

# KICKASS



## 12V DEEP CYCLE LITHIUM BATTERY

## OWNER'S MANUAL

KA12120XB-LION | KA12200XB-LION

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# QUICK START GUIDE

- You KickAss Smart Lithium Battery has been shipped at approximately 60% SOC. When you first receive your battery, please complete a full charge of the battery before use, ensuring the battery charger indicates the battery is full before removing the battery from charge.
- Do not exceed the performance specifications referenced on the sticker on the battery.
- When connecting batteries in a series or parallel configuration, ensure each battery has been fully charged separately before connecting the batteries.
- Ensure all connected loads and charge inputs are connected via appropriately sized fuses.

# SAFETY INFORMATION

- Always use the specified charger designed for the lithium battery. Using an incorrect charger may cause damage or create a safety hazard.
- Do not charge the battery beyond its recommended voltage or current limits.
- Overcharging can lead to overheating, fire, or explosion.
- Never charge the battery if it is damaged or swollen. Contact your supplier for support.
- Ensure the battery is installed in a well-ventilated area to prevent overheating.
- Do not expose the battery to extreme temperatures. Charge and operate the battery within the temperature range specified in this manual.
- Follow the installation instructions carefully. Incorrect connections can result in damage or hazardous conditions.
- Do not short-circuit the battery terminals.
- Do not disassemble or modify the battery. Tampering with the battery can result in safety risks and will void the warranty.
- Ensure all connected devices and loads are within with the battery's specifications to prevent overloading.
- In case of a battery fire, use a Class D fire extinguisher. Do not use water, as it can worsen the fire.
- Keep the battery away from children and unauthorised personnel.
- Dispose of the battery according to local regulations and guidelines for hazardous waste.

# PRODUCT SPECIFICATIONS

SKU	KA12120XB-LION	KA12200XB-LION
<b>Battery Type</b>	LiFePO4	LiFePO4
<b>Voltage</b>	12.8V	12.8V
<b>Capacity</b>	120Ah	200Ah
<b>Energy</b>	1536Wh	2560Wh
<b>Parallel Connection</b>	Yes (4 Max)	Yes (4 Max)
<b>Series Connection</b>	Yes (4 Max)	Yes (4 Max)
<b>Max Charge Voltage</b>	14.6V	14.6V
<b>Charge Temperature Range</b>	0 ~ +60°C	0 ~ +60°C
<b>Max Continuous Charge Current</b>	120A	200A
<b>Discharge Temperature Range</b>	-20 ~ +65°C	-20 ~ +65°C
<b>Max Continuous Charge Current</b>	120A	200A
<b>Battery Low Voltage Disconnect</b>	10V	10V
<b>Cycle Life</b>	4000 cycles   80% DOD   0.5C	4000 cycles   80% DOD   0.5C
<b>Dimensions</b>	316*159*211mm	522*244*241mm
<b>Weight</b>	11.85kg	20.4kg
<b>Storage Temperature</b>	0 ~ +30°C	0 ~ +30°C
<b>Storage SOC</b>	50%	50%
<b>Humidity Range</b>	0 ~ 85% RH	0 ~ 85% RH
<b>Certification</b>	IEC62619	IEC62619
<b>Warranty</b>	3 Years + 2 Year Pro Rata	3 Years + 2 Year Pro Rata

# DIMENSIONS



# INCLUDED COMPONENTS



1 X 12V 120Ah LiFePO4 Lithium Battery



2 X M8 X 16mm bolt with flat and spring washer



1 X 12V 200Ah LiFePO4 Lithium Battery



2 X M8 X 16mm bolt with flat and spring washer

## OPTIONAL ACCESSORIES



KickAss N70 Tray  
SKU: KAN70TRAY



KickAss Battery Linking Cables  
2AWG 400mm  
SKU: BALINK8400

## OPTIONAL ACCESSORIES



KickAss 200Ah Battery Tray  
SKU: KA12200TRAY



KickAss Battery Linking Cables  
2AWG 400mm  
SKU: BALINK8400

# PRODUCT FEATURES

## A-Grade LiFePO4 Prismatic Cells

A-Grade Prismatic cells are batched during manufacturing to optimise battery performance when the cells are assembled in the battery pack. This batching allows the cells to charge and discharge at the same rate, ensuring you achieve the full design capacity of the battery and extending the life of the battery.

