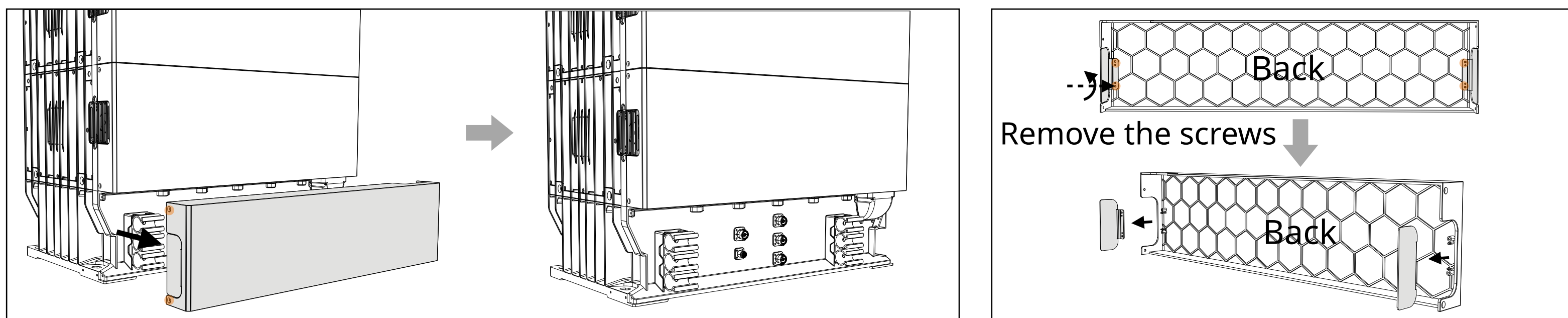
3.5 Recover the cover plate

- Secure the cables along the sliding channel and reinstall the cover plate. As shown in the fig. 3.



4. Wire the power cables

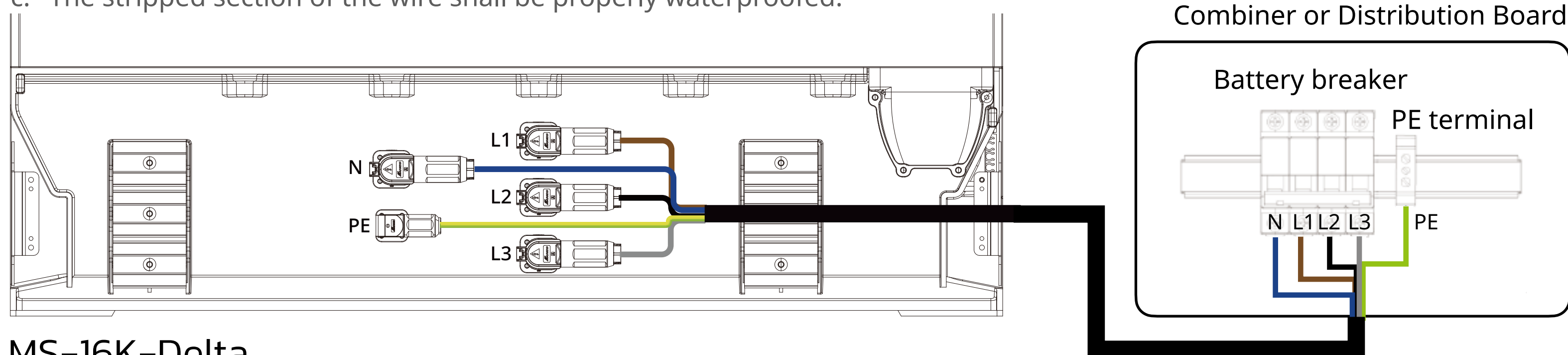
- Unfasten and remove the MS-ACCB-CNI front cover.
- Remove the baffle at the cable entry opening only on the side where cable connection is required.



