aerl

QUICK START GUIDE

AERL LiFe²

Batteries and Battery Cabinets



LiFe²-5120S · LiFe²-CAB6 · LiFe²-CAB10

Quick Start Guide

REV 2.0.1, 8 NOV 2026

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Contents

01	**Before You Start**	**3**
	Safety	3
	Box Contents	3
	AERL LiFe² Cabinets	4
	Tools	4
	Interface & Status LEDs	5
02	**Install the Cabinet and Modules**	**6**
	Minimum Clearance Requirements	6
	Connecting the Power Cables & Deploying the Support Feet	7
	Inserting and Fastening the Modules	7
	Connecting the Comms & the Protective Earth	8
	Connecting Parallel Cabinets	9
03	**Connect and Start Up**	**9**
	Connecting to the Inverter	9
	Managed and Self-Managed Mode	11
	Master Comms Port Pin-Out	11
	Connecting Parallel Cabinets to the Inverter	12
	Starting up or Shutting Down the Battery System	13
	Thank You for Choosing AERL	13

Document

Revision
2.0.1

Effective
11 / 2026

Audience
Qualified installers

Full details
LiFe² 5120S Installation and Operation Manual

Format
A4 · 14 pages

Before You Start

Safety, box contents, AERL LiFe² cabinets, tools

01

1.1 Safety

Follow the safety requirements in the LiFe² 5120S Installation and Operation Manual when installing, commissioning, operating and maintaining the product. Not following them can damage the product and other property, or cause injury or death. Tighten screws and fasteners to the torque given in the manual, with the correct tools. Read the manual in full before installation.

Important information

- Installers and users must familiarise themselves with the manual.
- Power cables and plugs can carry high current from the battery: take care when wiring.
- Have a fire extinguisher available before installation and use.
- Installation and commissioning must be performed by qualified personnel.
- Install the battery system in a suitable location (see the manual, §5.1).
- A battery module weighs 44 kg: install it with at least two people, using lifting aids if necessary.

1.2 Box Contents

#	Part	Qty
1	Termination Plug	1
2	Comms Cable	1
3	M6 × 16 Bolt	4



Figure 1.1 LiFe² 5120S battery module.

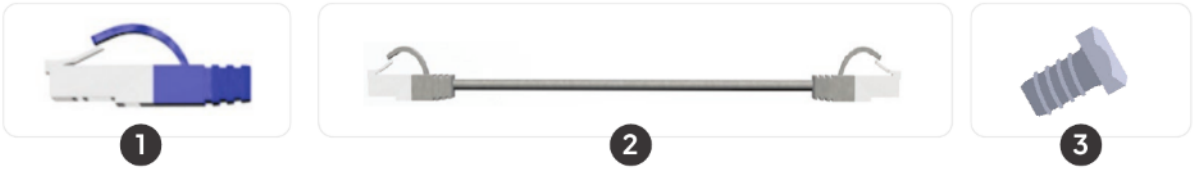


Figure 1.2 Included accessories: 1 termination plug, 2 comms cable, 3 M6 × 16 bolt.

1.3 AERL LiFe² Cabinets

Specification	LiFe²-CAB6	LiFe²-CAB10
Dimensions (W × H × D)	620 × 1270 × 600 mm	620 × 1890 × 600 mm
Max. Qty of Modules	6 (30.72 kWh)	10 (51.20 kWh)
Max. Continuous Current	625 A	1250 A
IP Rating	IP20	IP20
Weight	91 kg	128 kg

1.4 Tools

- Utility Knife
- Insulated Gloves
- Goggles
- Drill



Figure 1.3 LiFe²-CAB10 and LiFe²-CAB6.