## 100% Usable Capacity

With 100% usable capacity, this battery is ideal for powering your off-grid setup for your weekend getaway. Average power consumption and estimated run time of typical devices used in an off-grid setup are referenced in Table A.

Device	Power Draw	Est. Run Time - 120Ah	Est. Run Time - 200Ah
Fridge	0.6 ~2.2A	54 - 200hrs	90 - 330hrs
KickAss LED Strip	2.25A	53hrs	88hrs
KickAss Sound Bar	2A	60hrs	100hrs
12V Large Oven	20A	6hrs	10hrs
KickAss E BBQ	46A	2.6hrs	4.3hrs
Pod Machine	89A	1.3hrs	2.2hrs

## Continuous Charge and Discharge

The KickAss KickAss 12V Deep Cycle Lithium – LiFePO4, supports a 1C continuous charge and discharge current.

## Parallel and Series Configuration

KickAss 12V Deep Cycle Lithium Batteries - LiFePO4 batteries can be connected in either parallel or series configurations, but not simultaneously in both. Connect up to a maximum of 4 batteries in series or 4 batteries in parallel.

Only batteries of the same model and from the same batch should be connected in parallel or series.

In a parallel configuration, the system voltage remains constant while the capacity (measured in Ah) and the total continuous charge and discharge ratings of the battery bank increase.

	System Voltage (V)	System Capacity (Ah)	System Watt Hours (Wh)	Max Continuous Discharge Rate (A)
1 x 120Ah Battery	12.8V	120Ah	1536Wh	120A
2 x 120Ah Battery	12.8V	240Ah	3072Wh	240A
3 x 120Ah Battery	12.8V	360Ah	4608Wh	360A
4 x 120Ah Battery	12.8V	480Ah	6144Wh	480A

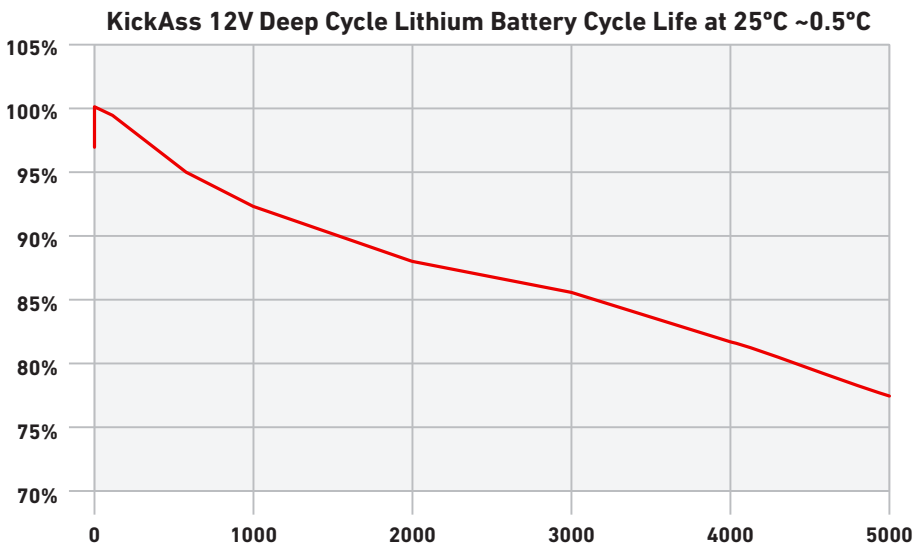
When connecting batteries in series, the system voltage is increased, and the capacity measure in Ah and total continuous charge and discharge rating of the battery bank maintained.

	System Voltage (V)	System Capacity (Ah)	System Watt Hours (Wh)	Max Continuous Discharge Rate (A)
1 x 120Ah Battery	12.8V	120Ah	1536Wh	120A
2 x 120Ah Battery	25.6V (24V Nominal)	120Ah	3072Wh	120A
3 x 120Ah Battery	38.4V (36V Nominal)	120Ah	4608Wh	120A
4 x 120Ah Battery	51.2V (48V Nominal)	120Ah	6144Wh	120A

Table C

### 4000+ Cycles @ 80% Depth of Discharge – 0.5C

The KickAss 12V 120Ah Deep Cycle Lithium Battery - LiFePO4 is rated for 4000+ cycles at a depth of discharge (DoD) of 80% at discharge rate of 0.5C. Reducing or increasing the average DoD of the battery will increase, or reduce the cycle life of the battery accordingly.



