
POWERBOSS
KICKASS
ALL-IN-ONE
2000W
2KW PURE SINE WAVE INVERTER
120-40A AC-DC CHARGER
40A DC-DC CHARGER
40A MPPT CHARGER
30A DC LOAD OUTPUT
FULL SYSTEM MONITORING

KAPB2K1280

TABLE OF CONTENTS

1. SAFETY NOTES

1.1 SAFETY PRECAUTION

The PowerBoss is designed and tested to meet strict safety standards. Always read and follow all safety instructions and warnings before use. Incorrect operation could result in personal injury or property damage.

1.2 GENERAL SAFETY

- The information in this user manual is subject to change due to product updates. All descriptions in the manual are for guidance only.
- Use insulating tools and wear personal protective equipment when operating the unit to ensure personal safety. Wear anti-static gloves, clothes, and wrist strips when touching electronic devices to protect the product from damage.
- Strictly follow the installation, operation, and configuration instructions in this user manual. The manufacturer shall not be liable for equipment damage or personal injury if you do not follow the instructions.
- Do not disassemble the unit. Take it to a qualified service center when service or repair is required. Incorrect re-assembly may cause electric shock or fire.
- Use extreme caution when working with metal tools near batteries. Accidentally dropping a tool could cause a spark or short circuit, potentially leading to fire, explosion, or serious damage to electrical components.
- Never connect the AC output to the AC input.
- Do not use the unit in environments where flammable gases, vapours, or excessive dust may be present. Doing so could create an ignition risk and lead to fire or explosion.

1.3 BATTERY SAFETY

DANGER

- If battery acid comes into contact with skin or clothing, wash thoroughly with soap and clean water immediately. If acid splashes into eyes, rinse for at least 15 minutes with clean water and seek medical attention right away.
- Smoking or creating open flames near batteries or engines is strictly prohibited.

WARNING

- If the battery is fully discharged, charge it according to the specific instructions in its user manual.
- Factors such as temperature, humidity, and weather conditions may impact the battery's current and affect its load capacity.
- Use a multimeter to check the battery DC cable and ensure proper polarity. The voltage should always be within the allowable range.
- Never connect a single battery pack to multiple inverter chargers simultaneously, as this can cause damage.

1.4 INVERTER CHARGER SAFETY

WARNING

- Always use compatible AC connectors and cables to connect the equipment. Using an incompatible connector could cause serious damage, which will not be the responsibility of the manufacturer.
- Ensure the AC cables are properly, securely, and tightly connected.
- Ensure the voltage and frequency at the connection point match the equipment's specifications.

DANGER

- All labels and warning marks should be visible after the installation. Do not cover, overwrite or damage any label on the equipment.

2. PRODUCT SPECIFICATIONS

Model	KAPB2K1280
Dimensions	285mm x 121mm x 427mm
Weight	9.85kg
Operation Temperature Range	(-20 °C ~ 50 °C)
Inverter + Automatic Transfer Switch + ACDC Charger	
AC Output Power	2000W
AC Input / Output Voltage	240Vac
AC Input / Output Frequency	50Hz
Battery Charge Current	80A Max (Adjustable)
Efficiency	93% Max
Overload Protection	<10s @ 100% Load | 5s @ 150% Load | <5s @ 200% Load
AC Input Type	IEC13
AC Output Type	IEC14
Transfer Time	25ms
Circuit Protection	10A (30mA) RCBO
MEN Link	Yes
Battery Output	
Nominal Voltage	12V
Battery Type	GEL, AGM, FLD, LiFePO4, KickAss LiFePO4, USER
Battery Capacity	50 - 500Ah
Battery Integration	KickAss Smart and Ultra-X Series
DCDC-MPPT Charger	
Alt Input Voltage Range	12V Nominal - 9 ~ 16V
Alt Battery Charging Current	40A Max (Adjustable)
DCDC Efficiency	88% Max
Solar Input Voltage Range	14.5V - 50V
Solar Battery Charging Current	40A Max (Adjustable)
MPPT Efficiency	95% Max
DC Load	
Output	12V 50A Max
Warranty	2 Years


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POWERBOSS

IEC13 AC INPUT CABLE

IEC14 AC OUTPUT CABLE

TEMPERATURE SENSOR CABLE

RJ45 CABLE

3-PIN DRY CONTACT CONNECTOR

2-PIN IGNITION CONTROL CONNECTOR

KAPBRDU - KICKASS POWERBOSS REMOTE DISPLAY UNIT WITH BLUETOOTH

REMOTE SCREEN

RJ45 CABLE

KAPBBTMOD - KICKASS POWERBOSS - BLUETOOTH REMOTE MODULE

BLUETOOTH MODULE

RJ45 CABLE

KA3PINTODCDCWK- KICKASS DCDC TRAILER WIRING KIT

KAPBTOALTWK6.5M | KAPBTOALTWK KICKASS POWERBOSS TO ALTERNATOR WIRING KIT (6.5M & 8M)

KAPBPCONN – POWERBOSS CONNECTIONS KIT

POWERBOSS TO BATTERY + CONNECTION KIT WITH ISOLATOR SWITCH AND 250A MEGA FUSE

POWERBOSS TO SOLAR CONNECTION CABLE

POWERBOSS TO DC LOAD CONNECTION CABLE

POWERBOSS TO BATTERY CONNECTION CABLE

GROUND CABLE

13MM SOCKET DRIVER

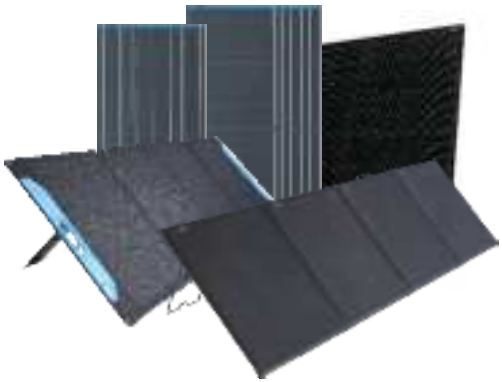
MULTI BIT SCREW DRIVER

BATTERIES

The PowerBoss has been specially designed to integrate seamlessly with KickAss Smart Lithium and Ultra-X Batteries. It provides accurate real-time State of Charge data, system monitoring, and smart alerts when paired with these batteries.

Visit www.kickassproducts.com.au to browse the full range of compatible smart and Ultra-X Lithium LiFePO4 batteries.

SOLAR



Visit www.kickassproducts.com.au to browse the full range of compatible solar panels.

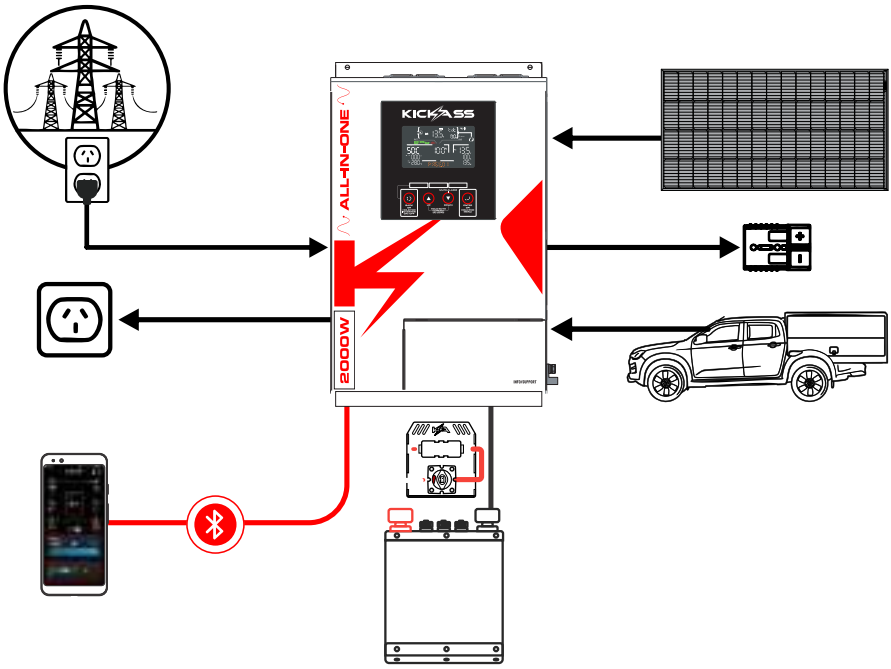
3. PRODUCT FEATURES

This all-in-one power solution ensures seamless and reliable energy management for your off-grid, camping, or mobile power needs. With its built-in 2000W inverter and automatic transfer switch, it effortlessly switches between power sources without interruption.

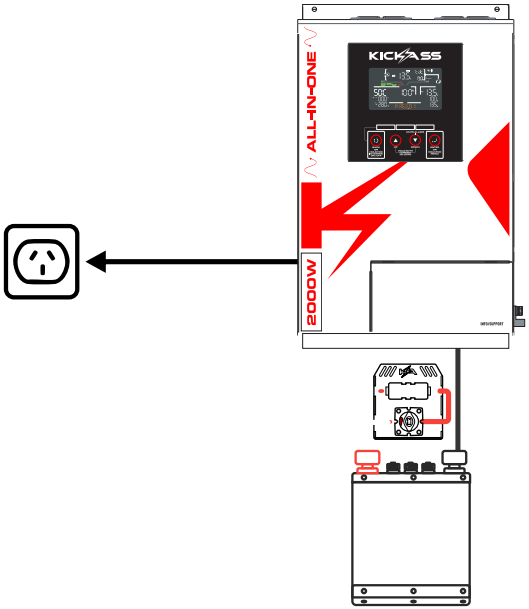
The high-speed 80A AC charger, 40A MPPT solar charge controller, and 40A DCDC charger provide versatile charging options, allowing you to recharge from AC power, solar panels, or your vehicle's alternator.

You can even charge and discharge simultaneously, ensuring uninterrupted power for your devices and appliances.

The dedicated 50A DC load output keeps your 12V gear running smoothly. Plus, with real-time system monitoring via Bluetooth or a remote screen, you can optimise performance and maximise energy efficiency.



The PowerBoss features a 2000W pure sine wave inverter with a bypass function and an automatic transfer switch, protected by an RCBO (Residual Current Circuit Breaker + Circuit Breaker) or safety switch. It utilises IEC 13 and IEC 14 input and output AC cables, providing a true plug-and-play solution for AC power connections.



