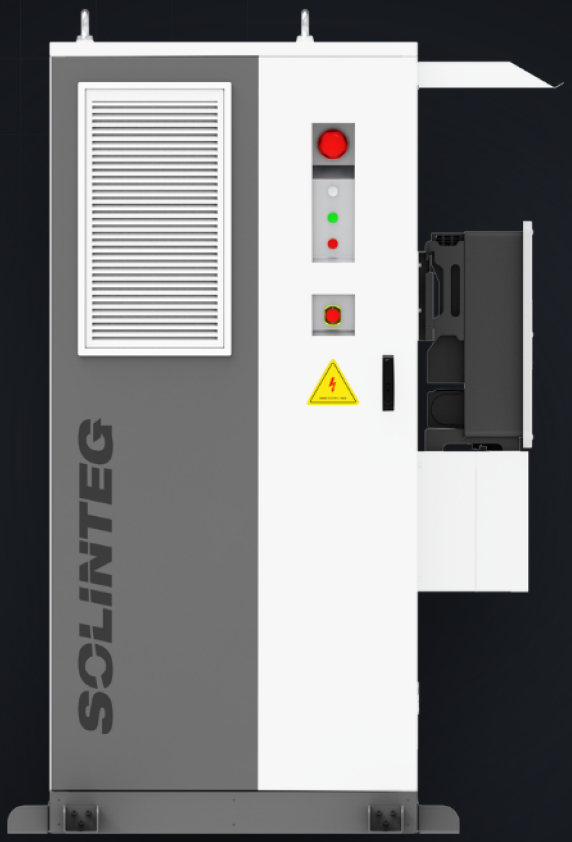
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QUICK START GUIDE

All-In-One Energy Storage System

Commercial Outdoor Energy Storage, 25–50 kW



AIO-25K · 29.9K · 30K · 40K · 50K

Quick Start Guide

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Audience
Licensed installers

Full details
All-In-One User Manual

Format
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Before You Start

01

What you need, key values at a glance

This guide covers the essential steps to install, connect and start up the All-In-One. It does not replace the **All-In-One User Manual**. Read the manual's safety instructions (§1) before you start, and use the manual for any step you are unsure of. References such as §5.3 point to sections of the user manual.

Only licensed electrical workers may install the All-In-One

Install in accordance with AS/NZS 3000, AS/NZS 5139, AS/NZS 4777.1 and the requirements of the local network service provider. Never work on live equipment: isolate every supply first. Connect the protective earth before anything else, and disconnect it last.

Lithium-ion battery

The cabinet holds up to 112.5 kWh of lithium-ion batteries at high DC voltage (up to 840 V). Never short-circuit the battery terminals. Do not install, wire or open the cabinet in rain, snow, lightning or high humidity.

1.1 What You Need

- **The All-In-One:** the battery cabinet (Solinteg E2BR) and the hybrid inverter (Solinteg M2HT 25–50 kW), which is packed separately.
- **Supplied in the cabinet's parts box:** decorative panels, mounting feet, lifting eyes, rain shelter, cable covers, bolts, M20 × 150 expansion anchors, lugs, the communication module, the battery communication cable and the inverter emergency stop cable (full list §3.4).
- **You supply:** grid, load and earth cables, earthing flat bar if used, cable tray and sealing material (§5.1.2).
- **Lifting:** a crane or forklift rated for at least 2 t, operated by a holder of the required high risk work licence.
- **Tools:** hammer drill, torque wrench and sockets, crimping tools (including RJ45), wire strippers, screwdrivers and a multimeter with a DC range above 1100 V (§4.1.5, §5.1.1).

