



High Voltage Wall-mounted Residential Energy MEGAHV10K Storage Battery Box

User Manual

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www.megalion.com.au



Table of Contents

1. Safety Precautions	4
1.1 General Safety	4
General Requirements.....	4
1.2 Personnel Requirements	4
Definitions.....	4
1.3 Electrical Safety	5
Grounding Requirements.....	5
General Electrical Requirements — DANGER ⚠	5
DC Operation — DANGER ⚠	5
Wiring Requirements.....	5
Anti-Static Requirements.....	5
1.4 Battery Safety	5
Battery Safety Statement.....	5
Battery Safety — DANGER ⚠	6
Personal Safety and Device Operation	6
Battery Handling Precautions.....	6
Moving Heavy Objects	6
Battery Installation Requirements	6
Hazard and Toxicity Warning — DANGER ⚠	7
Emergency Measures	7
Battery Recycling.....	7
1.5 Storage Requirements.....	7
1.6 Handling & Transportation Requirements	8
1.7 Installation Environment Requirements	8
1.8 Mechanical Safety	8
1.9 Testing a New Device	8
1.10 Maintenance & Replacement — DANGER ⚠	8
2. Product Introduction	9
2.1 Product Shape & Dimensions	9
2.2 Product Images	9
2.3 Specifications	10
2.4 Product Label Description	11
2.5 BMS Functional Characteristics	12
2.6 BMS-Compatible Inverter Manufacturers.....	12
2.7 Performance & Test Conditions.....	13

3. Application Scenarios	13
4. System Installation	13
4.1 Inspection Before Installation.....	13
4.2 Preparing Tools & Meters.....	13
4.3 Packaging contents	15
4.4 Installation Instructions.....	16
4.4.1 Installation Environment.....	16
4.4.2 Floor-Mounted Installation.....	16
4.4.3 Wall-Mounted Installation	18
4.4.4 Electrical Installation.....	19
4.4.5 Operating System	22
5. Fault Handling	24
6. Regulatory Compliance & Standards (AU/NZ).....	25

1. Safety Precautions

1.1 General Safety

Before installing, operating, or maintaining this equipment, carefully read this manual and observe all warnings, labels, and safety instructions provided. The instructions described in this manual supplement recognised safe-work practices and do not replace applicable standards. Operation is permitted only in environments that meet the specified design requirements.

The manufacturer is not liable for (including but not limited to): operation outside specified conditions; installation or use not compliant with relevant Australian/New Zealand Standards (AS/NZS); unauthorised disassembly or modification; failure to follow instructions and warnings; damage due to natural disasters; transport/storage damage; negligence or misuse; or removal of identification marks.

General Requirements

- Never install, operate, or service equipment outdoors during adverse weather (lightning, heavy rain, snow, high winds).
- Observe all warning labels and safety instructions.
- Use correct, serviceable tools.
- Isolate all power before installation, wiring, servicing, or replacement.
- Do not wash the equipment with water.
- Inspect for physical damage (drops, dents, cracks) before use.
- Test for voltage before touching any conductor or terminal.
- Repair paint scratches to prevent corrosion.

1.2 Personnel Requirements

- Only licensed electricians or trained personnel may install, adjust, or maintain this equipment.
- All personnel must be trained in safe work practices.
- Only qualified professionals may remove safety features or perform repairs.
- Hold licences/permits as required under AU/NZ law (e.g., high-voltage work, working at heights, specialised equipment).
- Component replacement (including software/firmware) only by qualified or authorised personnel.

Definitions

- Professional personnel: Experienced electricians/technicians trained in installation, operation, and hazard awareness.
- Trained personnel: Individuals with relevant technical training and practical experience, aware of risks and able to mitigate them (including apprentices under supervision).
- Operators: Persons who may interact with the equipment but are not classified as trained or professional personnel.

1.3 Electrical Safety

Grounding Requirements

- The protective earthing conductor must be the first connected and last removed during disassembly.
- Do not cut, bend, or damage the earthing conductor.
- Never operate the equipment without a correctly installed earth.
- Verify all electrical connections and earthing integrity before energising.

AU/NZ STANDARD — HIGHLIGHT: AS/NZS 3000 (Wiring Rules) applies to all installation wiring. See also AS/NZS 3017 (testing), AS/NZS 3008.1.1 (current-carrying capacity), and AS/NZS 5139 (battery systems).

General Electrical Requirements — DANGER ⚠

- Confirm the equipment is undamaged; faults may result in electric shock or fire.
- All electrical connections must comply with AS/NZS 3000, AS/NZS 5139, and applicable distributor/network service provider (DNSP) requirements.
- Obtain approval from the relevant electricity distributor before grid connection.
- Use only cables compliant with local regulations.
- Use insulated, rated tools.

DC Operation — DANGER ⚠

- Never install or remove power cables while energised.
- Isolate upstream DC and AC with lockable devices; apply lock-out/tag-out (LOTO).
- Identify and label conductors prior to connection.
- If multiple inputs exist, disconnect all and ensure the equipment is fully powered down before work.