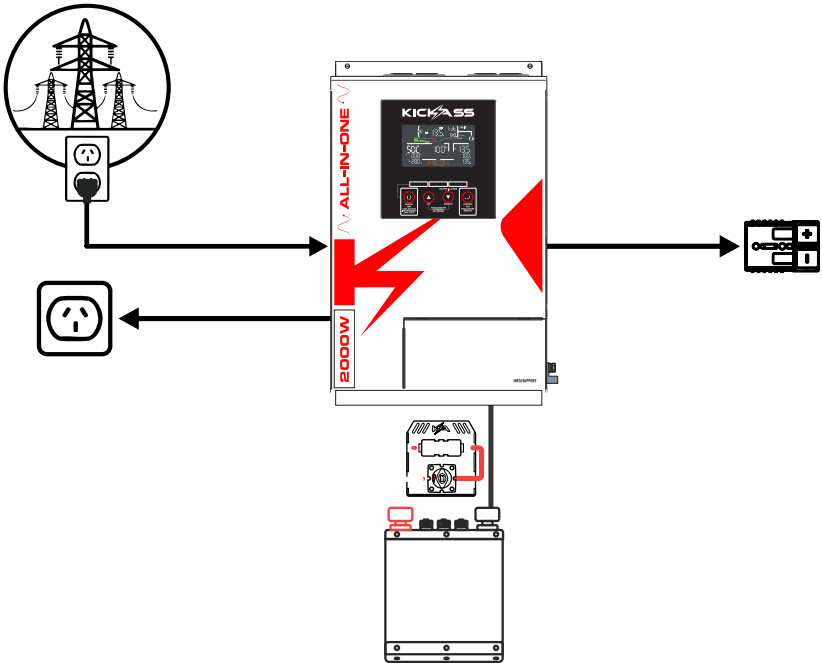
In inverter mode, the PowerBoss converts DC power from the auxiliary battery into a pure sine wave AC output. This pure sine wave output is suitable for powering both resistive and inductive loads. AC power is available via the IEC 13 connector on the PowerBoss and the IEC 14 to 10A AU outlet cable supplied with the unit.

The inverter output can be turned on and off using the touch interface on the PowerBoss LCD, the Remote Display, or the Bluetooth app. Turning off the inverter when not in use will help reduce the standby power consumption.

In bypass mode, AC power from the grid supply is transferred directly from the AC input to the AC output. When the PowerBoss detects AC input at the IEC 14 input connector, it will automatically switch from inverter mode to bypass mode. Once the grid supply is disconnected, the PowerBoss will automatically revert to inverter mode.

While in bypass mode, input power from the grid can also be converted to DC power, which is then used to charge the auxiliary battery and power any connected external DC loads, in addition to providing a direct bypass feed to the AC output.

The AC input power in bypass mode is limited to a maximum continuous input of 2000W. Power distribution from the AC input is prioritised to power the AC load first, followed by the DC load, and then the battery.



The PowerBoss features an integrated automatic transfer switch (ATS) that allows the unit to seamlessly switch between inverter mode and bypass mode when the AC grid input is connected or disconnected.

When the AC grid input is connected, the PowerBoss automatically detects the AC signal and enters bypass mode. The ATS switches the AC output to the AC signal provided by the grid input, while also disconnecting the MEN link used in inverter mode.

When the AC grid input is disconnected, the PowerBoss detects the absence of input and automatically transitions to inverter mode. The ATS then switches the AC output to be powered by the inverter, and the internal MEN link is reconnected.

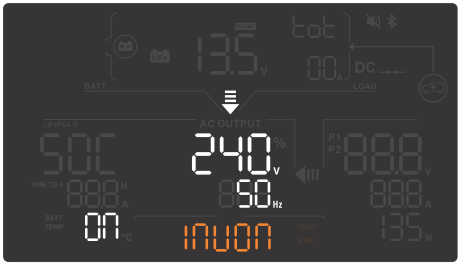
The PowerBoss is equipped with an AC hardware safety switch, or a Residual Current Circuit Breaker with Over Current Protection (RCBO), which safeguards the AC output of the device.

The RCBO combines the functions of both a Residual Current Device (RCD) and a Circuit Breaker (CB). It monitors for both earth leakage and overcurrent faults on the AC output, automatically disconnecting the output if needed to protect the user from electrocution.

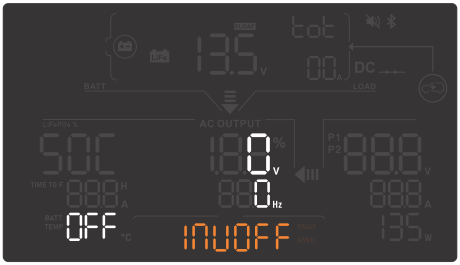
The integrated RCBO complies with AS/NZS 4763 (Safety of Portable Inverters) and may be necessary for the installation to meet the requirements of AS/NZS 3001 (Transportable Structures and Vehicles, including their Site Supplies).

The inverter output can be switched on or off via the PowerBoss LCD touch interface, the Remote Display, or the Bluetooth app.

To minimise standby power consumption, turn off the inverter when it is not in use.



INVERTER ON



INVERTER OFF

The inverter can be configured to automatically enter a low power mode after a period of inactivity by adjusting the No Load Power Save setting.

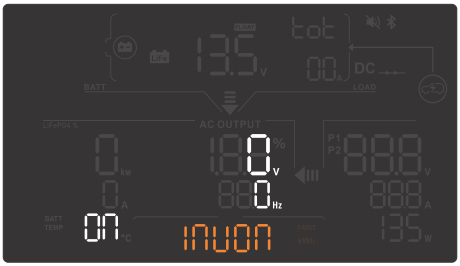
When this function is enabled, the inverter monitors the AC output. If no load greater then 100W is detected for the duration specified in the No Load Power Save setting, the inverter will enter a power saving mode to reduce standby power consumption.

IMPORTANT: The No Load Power Save function will only activate when the unit is not in an active charging stage (i.e. Bulk, Absorption, or Float).

In this mode:

- The Inverter ON indicator on the LCD and Bluetooth app remains illuminated.
- The Battery to AC Output indicator turns off, indicating that the AC output has been disabled.
- The AC Voltage output indicator will show 0V and 0Hz on both the LCD and Bluetooth app.

INVERTER ON



INVERTER ON - POWER SAVE MODE

To activate the AC output after the unit has entered into the power save mode, the inverter must be turned off and then on again via the inverter switch on the LCD display, Remote Display, or Bluetooth app.

IMPORTANT: Manually turning off the inverter when not in use is the most effective way to minimise standby current.

IMPORTANT: While the PowerBoss can supply AC loads ranging from 0 to 2000W, it will only detect loads greater than 100W for the purpose of triggering the No Load Power Saver function.

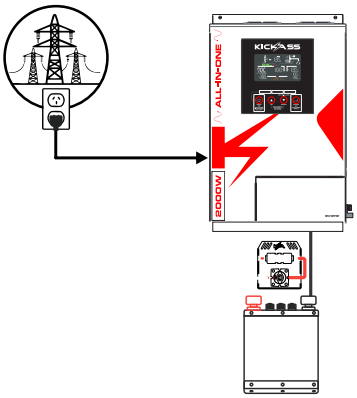
If the inverter is being used to power low-consumption devices (e.g. mobile phone chargers), disable the No Load Power Saver feature to avoid unintended shutdown of the AC output.

The AC output power of the PowerBoss is user-configurable and can be adjusted based on the installation type. Reducing the AC output power may be necessary when the auxiliary batteries cannot sustain the continuous discharge rate required to power a 2000W inverter. The maximum AC output power can be adjusted using the Output Power Limit function in the device settings menu.

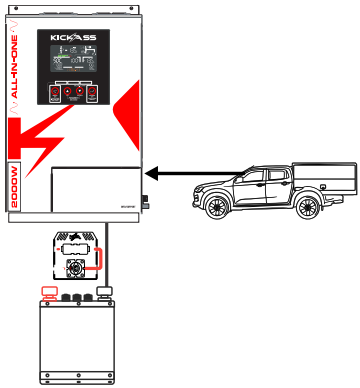
For an RCBO to effectively detect an earth leakage fault, the inverter must be used in a system with a Multiple Earth Neutral Link (MEN Link). When the PowerBoss is operating in inverter mode, the MEN link is automatically established, allowing the RCBO to detect any earth leakage faults in the system.

When the PowerBoss is operating in bypass mode, the internal MEN link is automatically disconnected via the automatic transfer switch. In this mode, the integrated RCBO operates correctly through the MEN link installed in the grid connection of the home or shore power to which the PowerBoss is connected.

In an AC power system utilising a MEN link, proper earth wiring is essential for electrical safety. The Earth tab on the PowerBoss must be connected to the chassis of the vehicle, mobile structure, or fixed installation where it is installed.



The PowerBoss AC Charger converts AC power from the grid supply or generator into DC power to charge the battery. The AC Charger output can simultaneously charge the battery and power any connected AC or DC loads. The charging current is adjustable between 10A and 80A through Menu Option 03.



The PowerBoss features a 40A DCDC charger compatible with both fixed and smart alternators, providing optimal multi-stage battery charging for supported battery chemistries while driving. The charge current is adjustable between 10A and 40A, via Menu Option 04.

A smart alternator adjusts its output voltage to optimise the charging efficiency of the vehicle's starter battery. When charging from a smart alternator, the IGN setting (Menu Option 15) must be set to ON, and the PowerBoss IGN wire must be connected to an accessory circuit that is only active when the vehicle is running.