1.2 Key Values at a Glance

Item	Value	Manual
Cabinet size (W × H × D)	1050 × 2262 × 1140 mm (cabinet alone); 1376 mm wide with the inverter fitted	§2.2
Weight	Cabinet 1101–1440 kg; inverter 89 kg	About, §4.1.2
Crane or forklift capacity	At least 2 t; crane working radius at least 2 m	§3.2
Foundation	Level within 3 mm; slope no more than 5°	§4.1.2
Anchor holes	25 mm diameter, 150 mm deep, M20 × 150 anchors	§4.2.1
Earth	40 × 4 mm galvanised flat bar or 50 mm² PE; M8 × 16 bolts at 8 N·m	§5.2
Grid cable	4 × 35 + 1 × 16 mm² or 4 × 50 + 1 × 16 mm²; SC50-8 lugs at 12 N·m	§5.3.3
Load cable	4 × 25 + 1 × 16 mm² or 4 × 35 + 1 × 16 mm²; C45-25 lugs at 3.5 N·m	§5.3.3
PE lugs (grid and load)	SC16-8 at 12 N·m	§5.3.3
Grid and load strip lengths	Sheath 95–100 mm; cores 20–25 mm	§5.3.3
Inverter on-grid connector	Terminal screws 3.8 N·m; nut 10 N·m	§5.3.1
Inverter back-up connector	Strip sheath 95–100 mm, cores 15 mm; screws 5 N·m; nut 10 N·m	§5.3.1
Battery voltage before connecting	840 V or less	§5.3.1
PV cable	4 mm² or 6 mm²	§5.3.1
Emergency stop and fire signal cores	0.5–1.5 mm²; strip sheath 55 mm, cores 8 mm	§5.3.1, §5.3.4
Operating temperature	−20 to 50 °C (charging 0 to 50 °C)	§4.1.3

Position and Anchor the Cabinet

02

Choose the site, lift and place the cabinet

2.1 Choose the Site

- A concrete, solid-brick or steel foundation designed for at least 2 t, level within 3 mm and sloping no more than 5°, with cable trenches or conduit entries (§4.1.2).
- Well drained and not low-lying, away from heat, flammable materials, corrosive gases, dust and strong vibration. Keep the separations from buildings that local fire codes require (§4.1.3).
- Keep the clearances shown below around the cabinet.

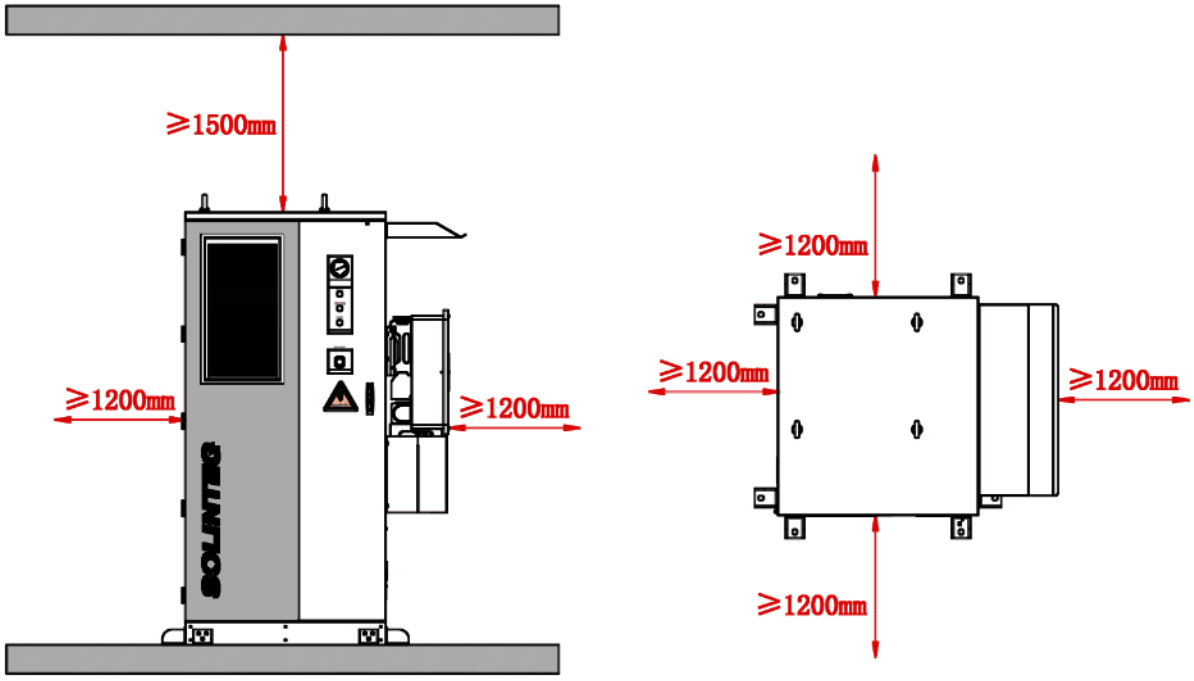


Figure 2.1 Installation clearances.