Wiring Requirements

- Maintain ≥ 30 mm clearance between cables and heat sources.
- Bundle same-type cables; separate different types by ≥ 30 mm; avoid twisting/crossing.
- Provide mechanical protection at penetrations (grommets, glands).
- Condition cold-stored cable at room temperature ≥ 24 h before install.

Anti-Static Requirements

- Wear anti-static gloves when handling internal components.
- Avoid clothing that generates static when working on PCBs.

1.4 Battery Safety

Battery Safety Statement

No responsibility is accepted for faults, damage, injury, or loss arising from failure to follow handling/charging requirements, over-discharge, incorrect BMS parameters, use of

unapproved PCS/inverters, unauthorised changes to application, unsuitable site/electrical conditions, poor maintenance, theft, or use beyond warranty.

Battery Safety — DANGER ⚠

- Do not work live.
- Keep away from heat sources and direct sun.
- Do not disassemble, modify, puncture, or immerse.
- Lithium-ion systems present fire risk; electrolyte is flammable/toxic; thermal runaway emits CO/HF; gas accumulation can explode.
- Store in original packaging; avoid over-stacking.
- Transport in indicated orientation; avoid impacts.
- No hot-work near batteries.
- Operate only within specified temperature range.
- Quarantine damaged batteries; monitor for smoke/heat/leaks.

Personal Safety and Device Operation

- Wear appropriate PPE and stop work if hazards arise.
- Use correct tools only.
- Enclosure surfaces may be hot during operation.
- Ensure reliable earthing.
- Avoid contact with electrolyte; harmful to skin/eyes.
- Keep flammables away; do not short terminals or place objects on the unit.

Battery Handling Precautions

- Remove jewellery; use insulated tools; wear rubber gloves/boots and safety glasses.
- Disconnect charging supply before connecting/disconnecting terminals.
- Check for inadvertent earths and isolate from supply if found.

Moving Heavy Objects

- Plan team lifts with a spotter; coordinate movements.
- Lift with legs; avoid twisting.
- Use trolleys/forklifts and secure loads; wear safety shoes and gloves.



Battery Installation Requirements

- Inspect packaging; do not use if damaged.
- Observe polarity; avoid shorts.
- Use a torque wrench and re-check for loosening.
- Remove all packing debris after installation.

Hazard and Toxicity Warning — DANGER ⚠

- Terminal-metal contact can heat and cause leakage; electrolyte is flammable.
- Combustion vapours irritate eyes/skin/respiratory tract.

Emergency Measures

Abnormal Battery — DANGER ⚠

- If leakage/odour: keep untrained persons away and contact trained personnel.
- Responders wear goggles, rubber gloves, respirator, and protective clothing.
- First aid: inhalation — fresh air; eyes — flush ≥ 15 min; skin — wash; ingestion — seek immediate medical care.

Fire — DANGER ⚠

- Power off only if safe.
- Use CO₂, FM-200, or ABC dry powder extinguishers.
- Avoid contact with HV components.
- Wear respiratory protection and keep distance.

Flood — DANGER ⚠

- Power down only if safe.
- Do not touch flooded parts.
- Do not reuse water-exposed batteries; engage licensed recycling/disposal.

Battery Falling — DANGER ⚠

- Do not use dropped/impacted batteries.
- If odour/damage/smoke/fire: evacuate and call emergency services.
- If apparently undamaged: have professionals assess or recycle.

Battery Recycling

- Dispose per local law; never as household rubbish.
- Contact a licensed battery recycler for leaking/damaged/end-of-life batteries.
- Avoid high temperatures, sun, humidity, and corrosives.

1.5 Storage Requirements

- Record storage conditions (temperature, humidity, environment).
- Long-term storage not recommended; after 12 months, irreversible capacity loss typically 3–10%.
- Store upright; follow stacking instructions.
- Environment: 0–25 °C; 35–85% RH; dry, clean, ventilated; avoid solvents/corrosives and sun.
- Recharge to recommended SOC before use after storage.

1.6 Handling & Transportation Requirements

NOTICE — UN38.3 Compliance: Product complies with UN38.3 testing for transport of dangerous goods.

- Load/unload per local laws and industry standards.
- Avoid rough handling; damage may lead to leaks/explosion/fire.
- Ship only if intact/no odour/smoke/fire.
- Transport: Rail/air not supported; maritime per IMDG; land per ADR/JTT617 and national regulations.
- Protect from rain/snow/water; avoid drops, inversion, tilting.

1.7 Installation Environment Requirements

- Comply with local laws and AS/NZS standards for lithium products.
- Keep inaccessible to children and away from living/working areas.
- In garages, clear of vehicle paths; consider bollards.
- Basements: ensure ventilation; wall-mount to avoid water accumulation; keep flammables away.
- Dry, well-ventilated, solid/flat surface; shade from sun/rain; clean environment free from solvents/corrosives.
- Avoid explosive atmospheres and mobile platforms (ships/trains/vehicles).

