GivEnergy®
Australia

LITHIUM IRON PHOSPHATE

BATTERY INSTALLATION MANUAL

GENERATION 3 | Giv-Bat 9.5

GIV-BAT-9.5-G3

BIGGER AND BETTER

Our third-generation battery is here

The Generation 3 9.5kWh battery pack is the latest addition to our line-up of bestselling battery packs and offers a very competitive cost/kWh.

Ideal for medium to large properties, this battery pack is very popular amongst those customers that are striving for energy independence. Many customers opt to have 2 of these installed to ensure as little energy is purchased from the grid as possible. Utilising lithium iron phosphate, our batteries are extremely safe and can be installed in a wide range of locations. The battery chemistry does not contain any Cobalt, making it non-flammable and the battery pack is 99% recyclable. Our market leading battery warranty means you can use your battery as often as you need for 10 years and still be covered.

Specifications

Dimensions
576H X 225D x 480W (mm)

Weight
85Kg

Usable capacity
9.5 kWh / 186 Ah

Voltage
51.2V DC

Current
120A

Environmental category
Indoor and outdoor, indoor installation must follow AS/NZS 5139:2019, please read it before doing any installation.

Warranty
12 years

Charging temperature
0°C - 55°C

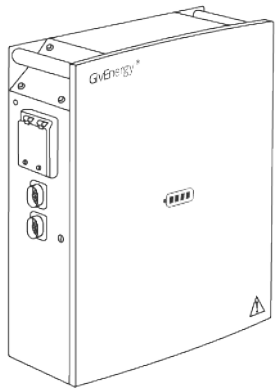
Discharging Temperature
-10°C - 55°C

Depth of Discharge
100%

SKU
GIV-BAT-9.5-G3

Item	Item Name		Qty
A	Battery Module	Battery Module	1
B	Wall Mounting Bracket	Wall Mounting Bracket	1
C	User manual	Documentation	1
D	Expansion bolts	Fixing	4
E	Ground screw	Fixing	1
F	Security screw	Fixing	2

A



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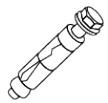
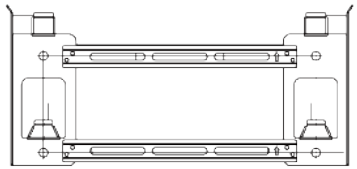


E

F

B



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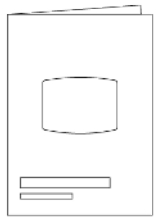


GivEnergy®

Introduction

All information contained in this booklet refers to the assembly, installation, commissioning, and maintenance of the Generation 3 battery. Please retain this manual for future reference.

Installation Requirements

Installation of all GivEnergy equipment must be carried out by a **GivEnergy approved installer**.

Unit Information

The Generation 3 batteries are designed to work with a GivEnergy AC Coupled or Hybrid Inverter. The batteries work with renewable generation or import from the grid at off-peak times when prices are lower, and discharge during busier periods when prices are more expensive.

Storing the Battery

The units must be stored in their original packaging at temperatures between -30°C - 60°C. Please note that between -10°C - 0°C there may be reduced performance in charging and discharging.
Do not stack more than 4 units on top of each other. Stock batteries need to be replenished and maintained every five months. If the battery is stored in the warehouse for more than 6 months, the battery may need to be replenished before delivery.

Packaging Contents

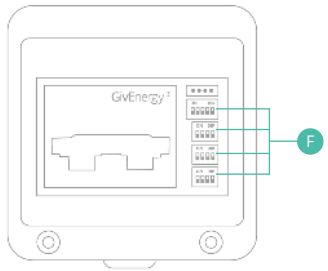
When unpacking, please check the following:

- There are no missing accessories from the packaging list
- The model and specification of the battery's nameplate match the order specifications

If any damaged or missing parts are found, please contact GivEnergy on **1300 448 363** or email **info.aus@givenergy.com** immediately. Returns must be provided in original or equivalent packaging. The cardboard packaging is recyclable.

Item	Item Name	Function
A	DC MCB Breaker	Battery Isolator
B	ON/OFF Switch	System Switch
C	STATUS	Status Indicators
D	Earthing Point	Earth Bonding
E	Connection ports	Inverter connection
F	Dip Switches	Dip Switch

DC MCB / dip switches

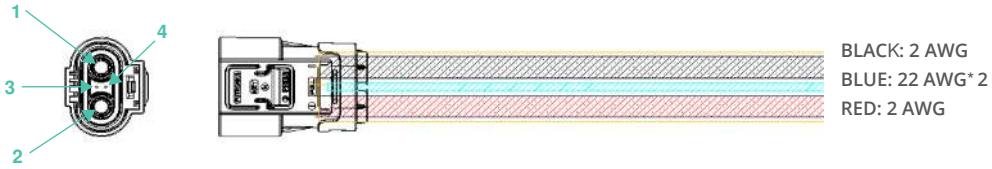


Plug to plug 150A battery cable(Built in comms cable)

IMPORTANT

The battery cable has a grommet at one end. This is the inverter end of the cable, the grommet slides into the receiver. The same cable is used for battery to battery connections however the grommet can be removed if desired in this installation scenario.

Battery Terminal Introductions



NO	Terminal Description
1	The negative pole, connected to an inverter or a parallel battery. Using
2	The positive pole, connected to an inverter or a parallel battery.
3	Built-in communication terminals, CANBUS, CAN-L
4	Built-in communication terminals, CANBUS, CAN-H

Note: The battery cable is not included inside the package, it is supplied as a separate accessory by GivEnergy AU.

Safety Instructions

Extra care and attention must be taken when installing and maintaining any GivEnergy equipment.
The system is capable of lethal voltages, even when disconnected
Inspect before install: Do not use the battery if there are any deformities, such as bulging or leakages.

· Avoid Hazardous Environments: keep it away from flammable materials.

· Moisture Precautions: If moisture has entered the system, do not install or operate it.