4.1 Single cluster scenario

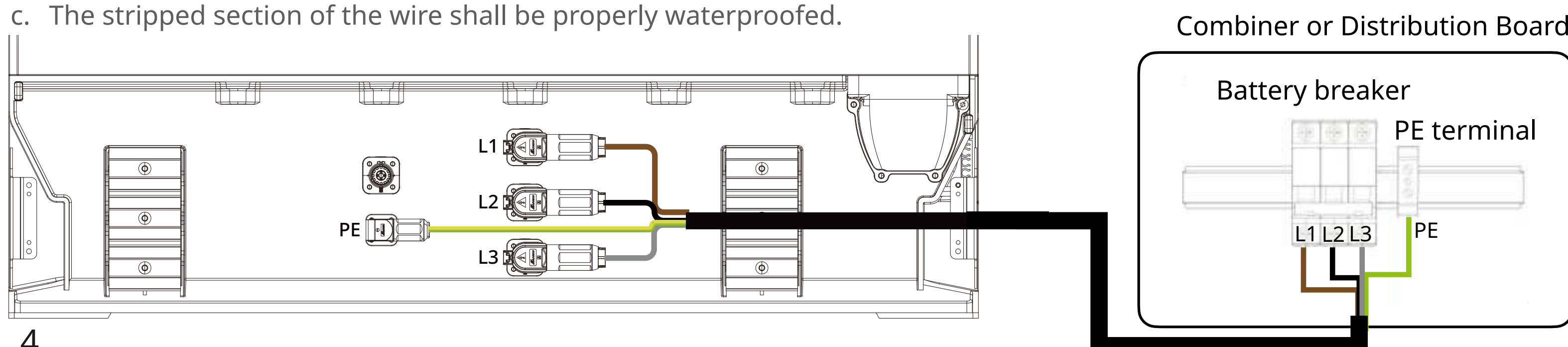
MS-16K-U

- Assemble the power cables and connections according to the following steps in Section 5.
- Connect the assembled connectors to the BattBank terminals: L1, L2, L3 – Phase lines / N – Neutral / PE – PE line.
- The stripped section of the wire shall be properly waterproofed.



MS-16K-Delta

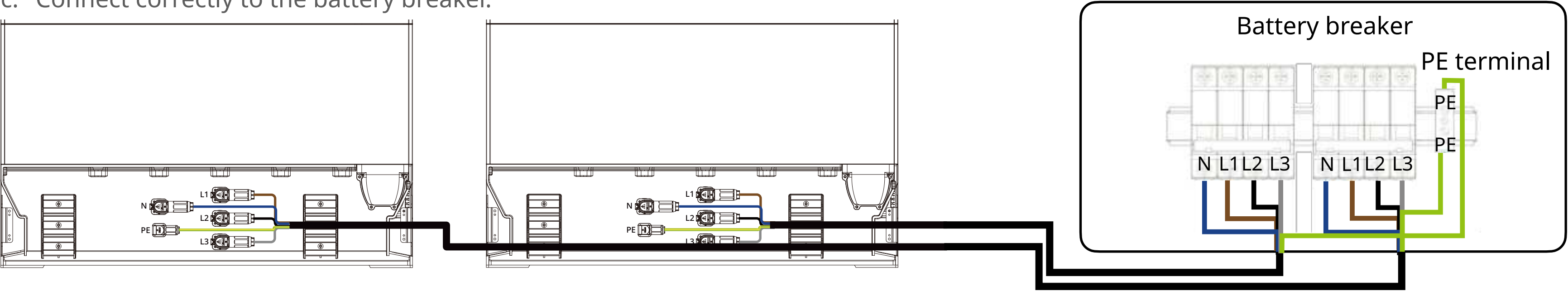
- Assemble the power cables and connections according to the following steps in Section 5.
- Connect the assembled connectors to the BattBank terminals: L1, L2, L3 – Phase lines / PE – PE line.
- The stripped section of the wire shall be properly waterproofed.