Environmental considerations: Avoid outdoor installs within 500 m of the coast; derate outside recommended ambient. MEGAHV10K charge: 0–50 °C; discharge.

1.8 Mechanical Safety

- Wear safety goggles and gloves when drilling.
- Shield device from debris and clean promptly.

1.9 Testing a New Device

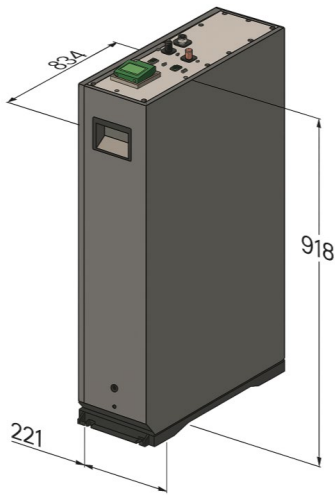
On first power-up, a qualified person must configure settings correctly. Incorrect settings may breach certification and affect operation.

1.10 Maintenance & Replacement — DANGER ⚠

- Power off and follow this manual's safety precautions before any maintenance.
- Restrict access; use temporary signage/barriers.
- Contact dealer/service provider if faults occur; do not re-energise until resolved.
- Do not open covers without authorisation (shock risk; may void warranty).
- Verify inputs are isolated and DC bus de-energised before work.
- Replace only with same type battery/pack.
- Remove all tools/parts before re-closing.
- For extended non-use, store battery and maintain charge per this manual.

2. Product Introduction

2.1 Product Shape & Dimensions



(Figure 1)

2.2 Product Images



Figure 2: Front view



Figure 3: Back view



Figure 4: Left side view



Figure 5: Right side view





2.3 Specifications








No.	Item	Parameter	Remark
1	Battery Chemistry	Hybrid electrolyte, solid-state LFP	
2	Total Energy	10.24 kWh	
3	Battery Capacity	50 Ah	
4	Nominal Voltage	204.8 V	
5	Operating Voltage Range	182.4–227.2 V	
6	Rated Current (Recommended)	25 A	
7	Max Charging Current	40 A	
8	Max Discharging Current	40 A	
9	Communication	CAN	
10	Monitoring Type	Wifi	
11	Cycle Life	6000 cycles	(25±2°C, 0.5C, 70%SOH)
12	Best Operating Temperature Range	Charge: 0–40°C	60±25%RH.

		Discharge: 19-40°C	23±5°C (Recommended)
13	Humidity	0~95%<(No condensation)	
14	Storage Temperature Range	< 1 month: 10~50°C	60±25%RH. 23±5°C (Recommended)
15	Warranty	10 Year product Warranty	
16	Weight	97kg	
17	Module Dimension (W x H xD)	534*918*221mm	Without PCS
18	IP Protection	IP65	
19	Installation method	Wall-mounted and floor-mounted	
20	Wire harness length	<3m	
21	Certification	IEC62619 IEC60730-1 IEC62040 CE;UN38.3	

Manufacturer: Jiangsu Megalion Energy Storage Integration Technology Co., Ltd.

2.4 Product Label Description

Symbol	Description
 DANGER	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
 WARNING	This instruction indicates a potential hazard during operation. Failure to comply with this warning may result in personal injury or death.
 CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results.
NOTICE	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
	The battery system must be disposed of at a proper facility for environmentally-safe recycling.

	Do not dispose of the battery together with household waste.
	Read the enclosed documentation.
	Keep the battery system away from children.
	Keep the battery system away from open flames or ignition sources.
	Caution, risk of danger
	Caution, risk of electric shock.
	Protect the location of the ground wire.

2.5 BMS Functional Characteristics

Key features include: precise cell/pack voltage monitoring (± 5 mV at -10 – 50 °C), current monitoring with over-current and short-circuit protection (± 0.5 A accuracy), multi-point temperature monitoring (± 1 °C at 20 – 65 °C), SOC estimation ($\pm 5\%$), intelligent passive balancing (up to 100 mA), automatic addressing, multiple comms (RS485/CAN/Wi-Fi), dry contacts, data storage (EEPROM up to 12,000 records), online upgrades, digital inputs, and secondary protection via relay isolation if abnormal cell voltage or relay malfunction occurs.

2.6 BMS-Compatible Inverter Manufacturers

No	CANtype Communication	485 type Communication
1	Pylon	Pylon
2	Growatt	Growatt
3	Victron	SRNE
4	Goodwe	Deye
5	Ginlong	Voltronic Power
6	LuxPower	Pace
7	Sofar	
8	KSTAR	
9	SMA	
10	MEGAREVO	
11	Afore	
12	Im:t	
13	Yiyei1	

AU/NZ STANDARD — HIGHLIGHT: Grid-connected inverters must comply with AS/NZS 4777.2 and local DNSP rules; installation/commissioning per AS/NZS 4777.1 where applicable.

