KICKASS

12V 16 AMP SMART BATTERY CHARGER

USER MANUAL

KACHG1216

V1.1

TABLE OF CONTENTS

PRODUCT SPECIFICATIONS

- Input Voltage / Frequency: 220 ~ 240V/50Hz
- Charging Voltage: 12V/24V
- Charging Current: 4A/8A/16A Max
- Maximum Input current and power: 1.7A, 300W Max
- Certifications: AS/NZS 60335.2.29:2017+a1 :2020
- Dimensions: 298 x 152 x 87mm
- Operating Temperature: -10°C - 40°C

PRODUCT FEATURES

- Automatic 9 stage smart charging
- Fast charge 16A peak output
- Adjustable output for different battery sizes for precise charging: 4A,8A and 16A
- Multi- chemistry battery compatibility: Lead acid batteries, AGM batteries, Gel batteries, and LiFePO4 batteries.
- Lithium Activation mode.
- AGM Recondition mode.
- Starter Battery Replacement mode.
- Reverse polarity protection, short circuit protection and overheating protection.
- Connect via Anderson connector or alligator clamps.

BATTERY CHARGER PROTECTION FEATURES

Reverse Polarity Protection: This charger offers reverse-polarity protection. Should reverse polarity occur, the red LED will blink and the charging process will not begin. If this happens, immediately disconnect the charger from the battery and unplug the AC power cable from the outlet. Then, reconnect the charger to AC power and then connect the red alligator clamp to the positive (+) battery post and the black alligator clamp to the negative battery (-) post.

Short-circuit Protection: If you accidentally touch the clamps together while the mains power is on, the charger will automatically turn off. If this happens, unplug the charger from the mains power outlet, disconnect, and begin again this time being careful not to let the clamps touch.

Overheating Protection: The charger will reduce the charge current to 2A if the internal temperature reaches 95 ^{0}C. This protects both the charger and the battery.

Charge Memory: If the mains AC power is disconnected for any reason during the charging process, the charger will remember the charge settings it was using and will automatically restart charging in the same mode once mains AC power is restored, providing the battery clamps have not been disconnected.

IMPORTANT SAFETY INFORMATION


Indoor Use Only


No Excessive Dust


No Excessive Moisture

- Before you begin charging, read the instructions and this user manual carefully.
- Explosive gases may escape from the battery during charging. Prevent flames and sparks, and ensure the battery and charger have adequate ventilation.
- The charger is for indoor use only. Do not expose to rain or moisture.
- The charger is for charging lead acid and lithium batteries ONLY. (Review the size and voltage details in the specifications table provided).
- Disconnect the 240V mains power supply before disconnecting the charger from the battery.

- If the AC cord is damaged do not use it. It must be replaced or repaired by a qualified technician.
- Corrosive substances may escape from the battery during charging and damage delicate surfaces. Make sure you charge in a suitable area and store your batteries and charger safely.
- Children should be supervised to ensure that they do not play with the charger.
- The charger should not be dismantled, and any attempt at modification or repair without the approval of KickAss will void any warranty.
- Do not attempt to charge a battery that is damaged or seems to be damaged.
- Do not attempt to charge a lithium battery at temperatures below 0°C (32°F).
- Do not attempt to charge a lithium battery that does not have an in-built Battery Management System (BMS).
- Do not smoke or allow sparks or flames anywhere near the battery or engine.
- Do not drop any heavy metal objects – for example, metal tools – onto the battery, as it could cause a short circuit and a possible explosion.
- Do not place the charger on top of the battery while it is charging.
- Avoid getting electrolyte on your skin or clothes. It is extremely corrosive and can cause burns.
- If electrolyte gets into your eyes - wash them thoroughly with water and seek medical attention immediately.
- Always confirm the battery manufacturer's safety recommendations and technical specifications before connecting it to the charger.
- Every battery has a recommended maximum charge voltage. Ensure that the charge voltage of the mode you have selected does not exceed the battery manufacturer's recommendations.

- Every battery has a recommended maximum continuous charging current rating. Make sure that the charger does not exceed the recommended maximum continuous charging current specified by the battery manufacturer.