4.2 Multi-cluster scenario

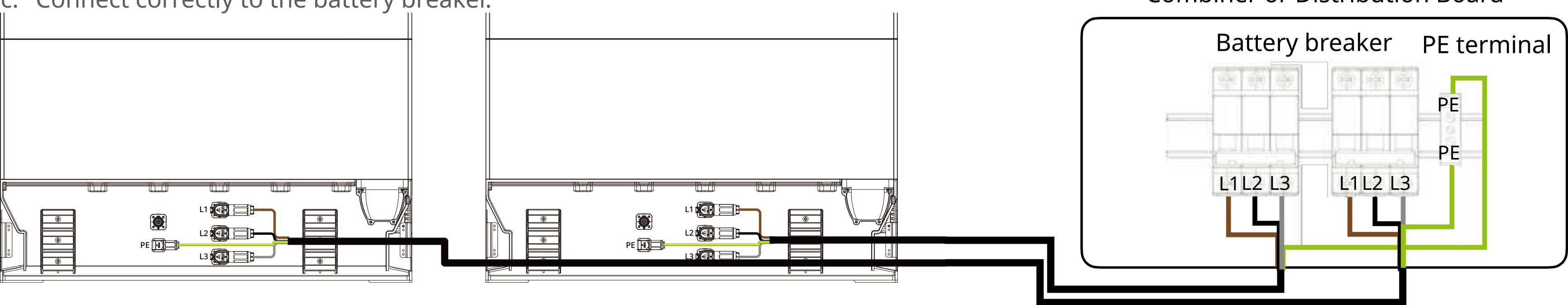
MS-16K-U

- a. Assemble the power cables.
- b. The stripped section of the wire shall be properly waterproofed.
- c. Connect correctly to the battery breaker.



MS-16K-Delta

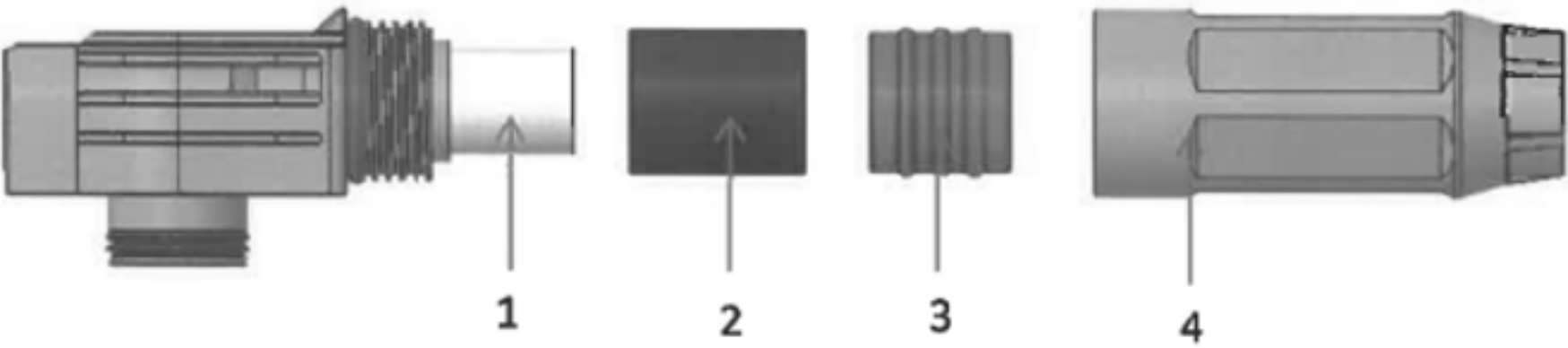
- a. Assemble the power cables.
- b. The stripped section of the wire shall be properly waterproofed.
- c. Connect correctly to the battery breaker.



5. Assemble the power connector

5.1 Overview

- a. The connector assembly consists of the following components:



No.	Component Description	Quantity
1	Connector Body	1 SET
2	Support Sleeve	1 PCS
3	Sealing Sleeve	1 PCS
4	Terminal Cap	1 PCS

5.2 Strip the cable

- a. Strip the cable to a length of 25.0 ± 2 mm (PE Line 18.0 ± 2 mm).



NOTE:

- Ensure that the stripped conductor remains exposed on the wire.