2.7 Performance & Test Conditions

- Tests on new batteries within one week of shipment; ≤ 5 cycles prior to testing.
- Standard environment unless otherwise specified: 20 ± 5 °C, 45–85% RH (or 15–30 °C, 25–85% RH where acceptable).
- Instruments: voltmeter (≥ 10 k Ω input), ammeter (external resistance incl. leads < 0.01 Ω), impedance meter (e.g., 1 kHz LCR).

Check appearance: No cracks, rust, or leakage.

3. Application Scenarios

Suitable for detached dwellings, remote sites, farms, and households.



Villa



Remote Sites



Farm






Household


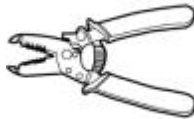
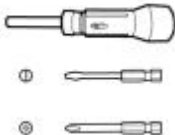












4. System Installation

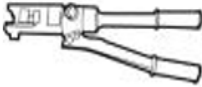








4.1 Inspection Before Installation

- Outer Packaging: Inspect for holes, cracks, or signs of internal damage; verify model; do not open if damaged or incorrect—contact dealer.
- Deliverables: After unpacking, confirm all components are present and undamaged.

4.2 Preparing Tools & Meters

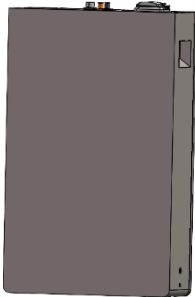
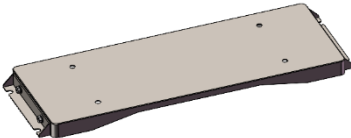
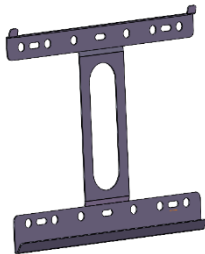
Type	Tools and Instruments		
Install			
	Percussion drill	Torque socket wrench	Torque wrench




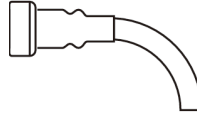
			
	Diagonal pliers	Wire stripper	Torque screwdriver
			
	Rubber hammer	Tool knife	Wire nippers
			
	Crimping pliers	Cold pressing terminal crimping pliers	Disassembly and assembly tools
			
	Cable tie	Vacuum cleaner	A multimeter
			
	marking pen	Steel tape	Level ruler

			
	hydraulic clamp	Heat shrinkable sleeve	Hot air gun
Personal protective equipment			
	Safety gloves	Protective glasses	Anti-dust masks
			
	Safety shoes	Electric screwdriver	Protective gloves

4.3 Packaging contents

- Battery box ×1
- Base ×1
- Wall rack ×1
- M8×60 expansion bolts ×6
- Manual ×1
- Cables ×2
- Installation manual x1

		
Battery box × 1	Base × 1	Wall rack × 1

 M8*60 Expansion bolt × 6	 M6*12 Bolt×4	 manual
 cable × 2		

Installation angle: Do not mount forward, horizontal, upside-down, backward, or sideways.

Position: Solid brick/concrete wall or floor; other substrates must be flame-retardant and support full weight.

Space: Maintain clearances; do not place items beneath wall-mounted units.

Drilling: Wear eye/dust protection; vacuum debris; ensure anchors sit flush with surface.

4.4 Installation Instructions

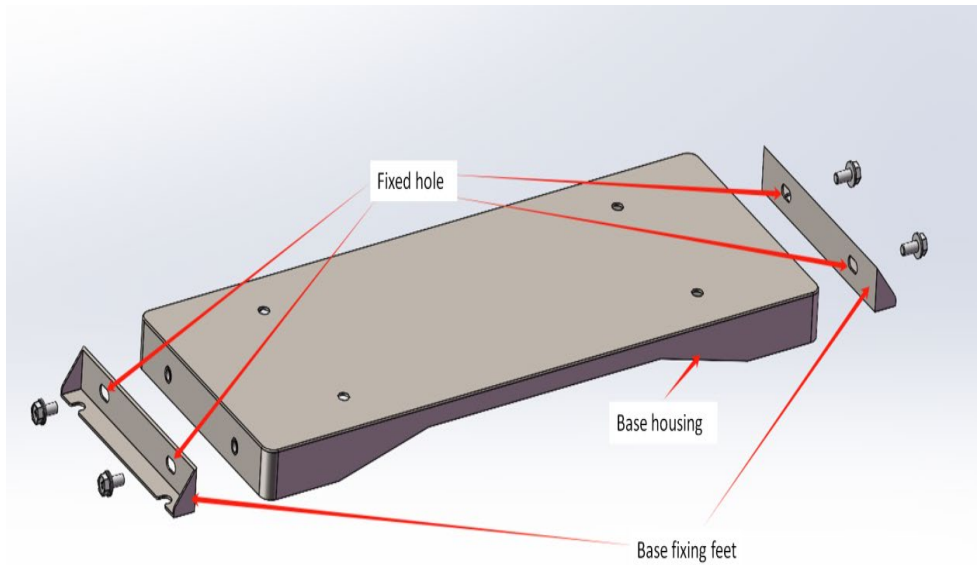
4.4.1 Installation Environment

Flat, stable, load-bearing surface; reinforce if needed. Optimal operation 20–40 °C; avoid direct heat/sun/rain/extremes; keep away from high/low temperature sources.