IMPORTANT: This charger must only be used to charge batteries as outlined in this manual. Always refer to the technical specifications of the battery that you are charging. Do not use this charger for any other purpose.

UNDERSTANDING YOUR CHARGER AND WHAT'S INCLUDED

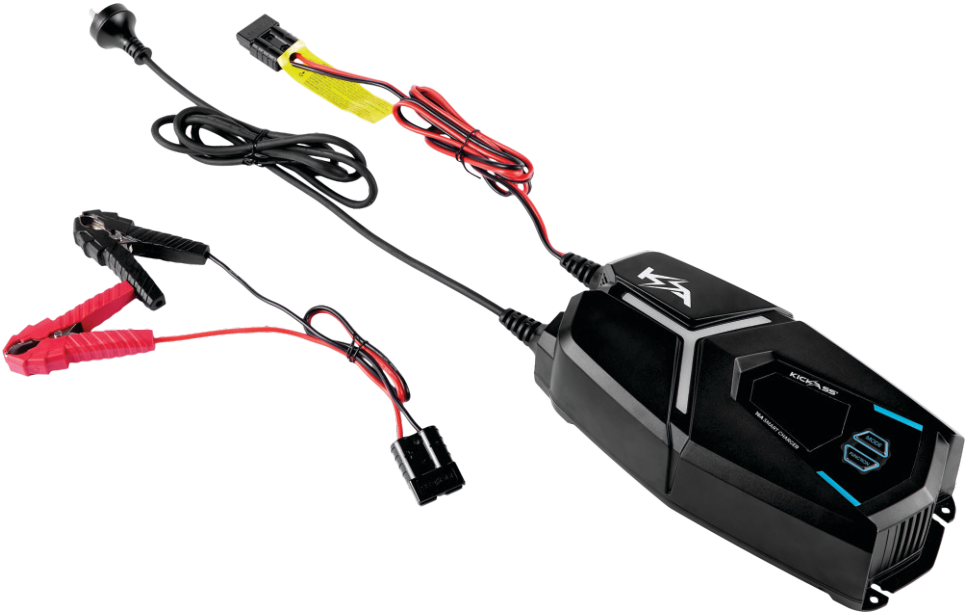
LCD Display

Function Button

Charging Light Indicator

Battery Type Indicator

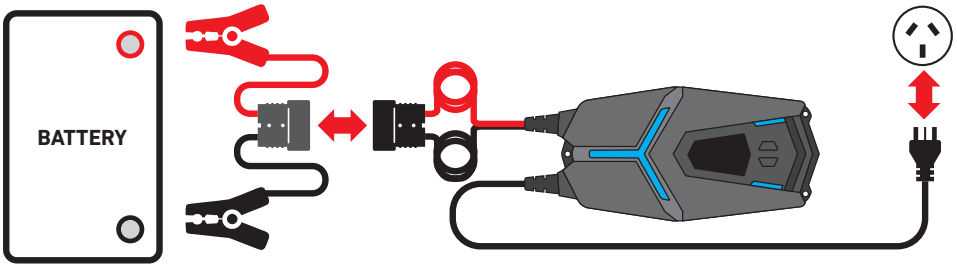
Mode Button



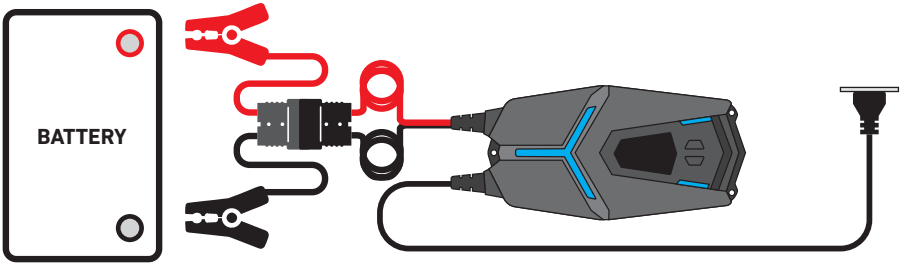
CONNECTING THE BATTERY CHARGER

To connect the charger and begin charging your battery, please follow these steps.

