

# KICKASS



## 12V 105AH SMART ULTRA SLIMLINE LITHIUM DEEP CYCLE BATTERY

## OWNER'S MANUAL

### KA12105ULTRASLIMX-LION

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# IMPORTANT SAFETY INSTRUCTIONS

## Caution:

- Do NOT operate before reading user manual.
- Do NOT short circuit the battery terminals.
- Do NOT incinerate, crush, puncture, or disassemble.
- Do NOT discard in fire or expose to excessive heat.
- Do NOT overcharge or over-discharge.
- Do NOT immerse in any liquid.
- Store at a minimum capacity of 50%, recharge every 3 months.
- Only use an approved battery charger.
- Not suitable for parallel or series connection.
- Not suitable for under bonnet fitment or cranking/starting applications.
- Warranty may be void if case is opened.
- Keep out of reach of children.
- When charging or discharging KickAss Lithium Batteries, ensure the total charge or discharge current does not exceed the maximum specified - see battery specifications table located on the battery and in this user manual.
- Keep metal object clear from all power in/output connection ports.
- Only use compatible connector types when making connections to battery power in/output ports.

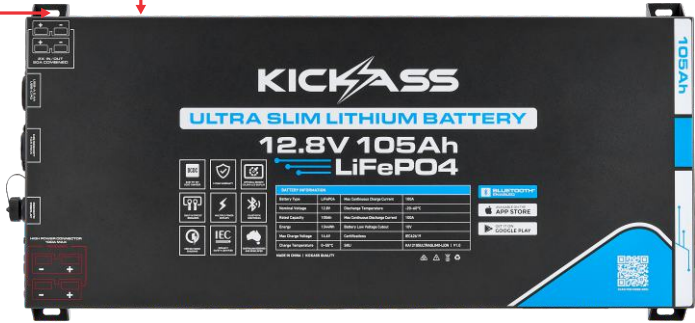
## BEFORE USING YOUR BATTERY FOR THE FIRST TIME PLEASE READ AND FOLLOW THESE INSTRUCTIONS:

- State Of Charge (SOC) Calibration: Before use, fully charge your battery until the connected charger indicates the "Float" stage has been reached. Do not remove the battery from charge when the battery reaches 100%. Continue to charge the battery until the battery and charger have completed a full charge cycle. This should occur a short time after the battery SOC states 100%.
- When not in use, the battery SOC% may lose synchronization over time if left in storage for more than a few months. Before using your battery after storage, complete a full charge cycle as explained above.

# OVERVIEW

Metal case with mounting brackets

DCDC mounting points (optional bracket)



2 X 50A Anderson Connectors (max. 50A)

USB QC3.0

USB-C PD 45W

10A 12V Socket

RJ45 Comm Port

2 X 175A Anderson Connectors (Max. 100A)

# BATTERY

## Features

- 105Ah Lithium Iron Phosphate (LiFePO<sub>4</sub>) Battery
- 100A Internal Battery Management System (BMS)
- BMS supervised Lithium Battery protection and alarms
- Bluetooth compatibility with KA App (Android and iOS)
- Monitor battery status via the Remote Display Unit (RDU) screen - Plugs into battery.
- Approximately 2000 cycles at 80% DOD, and up to 4000 cycles at lower discharge rates.
- Low self-discharge and long shelf life

**Note:** The total current draw from the battery must not exceed 100 Amps. Exceeding 100A will trigger the BMS over current protection feature.

## BMS Protection Features

- Battery over and under voltage protection
- Battery over and under temperature protection
- Battery over charge and discharge protection
- Battery short circuit protection

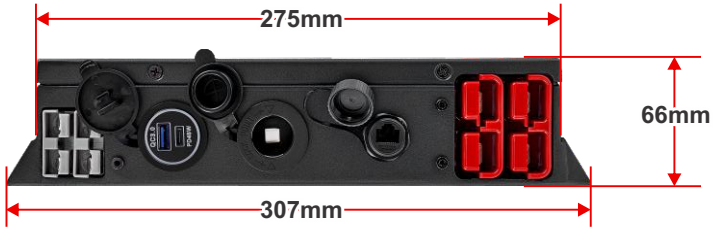
## Applications

- Solar System
- Telecommunications
- 4WD Dual Battery Systems
- Caravan, Motorhome Systems
- Emergency Power System

# SPECIFICATIONS

<b>Battery Type</b>	LiFePO <sub>4</sub>
<b>Nominal Voltage</b>	12.8V
<b>Rated Capacity</b>	105Ah
<b>Energy</b>	1344Wh
<b>Max Charge Voltage</b>	14.6V
<b>Charge Temperature</b>	0~55°C
<b>Max Continuous Charge Current</b>	50A
<b>Discharge Temperature</b>	-20~60°C
<b>Max Continuous Discharge Current</b>	100A
<b>Battery Low Voltage Cutout</b>	10V
<b>Weight</b>	16.5Kg
<b>Self Discharge</b>	<3% of capacity declined per month at 25°C

# DIMENSIONS



# OPTIONAL ACCESSORIES

## DCDC Bracket Kit

The KickAss DCDC Bracket kit allows easy fitment of KickAss DCDC-MPPT chargers and includes everything needed for easy plug & play installation.