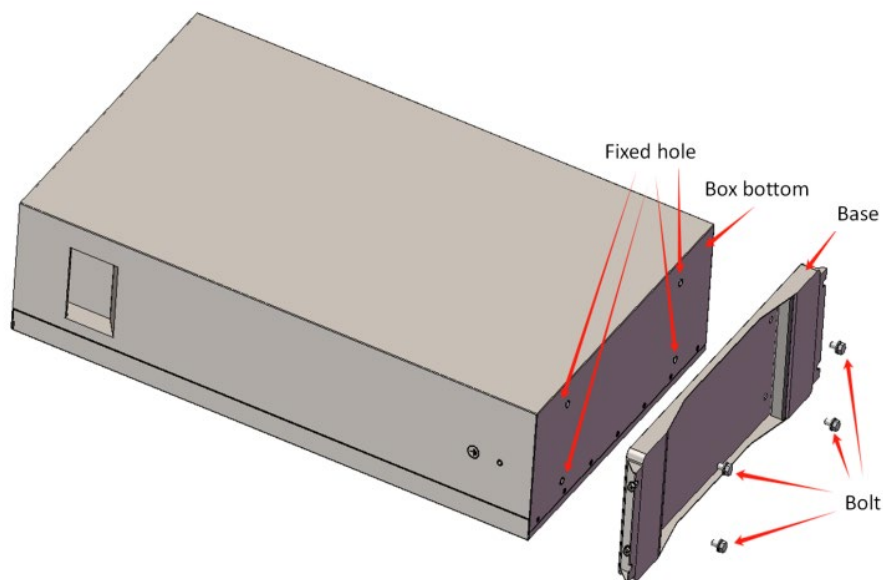
Avoid vibration and water accumulation; keep out of children's reach; no flammables nearby.

4.4.2 Floor-Mounted Installation

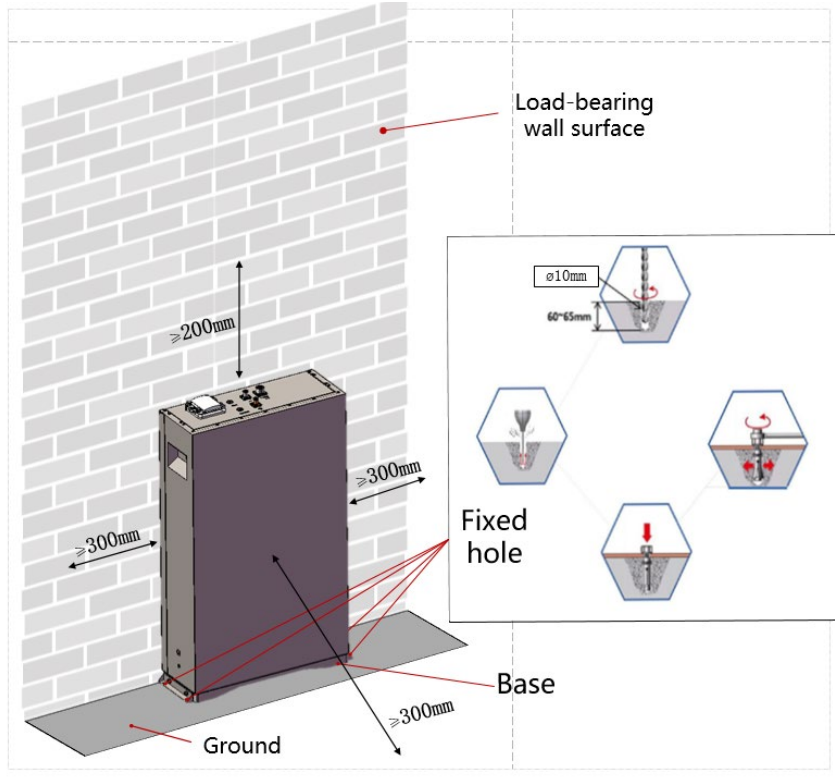
- Step 1 — Base Assembly: Attach base fixing feet with M6×12 bolts; torque 5–12 N·m.



- Step 2 — Fix Base to Box: Use M5×12 bolts; torque 18–25 N·m.