· Dry Hands Only: Avoid touching the system with wet hands.

· Vertically only: Do not install the product horizontally.

· Care physical damage on the product: Do not puncture or throw, prevent from any physical impact as possible.

· No repairs: Do not attempt to repair the product yourself, please seek help from approved installers and manufacturer.

· Weight Restrictions: Do not place heavy items on top of the product.

- If you suspect something is wrong with the battery, contact GivEnergy on **1300 488 363** or email **info.aus@givenergy.com**
- If any damaged or missing parts are found, please contact GivEnergy on **1300 488 363** or email **info.aus@givenergy.com** immediately. Returns must be provided in original or equivalent packaging. The cardboard packaging is recyclable.

Do not use the battery if there are any deformities, such as bulging or leakages

Do not puncture the battery

Do not throw the battery or use forceful impact

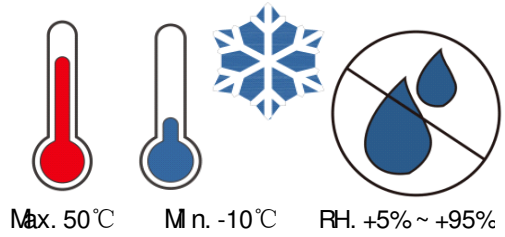
Do not attempt to repair the battery yourself (please call your Approved Installer)

The battery must be installed vertically, never install horizontally, avoid tilting the unit

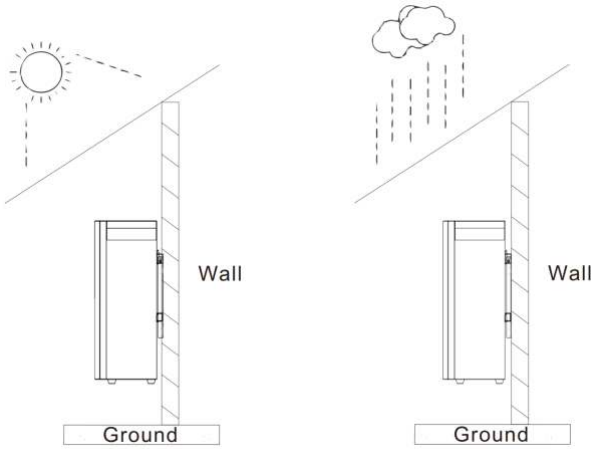
Installation Instructions

- All electrical installations must be carried out by a qualified and registered electrician and in accordance with the local wiring regulations
- Ensure batteries are always fixed to the wall using the mounting bracket, even when the weight of the product is on the floor
- All GivEnergy equipment must be installed by a **GivEnergy approved installer**
- Externally mounted batteries must always be wall mounted above the frost-line or a minimum of 50mm
- An earth bond must be installed between all batteries and inverters
- Do not remove the front cover unless instructed by the GivEnergy support team
- The ambient temperature for the installation of the battery system should be above - 10°C , below 55°C , and the humidity should be between 5% and 95%
- The battery and inverter should be installed in a well ventilated area

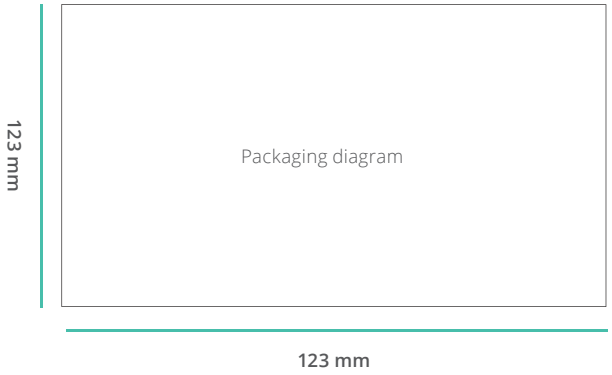
The ambient temperature for the installation of the battery system should be above - 10℃ , below 50℃ , and the humidity should be between 5% and 95%.



For outdoor installation, a rain cover should be installed above the battery. It should be installed in a place that avoids direct sunlight and maintains ventilation.



Packing size



Packing weight

203.0± 0.5 KG

Pallet presentation

- The GivEnergy stackable batteries is presented on pallets
- Each pallet contains 12 units
- The batteries are arranged in 4 PCS per layer, and the pallets can be stacked 3 layers high

Stacking pallets

- When stacking pallets, ensure that the bottom pallet is on a flat, stable surface
- Do not stack more pallets than recommended to prevent damage to the lower batteries and to maintain stability during transport

Safe unloading of the pallets

- Use appropriate lifting equipment, such as a forklift or pallet jack, to safely unload pallets from the delivery vehicle
- Ensure that the unloading area is clear of obstacles and is on a level surface
- Exercise caution when removing pallets from the vehicle to avoid injury or damage to the batteries

Safe unloading of the pallets

- Avoid dropping or mishandling the boxes, as this can lead to damage to the batteries
- Examine the box for any symbols or labels, follow these instructions carefully to ensure the proper orientation and handling of the product delivery vehicle:

Class 9 product | This way up | Handle with care | Keep dry | Recycle

Safe transport in installer vehicles

- When transporting the batteries in an installer's vehicle, use proper securing methods, such as straps or cargo nets, to prevent movement and damage during transit
- Ensure that the batteries are positioned securely to avoid shifting while driving

Safe unloading from the van

- When unloading the product from the van, use appropriate lifting techniques to prevent strain or injury
- If possible, use a ramp or a liftgate to facilitate the unloading process

UNPACKING THE PRODUCT

Unpacking the product

- When unpacking the product, do so in a clean and dry area
- Use appropriate tools, such as box cutters, to carefully open the packaging, be cautious not to damage the batteries inside
- Inspect the product for any visible signs of damage or irregularities. If damage is observed, document it and contact the manufacturer or supplier immediately