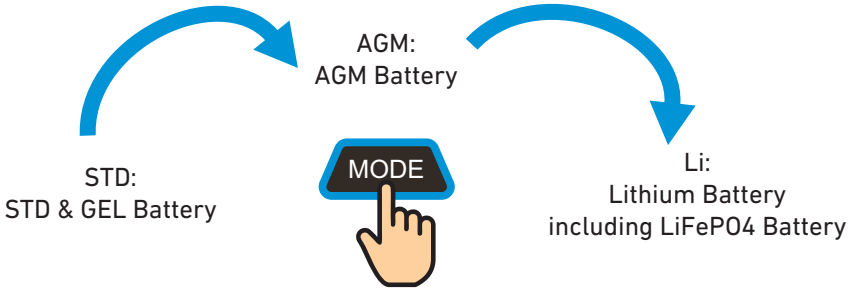
Step 1:
Prepare your charger - position the charger so the cables can reach the battery you intend to charge, and make sure you have ready access to AC power to plug the charger in. Ensure the Anderson-style connector is disconnected.



Step 2:
Connect the charger to AC power.

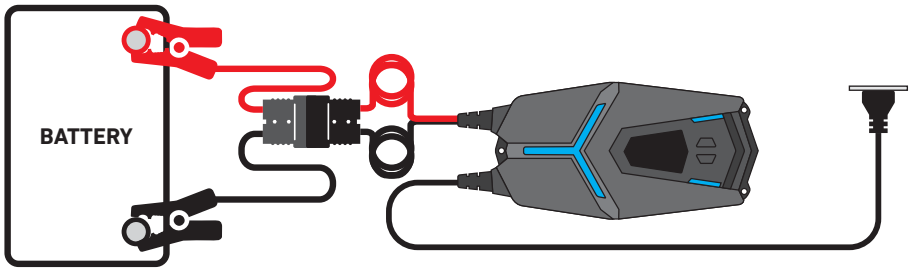


Step 3
Select the appropriate charge mode using the 'Mode' button, ensuring the mode is correct for the battery type to be charged.



Step 4
Adhere to the recommended charge rate based on the battery's specifications. Following these guidelines ensures safe and efficient charging, optimising the battery's longevity and performance.

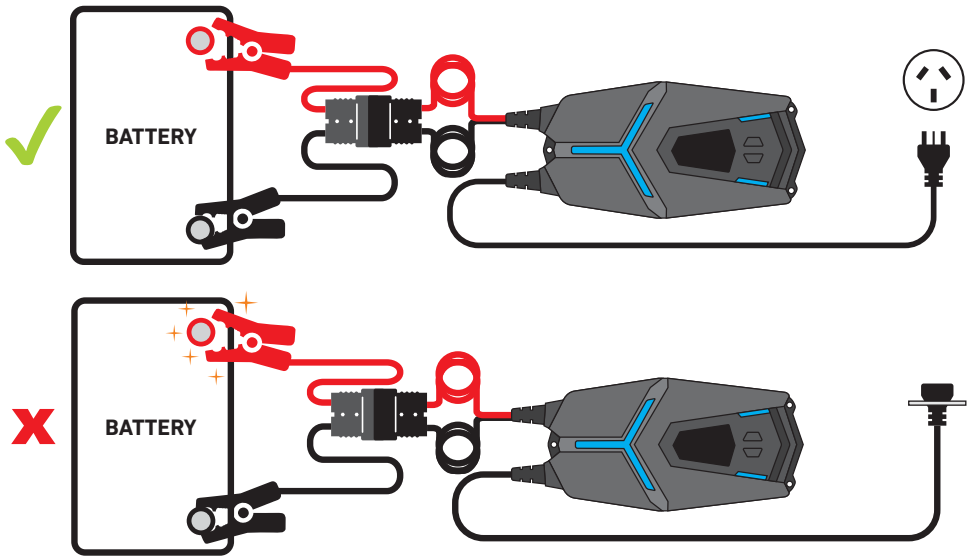
Step 5
Connect the alligator clamps to the battery and then connect the Anderson-style connector.