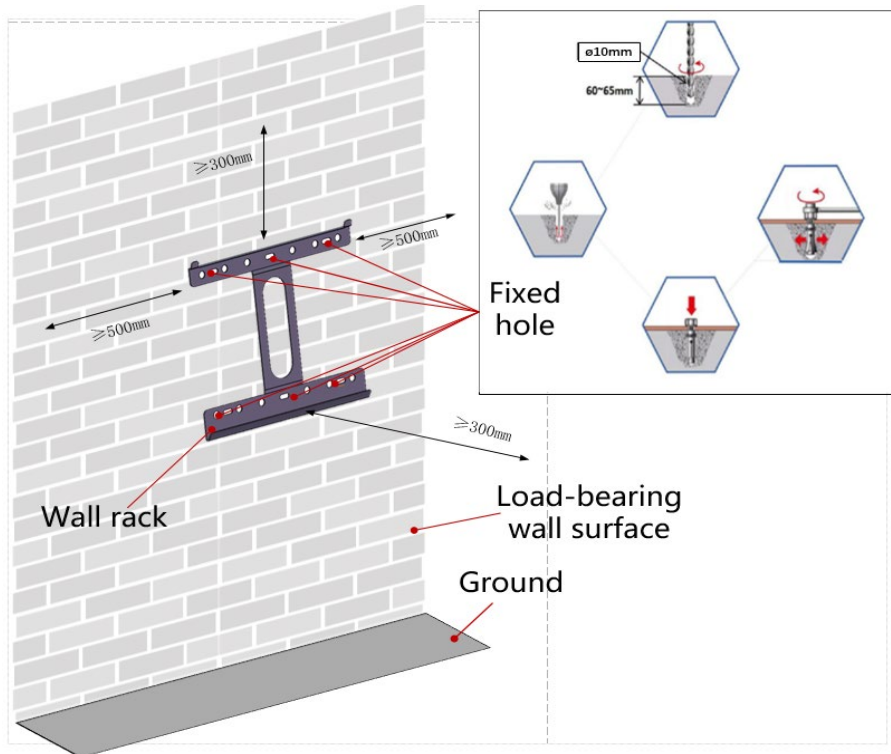


- Step 3 — Secure to Ground: Drill Ø10 mm × 60–65 mm; insert M8×60 anchors flush; torque 12–28 N·m.

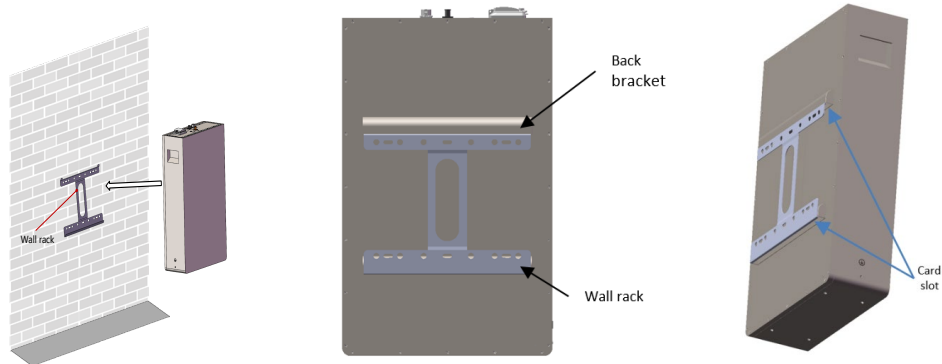


4.4.3 Wall-Mounted Installation

- Step 1 — Marking: Use wall rack as template; level; mark holes.









- Step 2 — Drilling: Ø10 mm × 60–65 mm; clean.
- Step 3 — Anchors: Insert M8×60 anchors flush.
- Step 4 — Rack Mounting: Fit washers/nuts; torque 12–28 N·m.
- Step 5 — Hang Battery: Lift parallel; slide onto bracket slot.



4.4.4 Electrical Installation

Required tools:

Item	Tool		
Tool	Multimeter 	Protective gloves 	Flat-head screwdriver 
	Electric screwdriver 	Phillips screwdriver 	Socket wrench 

Interface Definition

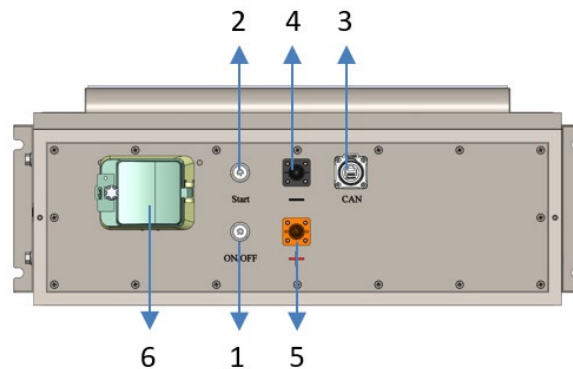


Figure 6: Front Panel Interface

Interface Definition Table

Item	Name	Model	Remarks
1	Power switch	19MM DC12V	
2	Black start button	19MM DC12V	
3	Communication port	RJ45	CAN To PCS RS485 Internal Connection
4	Port Negative	P057C010AK	Black 6 sq mm
5	Port Positive	P057C010BK	Orange 6 sq mm
6	Air circuit breaker	63A	2P