PACKAGING

Disposal of packaging

- Dispose of the packaging materials responsibly. Recycle cardboard and other recyclable materials as applicable
- Follow local regulations for the disposal of non-recyclable materials
- Do not leave packaging materials in public areas or unauthorised dumping locations

Handling packaging damage

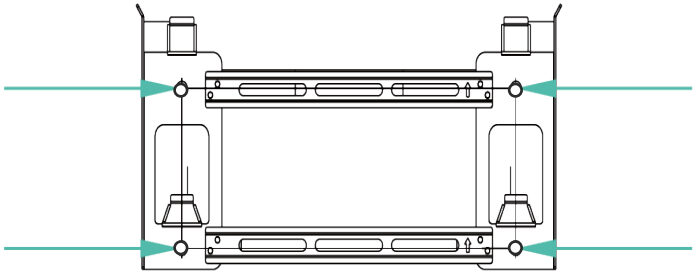
1. **Document damage**
   Before opening the packaging, take photos of any visible damage to the exterior of the boxes
2. **Inspect the batteries**
   Carefully unpack the product and inspect for any internal damage or defects
3. **Contact the supplier**
   If damage is found, contact the supplier or manufacturer immediately to report the issue and provide them with the documentation of the damage
4. **Follow supplier's instructions**
   Follow the supplier's instructions regarding the return, replacement, or repair of the damaged batteries

Remember, proper handling and care during the transportation and unpacking process are essential to ensure the safe and efficient installation of your GivEnergy stackable batteries. If you have any questions or concerns, don't hesitate to contact the supplier or manufacturer for assistance.

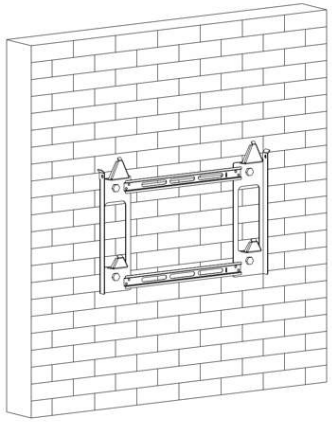
Below is a list of the tools and equipment required to install the Gen 3 Giv-Bat 9.5:

- Drill bits
- Screw driver
- Socket set
- Pencil
- Tape measure
- Multimeter
- Spirit level
- Insulated gloves
- Safety goggles
- Safety shoes
- Hammer
- T25 torx bit

1. Place the wall mounting bracket horizontally onto the wall and mark the position of the bracket holes. Ensure the wall is suitable to hold the weight of the battery.

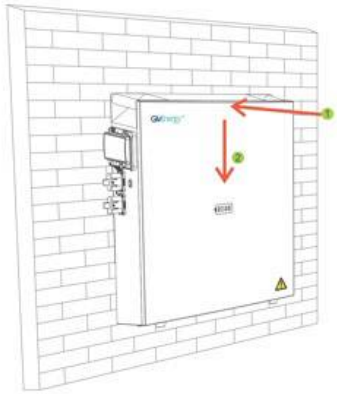


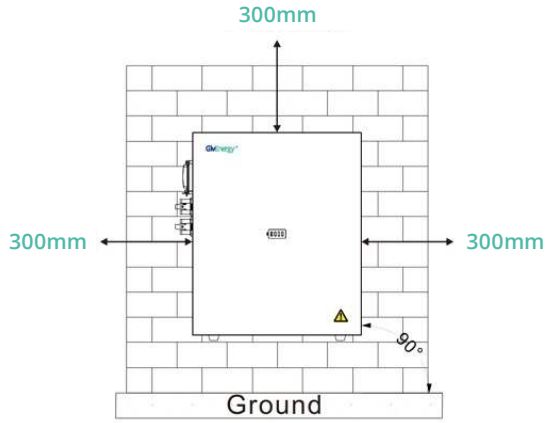
2. Drill 4 holes at the marked positions ensuring they are the sufficient depth for the fixings. Fix the mounting bracket to the wall using 4 expansion bolts.



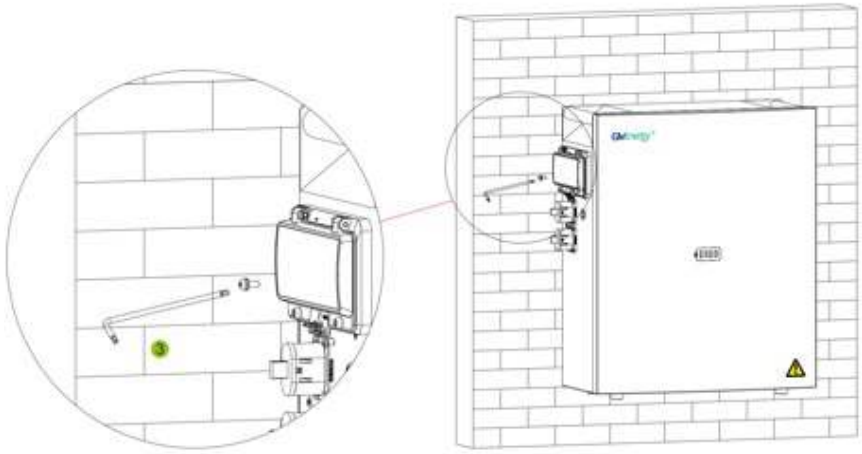
STEP-BY-STEP INSTALLATION

3. Mount the battery onto the mounting bracket.



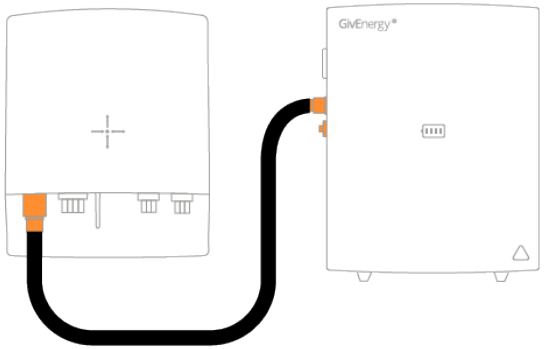


4. Place the battery against the wall and ensure it is above the wall mounted bracket. Slide the battery down and hang it on the bracket. Lock the safety screws on both sides of the battery.