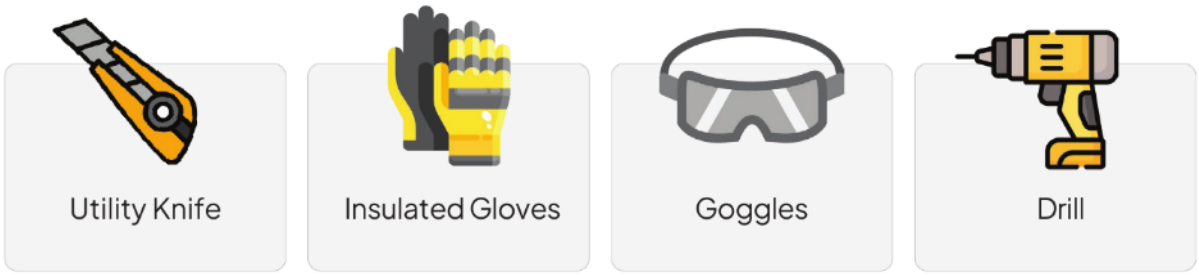


Figure 1.4 Tools.

1.5 Interface & Status LEDs

The front-panel LEDs show the battery state **(Status, Error and SOC)**.



Figure 1.5 LiFe² 5120S front panel.

Letter	Label	Function
A	COMM	Inverter Comms
B	OUT	Battery Comms Out
C	IN	Battery Comms In
D	N/A	Error Indication
E	N/A	Battery Status
F	N/A	SOC Indicator
G	ON/OFF	On/Off Switch
H	MCB	Circuit Breaker
I	+	DC+ Port
J	–	DC– Port

LED	Status	Description
Error	Red ON	An error has occurred.
Error	Off	There are no active errors.
Status	Green ON	The battery is active and can be charged and discharged.
Status	Off	The battery is not active.
SOC	4 LEDs ON	75–100% SOC
SOC	3 LEDs ON	50–75% SOC
SOC	2 LEDs ON	25–50% SOC
SOC	1 LED ON	0–25% SOC

- If SOC is below 5%, the first LED flashes quickly (0.5 s on, 0.5 s off: 1 Hz).
- While discharging, the last lit LED flashes (1 s on, 1 s off: 0.5 Hz).
- While charging, the last lit LED flashes slowly (2 s on, 2 s off: 0.25 Hz).

Install the Cabinet and Modules

Minimum clearance requirements

02

2.1 Minimum Clearance Requirements

- ≥ 650 mm in front of the front door (service access)
- ≥ 100 mm between adjacent cabinets
- ≥ 500 mm at the end of the row

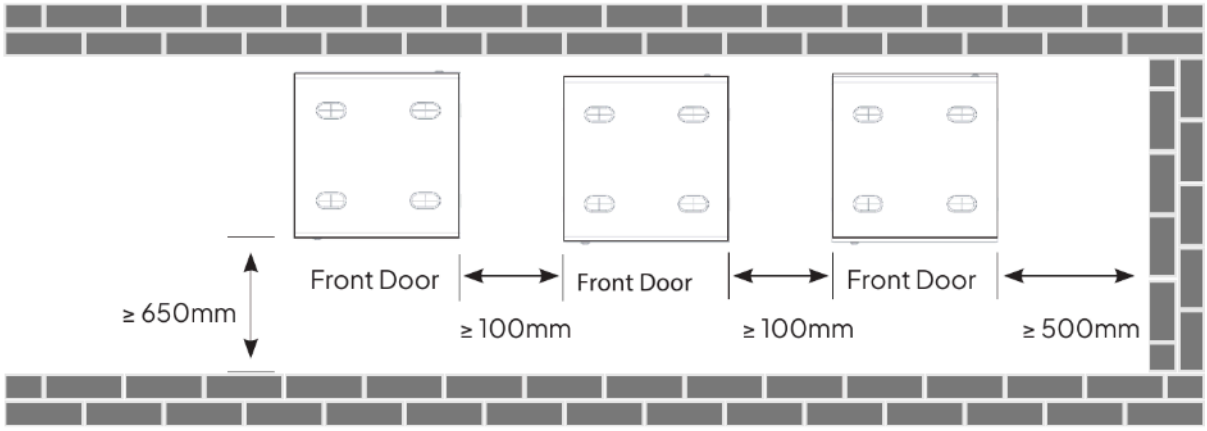


Figure 2.1 Minimum clearances, top view of three cabinets in a row against a wall.