2.2 Lift and Place the Cabinet

1	Unpack the crate and remove the pallet bolts (§3.1). The door key is on the side cable panel.
2	To lift by crane, screw the four M24 lifting eyes and rubber washers into the top of the cabinet. Otherwise, use the forklift pockets (§3.2).
3	Place the cabinet on the foundation. Keep it upright and tilted no more than 10°.

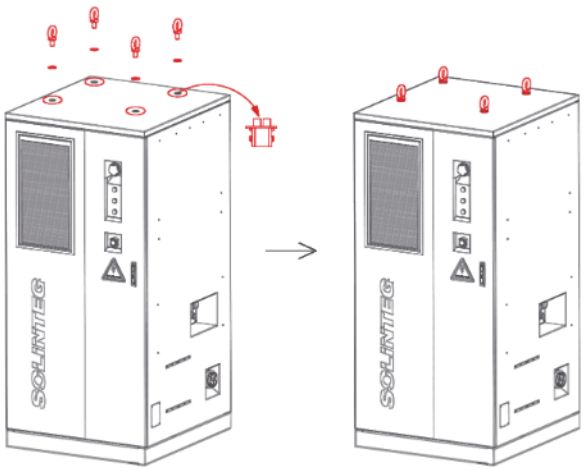


Figure 2.2 Fitting the lifting eyes.

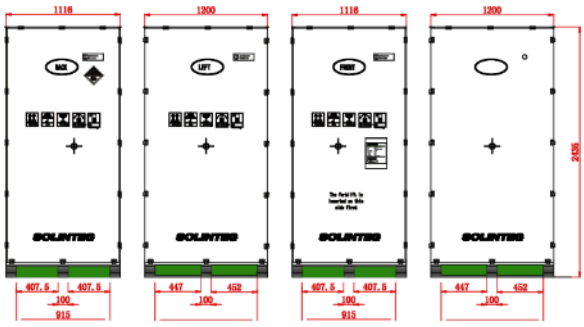


Figure 2.3 Forklift pockets.

2.3 Anchor the Cabinet and Fit the Inverter

1	Fit the decorative panels with the 24 M5 × 10 screws (§4.2.1).
2	Choose front-and-rear or left-and-right mounting feet, and mark out the holes.
3	Drill the holes (25 mm, 150 mm deep), vacuum them clean and tap in the M20 × 150 anchors.
4	Bolt the four feet to the cabinet with the M8 × 25 bolts, then tighten everything evenly.
5	Fit the rain shelter above the right-hand side with the five M6 × 16 bolts and waterproof washers (§4.2.2).
6	Fix the inverter bracket to the right-hand side with four M8 × 16 bolts, hang the inverter on it and tighten the M6 side screws (§4.2.3).

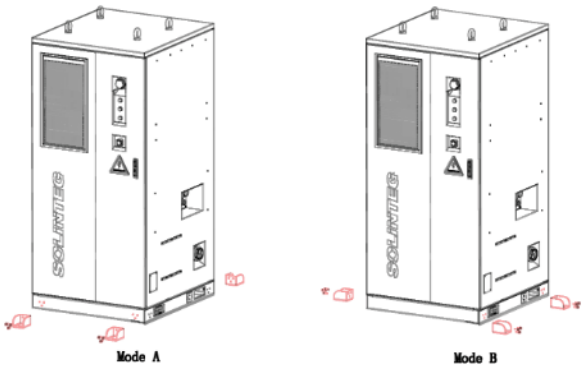


Figure 2.4 Mounting feet, front-and-rear or left-and-right.

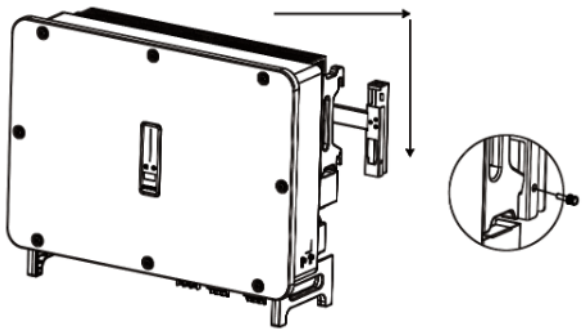


Figure 2.5 Hanging the inverter.