IGN On	IGN High	12.2V	10.5V
IGN Off	(Ignore Ignition Wire)	13.2V	12.6V

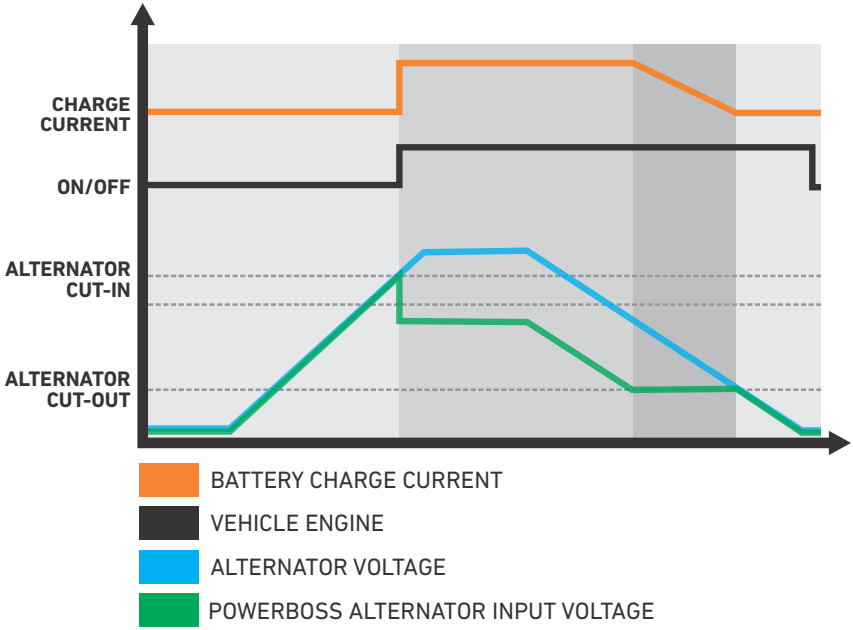
The PowerBoss can be configured to initiate charging either via an ignition signal from the vehicle or by monitoring the voltage at the alternator input terminals. This is adjustable through the Ignition Setting option via Menu Option 15.

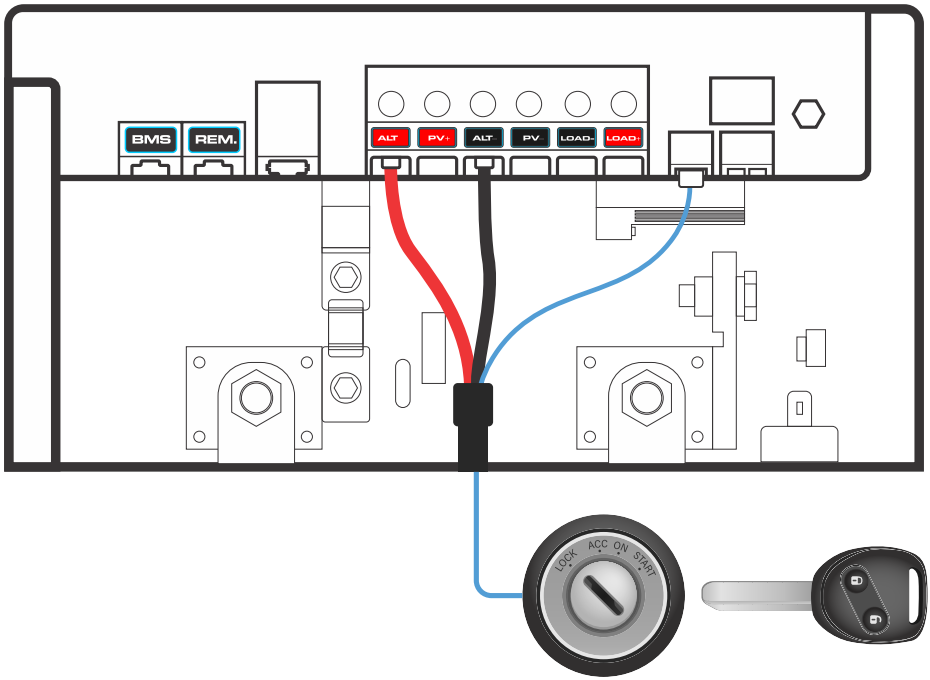
The DCDC cut-in and cut-out voltage thresholds will automatically adjust based on the selected ignition source.

Due to voltage drop across the cable connecting the alternator to the PowerBoss, the voltage measured at the unit's input may be lower than the actual alternator voltage.

To prevent the unit from incorrectly interpreting this lower voltage as being below the cut-out threshold, the PowerBoss will progressively reduce its output charge current as the input voltage nears the cut-out value. This helps minimise voltage drop across the input cable.

This feature ensures the unit continues to charge correctly.

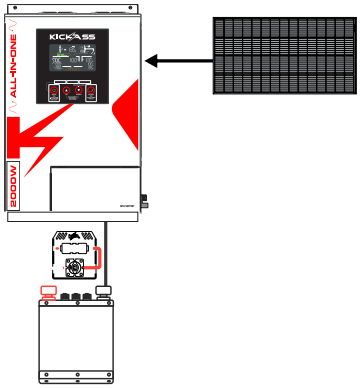




BLUE - IGNITION OVERRIDE

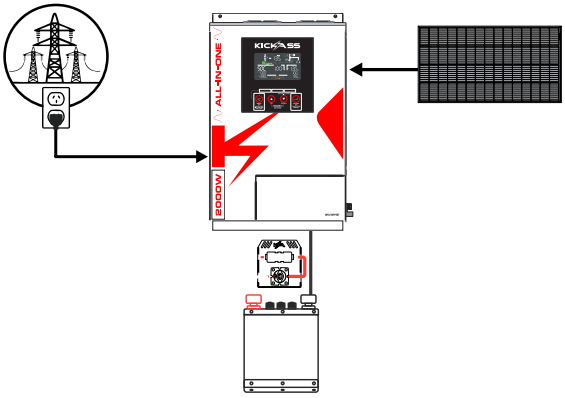
A fixed voltage alternator does not vary the output voltage while the vehicle is switched on. In this system, the PowerBoss can determine that the vehicle is running and enable charging by sampling the alternator voltage. To enable charging via only the alternator input voltage, the IGN setting (Menu Option 15) should be set to OFF.

When charging from a 12V alternator, it is recommended to always use the IGN wire and set the IGN setting (Menu Option 15) to ON.



The 40A MPPT Solar Charge Controller uses Maximum Power Point Tracking (MPPT) technology. This technology allows the PowerBoss to dynamically track the input power generated by the sun to optimise the charge output to the battery. The charge controllers operate at 95% conversion efficiency, meaning that 95% of the power received by the MPPT Solar Charge Controller from the connected solar array is converted to output power. The charge current is adjustable between 10A-40A via Menu Option 03.

Once the solar input is connected, the MPPT charging algorithm takes approximately one minute to calculate the maximum power point for charging.



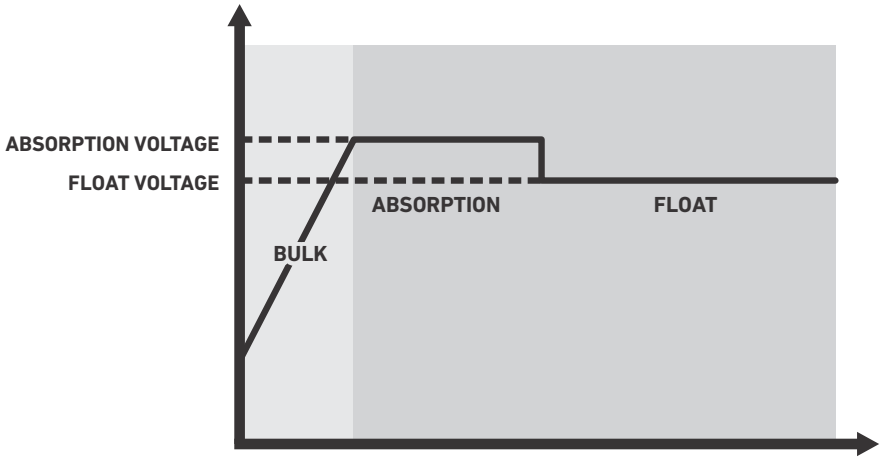
The PowerBoss supports simultaneous AC and solar charging, allowing the auxiliary battery to charge from both inputs when available. In this setup, the system automatically prioritises solar power over AC power, and only draws additional power from the AC input when necessary. The total maximum charge current achieved is 80A, and the charge current is adjustable between 10A-80A in Menu Option 03.

The PowerBoss contains pre-configured charge profiles for AGM, GEL, FLOODED and Lithium batteries (LNC and LFP). Users should select the battery type in Menu Option 01, or via the Bluetooth App.

Battery Type	Description
AGM	Absorbent Glass Mat
GEL	Gelled Electrolyte
FLD	Flooded Sealed Acid
LFP	KickAss LiFePO4 Battery (with communications). The PowerBoss can communicate directly with the battery's BMS, displaying State of Charge (SOC) and any system alerts reported by the BMS.
LNC	LiFePO4 Battery (without communications)
USER	Charge profile parameters relating to the Bulk, Absorption and Float charge stages are user configurable. This battery setting can be used to customise the charging profile.

The charge stages apply to all charging methods, including AC charging, alternator charging, MPPT charging, and AC + MPPT charging.

Charge Stage	Description
Bulk	The charger will deliver full current during the Bulk charging stage. Once the charger output voltage reaches Bulk Voltage – 0.2V, the unit will transition to the Absorption charging stage. The unit will automatically transition to the Absorption charging stage if the Bulk charging stage exceeds six hours.
ABS (Absorption)	During the Absorption stage, the Bulk Voltage will be maintained until the current drops below the Absorption exit current for > 10 minutes. The unit will automatically transition to the Absorption charging stage if the Bulk charging stage time exceeds six hours. **NOTE:** The ABS exit current is 2A by default for all battery types except USER.
Float	In the Float charging stage, the battery voltage will slowly reduce until the Float Voltage is reached. The battery is then considered fully charged. If input power is available, the PowerBoss will actively maintain the float voltage by powering any connected loads.
Float to Bulk Recovery	If the battery voltage falls below the Bulk Recovery Voltage and there is an input source available, the PowerBoss will automatically begin charging from the Bulk charging stage again.



The charging voltage and maximum charging voltage is determined by the battery chemistry, capacity, and temperature. If the PowerBoss temperature sensor is not connected, program the approximate ambient temperature of the location where the battery will be charged in Menu Option 18, or via the Bluetooth app. Charge profile parameters can be customised by selecting the USER battery type.

Battery Type	FLD	GEL	AGM	KickAss LifePO4 (LFP) / Lithium No Comms (LNC)	USER
Bulk Voltage	14.8V	14.6V	14.6V	14.2V	14.6V (Default)
ABS Exit Current	2A				2A (Default)
Float Voltage	13.5V	13.8V	13.4V	13.6V	13.5V (Default)

The external battery temperature sensor module is used when charging AGM, GEL, or FLD battery types. It should be installed on the negative terminal of the auxiliary battery.