2.2 Connecting the Power Cables & Deploying the Support Feet

Power Lug Torque: 15 N·m

Lower the support feet until the wheels are off the floor before you insert any batteries.

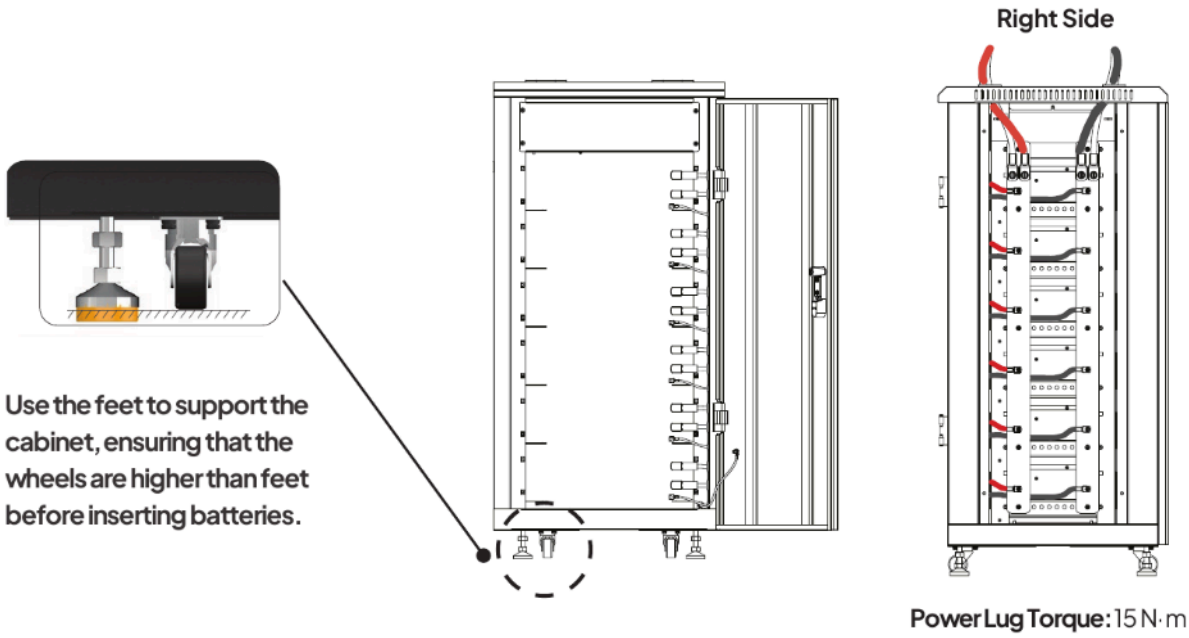


Figure 2.2 Support feet, and the DC power cabling down the right-side busbar of the cabinet.

2.3 Inserting and Fastening the Modules

Slide the modules into the cabinet from the bottom up, and fasten each one.