# Inverter Cables (Optional)

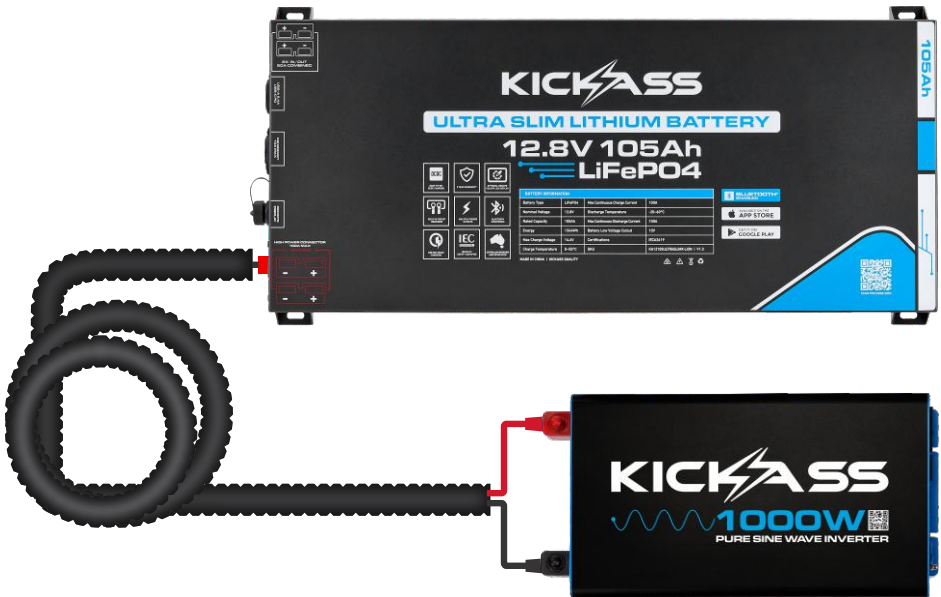
KickAss Inverter leads have been designed to allow you to easily connect a high powered load to the battery. The Inverter Cables have been designed to work flawlessly to provide high current flow to a KickAss 1000W Inverter, and will also work perfectly to connect other KA products like the KickAss Control Hub.

## Note:

- Be mindful when powering multiple loads at the same time. The internal BMS will allow a maximum of 100A to be drawn from the battery at one time.
- Do not exceed a 1200W inverter load.