Temperature readings from the sensor are used to automatically adjust the Bulk, Absorption, and Float charging voltages to suit the battery's operating temperature.

If the temperature sensor is not connected while one of the above battery types is selected, an estimated ambient operating temperature can be manually set via Menu Option 18 or through the Bluetooth app.

	GEL	FLD	AGM
Bulk voltage – Low < 10°C	14.8V	14.6V	14.6V
Bulk voltage – Medium 10~40°C	14.4V	14.2V	14.3V
Bulk voltage – High > 40°C)	14V	13.8V	14V

IMPORTANT: There is no voltage adjustment based on temperature for LiFePO4 batteries. The external temperature sensor is not required for LiFePO4 batteries.

Lithium Activation Mode in the PowerBoss is designed to recover a lithium battery that is in sleep or low voltage protection mode. When the battery voltage drops below a certain threshold, the BMS protection activates, cutting off voltage at the terminals to prevent the battery from further discharge. In this state, normal charging may not be possible.

To recover a lithium battery in low voltage protection mode, the PowerBoss will provide a constant voltage output of 14.3V with a current limit of 10A until the BMS low voltage discharge protection is released.

Once the PowerBoss detects the battery has been recovered, the PowerBoss will restart and normal charging will resume.

NOTE: Lithium Activation Mode can only be activated through AC or alternator inputs, not via the solar input alone.

If Battery Voltage < 8V and AC input is connected, the PowerBoss enters Lithium Activation Mode automatically.

To initiate Lithium Activation Mode via the alternator input, the hardware switch on the PowerBoss must be turned on.

If the hardware switch is in the remote position, then the hardware switch on the Remote Display or Remote Bluetooth module must be engaged for the PowerBoss to enter Lithium Activation Mode.

Once the hardware switch is engaged, start the vehicle. As the alternator voltage increases above 12.8V the PowerBoss will automatically turn on and enter Lithium Activation Mode.

REMOTE HARDWARE SWITCH

OR

REMOTE HARDWARE SWITCH

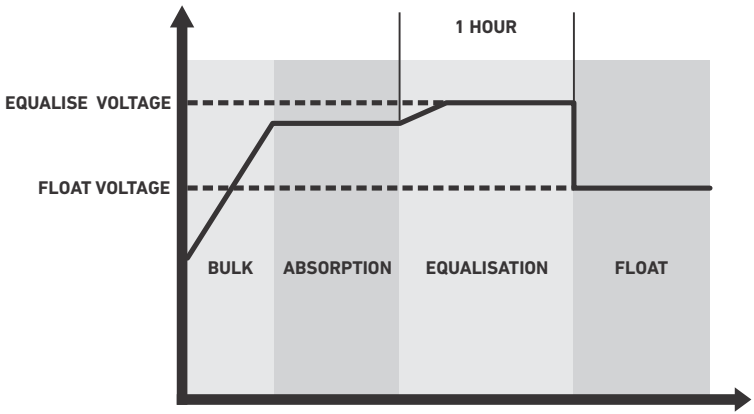
Equalising a Flooded type battery is important to correct cell imbalances that naturally develop over time, ensuring all cells are fully charged and preventing sulfation.

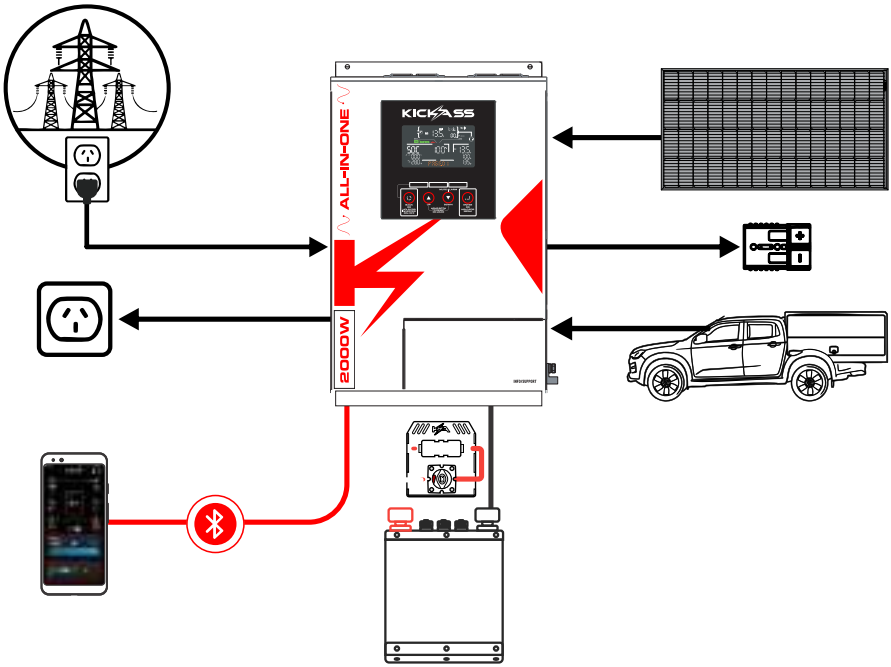
Sulfation is the build up of sulfate crystals on the internal positive and negative plates of the battery. If left unchecked, sulfation will reduce the overall capacity of the battery. Therefore, all batteries should be periodically equalised.

NOTE: Equalisation is only required for Flooded batteries.

Initiate the equalisation process through Menu Item 15 on your PowerBoss or Bluetooth app. This is a one-time setting – after the Equalisation charge is complete, the unit will revert to the normal charging process.

Once initialised, the PowerBoss will enter the Equalisation charging stage after completing the Absorption charging stage. If the Equalisation charge is enabled while the charger is in the Float charging stage, the Equalisation charge will begin after the next full charging cycle - starting from Bulk, then moving through Absorption before entering Equalisation.



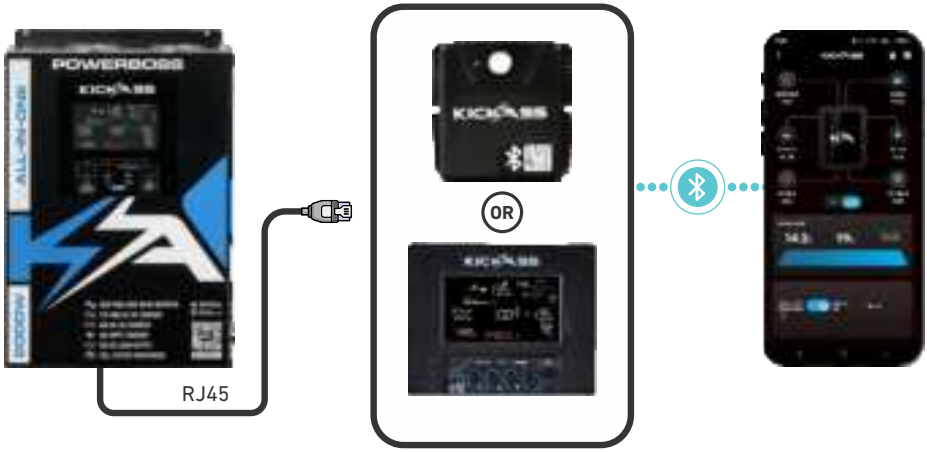


The PowerBoss monitors all system inputs and outputs to provide real time feedback on system performance. The following information is monitored and displayed on the PowerBoss LCD display, and Bluetooth app.

Solar Input	Input Voltage, Input Current and Power
Alternator Input	Input Voltage, Input Current and Power
AC Input	Input Voltage, Input Frequency
AC Output	Output Voltage, Output Frequency, Output Current (AC and DC), Output Power
DC Output	Output Voltage, Output Current and Power
Battery	Battery Voltage, Battery SOC, Net Input / Output Current

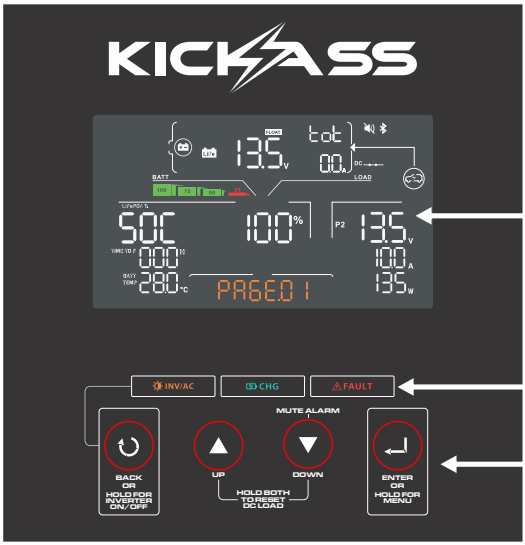
The PowerBoss provides two remote monitoring options: the KickAss Remote Display Screen, and the Bluetooth app. Both provide options for full system monitoring and control.

To connect to the PowerBoss via the Bluetooth app, you need either the Remote Display Screen or the Remote Bluetooth Module.



Please refer to section 4.6 on pg 47 for details on setting up and configuring the Bluetooth app.

The PowerBoss front panel is equipped with an LCD display, LED indicators, and function keys, providing intuitive user interaction and real-time status monitoring. The LCD screen on the front of the PowerBoss is replicated on the remote display unit.

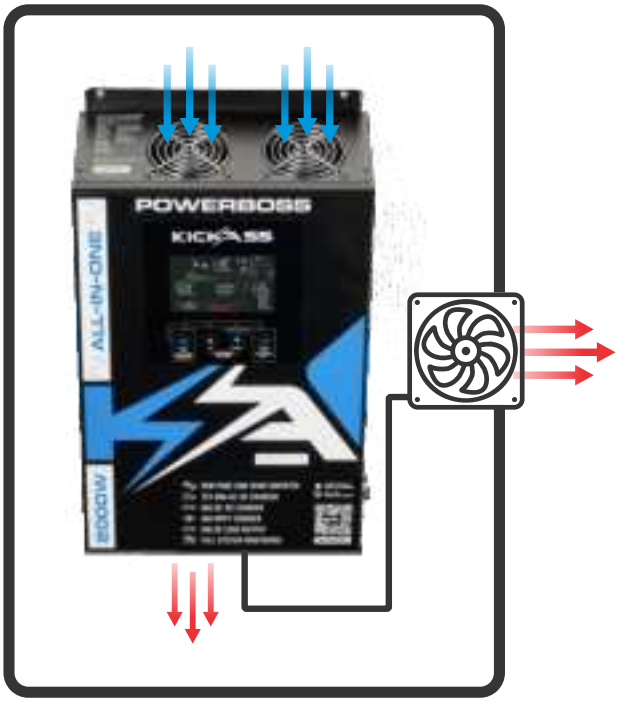


The PowerBoss features smart cooling fans that will regulate the temperature of the system by automatically adjusting their speed based on internal temperature and charge/discharge current. The fans increase/decrease airflow when needed to prevent overheating, ensuring optimal performance and prolonging component lifespan. These fans operate at higher speeds only when necessary, reducing energy consumption and noise during normal operation. By managing heat effectively, they also help prevent damage and maintain stable system performance.