Module Bolt Torque: 3 N·m

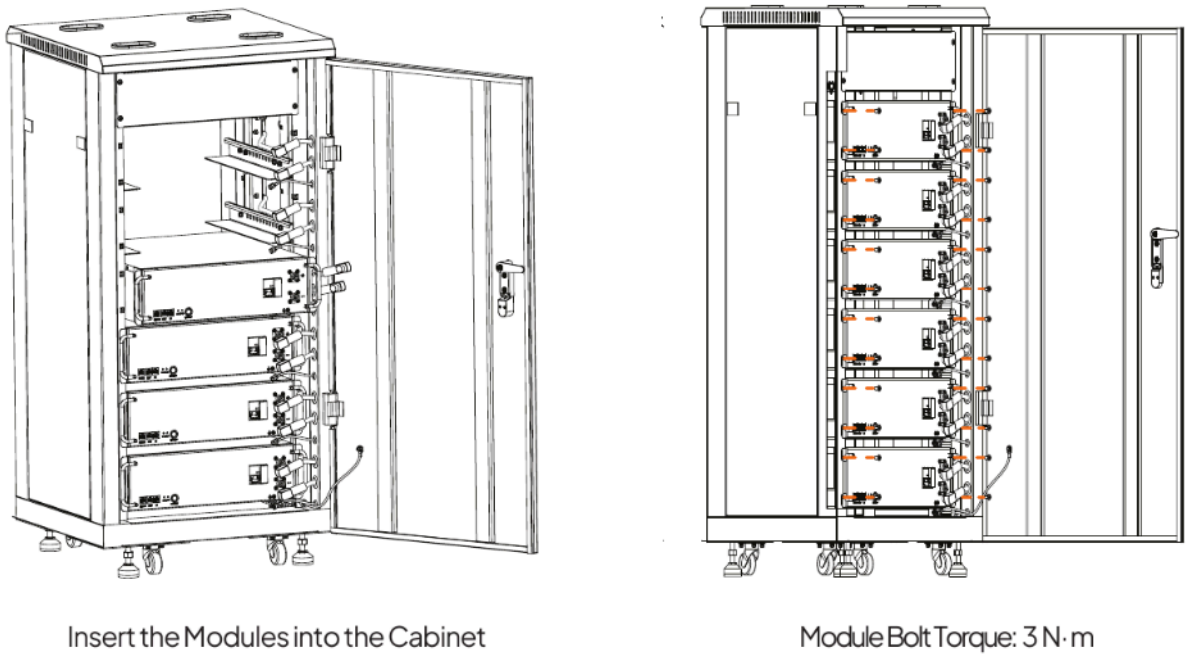


Figure 2.3 Inserting and fastening the modules.

2.4 Connecting the Comms & the Protective Earth

- **COMM** on the master battery: to the inverter.
- **OUT** on each module: to **IN** on the next module.

Insert the termination plug into the **OUT** port of the last battery in the chain.

Connect the PE to each battery module.