## KICKASS Inverter Connection



# KICKASS Control Hub Connection



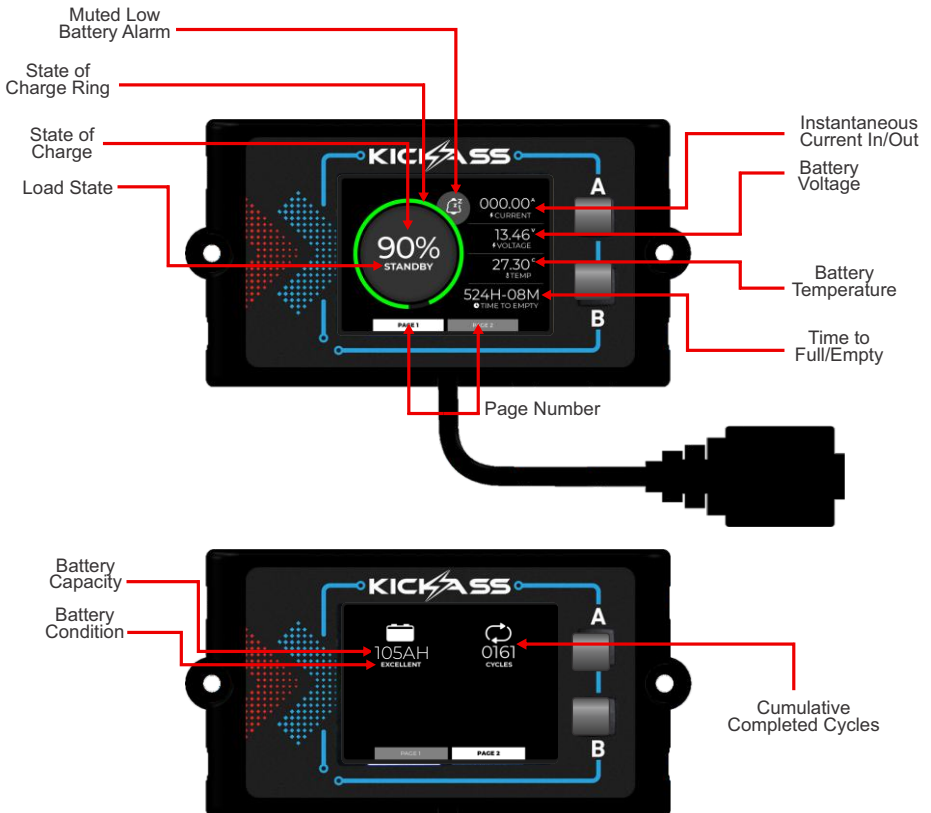
KACTRLHBDCCD



# REMOTE DISPLAY UNIT

The KickAss Lithium Battery Remote Display Unit (RDU) has been specifically designed to pair seamlessly with the KickAss Lithium Battery range. The RDU allows you to monitor the state and condition of the battery from up to 10m away. The unit features the following:

- Battery state of charge (SOC %).
- Instantaneous current flow, positive when charging, negative when discharging
- Battery pack voltage
- Battery temperature
- Remaining time to full/empty at the current rate of charge/discharge
- Total capacity of battery
- Number of full cycles the battery has completed. A full cycle is defined by 100% discharge and recharge of a battery. Depleting a battery to 50% and recharging it twice will result in 1 cycle.
- Mutable low battery charge alarm
- Battery capacity condition state (excellent, good, fair, bad)
- Battery protection alarms
- Versatile cable mounting positions



# Connecting RDU

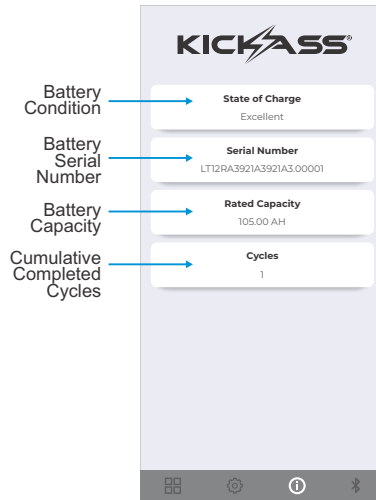
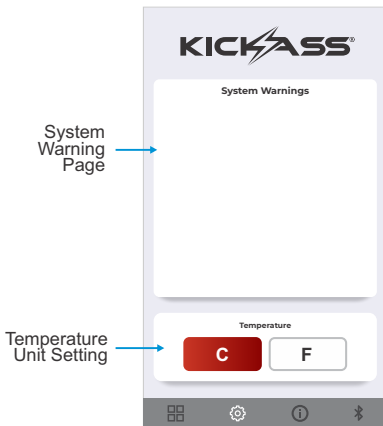
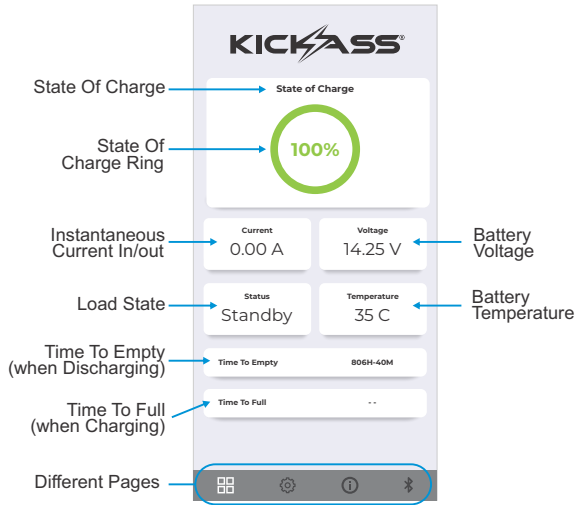
To connect the RDU to the Ultra Slim Battery, simply plug the RJ45 cable into the dedicated female connection points on both the RDU and battery.

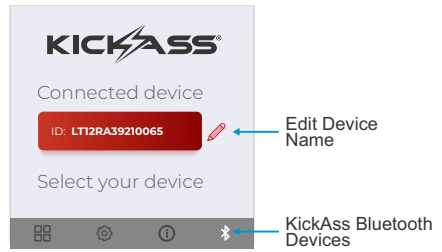
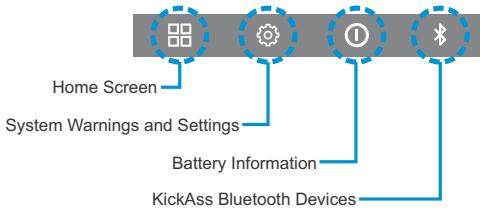


# KICKASS LITHIUM APP

The KickAss Lithium Battery has been designed with the latest Bluetooth technology to remotely monitor your battery from your smartphone. The app features the following:

- State of Charge (SoC)
- Instantaneous Current Flow, positive when charging, negative when discharging
- Battery Pack and Cell Voltage.
- Battery Temperature
- Remaining time to full/empty at the current rate of charge/discharge
- Total Capacity of Battery
- Low Battery Alarm
- Battery Capacity Health Indicator
- Battery Protection Alarms





## Connecting to the App

To get started please download the KA Outback Proof Gear App from the Google Play store or the Apple iTunes Store.