Earth and Wire the System

Earth the cabinet, inverter AC cables (on-grid and back-up)

03

Before you connect anything

Switch off every breaker in the cabinet and turn the inverter DC switch OFF. Connect the cabinet earth first. Leave the waterproof plugs in unused cable entries, and seal every entry when you finish.

3.1 Earth the Cabinet

Connect the earth point on the right of the cabinet to the site earthing system with 40 × 4 mm galvanised flat bar or 50 mm² PE cable, using two M8 × 16 bolts at 8 N·m. Paint cut ends of the flat bar (§5.2).

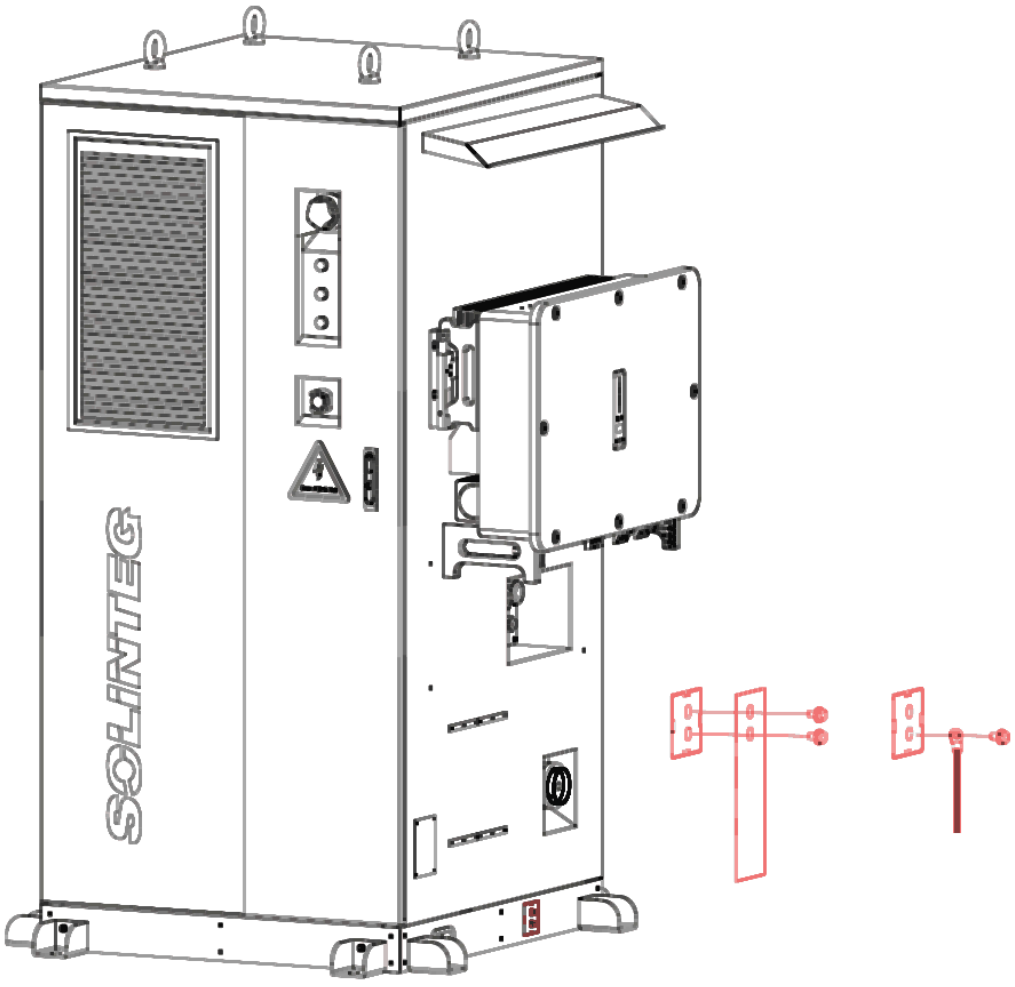


Figure 3.1 Earth connection.