The unit features an external 12V fan output, designed to improve airflow when the system is installed in an enclosed space.

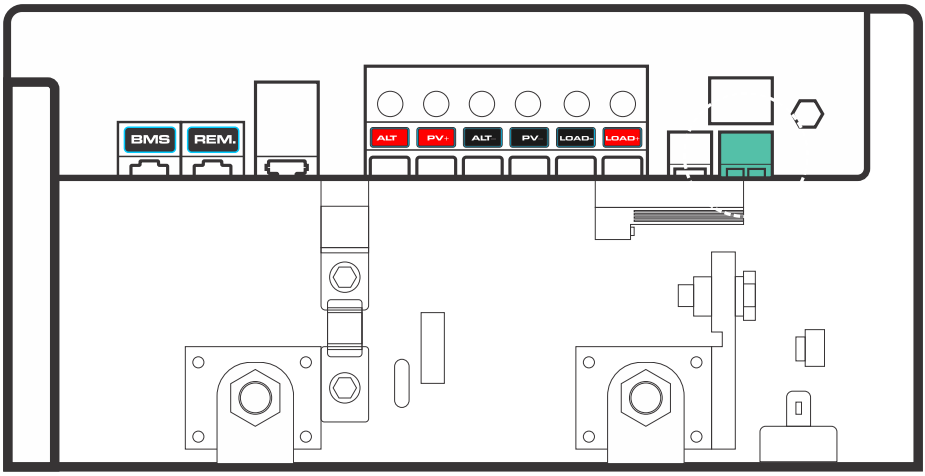
This external fan output is governed by the same smart control logic as the internal cooling fans. When the internal fans turn on, off, or adjusts speed based on internal temperature, the external fan will respond in the same manner—ensuring consistent thermal management across the system.

EXTERNAL FAN OUTPUT



DRY CONTACTS IN THE POWERBOSS

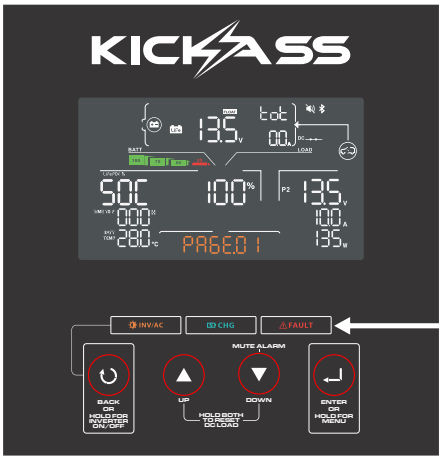
The PowerBoss is equipped with dry contacts (also known as relay contacts or volt-free contacts), which are electrically isolated switch contacts used to control external devices such as backup generators, alarms, or load-shedding systems. These contacts function as a simple on/off switch without supplying voltage, ensuring safe and seamless integration with various systems.



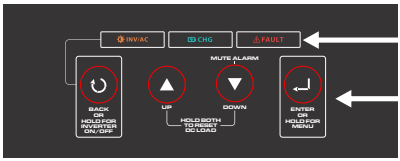
HOW DRY CONTACTS WORK IN THE POWERBOSS

The internal relay in the PowerBoss operates between Normally Open (NO) and Normally Closed (NC) states, depending on system conditions:

- When the battery reaches Low State of Charge (SOC) or Low Voltage Cut-Out (refer to LCD Menu 07 and 08 for details), the relay closes the circuit, sending a signal to trigger an external device (eg. start a generator).
- Once the battery recovers from Low SOC or Low Voltage Cut-Out, the relay opens the circuit, stopping the signal.

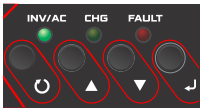
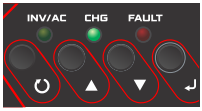
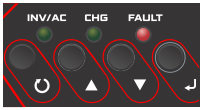


LED INDICATOR	STATUS	DESCRIPTION
INV/AC	SOLID	Indicates that the AC input is connected and providing power to the system.
	FLASHING	Indicates that AC output is being powered via the inverter.
	OFF	Indicates that there is no load being powered through the AC output.
CHG	SOLID	Indicates that the battery is fully charged and the system is in Float.
	FLASHING	Indicates that the battery is being charged.
	OFF	Indicates there is no charge input connected to the system.
FAULT	SOLID	Indicates that there is an active fault occurring with the system.
	FLASHING	Indicates that there is an active warning.
	OFF	Indicates that there are no active warnings or faults.

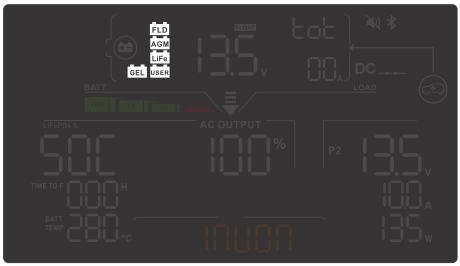


	Return – Used to exit the current display and return to the main display.
	Up – Used to toggle between displays and menu settings.
	Down – Used to toggle between displays and menu settings.
	Enter - Used to confirm the current selection.

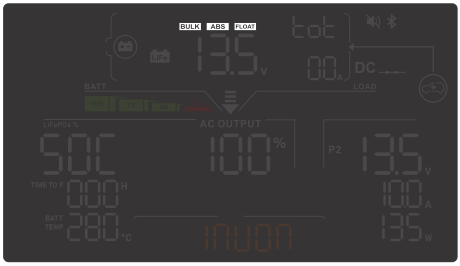
	Long Press	Enter into the main menu.
AND	Long Press	Reset a DC load over-current fault (Fault Code 14).
	Long Press	Cycles the inverter on and off.

LED	COLOUR	STATUS	DESCRIPTION
INV/AC	 GREEN	SOLID	Indicates that the AC input is connected and providing power to the system.
		FLASHING	Indicates that the AC output is being powered via the inverter.
		OFF	Indicates that there is no load being powered through the AC output.
CHG	 GREEN	SOLID	Indicates that the battery is fully charged and the system is in Float.
		FLASHING	Indicates that the battery is being charged.
		OFF	Indicates that there is no charge input connected to the system.
FAULT	 RED	SOLID	Indicates that there is an active fault.
		FLASHING	Indicates that there is an active warning.
		OFF	Indicates that there are no active warnings or faults.

Battery Voltage: Displays the voltage of the auxiliary battery connected to the PowerBoss.

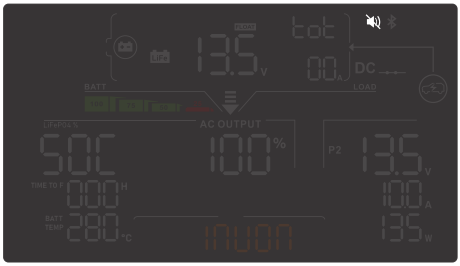


Battery Type: Displays the selected battery type.

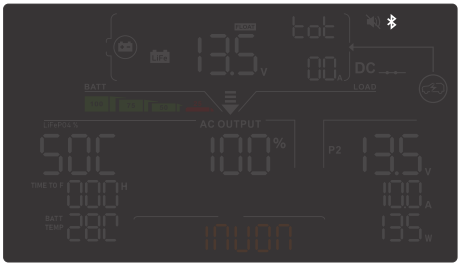


Charging Stage: Displays the active charge state: BULK, ABSORPTION or FLOAT.

Battery Symbol: Indicates that the auxiliary battery is detected.



Alarm: Indicates that audible feedback is disabled. No sound will be heard when pressing buttons or if an alarm is triggered.



Bluetooth Status: Indicates that there is an active Bluetooth connection.

Total System DC Amps: The display shows the real-time battery current. Charging indicates that the PowerBoss is charging the auxiliary battery. Discharging indicates the PowerBoss is drawing power from the auxiliary battery.

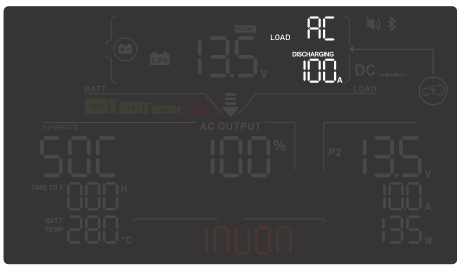
DC Discharging: The display shows the total DC current being drawn from the DC load output terminal.

DC Charging: The display shows the total DC current provided by the PowerBoss from a DC charging input.

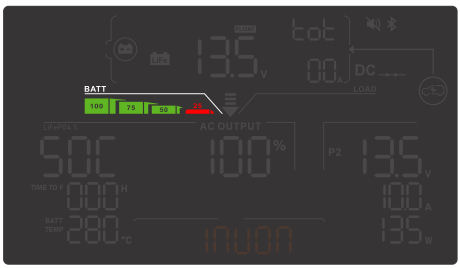
The DC current provided by the PowerBoss can be split across the battery output, DC output and AC output.

AC Charging: The display shows the total DC current provided by the PowerBoss from the AC charging input.

The DC current provided by the PowerBoss can be split across the battery output, DC output and AC output.



AC Discharging: The display shows the total DC current used by the inverter.



Battery Level Indicator: Displays the approximate State of Charge (SoC) percentage remaining in the auxiliary battery. This approximation is based on the battery voltage only. This approximation is only applicable to AGM, GEL, FLOODED, and USER defined battery types.