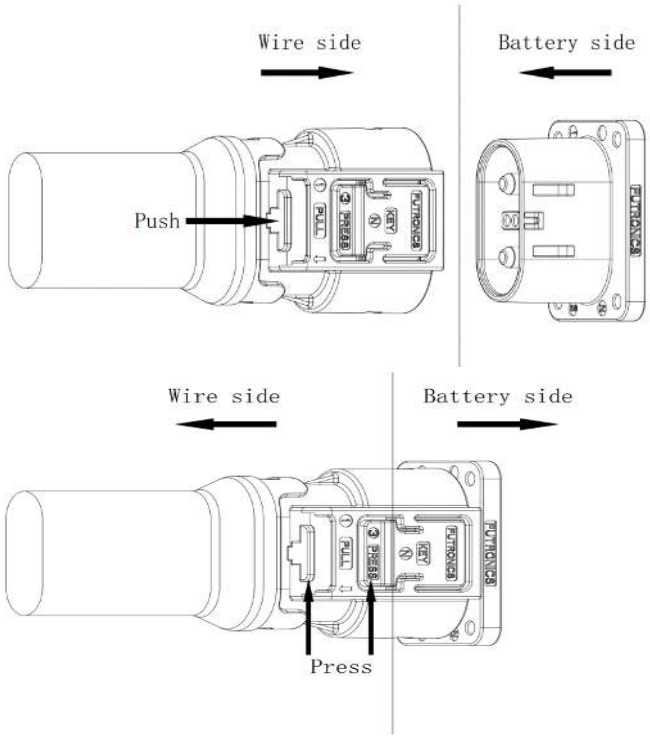


For GIV-HY-3.6/5.0-AU Inverters only

4A. If connecting to GIV-H**Y**-3.6/5.0-AU inverter, use a plug to plug cable from output A of the Generation 3 battery to the connectors within the GIV-H**Y**-5.0-AU inverter.



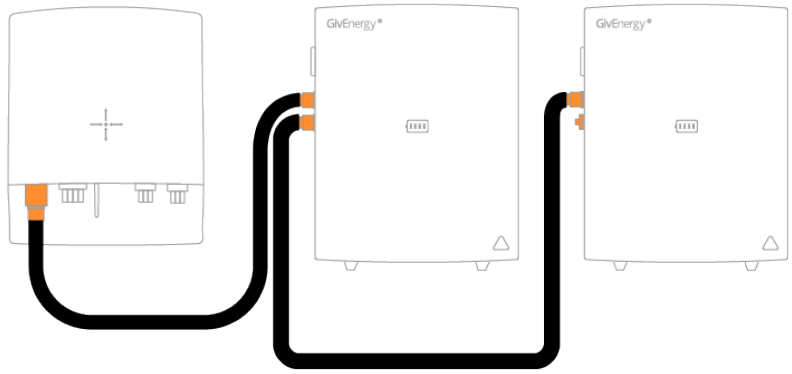
4B. Methods to plug and unplug the battery



STEP-BY-STEP INSTALLATION

For installing additional batteries

4C. If connecting a Generation 3 battery to a Generation 3 battery use a 150A plug to plug cable and connect from output B in your master battery into output A of your slave Generation 2 battery, and set your dip switches as per step 5 (below).



5. Ground wiring

The battery is not equipped with a grounding wire, and a grounding wire needs to be made by oneself during installation.

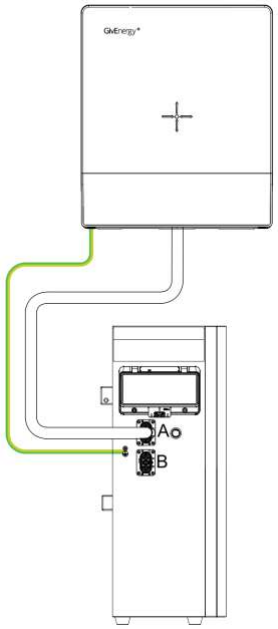
The schematic diagram of the grounding wire is as follows:

Notes: The diameter of the ground wire should not be less than 6AWG.

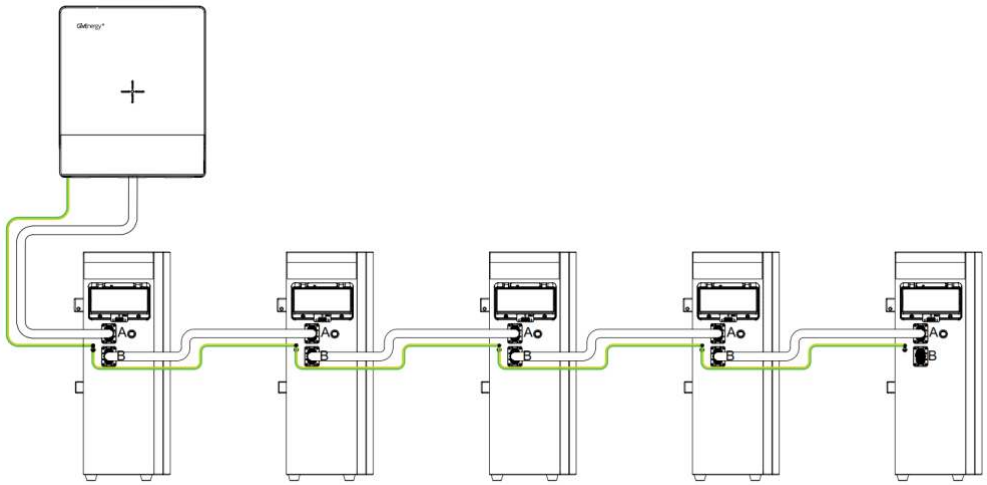
STEP-BY-STEP INSTALLATION

5A. Connection of Ground wire

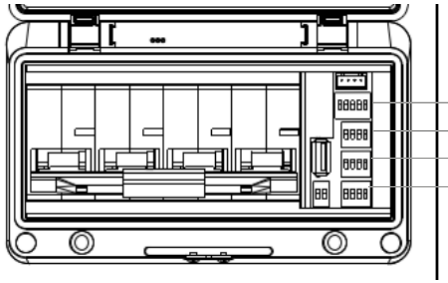
For Single battery



For Multiple batteries



6. Set up the dipswitches on the circuit breaker, as shown overleaf.



SWITCH 4 - Master / Slave Dip Switch
SWITCH 3 - Address Dip Switch
SWITCH 2 - Address Dip Switch
SWITCH 1 - Address Dip Switch