PE Torque: 3 N·m

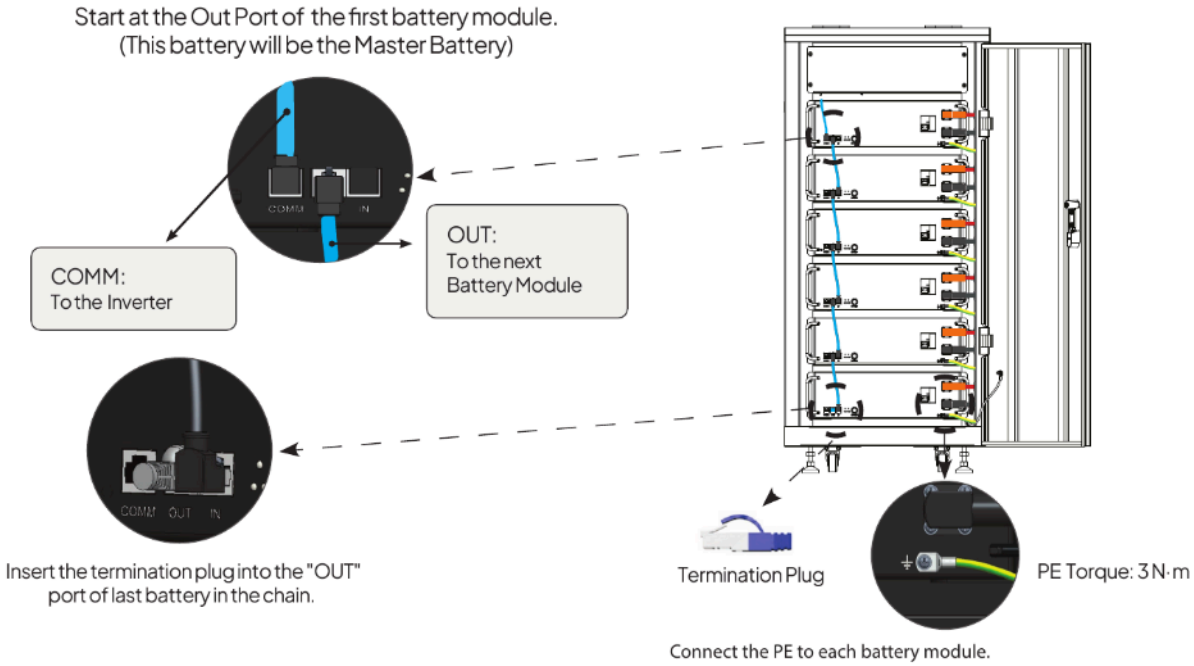


Figure 2.4 Single cabinet comms wiring: inverter to the COMM port of the master battery, then OUT → IN down the cabinet.

2.5 Connecting Parallel Cabinets

Insert the termination plug into the **OUT** port of the last module.

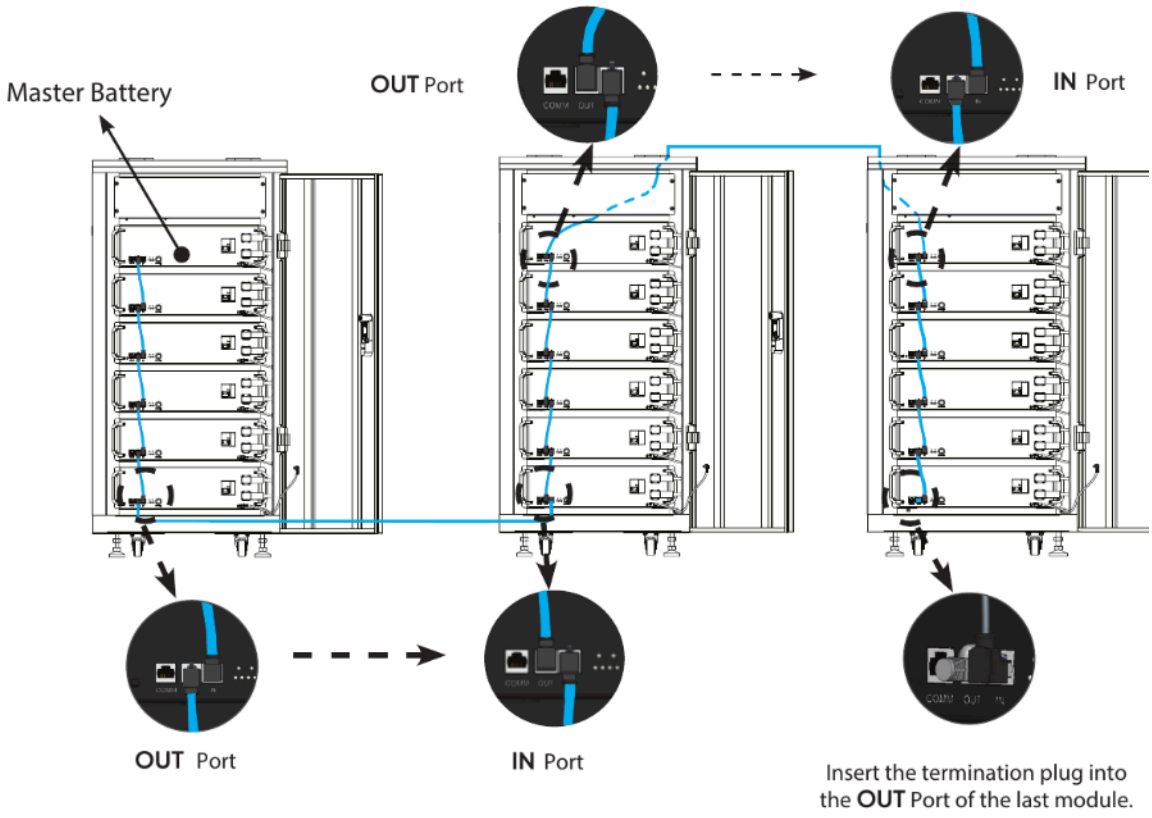


Figure 2.5 Three cabinets in parallel: the comms chain runs from the OUT port of the last battery in each cabinet to the IN port of the next cabinet.