If the app is already downloaded on your device for use with your KickAss Bluetooth Fridge, you must ensure that any updates to the App are installed prior to connecting.

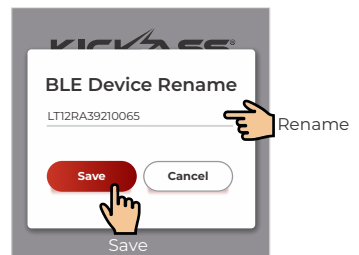
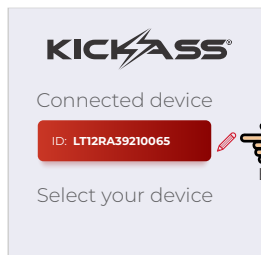
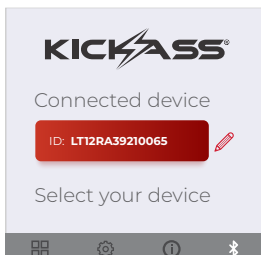
Once the APP is installed, locate your battery's serial number on the side of your battery. On the KA Outback Proof Gear App, find the device ID that corresponds to the first 10 digits and the last 4 digits of the battery's serial number and click connect device.



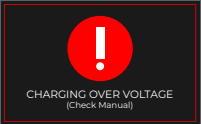
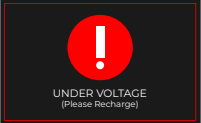

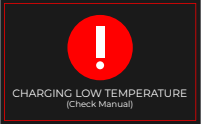
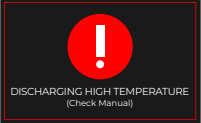
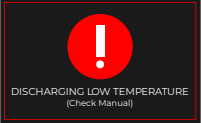

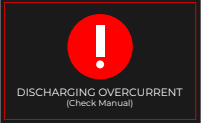
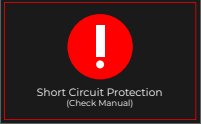
## Rename Device ID

To rename your Bluetooth device, connect to the device and then navigate to the fourth tab on the bottom toolbar. Click the pencil icon next to the connected device, edit the name and then click save.

**Note:** Editing your devices name, will only edit it on your device. It will not change the name of the battery for other people who try to connect to it.



# KICKASS LITHIUM BMS ALARM MODES

ALARM MODE	APP SYSTEM WARNING	LCD screen SYSTEM WARNING
<p><b>Over Voltage Protection:</b> The voltage of your battery has exceeded the normal range. Remove charger from battery</p>	<p>Charging Over Voltage Error</p> <p><a href="#">View Error</a></p>	 <p>CHARGING OVER VOLTAGE (Check Manual)</p>
<p><b>Under Voltage Protection:</b> The voltage of your battery is below the normal range. Connect charger to battery</p>	<p>Under Voltage Error</p> <p><a href="#">View Error</a></p>	 <p>UNDER VOLTAGE (Please Recharge)</p>
<p><b>Charging High Temperature Protection:</b> The temperature of your battery has exceeded the normal range. Disconnect all loads/chargers and place your battery in a cooler location</p>	<p>Charging High Temperature Error</p> <p><a href="#">View Error</a></p>	 <p>CHARGING HIGH TEMPERATURE (Check Manual)</p>
<p><b>Charging Low Temperature Protection:</b> The temperature of your battery is below the normal range. Disconnect all loads/chargers and place your battery in a warmer location</p>	<p>Charging Low Temperature Error</p> <p><a href="#">View Error</a></p>	 <p>CHARGING LOW TEMPERATURE (Check Manual)</p>
<p><b>Discharging High Temperature Protection:</b> The temperature of your battery has exceeded the normal range. Disconnect all loads/chargers and place your battery in a cooler location</p>	<p>Discharging High Temperature Error</p> <p><a href="#">View Error</a></p>	 <p>DISCHARGING HIGH TEMPERATURE (Check Manual)</p>
<p><b>Discharging Low Temperature Protection:</b> The temperature of your battery is below the normal range. Disconnect all loads/chargers and place your battery in a warmer location</p>	<p>Discharging Low Temperature Error</p> <p><a href="#">View Error</a></p>	 <p>DISCHARGING LOW TEMPERATURE (Check Manual)</p>
<p><b>Charging Over Current Protection:</b> The charging current of your battery has exceeded the normal range. Disconnect all chargers from the battery</p>	<p>Charging Overcurrent Error</p> <p><a href="#">View Error</a></p>	 <p>CHARGING OVERCURRENT (Check Manual)</p>
<p><b>Discharging Over Current Protection:</b> The discharging current of your battery has exceeded the normal range. Disconnect all load from the battery</p>	<p>Discharging Overcurrent Error</p> <p><a href="#">View Error</a></p>	 <p>DISCHARGING OVERCURRENT (Check Manual)</p>
<p><b>Short Circuit Protection:</b> The battery is short-circuited. Check all wiring and connections for short circuits</p>	<p>Short Circuit Protection Error</p> <p><a href="#">View Error</a></p>	 <p>Short Circuit Protection (Check Manual)</p>