7. Push the 'On/Off' button on the right hand side of the battery, the LEDs will light up.

8. Commission the battery on the online portal and ensure the battery is operating normally.

Notes: Battery only has DC connections, no AC connection exists.

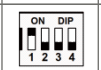
CANBUS DIP SWITCH SETTINGS

Single battery:

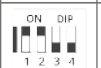
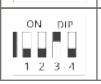
Master

Dip switch name	ID	Description
SW4		1,1,1,1,1
SW3		1,1,0,0
SW2		0,0,0,0
SW1		0,0,0,0

Slave 1

Dip switch name	ID	Description
SW4		1,1,1,1,1
SW3		1,1,0,0
SW2		0,0,0,0
SW1		1,0,0,0

Slave 3

Dip switch name	ID	Description
SW4		1,1,1,1,1
SW3		1,1,0,0
SW2		0,0,0,0
SW1		0,0,1,0

Multiple batteries in parallel:

Master

Dip switch name	ID	Description
SW4		1,1,1,1,1
SW3		1,1,0,0
SW2		0,0,0,0
SW1		0,0,0,0

Slave 2

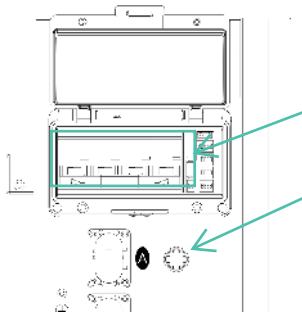
Dip switch name	ID	Description
SW4		1,1,1,1,1
SW3		1,1,0,0
SW2		0,0,0,0
SW1		0,1,0,0

Slave 4

Dip switch name	ID	Description
SW4		1,1,1,1,1
SW3		1,1,0,0
SW2		0,0,0,0
SW1		0,0,0,1

POWER ON AND OFF THE BATTERY SYSTSTEM

- If any abnormalities are found during the process of powering on the battery, please immediately turn off the battery power. After solving the problem, turn on the battery again
- Make sure the inverter is turned off before checking the battery



Power on

1. Switch the circuit breakers of all batteries to the “on” position
2. Switch on battery using button
3. The battery LED indicator lights up to indicate that the battery has been turned on

Power off

Press the power button for 3 seconds to turn off the battery. During the process, the buzzer will sound for 1 second and the LED light will turn off. When multiple batteries need to be shut down in parallel, this action needs to be repeated.

Please close the waterproof cover of the circuit breaker and tighten the waterproof cover screws

External USB battery

The USB of the battery can only be used for firmware upgrades. Please do not plug your phone or other electronic products into the USB of the battery for charging, otherwise the battery may be damaged.

1. Prepare a USB 2.0 interface USB flash drive in FAT32 format, storage space not exceeding 8GB;
2. Copy the battery firmware provided by the manufacturer to the root directory of the USB drive and delete all other files in the USB drive
3. Unscrew the fixing screws of the waterproof cover and open it, then set the dial switch according to the following diagram;
4. Insert the USB drive into the USB port of the battery, and the firmware will automatically update. After the SOC indicator light flashes alternately in red and green, the battery will automatically restart and the buzzer will sound once, indicating a successful upgrade.
5. After the upgrade is successful, unplug the USB flash drive, set the dial switch according to the following diagram, close the waterproof cover, and tighten the waterproof cover screws.

0, 0
(USB External)

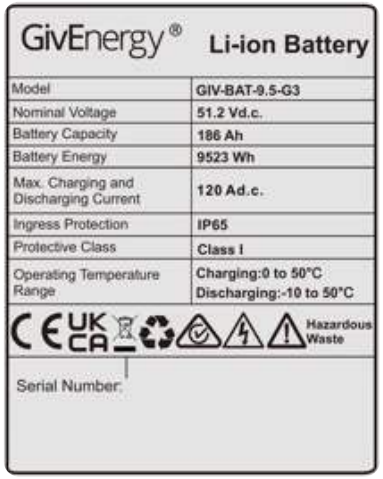
1, 1
(USB Internal)

USB Mode

LABEL DESCRIPTION

Nameplate

This provides unique identification of the battery (product type, device-specific characteristics, certificates and approvals). The Nameplate is located on the right side of the battery.



Note: This product can be installed outdoors, and its label comply with Separate Specific Requirement 7 in the Best Practice Guide, and has been tested as per the above test conditions. The Standard is ISO 4892-4 as long as the test conditions are met. UV protection test Report NO: GJW2023-5545-3

Serial number

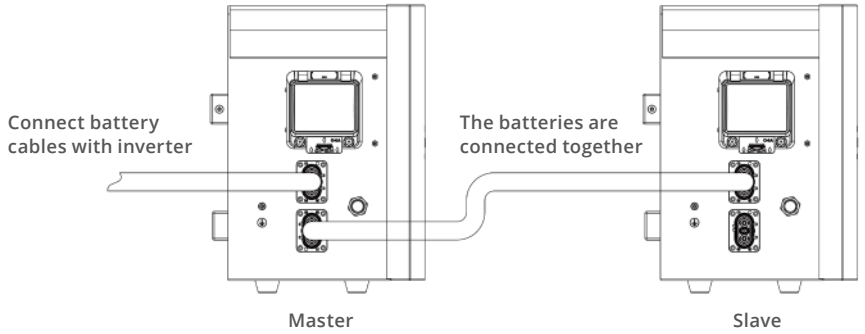
Located on the right side of the battery, the current battery serial number information.