Step 6

If the battery needs to be disconnected, switch off the power supply at the wall and unplug the charger, then disconnect the alligator clamps or the Anderson connection.

This will prevent any dangerous sparks. NOTE: Do not disconnect the alligator clamps from the battery while the charger is connected to mains power, as this may cause sparks.



BATTERY CHARGER STANDARD OPERATION MODES

12V/4A STD Mode:

Slow charge with 12V sealed or flooded lead acid or GEL battery, MAX 4A

12V/8A STD Mode:

Fast charge with 12V sealed or flooded lead acid or GEL battery, MAX 8A

12V/16A STD Mode:

Fast charge with 12V sealed or flooded lead acid or GEL battery, MAX 16A

12V/4A AGM Mode:

Slow charge with 12V AGM battery, MAX 4A

12V/8A AGM Mode:

Fast charge with 12V AGM battery, MAX 8A

12V/16A AGM Mode:

Fast charge with 12V AGM battery, MAX 16A

12V/4A Li Mode:

Slow charge with 12V LiFePO4 battery, MAX 4A

12V/8A Li Mode:

Fast charge with 12V LiFePO4 battery, MAX 8A

12V/16A Li Mode:

Fast charge with 12V LiFePO4 battery, MAX 16A

BATTERY CHARGER SPECIAL OPERATION MODES

Recondition Mode:

Recondition mode can be used on AGM batteries to deliver a specialized charge if the battery has not been used for some time. We recommend you consult your battery manual or vendor before using the Recondition mode as it can shorten battery life.

12V COLD Mode:

Activate 12V COLD mode for optimal charging in cold temperatures.

Starter Battery Replacement Mode:

By following the steps below, you can effectively use the Starter Battery Replacement Mode of the KickAss Flexi Charge Smart Charger to replace your vehicle's starter battery without encountering electronic system re-setting issues.

Step 1: Connect the KickAss Flexi Charge Smart Charger to the starter battery terminals in your vehicle.

Step 2: Ensure that the battery charger detects a voltage at the battery terminals minimum 6V before proceeding.

Step 3: Hold down the "MODE" button on the charger for 5 seconds.

Step 4: The Starter Battery Replacement Mode is now activated.

Step 5: Replace the starter battery while the charger maintains power to the vehicle's electronic systems.

Step 6: Ensure that the battery terminals remain connected to the vehicle's 12V terminals throughout the replacement process.

Step 7:. Once the replacement is complete, disconnect the charger from the battery terminals.

S**tep 8:** Verify that the vehicle's electronic systems have not reset and are functioning properly.

BATTERY TESTER OPERATION MODE

CHECK

Step 1: Ensure Vehicle is Off

Make sure the vehicle's engine is turned off before proceeding.

Step 2: Connect the charger

- Attach the positive clamp (red) of the charger to the positive terminal of the car battery (+).
- Attach the negative clamp (black) to the negative terminal of the car battery (-).

NOTE: It is possible to conduct the battery check test without connecting the charger to AC power. This enables the battery to be checked when AC power is not available.

If the battery is connected and the charger LCD does not power on, the battery may be severely discharged or damaged and the battery charger will need to be connected to AC power to conduct the battery check.

Optional Step 3: Power On the Charger

Plug in the charger to a power source and ensure it is turned on.

Step 4: Select the CHECK mode

Long press the FUNCTION button until the CHECK mode is selected on the LCD display.

Step 5: Read the results

The LCD will display the battery voltage and a status result to indicate the battery's condition.

BAD	FAIR	GOOD
≤10.9V	11-11.9V	≥12V

START POWER

Step 1: Connect the Charger:

- Attach the positive clamp (red) of the charger to the positive terminal of the battery (+).
- Attach the negative clamp (black) to the negative terminal of the battery (-).

NOTE: It is possible to conduct the start power test without connecting the charger to AC power. This enables the start power to be checked when AC power is not available.

If the battery is connected and the charger LCD does not power on, the battery may be severely discharged or damaged and the battery charger will need to be connected to AC power to conduct the battery check.

Optional Step 2: Power On the Charger:

Plug in the charger to a power source and ensure it is turned on.