# LITHIUM BATTERY BMS RECOVERY PROCEDURES

The KickAss Ultra Slim Lithium Battery BMS have been designed to safely maximise the life of the battery by protecting the internal LiFePO4 cells. Several of the protection features require a recovery procedure be conducted to re-activate the battery. These Recovery features are:

- Under Voltage Protection
- Over Voltage Protection
- Over Voltage Protection
- Short Circuit Protection

If the one the above events occur, the BMS will protect the battery cells by entering shut down mode. This disables the Discharge (Output) or Charge (Input) power capability of the battery.

Follow the instruction options below to recover the BMS:

## **Under Voltage Protection**

Lithium Battery Charger Activation Method:

- Connect a KickAss lithium compatible charger and follow the "Lithium Activation Mode" instructions in the product user manual.

*NOTE:* Always refer to the manufacturers user manual and specification before connecting a charger to the battery.

External 12V Power Source Activation Method:

1. Temporarily connect an external 12V power source to a input/output connector of the battery, until the the BMS has released the shut down mode and reactivated the output power. This should take no longer than 2-5 seconds.
2. Immediately remove the temporary power source once the BMS has recovered and connect a lithium compatible battery charger.

*WARNING:* When using an external 12V power source to recover the BMS i.e. another 12V battery, ensure all connections, including polarity are correctly fitted.

## **Over Voltage Protection - Charge Input off.**

1. Remove all connected chargers/ power supplies.
2. Connect a 12V load to the battery until the internal cell voltage drops and BMS releases the charge input shut down mode.

## **Short Circuit Protection**

Follow *Under Voltage Protection* activation method.

*CAUTION:* Before reconnecting load in the event of a short circuit, check all connections and polarity of connected load are fitted correctly.

# CONNECTIONS

**Note: The total output load of all connections combined must not exceed 100A**

## ► INPUTS/OUTPUTS



### 2x 50A ANDERSON CONNECTOR

- Input/Output for connecting chargers and loads
- Total combined power must not exceed 50A total current
- Protected by 50A Auto resettable circuit breaker

#### WARNING:

1. Only use Lithium (LiFePO4) compatible chargers - Recommend Max. charge 40A.
2. Only connect one charging source at a time.
3. Exceeding 50A combined current rating will trigger the safety breaker. Safety breaker will auto-reset in time.

**NOTE: THE 2 ANDERSON PLUGS INDICATED CANNOT EXCEED A TOTAL OF 50 AMPS COMBINED**

## ► OUTPUTS



### 12V CIG SOCKET

- Maximum 10A output



### USB QC3.0 / PD TYPE C OUTPUTS VOLTMETER WITH SWITCH

- PD TYPE C: 45W
- USB QC3.0: 18W
- Output power: 5V-6.5V-3A; 6.5V-9V-2A; 9V-12-1.5A

## ► INPUTS/OUTPUTS



### 2 X (175A) ANDERSON STYLE PLUG

- High current inverter output - 1200W Max.
- Emergency Starter Battery recovery - Connect to flat vehicle start battery for 10mins to revive charge and start engine.

#### WARNING:

1. Output is protected by BMS only. While this includes short circuit and over current protection, a suitable in line circuit breaker or fuse should be installed as close as possible to the battery connection.

2. If a short circuit event occurs, the BMS will engage the safety feature and the battery output will be turned off.

#### SHORT CIRCUIT RESET PROCEEDURE:

Refer to battery recover procedure.