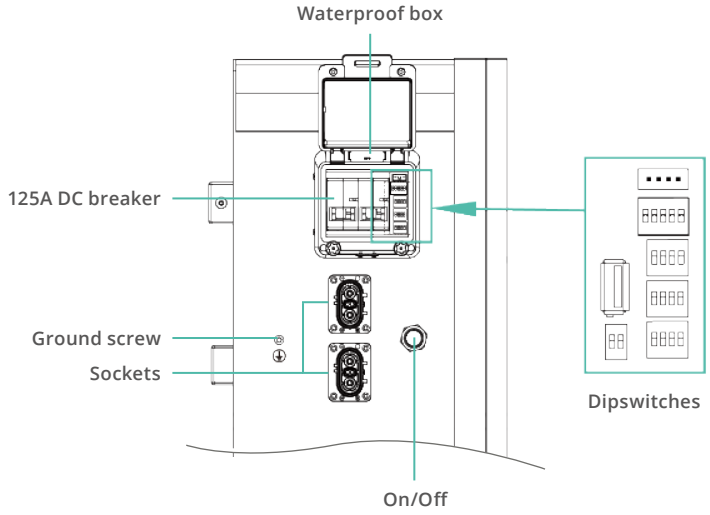
SN: AH YYWW G XXX

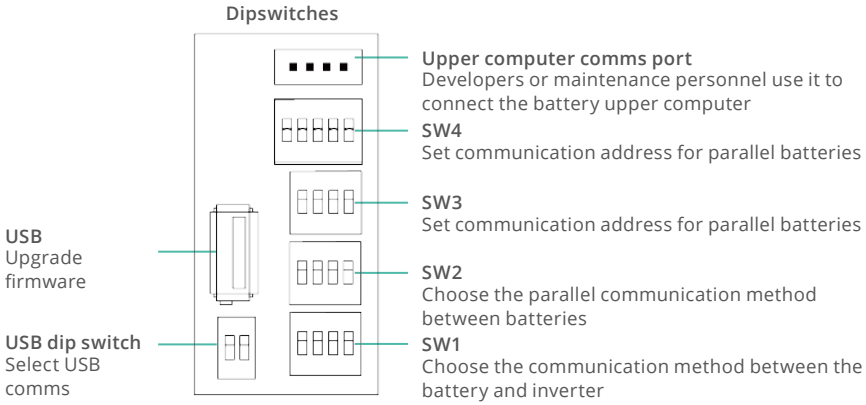
1 2 3 4

Number	Paraphrase
1	Implication fixed coding
2	Month and week
3	Brand code
4	Journal number

PORT FEATURES







STATUS INDICATORS

Status Indicators

LED	Colour	Name	Description
	Green	SOC LED1	SOC 0%~25%
	Green	SOC LED2	SOC 26%~50%
	Green	SOC LED3	SOC 51%~75%
	Green	SOC LED4	SOC 76%~100%
	Red	SOC LED	Fault
	Green	Power button	Normal operation

What does the STATUS light mean?

Off	Shut down
Green	Power is on
Green, flashing	Low battery energy
Flashing	Upgrading status
Red	Fault. Logged in system. If the light is red, call GivEnergy for remote diagnostics.

- **Battery on:** Press and hold the Battery button for 1s; the buzzer will sound for two seconds and the LED of battery switch will be green.
- **Battery off:** Press and hold the Battery button for 3s; the buzzer will sound for one seconds and the LED of battery switch will dim
- **Charge:** The Battery SOC in which range, the corresponding SOC LED The indicator is green and off at intervals of 1s
- **Low SOC:** When the SOC ranges from 0% to 5%, LED1 is flashes every 2 seconds
- **Upgrade:** The SOC LED Red-Green alternating

MANUFACTURER WARRANTIES

GivEnergy is the main supplier and manufacturer of the product. GivEnergy warrants that your product is (a) of acceptable quality and (b) does not have any latent defects.

- If you suspect something is wrong with the battery, contact GivEnergy on **1300 488 363** or email **info.aus@givenergy.com.**
- If any damaged or missing parts are found, please contact GivEnergy on **1300 488 363** or email **info.aus@givenergy.com** immediately. Returns must be provided in original or equivalent packaging. The cardboard packaging is recyclable.

Products Covered

Giv-Bat Gen 3 9.5
10 years

GivEnergy®

Routine Maintenance

Maintenance should be done by SAA approved technicians.

Maintenance Plan

- Check if wire connection loose.
- Check if cables aged/damaged.
- Check if cable insulating ribbon drop.
- Check if cable terminal has any overheat sign.
- Check if ground connection is well.

a. Operating Environment

(Every half year)

Carefully observe whether the battery system equipment is ineffective or damaged;

When the system is running, listen to any part of the system for abnormal noise;

Check whether the voltage, temperature and other parameters of the battery and other equipment parameters are normal during system operation;

b. Equipment Cleaning

(Every six months to one year, depending on the site environment and dust content, etc.)

Ensure that the ground is clean and tidy, keep the maintenance access route unblocked, and ensure that the warning and guiding signs are clear and intact. Monitor the temperature of the battery module and clean the battery module if necessary.

c. Cable, Terminal and Equipment Inspection

(Every six months to one year)

- Check if the cable connection is loose.
- Check whether the cable is aging or damaged.
- Check whether the conduit of the cable has fallen off.
- Check if the cable terminal position has any signs of overheating.
- Check whether the management system of the system equipment, monitoring system and other related equipment are invalid or damaged.
- Check that the grounding of the equipment is good and the grounding resistance is less than 10 ohms.

