



KA12120XB-LION

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- 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 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.

Battery Type	LiFePO4
Voltage	12.8V
Capacity	120Ah
Energy	1536Wh
Parallel Connection	Yes (4 Max)
Series Connection	Yes (4 Max)
Max Charge Voltage	14.6V
Charge Temperature Range	0 ~ +60°C
Max Continuous Charge Current	120A
Discharge Temperature Range	-20 ~ +65°C
Max Continuous Discharge Current	120A
Battery Low Voltage Disconnect	10V
Cycle Life	4000 cycles 80% DOD 0.5C
Dimensions	316*159*211mm
Weight	11.85Kg
Storage Temperature	0 ~ +30°C
Storage SOC	50%
Humidity Range	0 ~ 85% RH
Certification	IEC62619

DIMENSIONS

211mm



316mm

159mm

11.85Kg





1 X 12V 120Ah LiFePO4
Lithium Battery



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



KickAss N70 Tray
SKU: KAN70TRAY



KickAss Battery Linking Cables
2AWG 400mm
SKU: BALINK8400

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.

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.

Fridge	0.6 ~2.2A	54 - 200hrs
KickAss LED Strip	2.25A	53hrs
KickAss Sound Bar	2A	60hrs
12V Large Oven	20A	6hrs
KickAss E BBQ	46A	2.6hrs
Pod Machine	89A	1.3hrs

Table A

The KickAss 12V 120Ah Deep Cycle Lithium Battery - LiFePO₄ supports a 1C (120A) continuous charge and discharge current.

KickAss 12V 120Ah Deep Cycle Lithium - LiFePO₄ batteries can be connected in either parallel or series configurations, but not simultaneously in both. Connect up to 4 batteries in series or 4 batteries in parallel.

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.

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

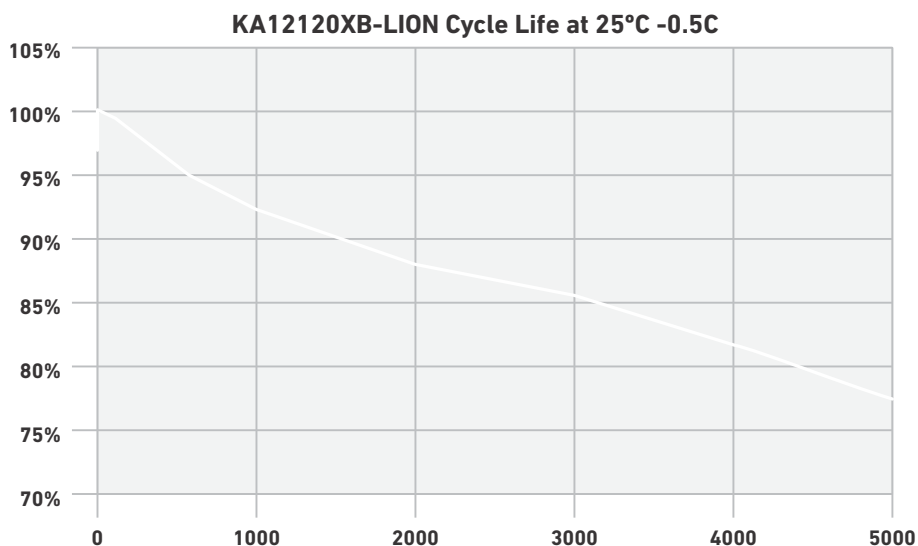
Table B

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.

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

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.



The Battery Management System (BMS) is a crucial component of the LiFePO₄ battery, ensuring it's safe under all conditions. The BMS performs two primary functions:

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. The BMS will resume normal operation once the recovery condition is met. Refer to the troubleshooting section of the manual for further details.