3. Check battery specifications and compatibility when using for battery recovery.

4. Check connected load specification will not exceed maximum current draw of 100A.

**NOTE: CANNOT EXCEED A TOTAL OF 100 AMPS COMBINED**



Battery Box Vehicle Recovery Cables  
**KABBJUMP**

## CONNECTING TO EXTERNAL CHARGERS

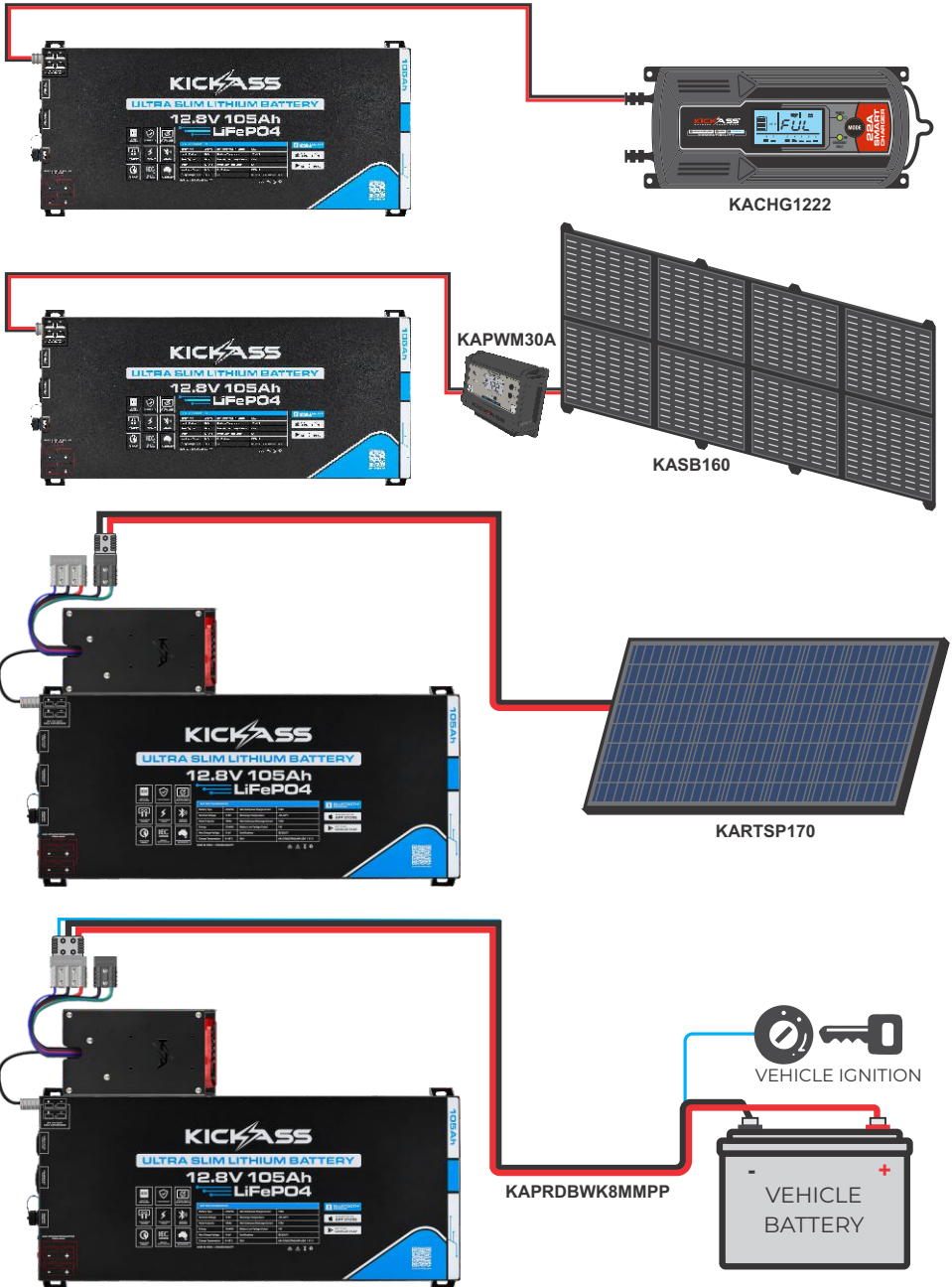
The KickAss Ultra Slim Lithium Battery may be charged in a number of ways:

- Connecting an AC charger to any of the in/out Anderson style connectors.
- Connecting a solar panel with regulator/controller to any of the in/out Anderson style connectors.
- Connecting alternator power to optional DCDC Charger in a vehicle installation.
- Connecting an unregulated solar panel to optional DCDC Charger.

#### Warning:

- Connecting multiple chargers to the battery at any one time is not recommended.
- Do not connect an unregulated solar panel directly to the battery via any of the in/out connectors.

# TYPICAL DIAGRAMS



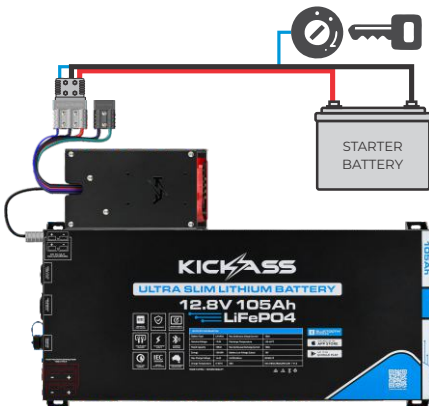
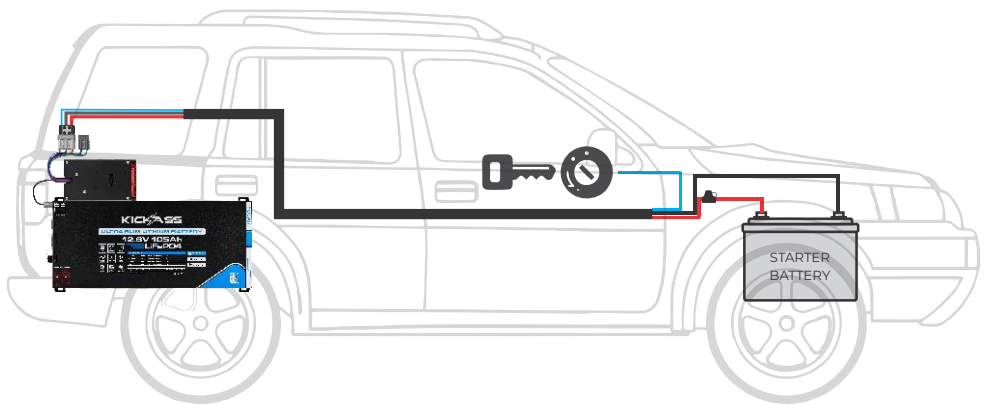
# CONNECTING DCDC CHARGER