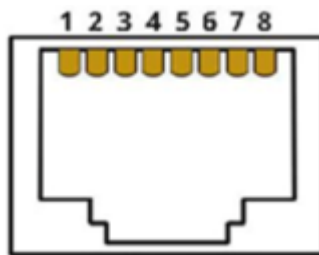


Figure 7: CAN Port Interface

Table RJ45Port Definition

	Description
CAN	Pin 1: CAN2-H Pin 2: CAN2-L Pin 4: CAN3-H Pin 5: CAN3-L Pin 3, 6, 7, 8: NC

Table Communication Cable Requirements

Cable Gauge	Strip Length	Maximum Cable Length
CAT5 or better	RJ-45 connector	45m

Table Power Cable Requirements

Size	Max. Voltage	Max. Current
6 sq mm	1000V	59A

Table Output/Internal Cable Definition

Cable	Type	Recommended Specification	Length(m)	Source
-------	------	---------------------------	-----------	--------

DC output power cable (inverter to battery Negative)	Common outdoor DC cable in the industry	Conductor cross-sectional area: 6 sq mm	As required	Provided
DC output power cable (inverter to battery Positive)			As required	Provided
Signal cable (Inverter to Battery)	Outdoor shielded twisted pair cable	Outdoor shielded twisted pair cable area: 0.20 – 0.35mm ² . Cable outer diameter: 6.2mm to 7mm	As required	Provided
Earth cable	Yellow and green lines	16 mm ²	As required	Installer to provide

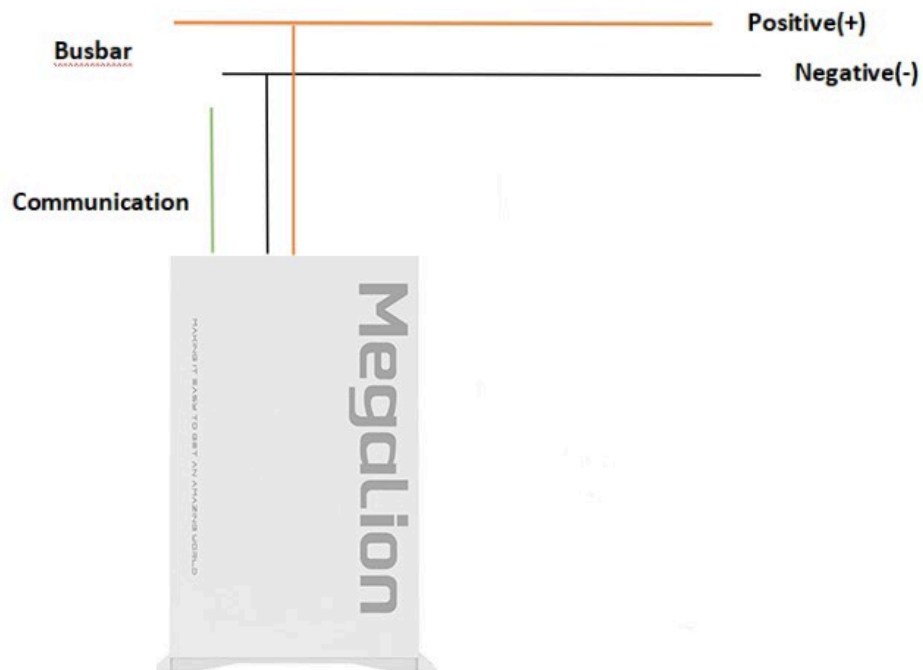


Figure 8: Cable Connection Unit(5KWh)