5.3 Assemble the connector

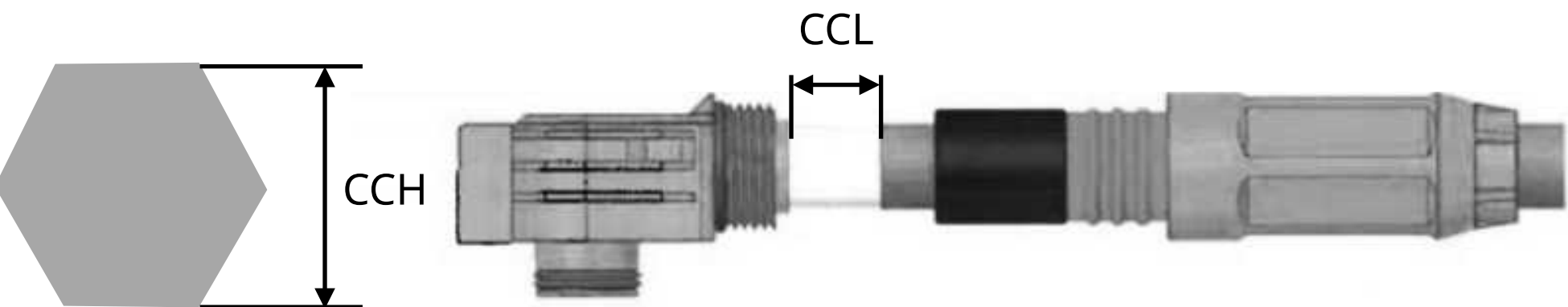
- a. Slide the conductor through the following components in sequence: Terminal Cap → Sealing Sleeve → Support Sleeve.
- b. Insert the conductor into the connector body's terminal.



5.4 Crimp the conductor

- a. Crimp the conductor to the connector according to the following specifications:

Cable Size	Cable Insulation OD	CCH	CCL	Crimp Ratio	Pull Force
50 mm ²	13.5–14 mm	9.5±0.15 mm	10.0±0.5 mm	72.3±2%	≥2800 N
35 mm ²	11.5–12 mm	8.6±0.15 mm	10.0±0.5 mm	77.3±2%	≥2300 N



NOTE:

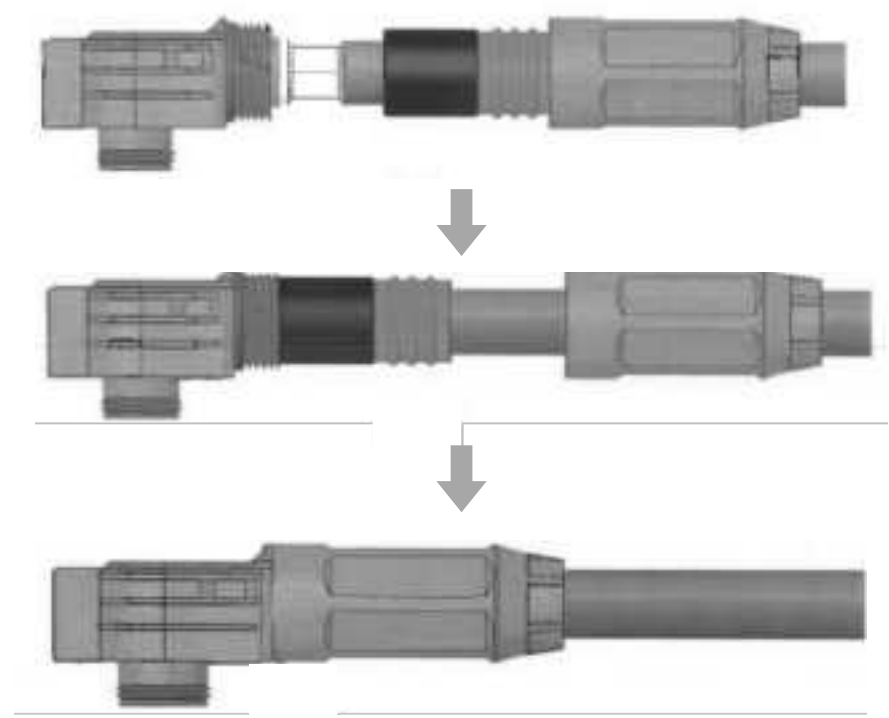
- Recommended crimping dimensions are for reference only. Adjust according to cable specifications, crimping tools, and testing results.