3.2 Inverter AC Cables (On-Grid and Back-Up)

The cables from the cabinet to the inverter are supplied and already connected inside the cabinet. Loosen the glands on the side cable panel and pull each cable out far enough to reach the inverter.

- **On-grid:** fit the connector seal parts to suit the cable, then the L1/L2/L3 lugs and N/PE lugs at 3.8 N·m. Tighten the connector nut to 10 N·m (§5.3.1).
- **Back-up:** do not confuse the back-up connector with the generator connector. Strip 95–100 mm of sheath and 15 mm of each core, tighten the terminal screws to 5 N·m and the nut to 10 N·m (§5.3.1).
- Feed any excess cable back into the cabinet and tighten the gland nuts.

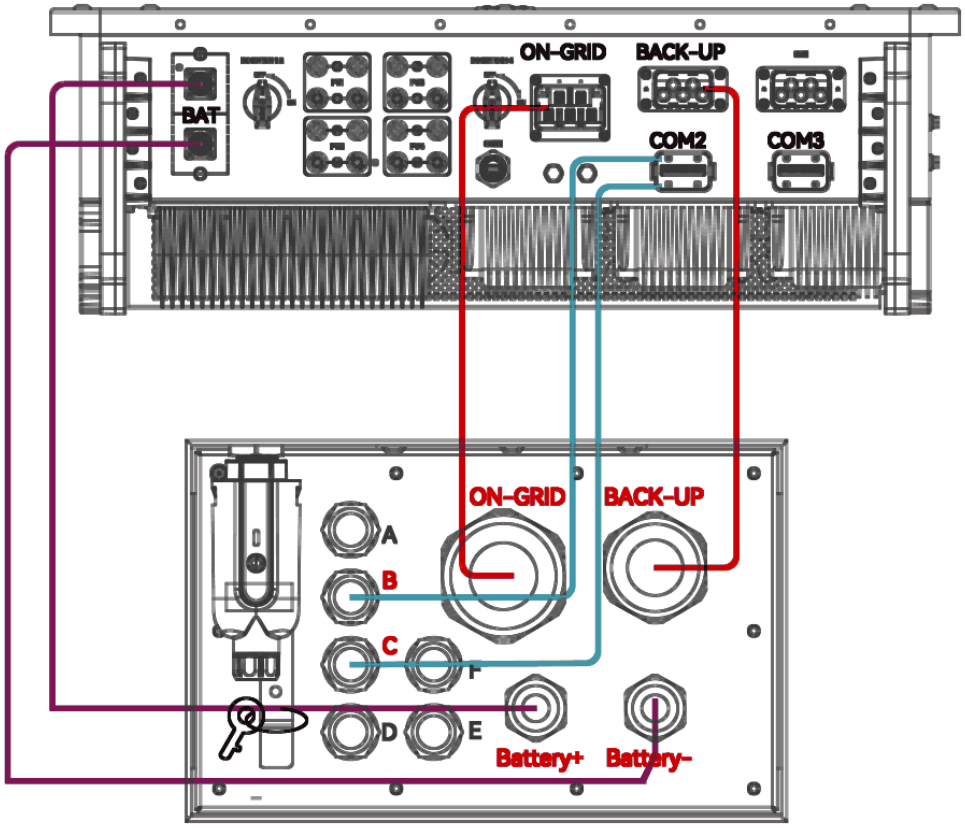


Figure 3.2 Cables between the cabinet and the inverter.

3.3 Battery DC Cables

1. Measure the battery voltage at the cable ends. It must be **840 V or less**. Check the polarity.
2. Plug the positive and negative connectors into the inverter battery terminals until they click.
3. Inside the cabinet, remove the battery pack cover at the upper left. Plug the main positive and negative cables into the battery pack until they click, then refit the cover (§5.3.2).