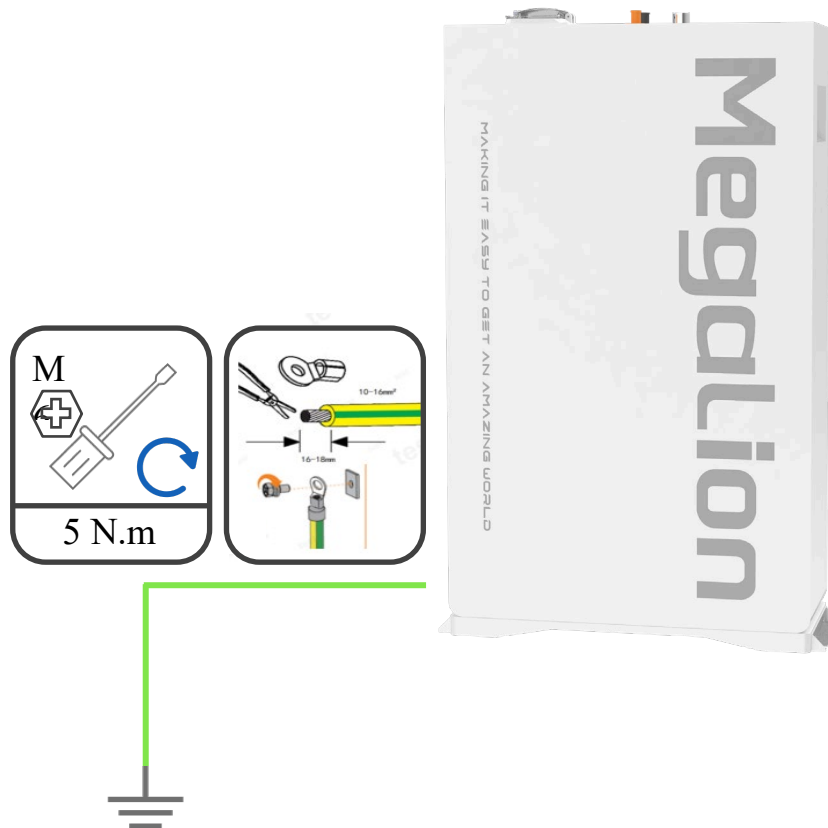


Figure 9: Cable Connection Of GND

RJ45 — CAN mapping: Pin 1 CAN2-H; 2 CAN2-L; 4 CAN3-H; 5 CAN3-L; 3/6/7/8 NC.

- Communication cable: CAT5 or better; max length 45 m.
- Power cable: 8 AWG up to 1000 V, 59 A max (verify per AS/NZS 3008.1.1).
- Signal cable: Outdoor shielded twisted pair (CAT5+), 0.20–0.35 mm², OD 6.2–7 mm.
- Earth cable: 16 mm² (customer supplied).
- Isolation & LOTO: Isolate inverter and battery circuits using lockable devices compliant with AS/NZS 3000/5139.
- PPE: Insulated gloves (DC-rated), safety glasses, protective clothing.
- Prove de-energised: Use a DC-rated tester.
- Fast plugs: Use per manufacturer instructions; verify polarity; torque terminals to spec.
- Compliance: Maintain clearances and access per AS/NZS 5139.

DANGER ⚠ — Qualified Personnel Only: Work on power harness by licensed electricians (AU/NZ). Isolate inverter AC/DC, PV array, and mains as required; apply LOTO. Keep untrained persons away. Startup: verify all terminations/torques; confirm comms with inverter. Shutdown: fully power down; prove safe voltage.

4.4.5 Operating System

(If applicable to BMS/app commissioning—refer to vendor app/web monitoring instructions.)

5. Fault Handling

Notifications via app/email for over-voltage, over-current, comms errors, etc. Report issues via app; physical intervention only by licensed electricians. Treat the system as energised until fully isolated and proven de-energised. Corrective actions must comply with AS/NZS 3000 and AS/NZS 5139.

#	Alarm	Reason	Handling
1	Individual cell voltage high	Cell exceeds threshold	Prohibit charging
2	Single cell voltage low	Cell below threshold	Prohibit discharging
3	Excessive cell ΔV	Cell voltage spread > threshold	Auto balancing starts
4	Total voltage high	Pack above threshold	Prohibit charging
5	Total voltage low	Pack below threshold	Prohibit discharging
6	Discharge temperature high	—	Reduce discharge power
7	Discharge temperature low	—	Prohibit discharge
8	Charge temperature high	—	Reduce charge power
9	Charge current high	—	Reduce charge current
10	Discharge current high	—	Reduce discharge current
11	Pack SOC low	Insufficient remaining energy	Charge promptly
12	Insulation fault	Reduced/lost insulation resistance	Troubleshoot/repair
13	Comms failure	PCS communication error	Check comms harness

14	Main + relay fault	Adhesion/damage	Shut down power switch
15	Total – relay fault	Adhesion/damage	Shut down power switch
16	Pre-charge failed	Relay adhesion/damage	Check pre-charge relay
17	Ambient temperature high	—	Reduce charge/discharge power
18	Ambient temperature low	—	Prohibit charge/discharge
19	Temperature sensor fault	Sensor malfunction	Inspect/replace sensor

6. Regulatory Compliance & Standards (AU/NZ)

This section is a quick reference for electricians, technicians, and apprentices. Always consult the latest editions and local distributor rules.

- AS/NZS 5139 — Electrical installations—Safety of battery systems for use with power conversion equipment.
- AS/NZS 3000 (Wiring Rules) — Earthing/bonding, isolation, protection, labelling, signage.
- AS/NZS 4777.2 — Inverter requirements (with AS/NZS 4777.1 where applicable).
- AS/NZS 3008.1.1 — Cable selection: current-carrying capacity and voltage drop.
- AS/NZS 3017 — Testing & verification.
- UN38.3 — Transport testing for dangerous goods.
- IMDG / ADR — Maritime/road transport of dangerous goods.
- WHS (AU) / HSWA 2015 (NZ) — Safety legislation.
- DNSP Service & Installation Rules — Local network requirements.

Labels & Signage: Battery system identification; shutdown/isolation procedure; hazard warnings; PPE; emergency contact info.

Handover Docs: SLD; datasheets; commissioning records; settings; verification & test results; maintenance schedule; emergency procedures; warranty and recycling info.

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