5.5 Push onto connector body

- a. Slide the support sleeve and sealing sleeve fully onto the connector body.
- b. Use a torque wrench to tighten the terminal cap to the connector body.
Recommended torque: 2 N·m.

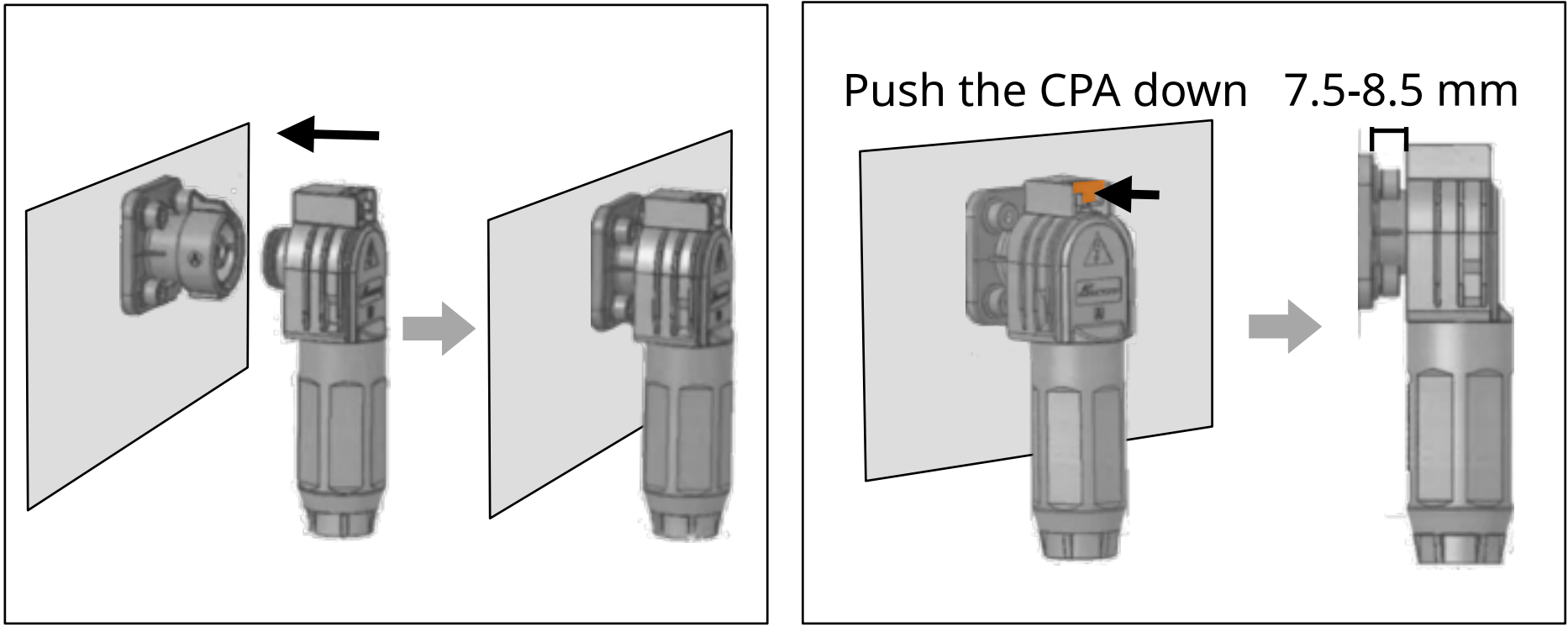
NOTE:

- Ensure the terminal cap fits flush with the connector body.