SoC %: Displays the real-time State of Charge (SoC) of supported KickAss LiFePO4 batteries. The supporting battery must be connected via an RJ45 cable to the BMS port on the PowerBoss.

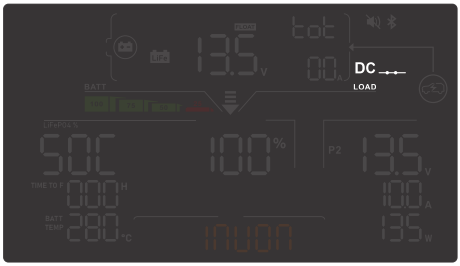
Battery Temperature: Displays data from the temperature sensor connected between the auxiliary battery and the PowerBoss. The battery temperature sensor is not required for a LiFePO4 battery.

When the temperature sensor is not connected, the default value displayed is ---°C.

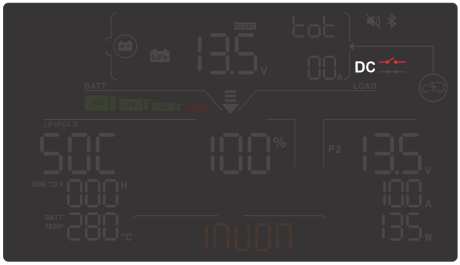
DCDC Input: Displays DC input voltage, current, and wattage. P1 indicates the information relates to the Solar input. P2 indicates the information relates to the Alternator input.

Alternator Charging: Indicates that the PowerBoss is actively charging from the Alternator input.

Solar Charging: Indicates that the PowerBoss is actively charging from the Solar input.



DC Load Relay Status – On: Indicates that Power is available from the DC load terminal.



DC Load Relay Status – Off: Indicates that the relay for the DC load terminal is open and there is no power available at the DC load output. This will occur after a DC output over-current condition or when the unit is in low voltage/SoC protection mode.

DCDC Input to AC Output: Indicates power is being provided from a DC input to the inverter.

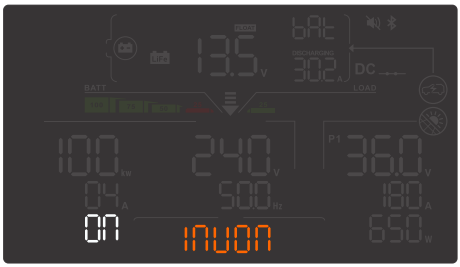
AC Output: Displays the AC output power and current (AC Amps) provided by the inverter.

AC Input: Displays AC input voltage and frequency.

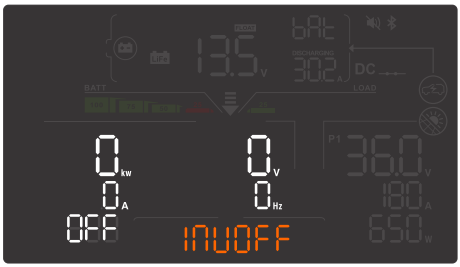
AC Output Level Indicator: Provides an approximation of the inverter output with respect to the max inverter available power.

Eg. If the max inverter power is set to 2000W, and an 800W load is being drawn from the PowerBoss, the load bar will show 50%. If the max inverter power is set to 1000W, and an 800W load is being drawn from the PowerBoss, the load bar will show 100%.

Battery to AC Output: Indicates that the inverter is active and power is being supplied by the auxiliary battery.



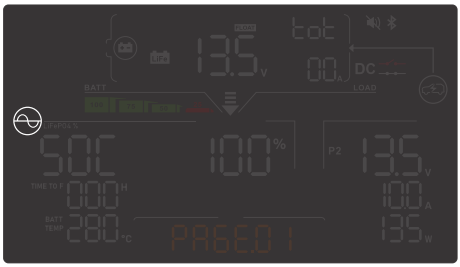
Inverter On: Indicates that power is available at the AC output. Power is provided by the inverter.



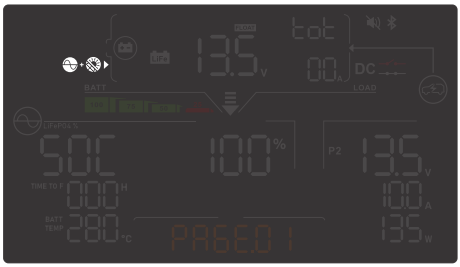
Inverter Off: Indicates that the inverter is turned off and there is no power available at the AC output.

Inverter Overload: Indicates that the inverter is currently being overloaded. The inverter output will shutdown unless the overload condition is removed.

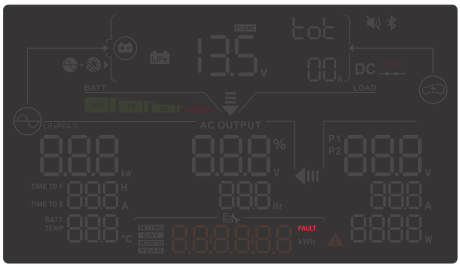
Bypass: Indicates the unit is in Bypass mode. AC power at the output is provided by the AC input connection to the unit.



AC Charging: Indicates that the unit is connected to AC power and is actively charging the battery.



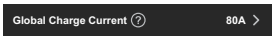
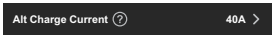
AC + Solar Charging: Indicates the unit is actively charging from AC and solar inputs simultaneously. The unit will use all available power from the solar input, before supplementing the remaining required power from the AC input to achieve the required charge current.



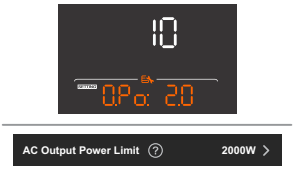
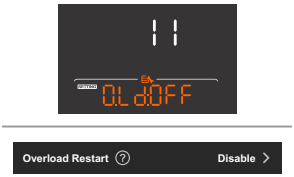
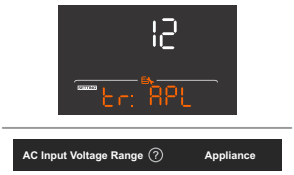
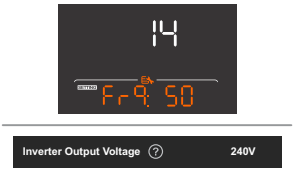
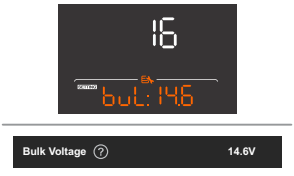
Active Fault: Indicates there is an active fault.

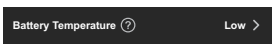
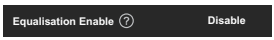
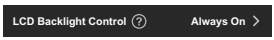
Active Warning: Indicates there is an active warning.

To access the PowerBoss menu, long press the the ENTER function key to enter the main menu.

MENU ID	DESCRIPTION	DEFAULT VALUE	LCD DISPLAY / APP DISPLAY	OPTIONS	REMARKS
00	Exit Settings Menu	ESC	 N/A	N/A	
01	Battery Type Selection	LFP	 	AGM, GEL, FLOODED, LFP, LNC, USER	Select the battery chemistry of the auxiliary battery connected to the unit.
02	Battery Capacity (Ah)	Ah: 200	 	Ah: 50, 55, 60, 65, 70, 75 - 500	Select the total capacity of the battery bank connected to the unit, eg. 2 x 100Ah batteries = 200Ah. If battery type is set to KickAss LiFePO4 (LFP), the battery capacity will be configured automatically when the unit establishes communications to the KickAss LiFePO4 battery.
03	Global Charge Current (A)	CC: 80A	 	10A – 80A	Set the maximum battery charge current for the system. This applies when charging from AC, solar, and alternator inputs. If CC is set to a value greater than 40A, then the charge output from Alternator and Solar will be capped at 40A. The battery type and capacity affects the CC limit. • If the battery type is AGM/GEL/FLD, the CC limit = Battery capacity X0.25C. • If the Battery type is LFP/LNC the CC limit = Battery capacity X 0.4C. • If the battery type is USER, the CC is customisable.
04	Alternator Charge Current (A)	dC: 40A	 	10A – 40A	Maximum charge output setting when charging from the alternator. The charge output can be reduced to reduce the load on low power alternators.

MENU ID	DESCRIPTION	DEFAULT VALUE	LCD DISPLAY / APP DISPLAY	OPTIONS	REMARKS
05	Low Voltage Warning (V)	VOL: 11.5	 Low Voltage Warning 11.5V >	11.1, 11.2, 11.3 - 12	The low voltage warning alert will trigger at this voltage. • This option is applicable only to AGM/GEL/FLD/USER/LNC battery types. • Low voltage warning must be set higher than low voltage cut-out. • Low voltage warning recovery value = 0.5V + Low voltage warning.
06	Low SoC Warning (%)	SOC: 15	 Low SOC Warning 10%	10, 15, 20, 25, 30, 35, 40 - 70	The low SoC warning alarm will trigger at this value. • Low SOC Warning applies to KickAss LiFePO4 (LFP) batteries only. • Low SOC warning must be set higher than low SOC cut out. • Low SOC warning recovery value = 5% SOC + Low SOC warning.
07	Low Voltage Cut-out (V)	V.Cu: 10.5	 Low Voltage Cut-out 10.0V >	10.0, 10.1, 10.2, 10.3, 10.4 - 11	Low voltage cut-out alert will trigger at this voltage. • This option is applicable only to AGM/GEL/FLD/USER/LNC battery types. • Low voltage cut-out recovery value = 0.5V + Low Voltage Cut-out value for AGM/GEL/FLD/USER, and 13V for LNC battery types.
08	Low SoC Cut-out (%)	S.Cu: 10	 Low SOC Cut-out 10%	* 10, 15, 20, 25, 30,35, 40 - 60	The low SoC cut-out alert will trigger at this value. • Low SoC cut-out applies to LFP batteries only. • Low SoC Cutout recovery value = 10% SoC + Low SoC Cut-out value.
09	No Load Power Save Time	L.Sh:OFF	 No Load Power Save Time 0.5h >	OFF, 0.5, 1.0, 1.5	The No Load Power Save Time is the period of time that no load is drawn from the inverter before the inverter enters a low power mode. When set to 0.0, the no inverter load shutdown feature will be disabled. • The no load detection threshold is <100W. If powering loads <100W from the AC output to disable the no inverter load shutdown mode.