Connect and Start Up

Connecting to the inverter, Managed and Self-Managed mode

03

3.1 Connecting to the Inverter

Connect the DC power cables and the comms cable between the master battery and the inverter.

> **Important note**
> The comms cable must be Cat 5 or higher.

Cable legend:

- DC+ cable (red)
- DC– cable (black)
- Comms cable (Cat 5 or higher) (blue)

- PE cable (green/yellow)
- DC breaker between the battery and the inverter: 2-pole, on both conductors (AS/NZS 5139)

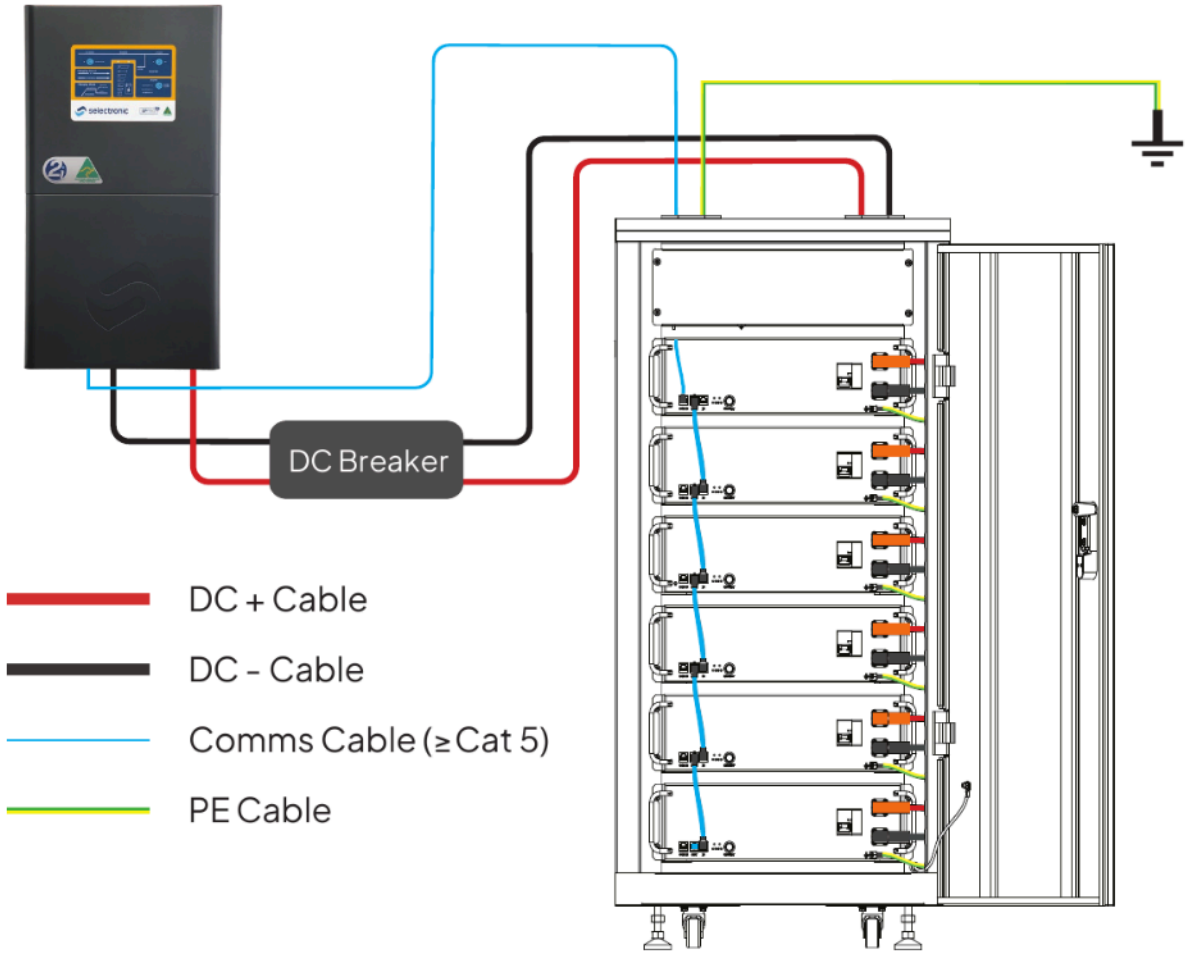


Figure 3.1 Connecting the master battery to the inverter.

3.2 Managed and Self-Managed Mode

The LiFe² 5120S starts in Managed (communication) mode by default.