Charging via vehicle alternator is simple and can be done easily by using the KickAss Plug & Play wiring kit. (Sold separately)

The triple Anderson style connector fitted to the DCDC interfaces with the KickAss Plug & Play Wiring Kit, providing a simple, quick connect vehicle charging solution. This triple connector and cable provides alternator power to the DCDC, along with an Ignition Source for charging in vehicles that are fitted with Smart or Temperature Compensating Alternator.

For more information on installing a Dual Battery Wiring Kit and Ignition Wire, please visit [KickAssproducts.com.au/support](http://KickAssproducts.com.au/support)

## CONNECTING TO ALTERNATOR



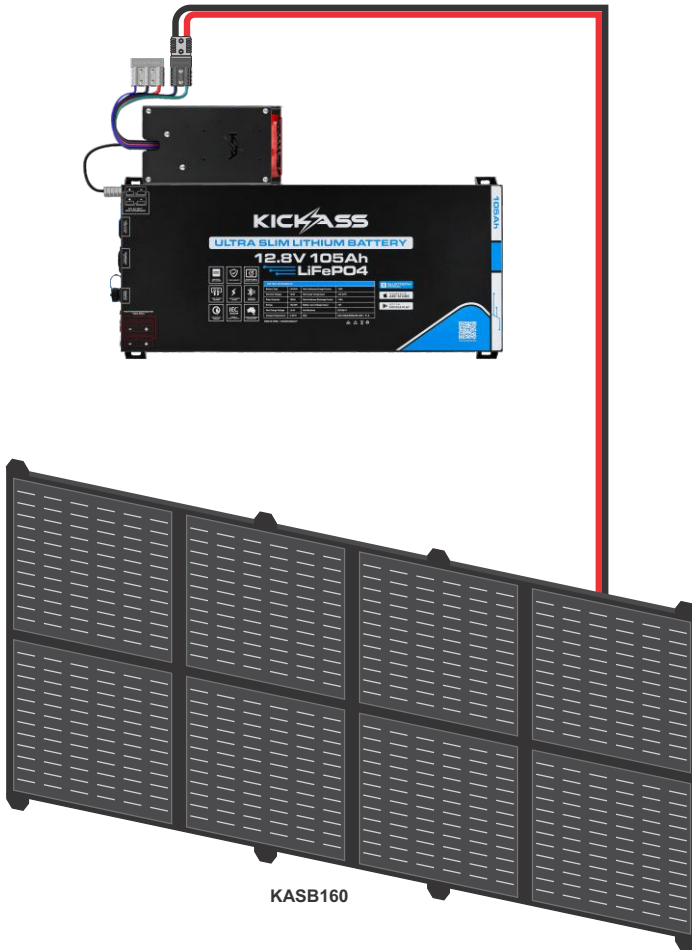
KickAss Premium Plug & Play Wiring Kit - 6m  
SKU: KAPRDBWK8MMPP