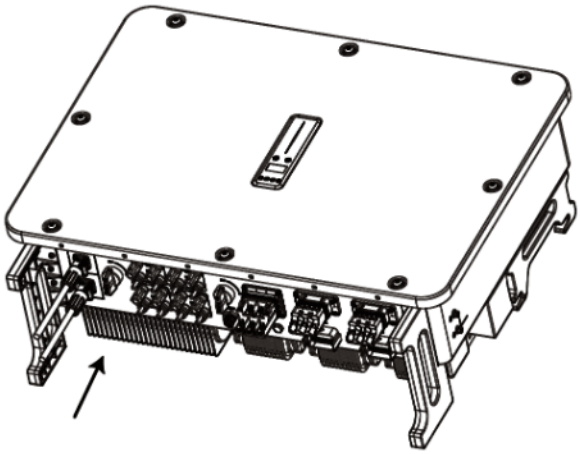


Figure 3.3 Plugging in the inverter battery connectors.

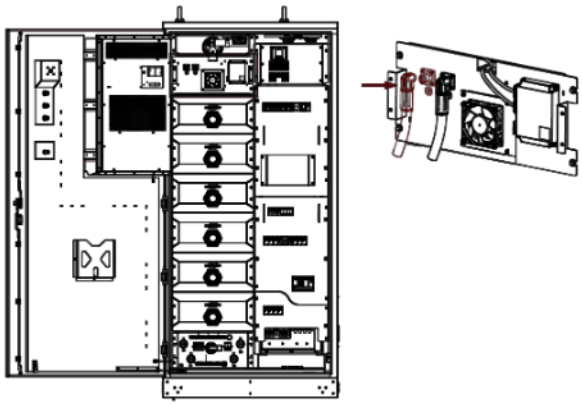


Figure 3.4 Connecting the battery pack cables.

3.4 Communication and Emergency Stop

- **BMS communication:** run the supplied cable from communication port B on the side cable panel to the inverter's **BMS 1** port (COM3, RJ45). BMS 2 is not used. Pinout: §5.3.1.
- **Emergency stop:** run the supplied cable from port C on the side cable panel to the inverter COM2 push-in terminals, following the COM2 terminal definitions in the inverter manual.
- **PV:** connect the PV strings to the inverter as its manual describes, using 4 mm² or 6 mm² cable.
- **Fire alarm signal (optional):** a dry contact on terminals 1-A and 2-A, for remote fire monitoring (§5.3.4).

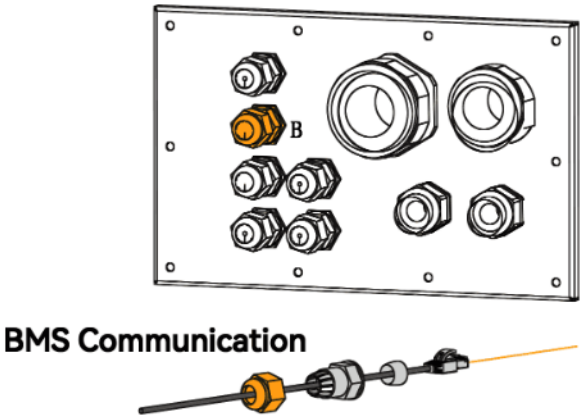


Figure 3.5 Communication port B.

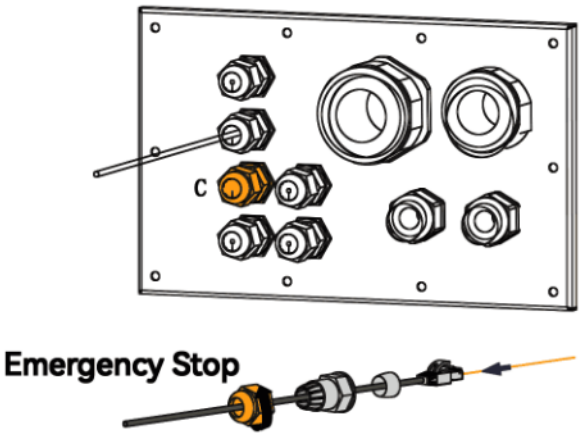


Figure 3.6 Emergency stop port C.

3.5 Grid and Load Cables

1	Remove the sealing plate under the electrical compartment and open the grid and load glands in the base.
2	Thread the cables through the glands. Strip 95–100 mm of sheath and 20–25 mm of each core.
3	Crimp the lugs: SC50-8 on the grid cores (12 N·m), C45-25 on the load cores (3.5 N·m) and SC16-8 on PE (12 N·m).
4	Connect L1, L2, L3, N and PE as shown, refit the lower cover and tighten and seal the glands (§5.3.3).