Step 3: Select START POWER Mode:

Long press the FUNCTION button until the START POWER mode is selected on the LCD display.

Step 4 :Wait for the Engine Icon to Flash:

When the engine icon on the LCD screen begins to flash, this indicates the charger is ready to test the starting power.

Step 5 : Start the Vehicle:

Immediately start the vehicle's engine while the engine icon is flashing.

Step 6 : Read the Results:

- The LCD screen will display the lowest voltage value recorded during the engine start.
- The screen will also display the status result (e.g., GOOD, FAIR, BAD) based on the battery's performance.

BAD	FAIR	GOOD
≤7.1V	7.2-9.9V	≥10V

Step 1: Complete START POWER test

- Ensure the START POWER test is completed successfully.
- Keep the clamps connected to the battery terminals and DO NOT turn off the vehicle's engine.

Step 2: Select ALT Mode:

Long press the FUNCTION button until the ALT mode is selected on the LCD display of the charger.

Step 3: Monitor Charging Status

- The charger will automatically begin testing the vehicle's alternator charging performance.
- The LCD will display the voltage level and a status result indicating the condition of the alternator's charging capability.

Step 4: Read the results

BAD	FAIR	GOOD
≤≦13.2	13.2-13.8V	≥13.8V

Step 5: Disconnect the Charger

- Turn off the vehicle's engine when testing is complete.
- Remove the clamps from the battery terminals in the reverse order: negative first, then positive.

LITHIUM ACTIVATION MODE

All lithium batteries have an integrated Battery Management System (BMS) to protect them from unsafe operating conditions. One of these conditions is Under Voltage Protection, which occurs when the batteries are depleted below a certain voltage.

When a battery pack enters this Under Voltage Protection mode, the BMS does not allow the battery to discharge any further to stop the cells from being damaged. While in this protective model, some BMS's may disconnect the external battery terminals from the internal cells. This can create problems for some chargers because they expect to sense a voltage at the battery terminals before they start charging.

To use Lithium Battery Activation mode, follow these steps:

Step 1: With the Anderson-style connector disconnected, connect the charger to 240V AC power.

Step 2: Select Lithium mode on the charger.

Step 3: Connect the alligator clamps to the battery – red clamp to battery positive (+) terminal, black clamp to battery negative (-) terminal – and then connect the Anderson-style connector.

Step 4: After connecting the Anderson-style connector, hold the Mode button down (for approximately 5 seconds) until the Li symbol flashes and the charger starts.

Note:

- In this mode, the output voltage will be a constant 13.5V supplying 12A max.
- The charger will stay in Lithium Activation mode for 10 minutes, after which time the charger will have reactivated the BMS to allow the battery to charge normally.
- Lithium Activation mode cannot be used while in AGM or STD charging modes.

CHARGING PROFILE

This charger is controlled by a microprocessor with 9 separate stages of charging batteries. The microprocessor senses the condition of the battery and delivers the right current and voltage. This will optimize the charging process and protect the batteries.

Stage 1: Battery Diagnostics and Pre-charge

Checks the battery voltage to make sure the connections are working, and that the battery is in a stable condition before starting to charge.

Stage 2: Desulphation

Available for STD/AGM batteries only, this stage detects sulfated batteries. Pulsing current and voltage (1'' charge and 0.5'' discharge), it removes sulfate from the lead plates of the battery restoring the battery capacity. If the change of battery voltage exceeds the voltage setting during charging and discharging, it enters the next stage 4 hours later. If the change is less than 3V, it enters the next stage without desulphurization repair (in about 10 seconds).

Stage 3: Soft Start

All initial battery test to determine battery condition. If the battery is severely discharged, the charger will begin the Soft Start stage. Charging starts with reduced current until the battery voltage reaches an appropriate level for charge.

Stage 4: Bulk

Main charging stage where the battery fills most of its capacity. The charger delivers maximum current until the terminal voltage has risen to the full charge level.

Stage 5: Absorption

Completes the charge up to virtually 100% at a constant voltage. The current tapers off once it reaches the minimum level.