## CONNECTING TO UNREGULATED SOLAR

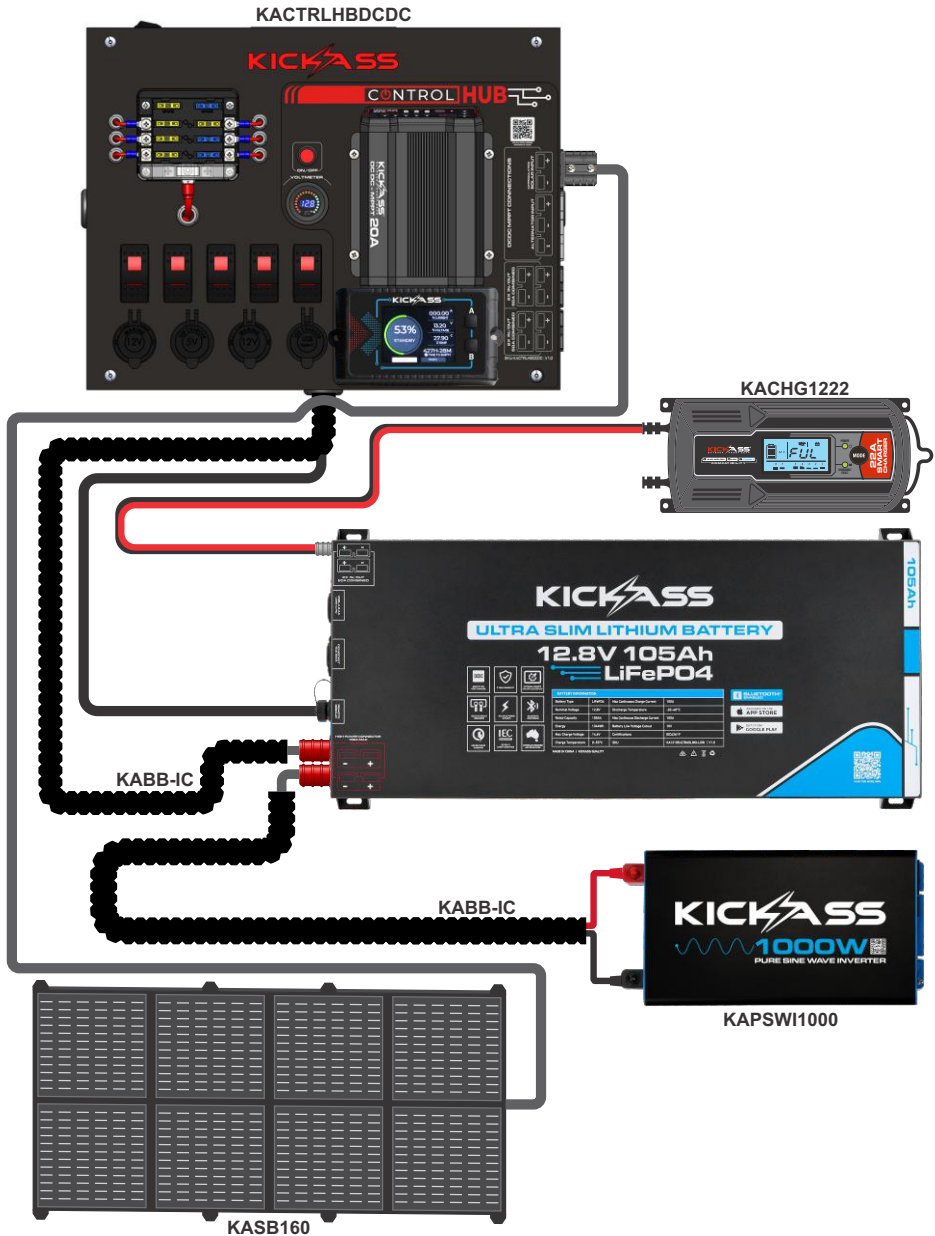
KickAss Ultra Slim Lithium Battery when installed with a KA DCDC - MPPT Charger with built-in regulator will be suitable for charging from unregulated solar panels. To connect your solar panel to the regulator simply plug it in via the Anderson style solar input plug labeled on the charger.

### NOTE:

- Please confirm the DCDC - MPPT chargers specification for correct solar input voltage. Never exceed the rated Open Circuit Voltage input range of the charger.



# THE ULTIMATE KICKASS ULTRA SLIM SETUP



# TECHNICAL SPECIFICATIONS



## BATTERY CASE INFORMATION

<b>Material</b>	Power Coated Steel Case
<b>Temperature Range</b>	-20°C - +65°C

## BATTERY INFORMATION

<b>Battery Dimensions:</b>	640mm (L) x 307mm (W) x 66mm (H)
<b>Battery Weight:</b>	16.5Kg
<b>Battery Chemistry:</b>	Lithium LiFePO4
<b>Battery Nominal Voltage:</b>	12.8V
<b>Battery Capacity:</b>	105Ah
<b>Operating Temperatures</b>	Discharge: -20 - 65°C Storage: -20 - 45°C Charge: 0 - 60°C

## PORTS (INPUT/OUTPUT)

<b>2x (50A) Anderson Style Plugs</b>	<b>2 x (175A) Anderson Style Plug</b>
Input / Output Capable Maximum Combined 50A Current Rating WARNING: 1. Do not plug in multiple chargers as inputs 2. Do not use an external charger while the DCDC Charger is operating 3. Exceeding 50A combined current rating will trigger the safety breaker	High Current Inverter Output WARNING: 1. Combined output must not exceed 100A. 2. KickAss Lithium batteries should not be used for jump starting.
<b>1 x Cigarette Socket Outputs</b>	Maximum 10A output per socket
<b>1x USB QC 3.0 / PD Type C Outputs</b>	- PD TYPE C: 45W - USB QC3.0: 18W - Output power: 5V-6.5V-3A; 6.5V-9V-2A; 9V-12-1.5A - ON/OFF switch

# 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  
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Australia**

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