Use Self-Managed mode when the inverter has no communication link to the battery (a no-comms or Self-Managed PCE). To switch to Self-Managed (No Comms) mode: with the battery on, double-press the **ON/OFF** button on the master battery. The SOC LEDs flash 3 times to confirm. The battery remembers the mode after a restart, so you set it once.

The battery switches back to Managed mode automatically when the communication cable between the inverter and the master battery is connected.

3.3 Master Comms Port Pin-Out

PIN No.	1	2	3	4	5	6	7	8
Definition	NC	NC	NC	CAN_H	CAN_L	NC	RS485B	RS485A

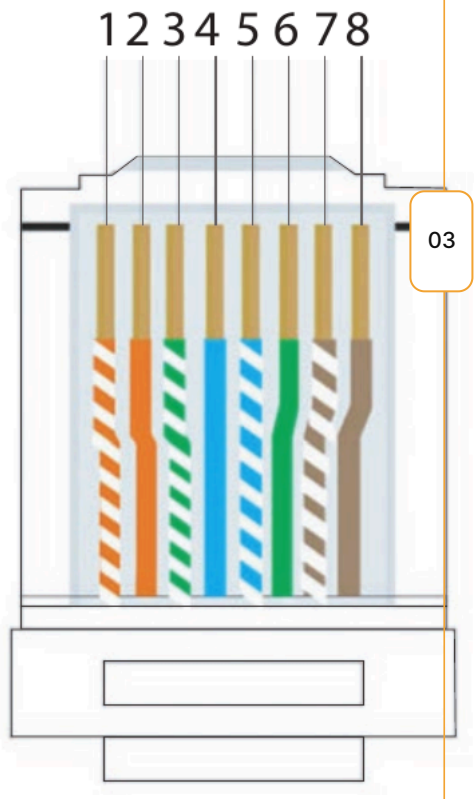


Figure 3.2 RJ45 pin numbering.