MAINTENANCE PROCEDURE

d. Daily maintenance instructions for customers

- **Visual inspection to ensure that item is free from damage, clutter (not being used as a shelf for example), infestation**
- **Ensure that the cable and cables appear to be in good condition and properly connected.**
- **Ensure that the cover for the MCB is closed.**
- **If cleaning ensure you follow the shutdown procedure on both the battery and inverter and use only warm water (no chemicals) and non abrasive cloths / sponges to wipe down the product**

Notes

After the equipment are out of operation, the following notes should be paid attention to while maintaining:

- Related safety standards and specifications should be followed in operation and maintenance.
- Disconnect all the electrical connections so that the equipment would not be powered on.
- Wait at least 5 minutes after disconnection in case that the residual voltage of capacitors down to safe voltage. Use a multimeter to ensure the equipment is completely uncharged.
- The equipment should be repaired by GivEnergy Staff and it is strictly forbidden for maintenance staff to open equipment on their own.
- Appropriate protective measures should be taken while maintaining, such as insulated gloves, shoes, and anti-noise ear plugs.
- Life is priceless. Make sure no one would get hurt first.
- The batteries need to be charged to 30%~50%SOC rate when the whole system is static (that is, the batteries has not been charged for two weeks or longer) for a long time, in case of over discharge.

Please contact us in time if there are any conditions that could not be explained in the manual.

GivEnergy Australia Pty Ltd

Phone: +61 1300 GIVENERGY (1300 448 363)

Email: info.aus@givenergy.com

Address: 'Level 1, 1 Queens Road, Melbourne, VIC 3004

Hours of operation: Monday – Friday 09.00am – 5:00pm (AEST time).

GIV-BAT-9.5-G3

SKU	GIV-BAT-9.5-G3
Cell type	$LiFePO_4$ prismatic cell
Battery Capacity	9.5 kWh / 186 Ah
Battery Energy	9523Wh
Nominal Voltage	51.2V
Operating Voltage Range	45V - 58V
Cont. max. charging and discharging	120A/120A
Peak Current	180A@1s
Max charging and discharging power	6000W
Peak Power	9000W@1s
Beast Mode (Discharge)1	150A/7500W@5min
Depth of discharge	100%
Operating voltage range	44.8-57.6V
Storage temperature	-20°C - 50°C
Dimension (W/H/D)	576H X 225D x 480W (mm)
Weight	85Kg
Cooling	Natural cooling
Communication Protocols	CAN/RS485
Humidity Range	5%~95%RH
Ingress Protection	IP65
Protective Class	I
Parallel quantity	Up to 5
Installation	Floor/Wall standing installation
Battery certification	IEC 62619/IEC 62040
Battery Designation	IFpP/50/174/122/[2P16S]M/-10+50/90

Status	Items	SOC indication				Remark
		LED1	LED2	LED3	LED4	
Charge SOC	0%-25%	● t=1s				The battery SOC; the corresponding SOC LED indicator will be green and off at intervals of 1S
	26%-25%	●	● t=1s			
	51%-75%	●	●	● t=1s		
	76%-99%	●	●	●	● t=1s	
	100%	●	●	●	●	
Discharge SOC	100%-76%	●	●	●	●	No special display status
	75%-51%	●	●	●		
	50%-26%	●	●			
	25%-0%	●				
Idle	100%-76%	●	●	●	●	When the SOC ranges from 0% to 5%, LED1 will be displayed in green and off for 2s
	75%-51%	●	●	●		
	50%-26%	●	●			
	25%-5%	●				
	5%-0%	● t=2s				

Parallel connection	Parallel connection succeeds	t=0.8s	t=0.8s	t=0.8s	t=0.8s	If the parallel is successful, the SOC LED will be green and off for 5S every 0.8S
Discharge SOC	Cell charge overvoltage protection					SOC LED light red
	Battery charge overvoltage protection					SOC LED light red
	Over charge and over discharge protection					SOC LED light red
	Cell discharge undervoltage protection					SOC LED light red
	Battery discharge undervoltage protection					SOC LED light red
	Discharge short circuit					SOC LED light red
	Voltage sampling fault					SOC LED light red
	Charge/discharge overcurrent protection					SOC LED light red

Safety Data Sheet

Issue Date:11 November 2024	Revision Date: 11 November 2024	Version: V01

SECTION 1 - IDENTIFICATION

Product Identifier

Product Name: *Rechargeable Li-ion Battery*
Models: *GIV-BAT-9.5-G3*

Other Means of Identification

SDS # SDS001
Synonyms: Lithium Iron Phosphate(LiFePO4, LFP)
Proper Shipping Name(ADG Code): Lithium-ion Battery
UN/ID No: UN3480

Recommended Use of the Chemical and Restrictions on Use

Recommended Use Energy Storage; Batter Packs

Details of Manufacturer or Importer

GivEnergy Australia Pty Ltd
Level 1, 1 Queens Road,
Melbourne VIC 3004
Australia

Emergency Phone Number

Emergency Telephone 1300 448 363(Australia)

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the hazardous chemical

EXEMPT FROM HAZARD CLASSES AND CATEGORIES ACCORDING TO AUSTRALIAN GHS.

Label elements, including precautionary statements

No signal word, pictograms, hazard or precautionary statements have been allocated according to GHS.
But there is other label for Transport of Dangerous Goods on package.

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Other hazards

This product is a Lithium Iron Phosphate Battery with certified compliance under the UN Recommendations on Transport of Dangerous Goods, Manual of Tests and Criteria, Part III, sub-section 38.3. For the battery cell, chemical materials are stored in a hermetically sealed metal case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials' leakage. However, if exposed to a fire, added mechanical shocks, decomposed, added electric stress by misuse, the gas release vent will be opened. The battery cell case might be breached at the extreme condition, and hazardous materials might be released in such case. Moreover, if heated strongly by the surrounding fire, acrid or harmful fume may be emitted.