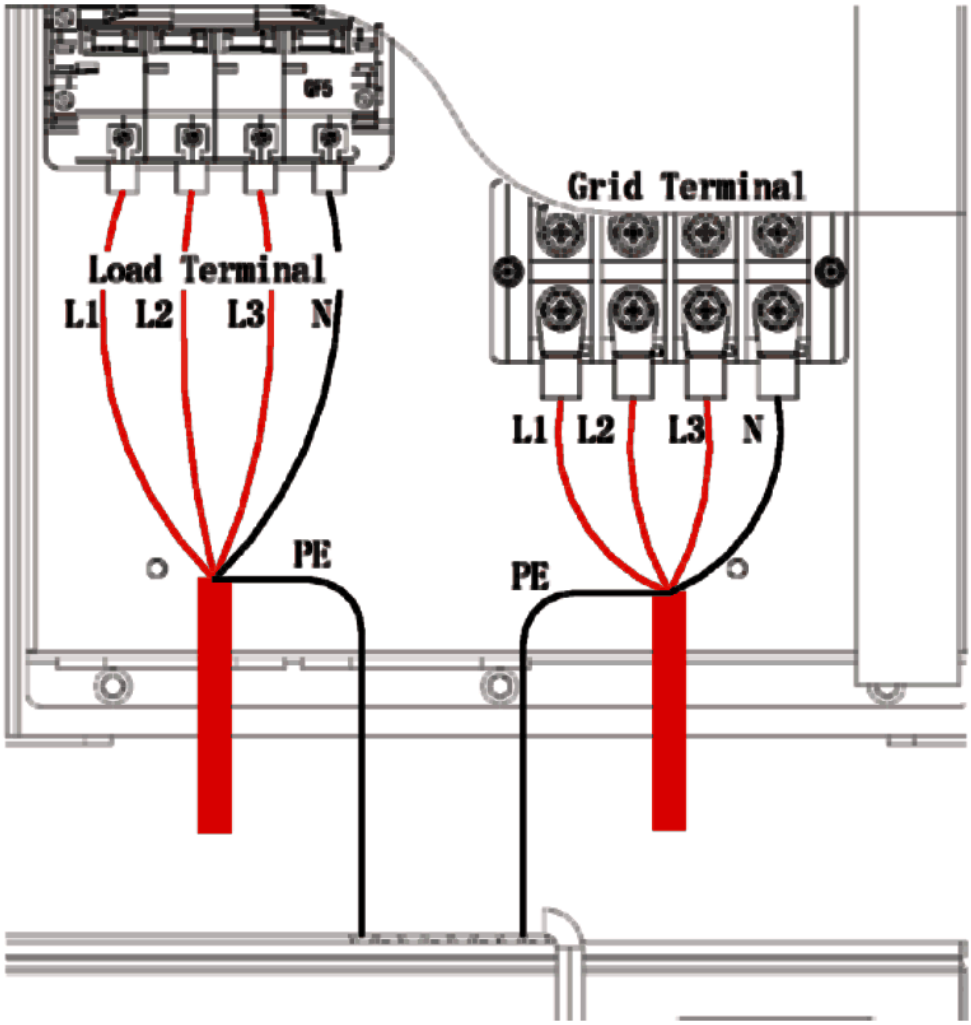


Figure 3.7 Grid and load terminals.

3.6 Finish

Tie the cables to the tie bar and fit the cable cover after commissioning (§5.3.1). Close and lock the cabinet door.

Start up and Check

Start-up sequence, check the indicators

04

4.1 Start-Up Sequence

Switch on the breakers in this order (§6.1).