3.4 Connecting Parallel Cabinets to the Inverter

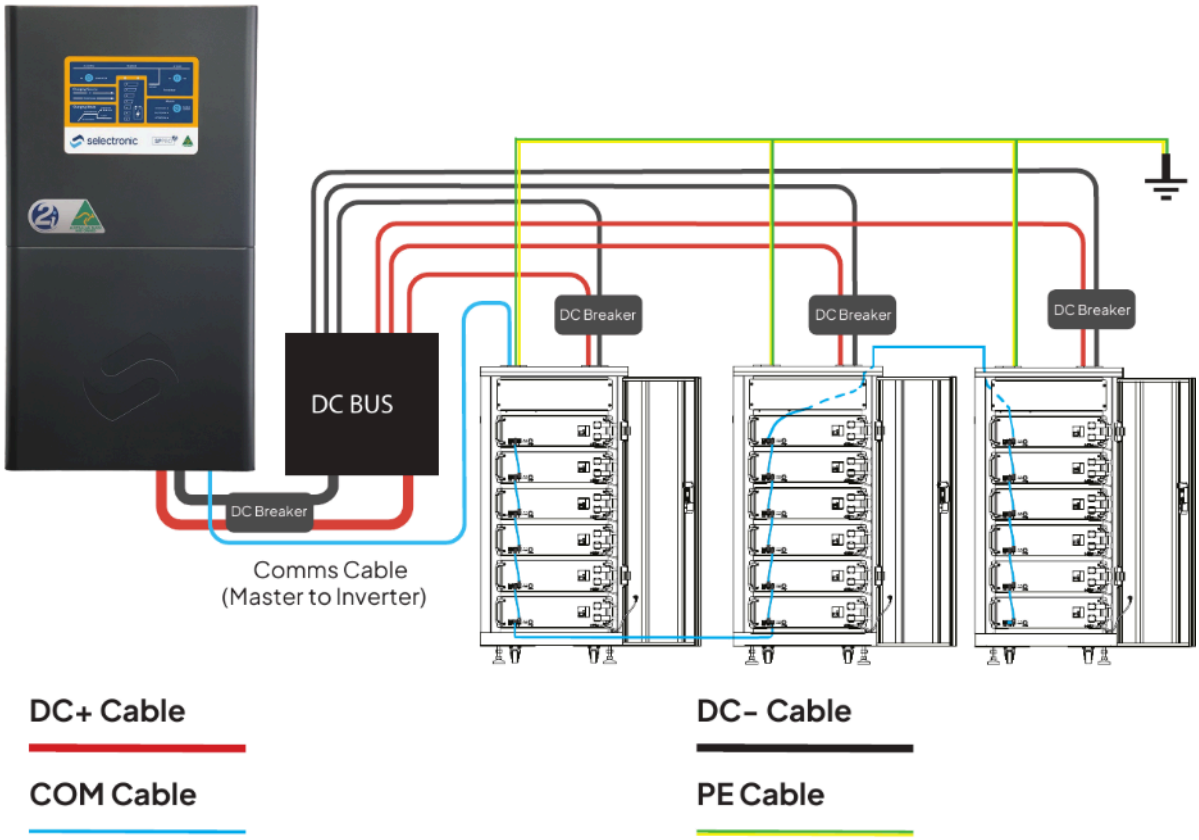


Figure 3.3 Parallel cabinets, each through its own DC breaker into a shared DC BUS / combiner box, then to the inverter.

Cable legend:

- DC+ Cable (red)
- DC− Cable (black)
- COM Cable (blue)
- PE Cable (green/yellow)

Note

1. A maximum of 64 AERL LiFe² modules can be connected in parallel.
2. Combine the DC power cables of parallel cabinets in a combiner box with a suitably rated DC bus.
3. Use DC power cables of approximately equal length for all cabinets.
4. The comms cable between the master battery and the inverter must be no longer than 5 m.

3.5 Starting up or Shutting Down the Battery System



Figure 3.4 The ON / OFF button on the master battery.

System start up	System shutdown
1: Turn ON the DC breakers between the battery cabinet(s) and the inverter.	**1:** Turn OFF the AC isolators (IN/OUT) on the inverter.
2: Turn ON the battery module breakers.	**2:** Turn OFF the PV isolators on the inverter and shut down the inverter.
3: Press the ON/OFF button on the master battery for 1 second to power up the system.	**3:** Turn OFF the DC breaker between the battery cabinet(s) and the inverter.
4: Turn ON the PV and AC isolators and start the inverter.	**4:** Press and hold the ON/OFF button on the master battery for 3 seconds to shut down the system.
	5: Check that the LEDs on all batteries are off, then turn OFF the battery module breakers.

3.6 Thank You for Choosing AERL

If you have any questions or need support, contact AERL.

Sincerely,

The AERL Team

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