## Battery Management System

The Battery Management System (BMS) is a crucial component of the LiFePO<sub>4</sub> battery, ensuring its safe and efficient operation. The BMS performs two primary functions:

- **Cell Balancing:** Balances the voltages of individual LiFePO<sub>4</sub> cells during charging to ensure even cell performance, thereby enhancing battery longevity
- **Monitoring:** Continuously tracks key parameters such as cell voltage, charge/discharge rates, and temperature to maintain safe operating conditions for the battery. If the BMS detects deviations from acceptable parameters, it will initiate protective measures to prevent unsafe operation and alert the user with a safety warning. The BMS will automatically resume normal operation and clear the safety alert once conditions return to within safe limits.

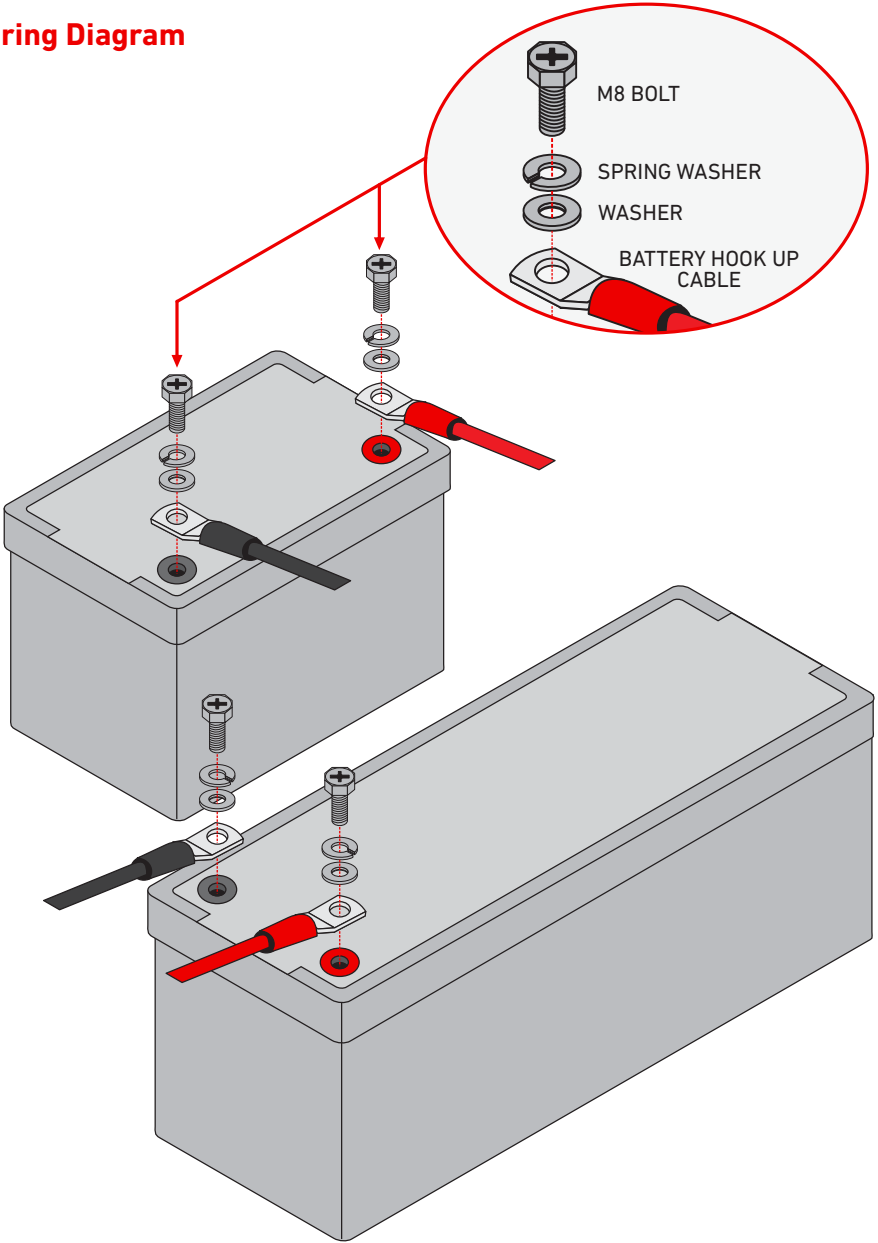
The BMS monitors the following parameters:

- Battery Pack Under/Over Voltage
- Cell Under/Over Voltage
- Continuous Over charge/Discharge Current Thermal Protection
- Pulse Overcharge/Discharge Current
- Short Circuit
- Charge Over/Under Temperature
- Discharge Over/Under Temperature

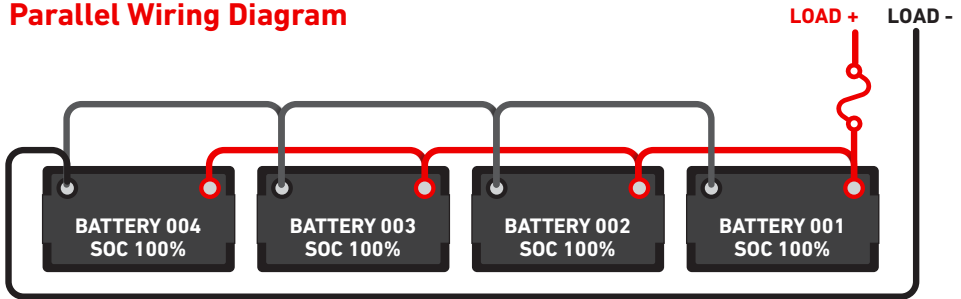
See the troubleshooting section of this manual for further information on system alerts.

# PRODUCT OVERVIEW

## Wiring Diagram



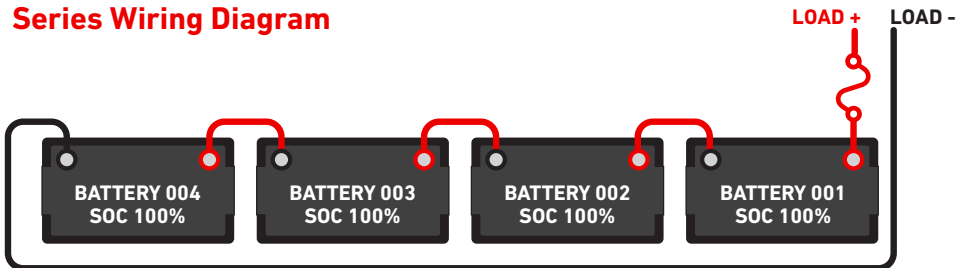
## Parallel Wiring Diagram



### Note:

- A) All batteries must be fully charged and allowed to rest for 30 minutes before being connected in parallel. Failure to follow this procedure may affect the performance and lifespan of the LiFePO4 batteries.
- B) We recommended using our KickAss Battery Linking Cables, 2AWG, 400mm length (BALINK8400), for connecting batteries in parallel.

## Series Wiring Diagram



### Note:

- A) All batteries must be fully charged and allowed to rest for 30 minutes before being connected in series. Failure to follow this procedure may affect the performance and lifespan of the LiFePO4 batteries.
- B) We recommended using our KickAss Battery Linking Cables, 2AWG, 400mm length (BALINK8400), for connecting batteries in series.

# PRODUCT INSTALLATION

## BATTERY SETUP

### Charging the Battery

To achieve optimal performance and ensure safe operation, it is essential to fully charge the battery and allow it to rest for 30 minutes before connecting any loads. This step is crucial for the proper functioning of the battery, particularly in parallel or series configurations.

For the initial charge, use an ACDC charger to ensure the battery receives a complete charge. Relying on a vehicle alternator or solar power for this process is not recommended, as these sources may not consistently provide adequate input. Issues such as the vehicle engine needing to be turned off or insufficient solar conditions could prevent a full charge.

### Wired Connection

**WARNING:** Before connecting the battery, ensure it has been fully charged and allowed to rest for 30 minutes.

**WARNING:** Verify that all loads or devices to be powered by the KickAss LiFePO4 battery are turned off before starting the installation.

**WARNING:** Ensure any isolation devices used in the installation are switched off before beginning.

1. Position the battery in the desired mounting location.
2. Secure the battery in place using a battery tray or an equivalent mounting method.
3. Verify that all positive connections for devices and fuses are terminated correctly.
4. Verify that all negative connections for devices are terminated correctly.
5. Connect the main battery positive terminal to the main system fuse. Use a 13mm socket to tighten the M8 bolts supplied with the battery to 20Nm.
  - a. If multiple connections are required for the main battery positive terminal, connect each system positive to the main battery positive terminal. Use a 13mm socket to tighten the M8 bolts to 20Nm.
6. Connect the main system negative terminal. Use a 13mm socket to tighten the M8 bolts to 20Nm.
  - a. If multiple connections are required for the main battery negative terminal, connect each system negative to the main battery negative terminal. Use a 13mm socket to tighten the M8 bolts to 20Nm.
7. The system is now ready to be activated. Turn on any isolation devices and power on any connected devices.