Step	Breaker	Result
1	QF4 grid	Grid power on; white power indicator on
2	QF7 SPD	Surge protection in service
3	QF6-1 bypass	AC system in service
4	QF8 auxiliary main	Control circuits powered
5	QF81 air conditioner	Air conditioner starts
6	QF82 UPS	UPS starts. The first time, press the UPS power button
7	QF821 controller PDU	PDU control supply on
8	QF1 high-voltage box main	BMS powers up
9	QF3 high-voltage box DC	DC control supply on
10	QF2 high-voltage box AC	AC control supply on
11	—	BMS self-test. Green running indicator on; red fault indicator off
12	—	The inverter runs its grid self-test and starts on-grid operation
13	QF5 load	Check the loads are ready, then switch on. Start-up complete

4.2 Check the Indicators

Indicator	Running normally
Cabinet power (white)	On steady
Cabinet running (green)	On steady
Cabinet fault (red)	Off
Audible and visual alarm	Silent
High-voltage box fault (red)	Off
Inverter power (blue)	Breathing
Inverter grid	On steady (on-grid operation)
Inverter communication	Green (red means no BMS communication)

If a fault indicator is on, see section 06 of this guide and §7.3 of the user manual.

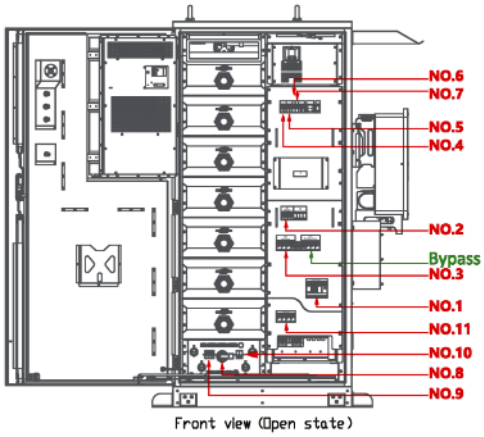


Figure 4.1 Breaker positions.

Connect to the IntegHub App

05

Scan a code to install the free Solinteg IntegHub app, or search for **IntegHub** in Google Play or the App Store.

Get the IntegHub app

Android
Google Play

iPhone
App Store

1. Log in to the Solinteg IntegHub app and create a plant.
2. Open the plant, tap **Devices**, then **+**.
3. Tap **Scan to add** and scan the QR code on the inverter rating plate, or tap **Enable Bluetooth** to find it.
4. Select the inverter, then choose **Wi-Fi** or **LAN** and enter the network details.
5. Wait for the three configuration steps to finish, tap **Complete**, then name the device and tap **Confirm**.

Step-by-step screenshots are in §6.2.4 of the user manual.



Figure 5.1
Scanning the inverter QR code.

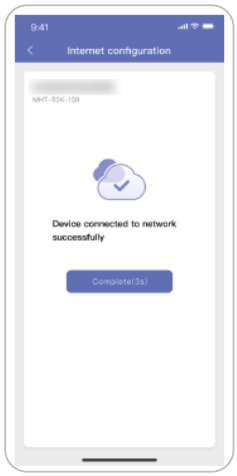


Figure 5.2
Network configuration complete.

Shut Down, Alarms and Support

Shut-down sequence, common alarms

06

6.1 Shut-Down Sequence

1. Switch off load breaker QF5.
2. Switch off the high-voltage box breakers QF1, QF2 and QF3, in that order.
3. Switch off the auxiliary main breaker QF8.
4. Switch off bypass breaker QF6-1.
5. Switch off grid breaker QF4.

> **In an emergency**
>
> Press the emergency stop button on the door and switch off grid breaker QF4. Switch off QF821 as well if the UPS output must be cut (§6.1).

6.2 Common Alarms

Code	Meaning	First check
E400	No BMS communication	Battery type selected in the inverter; cable in BMS 1 (not BMS 2); RJ45 pinout
E401	Battery over-discharged	Battery power and comms connections; PV, grid and generator connections; load size
E403	BMS sleeping	Grid or PV supply is stable; battery-to-inverter power connection
E431	Battery voltage mismatch over 100 V	Power cable connections and damage
E421 / E423	Too cold to charge / discharge	Battery temperature reading and sensors; warm the battery, then restart it
E422 / E424	Too hot to charge / discharge	Battery temperature reading and sensors; cool the battery, then restart it

The full list of protection (E), alarm (I) and warning (W) codes is in §7.3 of the user manual.

AERL technical support

1800 950 865 · support@aerl.com.au · aerl.com.au

Have ready: the model and the cabinet serial number, the inverter serial number and firmware, any alarm codes, and photos of the installation and indicators.

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