Stage 6: Recondition
Available for AGM batteries only, this stage charges at a higher voltage to recondition the sulfate of the AGM battery to extend battery life.

Stage 7: Analysis
Tests whether the battery can hold capacity.

Stage 8: Float
Delivers low constant voltage with minimum charge current, after the battery is fully charged. The charger continuously monitors the battery voltage and adjusts the charging current as needed to keep the battery fully charged.

Stage 9: Pulse
Maintains the battery at 95-100% capacity. The charger monitors the battery voltage and gives a pulse when necessary to keep the battery fully charged. Only for STD/AGM batteries.

Note: The KickAss Flex Charger range implements an intelligent voltage monitoring system to determine the point at which the charger transitions from Float back to bulk. This ensures the battery SOC is always maintained in an optimal state, regardless of whether the battery is being actively discharged or in a standby / low discharge state.has context menu

Charge Voltage
By simply selecting the appropriate charge mode for the battery type being charged, (refer to the battery manufacturer's recommendations) the voltage display settings for key charge stages will be altered according to the table below.

12V BATTERIES

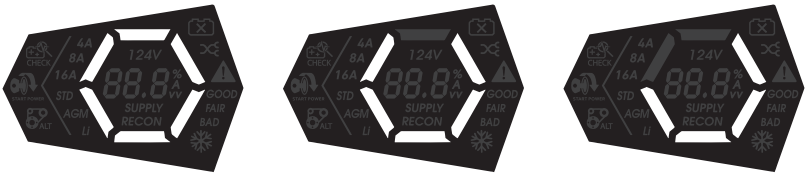
Battery	Absorption	Bulk	Float
12V LiFePO4	14.5V (CV)	14.5V (CC)	13.5V
12V AGM	14.7V (CV)	14.7V (CC)	13.5V
12V STD (FLD, SEALED, GEL)	14.4V (CV)	14.4V (CC)	13.5V

24V BATTERIES

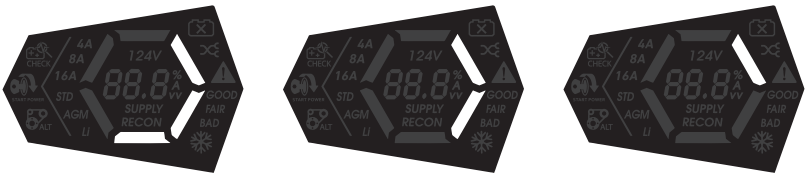
Battery	Absorption	Bulk	Float
24V LiFePO4	29.0V (CV)	29.0V (CC)	27V
24V AGM	29.4V (CV)	29.4V (CC)	27V
24V STD (FLD, SEALED, GEL)	28.8V (CV)	28.8V (CC)	27V

NOTES:
CC = Constant Current
CV = Constant Voltage

BATTERY CHARGING VOLTAGE LCD DISPLAY



FULL **>13.7V** **13.2-13.7V**



12.7-13.2V **12.0-12.7V** **<12.0V**

Note:

- The voltage LCD display shows the voltage level of your battery. Each bar in the LCD display corresponds with a particular voltage level. Depending on the voltage level of your battery, the appropriate LCD light bars will be illuminated.
- Once the charger reaches the float stage, indicating the battery is fully charged and being maintained, the FULL light bar will be illuminated and stay solid.

BATTERY CHARGER ERROR CODES

ERROR CODE	ICON ON DISPLAY	ERROR CODE MESSAGE
Er1		Reverse Polarity
Er2		Faulty Battery
Er3		Soft Start Stage (8-10V for 9 hours)
Er4		Reports battery error if voltage drops by more than 2V within 5 minutes
Er5		Desulphation Error
Er6		DC Power Supply mode when output voltage less than 10V
Er7		Bulk & Absorption Charging Time Exceeds (Over 36 Hours)

WARRANTY AND SUPPORT INFORMATION

Need help?

For product support or to make a warranty claim, reach out to the KickAss Customer Service team on **(07) 3123 1415** or at **support@kickassproducts.com.au**.

Alternatively, visit our Customer Support Portal at: **https://supportportal.kickassproducts.com.au/**

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