# TROUBLESHOOTING

## BMS PROTECTION AND EXPECTED BEHAVIOUR

Protection Type	Action	Release Condition	User Action
Cell Over-Voltage Protection	BMS will stop the battery from charging.	Protection is automatically released once the battery cell voltage returns to a safe level.	Check that the output voltage of the connected charger is below the maximum charge voltage of the battery.
Cell Under-Voltage Protection	BMS will stop the battery from discharging.	Protection is automatically released once the battery cell voltage returns to a safe level.	Check the output voltage of the battery terminals. If it is less than 10V, the battery has been completely discharged. Charge the battery.
Continuous Over Charge Current Thermal Protection	BMS will stop the battery from charging.	Protection is automatically released once the charge current temperature sensor returns to a safe level.	The battery charge current has exceeded the maximum charge rating of the battery. Check the maximum charge current of the battery.
Continuous Over Discharge Current Thermal Protection	BMS will stop the battery from discharging.	Protection is automatically released once the discharge current temperature sensor returns to a safe level.	The battery discharge current has exceeded the maximum charge rating of the battery. Reduce the total load on the battery.
Pulse Over Charge Current Protection	BMS will stop the battery from charging.	Protection is automatically released once the charger is disconnected.	The battery charge current has exceeded the maximum charge rating. Check that the connected battery charger is not faulty.
Pulse Over Discharge Current Protection	BMS will stop the battery from discharging.	Protection is automatically released once the load is disconnected or a charging source is connected to the battery.	The battery discharge current has exceeded the maximum charge rating of the battery. Check for any faults with the connected loads of the battery.

Protection Type	Action	Release Condition	User Action
Short Circuit Protection	BMS will stop the battery from discharging.	Protection is automatically released once the load is disconnected or a charging source is connected to the battery.	Check the installation for any signs of a short circuit. Rectify the installation if required.
Cell Discharge Over-Temperature Protection	BMS will stop the battery from charging.	Protection is automatically released after the cell temperature reduces to a safe level.	Ensure adequate ventilation around the battery. Avoid discharging at high rates for extended periods in high temperature environments.
Cell Discharge Under-Temperature Protection	BMS will stop the battery from discharging.	Protection is automatically released after the cell temperature increases to a safe level.	In colder climates, consider installing thermal insulation around the battery.
Cell Discharge Over-Temperature Protection	BMS will stop the battery from discharging.	Protection is automatically released after the cell temperature reduces to a safe level.	Ensure adequate ventilation around the battery. Avoid discharging at high rates for extended periods in high temperature environments.

# KICKASS PRODUCTS PTY LTD. WARRANTY DISCLAIMER

At Kickass Products Pty Ltd., we stand behind the quality and durability of our outdoor and camping products. Our product team rigorously tests every item in demanding conditions to ensure performance in normal use environments.

## Limited Warranty Coverage

Kickass Products Pty Ltd. warrants that our products are free from manufacturing defects in materials and workmanship for the applicable warranty period. If a defect arises within this period, we will, at our discretion, repair, replace, or provide an appropriate remedy in accordance with Australian Consumer Law (ACL).

## Exclusions

Warranty does not cover:

- Normal wear and tear
- Misuse, abuse or improper installation
- Damage caused by accidents, modifications, or lack of proper maintenance
- Consumable parts, unless a defect in materials or workmanship is present

## Making a Warranty Claim

To initiate a claim, please retain your proof of purchase and contact our customer service team with details of the defect. We will guide you through the process, including potential return or assessment requirements.

## Your Rights Under Australian Consumer Law

This warranty is in addition to any rights or remedies you may have under the ACL and does not exclude, restrict, or modify them.

Thank you for choosing Kickass Products Pty Ltd. We are committed to ensuring your outdoor adventures are backed with confidence.

# KICKASS

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KickAss Products Pty Ltd**

**Designed & imported by  
KickAss Products Pty Ltd  
39 Iris Place, Acacia Ridge, QLD 4110  
Australia**

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