MENU ID	DESCRIPTION	DEFAULT VALUE	LCD DISPLAY / APP DISPLAY	OPTIONS	REMARKS
10	Output Power Limit (kW)	O.Po: 2		0.1, 0.2, 0.3 - 2	Maximum AC output power. This setting applies to both inverter and bypass modes.
11	Overload Restart	O.Ld:OFF		OFF | ON	When an inverter overload fault occurs, the unit can be configured to automatically reset the output, or wait for a manual reset. When enabled, the inverter will automatically restart 30 seconds after an overload fault occurs. When disabled, the inverter must be turned off and then on again via the inverter control on the unit's LCD or the Bluetooth app.
12	AC Input Voltage Range	VAC:240		240	Not user configurable. Set to appliance mode.
14	Inverter Output Frequency (Hz)	Frq: 50Hz		50	Not user configurable. Set to 50Hz.
15	Ignition Setting	IG: ON		OFF | ON	When set to ON, The unit will look for an active signal on the IGN wire to start charging. When set to OFF, the unit will start charging based on the voltage at the alternators input terminal. It's recommended to connect the IGN wire and set the ignition setting to ON for all vehicles.
16	Bulk Voltage (V)	bul: 14.6		bul: 12, 12.1, 12.2 - 17	Applies only to USER batteries. The bulk voltage is the voltage the unit will charge to with a constant current before transitioning to absorption. Please refer after the relevant technical documentation from the battery manufacturer to confirm the acceptable charging voltage.

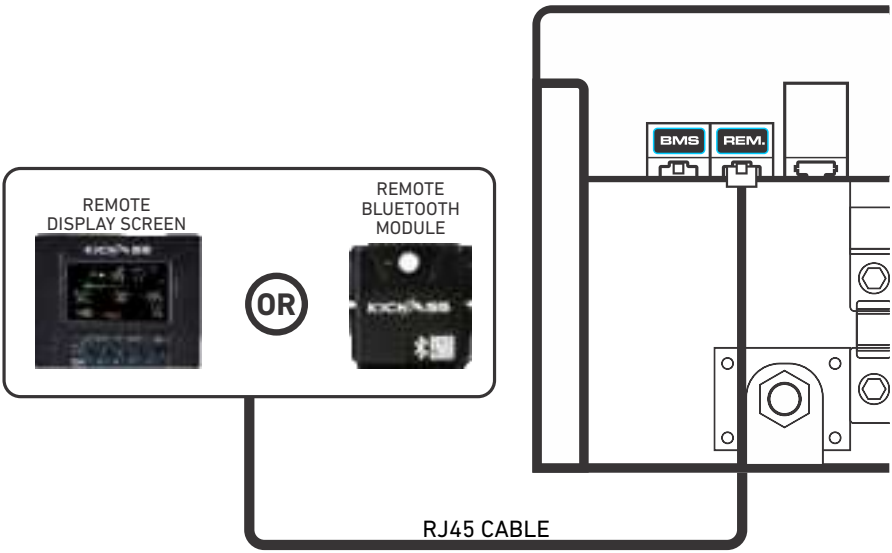
MENU ID	DESCRIPTION	DEFAULT VALUE	LCD DISPLAY / APP DISPLAY	OPTIONS	REMARKS
17	Float Voltage (V)	Ful: 13.5	 	Flt: 12, 12.1, 12.2 - 17	Only applies to USER batteries. The float voltage is the voltage the battery is maintained at during the float charging stage. Please review the relevant technical documentation from the battery manufacturer to confirm the acceptable charging voltage.
18	Battery Temperature	tEM:MEd	 	Lo | nEd | Hi	Used when no temperature sensor is installed. This setting is used to define the typical ambient operating temperature of the battery. The battery termperature setting is only applied when the selected battery type is AGM, GEL, FLD or USER. • High - Ambient temperature > 40°C • Medium - Ambient temperature >10°C and <40°C • Low - Ambient temperature <10°C
19	Absorption Exit Current (A)	AbS: 2A	 	AbS: 1A - 10A	The ABS exit current is the threshold the current must drop below when in the absorption charging stage before transitioning to float charging stage.
20	Equalisation	Eql:OFF	 	Eql: ON | OFF	Only applies to FLD batteries. When enabled, the unit will perform an equalisation charge to help break down any sulfation that may have occurred internally.
21	Sound Feedback	bEP: ON	 	ON | OFF	Enable or disable sound feedback. This applies to both the audible noise made when a button is pressed, and the audible alarm played when a warning or fault occurs. This setting controls both the PowerBoss LCD and the Remote Display LCD.
22	LCD Backlight Control	Lcd: ON	 	Lcd: ON | OFF	Enable or disable the backlight timeout. When set to ALWAYS ON, the PowerBoss LCD screen will remain on indefinitely. When set to OFF, the PowerBoss LCD screen will turn off after 60 seconds of inactivity. This setting controls both the PowerBoss LCD and the Remote Display LCD.

MENU ID	DESCRIPTION	DEFAULT VALUE	LCD DISPLAY / APP DISPLAY	OPTIONS	REMARKS
23	Batt Connect Number	nb: 1		nb: 1,2,3,4	Used when KickAss LiFePO4 (LFP) battery type is selected. Used to define the number of batteries connected to the PowerBoss.
F1	Main Board Firmware Version	U1 0.17		-	Current firmware on Main Board.
F2	DCDC Board FW Version	U2 2.13		-	Current firmware on the DCDC Board.

The supporting PowerBoss Bluetooth app can be downloaded from the App store and Google Play store.

SCAN ME

To connect to the PowerBoss, ensure that either the Remote Display Screen or Remote Bluetooth Module are connected to the REMOTE port on the PowerBoss.



1. Download and launch the PowerBoss app.

2. To connect to a new device, select the + symbol.

3. The app will scan for available devices. Select the available device from the device list.

4. The PowerBoss is now paired with the mobile device. The PowerBoss will automatically connect to this device when the app is launched.

When the Bluetooth app is connected and communicating with the PowerBoss, the Bluetooth icon will be shown on the PowerBoss LCD and Remote Display Screen.

On the remote Bluetooth module, the LED status indictator will turn solid once the Bluetooth connection has been established.

On / Off hardware switches are located on the PowerBoss, the Remote Display LCD and the Remote Bluetooth module.

LOCAL HARDWARE SWITCH

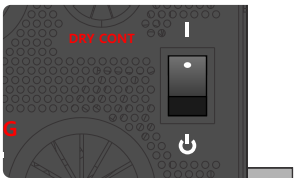
REMOTE HARDWARE SWITCH

OR

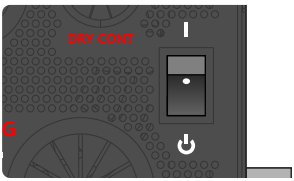
REMOTE HARDWARE SWITCH

The local switch on the PowerBoss can be used to turn the device on and off, or to switch control to the remote hardware switch of a connected Remote Display LCD or a Remote Bluetooth module.

NOTE: When an AC input is connected, the hardware switch is overridden and the PowerBoss will automatically turn on.



LOCAL HARDWARE SWITCH - ON



LOCAL HARDWARE SWITCH - OFF/REMOTE

When the local hardware switch is in the ON position, the PowerBoss will be powered on and the remove hardware switch will be overridden.

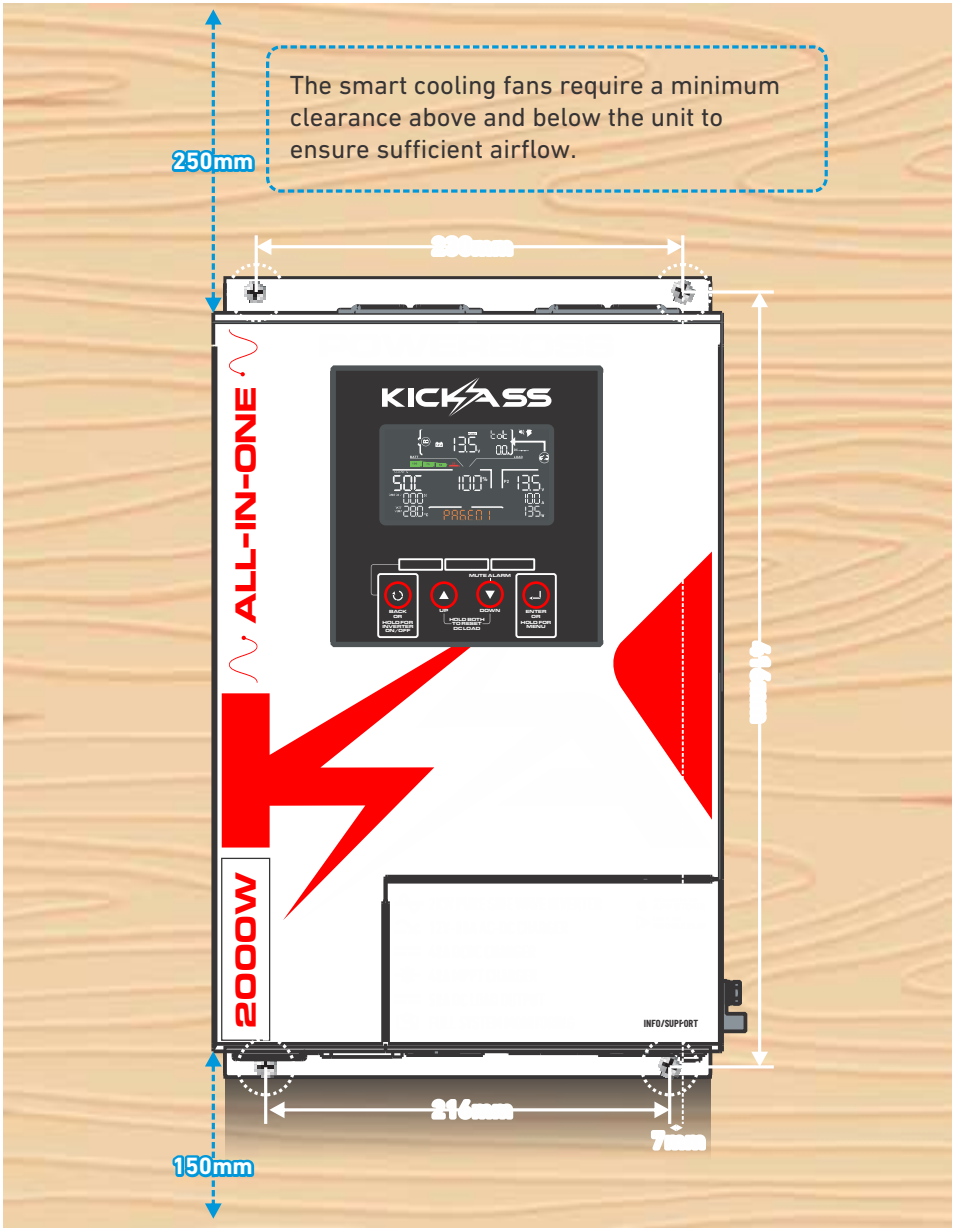
When there is no Remote Display LCD or Remote Bluetooth module connected and the hardware switch is in the OFF/REMOTE position, the PowerBoss will turn off.