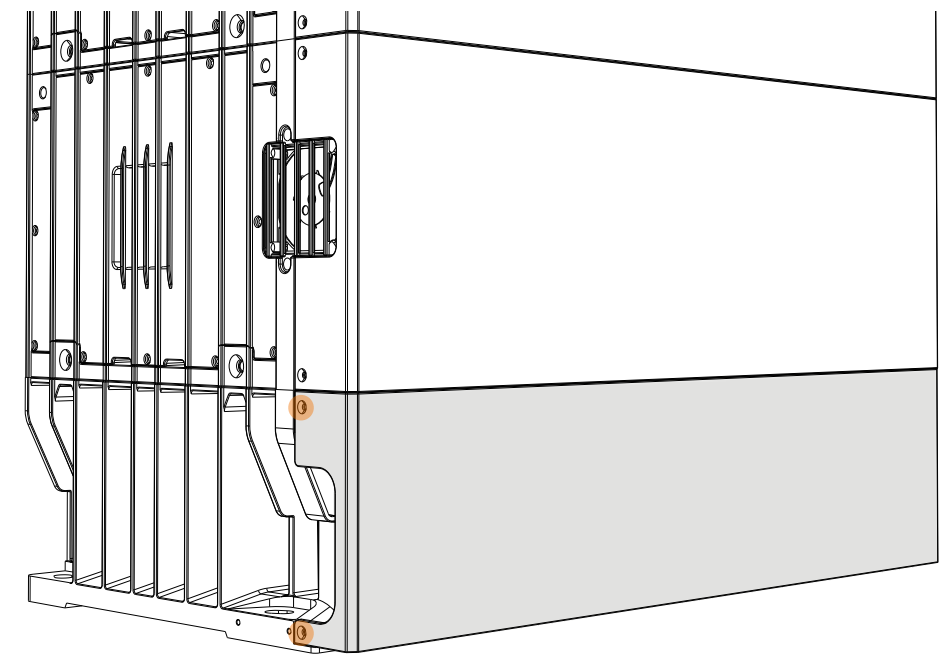
5.6 Power connector mating

- a. Remove the waterproof plug.
- b. Align the key position of the plug with the key slot of the socket.
- c. Insert the plug and socket into the position shown in the figure.
- d. Push the plug fully into the socket until the distance between the plug and socket is 7.5–8.5 mm.
- e. Listen for a clicking sound indicating the CPA has engaged.
- f. Push the CPA down to lock the plug in place.
- g. Verify the plug and socket are fully assembled.



6. Reinstall the front cover of the base

- a. Use a Phillips screwdriver to securely install the base front cover.

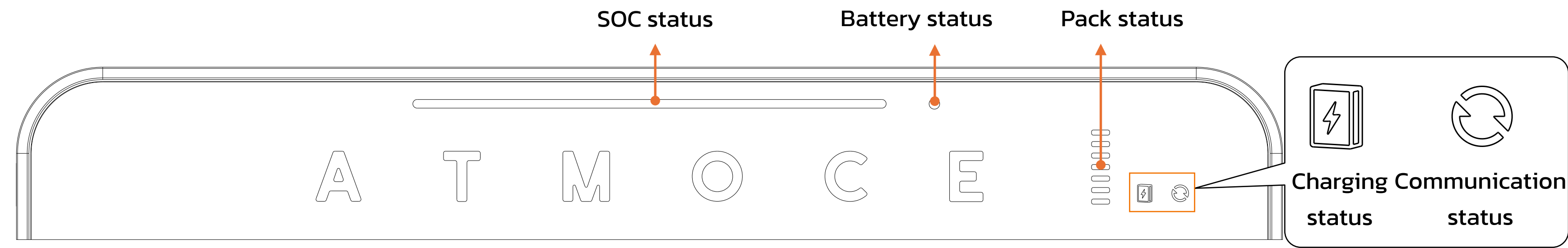


LED Indicator Description

The M-ELV BattBank has five types of LEDs and the following table describes their status.

NOTE:

- The state of charge (SOC) accuracy may deviate if the M-ELV BattBank is used for the first time, activated after long-term storage, or left in standby mode for a prolonged period. For calibration, please perform a full charge (to 100% SOC) at least once.



Function	Colour		Description
SOC status	Solid blue		Remaining battery energy percentage
Battery status	Quick flash red		Environmental failure
	Solid red		The battery has an internal fault
	Quick flash orange		Upgrading
	Dim		Normal operation
Pack status	Solid green		Normal operation (with other faulty modules present)
	Solid red		Fault
	Dim		Normal operation
Charging status	Solid green		Standby
	Slow flash green (2Hz)		Charging
	Slow flash green (0.5Hz)		Discharging
Communication status	Solid green		Normal operation
	Slow flash red		Fault