SECTION 3 - COMPOSITION & INFORMATION ON INGREDIENTS

Classification of the substance or mixture: ☐substance ☒mixture

Chemical Composition	CAS No.	Weight (%)
$LiFePO_4$	15365-14-7	38.4
C	7782-42-5	15.0
$LiPF_6$	21324-40-3	2.4
Copper	7440-50-8	9.0
Aluminum	7429-90-5	13
$C_3H_4O_3$	96-49-1	6.8
$C_2H_2F_2$	24937-79-9	6
$C_3H_6O_3$	616-38-6	5.2
$[C_2H_4]n$	9002-88-4	4.2

SECTION 4 – First Aid Measures

After eye contact: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
After skin contact: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.
After inhalation: Remove from exposure and move tto fresh air immediately. Use oxygen if available.
After ingestion: Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.

SECTION 5 – Fire Fighting Measures

Extinguishing Media: Hydrocarbon surfactant, CO_2.

Special Fire-Flghting Procedures: Self-contained breathing apparatus.

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Unusual Fire and Explosion Hazards: Cell may vent when subject to excessive heat-exposing battery contents.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, lithium oxide fumes.

SECTION 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:
If the battery is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the vapors to dissipate, Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the battery happens, liquid could be absorbed by using sand, earth or other inert substance and contaminated area should be ventilated meantime.
Environment precautions:
Do not allow product to reach sewage system or any water source.
Inform respective authorities in case of seepage into water course of sewage system.
Do not allow to enter sewers/ surface or ground water.
Methods and material for containment and cleaning up:
If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.

SECTION 7 – Handling and Storage

Handling: The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.
Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire.
Do not crush or puncture the battery, or immerse in liquids.
Storage: Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided.
Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.
Other Precautions: The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

SECTION 8 – Exposure Controls, Personal Protection

Engineering control: Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor.
Personal Protective Equipment:
Respiratory Protection: Not necessary under conditions of normal.
Skin and body Protection: Not necessary under conditions of normal. Wear suitable protective clothing and gloves if handling an open or leaking battery.
Hand protection: Wear suitable protective clothing and gloves if handling an open or leaking battery.
Eye Protection: Not necessary under conditions of normal. Wear suitable protective clothing and gloves if handling an open or leaking battery.
Other Protective Equipment: Have a safety shower and eye wash fountain readily available in the immediate work area.
Hygiene Measures: Do not eat, drink, or smoke in the work area. Maintain good housekeeping

Personal Protection:

Hand protection	Eye protection
 *Protective gloves*	 *Tightly sealed goggles*

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SECTION 9 – Physical and Chemical Properties

Information on basic physical and chemical properties	
Appearance	White and black
Odour	N/A
pH	N/A
Melting point/freezing point	N/A
Boiling Point and Boiling range	N/A
Flash Point	N/A
Upper/lower flammability or explosive limits	N/A
Vapor pressure	N/A
Vapor Density	N/A
Relative density	N/A
Solubility in water	N/A
Auto-ignition temperature	N/A
Decomposition temperature	N/A
Evaporation rate	N/A
Flammability (soil, gas)	N/A
Viscosity	N/A

SECTION 10 – Stability and Reactivity

Information on basic stability and reactivity	
Stability	The product is stable under conditions description Section 7
Conditions to Avoid	Heat above 70℃ or incinerate. Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions.
Incompatible Materials	Oxidizing agents, acid, base.
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide, lithium oxide fumes.
Possibility of Hazardous Reaction	N/A

SECTION 11 – Toxicological Information

Irritation	Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin. Eyes and respiratory tract may occurs.
Sensitization	N/A
Neurological Effects	N/A
Teratogenicity	N/A
Reproductive Toxicity	N/A
Mutagenicity (Genetic Effects)	N/A
Toxicologically Synergistic Materials	N/A

SECTION 12 – Ecological Information

Ecological Toxicity	N/A
Mobility in soil	N/A
Persistence and Degradability	N/A
Bioaccumulation potential	N/A
Other Adverse Effects	N/A

SECTION 13 – Disposal Considerations

Product disposal recommendation	Observe local, state and federal laws and regulation.
Packaging disposal recommendation	Disposal must be made according to official regulations.

SECTION 14 – Transport Information

Label for conveyance	Lithium Battery Label	
UN Number	UN3480 or UN3481	
Transport hazard class (es)	9	
Packing group	965 or 966	II
	967	--
Marine pollutant	No	
UN proper shipping name	Lithium ion Batteries (Including lithium ion polymer batteries) Lithium ion Batteries packed with equipment (Including lithium ion polymer batteries) Lithium ion Batteries contained in equipment (Including lithium ion polymer batteries)	
ICAO/IATA	Can be shipped by air in accordance with international Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA) DGR 65th Packing Instructions Section IA of 965~967 appropriately.	
IMDG CODE	International Maritime Dangerous Goods Code IMDG CODE (Amdt 41-22)	
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road	
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail	
The dangerous goods regulations require that each battery design be subject to tests contained in Section 38.3 of t he UN Manual of Tests and Criteria prior to being for transport.		

SECTION 15 – Regulatory Information

Law information

《Dangerous Goods Regulations》
《Recommendation on the Transport of Dangerous Goods Model Regulations》
《International Maritime Dangerous Goods》
《Technical Instructions for the Safe Transport of Dangerous Goods》
《Classification and code of dangerous Goods》
《Consumer Product Safety Act》 (CPSA)
《Federal Environmental Pollution Control Act》 (FEPCA)
《Resource Conservation and Recovery Act》 (RCRA)
《European Agreement concerning the International Carriage of Dangerous》
《Regulations concerning the International Carriage of Dangerous》
In according with all Federal, State and local laws.

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SECTION 16 – Other Information

Original Preparation Date: 11 November 2024
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Current Revision Date: -

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