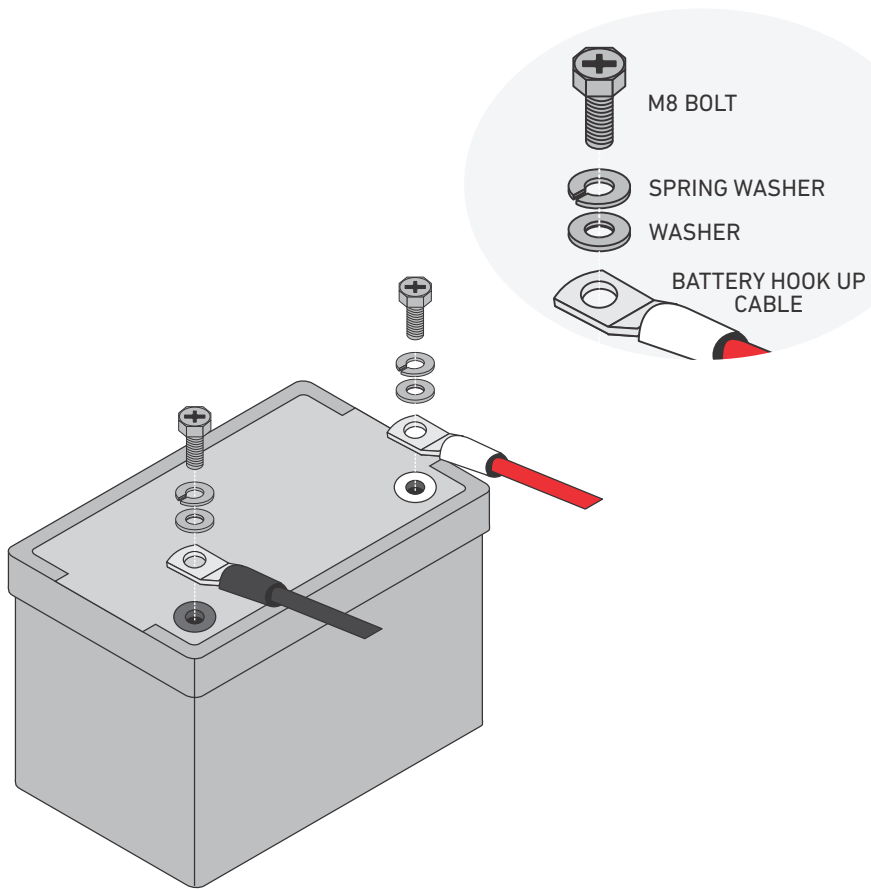
The BMS monitors the following parameters:

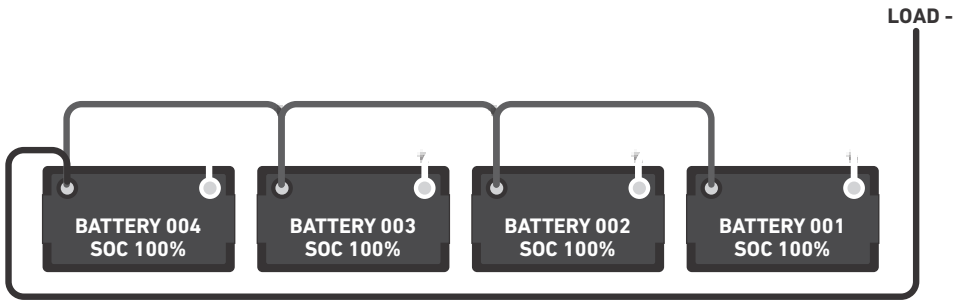
- Battery Pack Under/Over Voltage
- Cell Under/Over Voltage
- Continuous Over charge/Discharge Current Thermal Protection
- Pulse Overcharge/Discharge Current
- Short Circuit
- Charge Over/Under Temperature
- Discharge Over/Under Temperature

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

Cell Balancing: Balances the voltages of individual LiFePO₄ cells during charging to ensure even cell performance, thereby enhancing battery longevity.

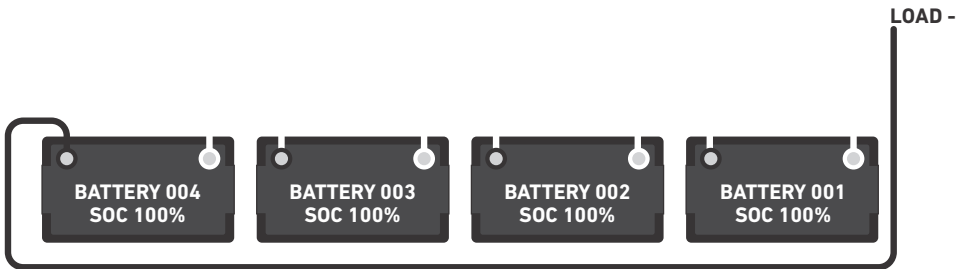
INSTALLATION





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.



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.

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.

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.

No output power / devices not running	If the battery enters a "sleep" or protection state, the BMS will prevent the battery from being discharged. This will often be determined by a terminal voltage of below 10V.	Connect the battery to a suitable lithium-compatible charger. It may be necessary to use a charger with a lithium activation/"wake up" mode to activate the BMS. If the concern persists, contact KickAss Products Support.

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 discharge 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.
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.