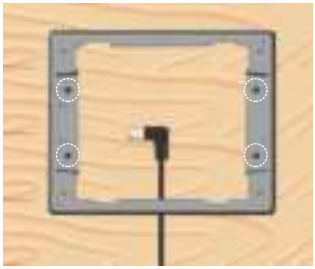
When either the remote display or remote Bluetooth module is connected, and the hardware switch is set to OFF/REMOTE, the PowerBoss ON/OFF control will be managed via the remote switch.

Local Hardware Switch	Remote Hardware Switch	AC Input	PowerBoss Status
ON	ANY	ANY	ON
OFF / REMOTE	ON	OFF	ON
	OFF	OFF	OFF
ANY	ANY	YES	ON

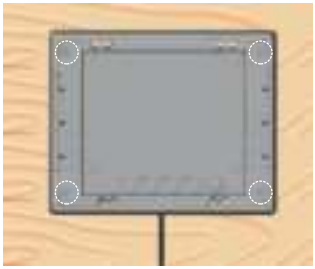
Warning ID	Description	Action
1	Fan locked fault	The cooling fans are restricted. Check to see if anything is blocking the fan vent.
2	Internal temperate sensor fault	Please contact the supplier for troubleshooting support.
3	ACDC or DCDC over temperature fault	An internal over temperature condition has been detected. Please check there is suitable clearance around the cooling fans. If the issue persists, please consider installing an external fan to improve cooling or contact the supplier for troubleshooting support.
4	AC output short circuit fault	Please contact the supplier for troubleshooting support.
5	AC output voltage is abnormal	Please contact the supplier for troubleshooting support.
6	AC output overload fault	The connected AC load has exceeded the maximum output of the PowerBoss. Please reduce the total AC load connected to the PowerBoss. If the overload restart feature has been disabled, restart the inverter via the inverter control button on the PowerBoss LCD or via the Bluetooth app. If the overload restart feature is enabled, the Inverter output will automatically restart after 30 seconds.
7	Bus voltage to high	Please contact the supplier for troubleshooting support.
8	Bus soft start failed	Please contact the supplier for troubleshooting support.
9	Battery temperature high fault	The external battery temperature sensor has detected a temperature outside the acceptable operating range. Please check there is suitable clearance around the battery. If the issue persists, consider installing an external fan to improve cooling.
10	Battery temperature sensor short circuit	The external battery temperature sensor has reported a short circuit in the connection cable. Please contact the supplier for troubleshooting support.

Fault ID	Description	Action
11	Fan locked fault	The cooling fans are obstructed or disconnected. Check to see if anything is blocking the fan vent.
12	BMS communication fault	A communication fault between the PowerBoss and the KickAss Lithium Smart Battery has been detected. Please confirm that the "Batt Connected Number" reflects the number of batteries connected via the communication cable. Please check the communication cable connections between all batteries are correct as per the user manual.
13	BMS system fault	A BMS safety concern has been detected. Please use the dedicated Lithium Battery Bluetooth app to continue troubleshooting.
14	DC load over current fault	An over current fault has been detected on the DC load output of the PowerBoss. Please reduce the total DC load connected to the DC load terminal. To recover the output, acknowledge the fault through the Bluetooth app or press and hold the up and down keys simultaneously on the LCD display.
15	DCDC input high voltage fault	A high voltage fault has been detected on either the solar or alternator input. Please check the voltage of the connected alternator or specification of the connected solar array.
Lo CUT	Battery low SOC/voltage cut-out warning	The battery voltage or battery SOC has reached the cut-out threshold. Both the AC loads and the DC loads have been disconnected.
Pv 17	Solar input reverse polarity fault	Reverse polarity has been detected on the solar input. Please check wiring of the solar panel.
Alt 17	Alternator input reverse polarity fault	Reverse polarity has been detected on the alternator input. Please check the wiring to the alternator.


The smart cooling fans require a minimum clearance above and below the unit to ensure sufficient airflow.
250mm
KICKASS
ALL-IN-ONE
2000W
INFO/SUPPORT
216mm
150mm

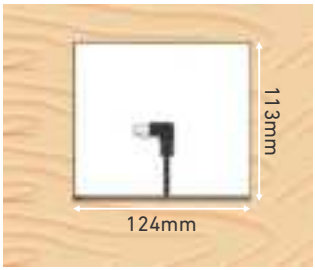


Screw the surface mount bracket to the mounting surface. Ensure the RJ45 cable is placed behind the surface mount bracket prior to fixing.

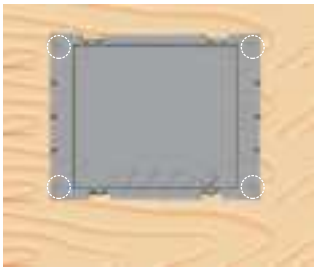


Connect the LCD screen to the RJ45 cable. Secure the LCD to surface mount bracket using the supplied mounting screws.

Clip the LCD bezel onto the LCD screen.

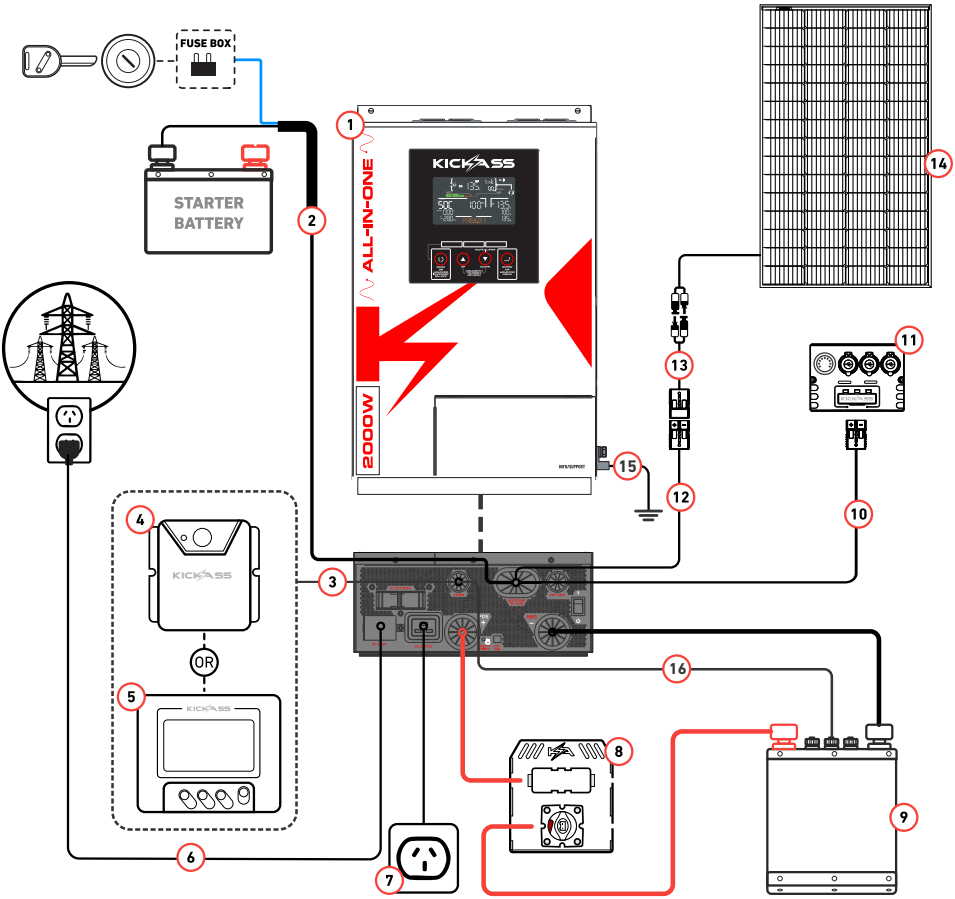


Cut the required section out of the mounting material.



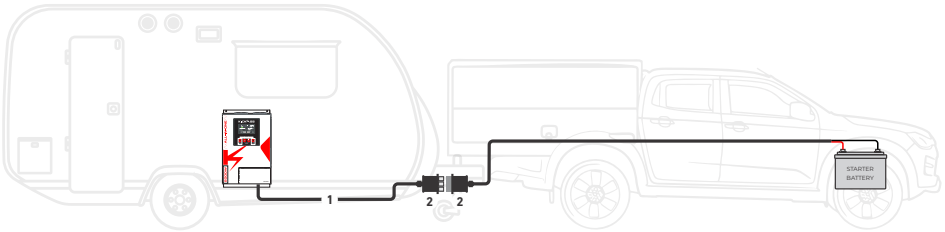
Connect the LCD screen to the RJ45 cable. Secure the LCD to the surface mount bracket using the supplied mounting screws.

Clip the LCD bezel onto the LCD screen.



1	PowerBoss
2	KickAss PowerBoss to Alternator Wiring Kit (6.5m / 8m)
3	Remote Module RJ45 Cable
4	KickAss PowerBoss - Bluetooth Remote Module
5	KickAss PowerBoss Remote Display Unit with Bluetooth
6	IEC13 AC Input Cable
7	IEC14 AC Output Cable
8	Isolator and Fuse Combination + 0AWG Battery Hook Up Cables

9	KickAss Ultra-X 230Ah 12V Deep Cycle Lithium Battery
10	PowerBoss DC Load Connection Cable
11	KickAss Mini Powerbox
12	PowerBoss to Solar Connection Cable
13	KickAss Solar Panel PV to Anderson Solar 5M Extension Cable
14	Solar Panels
15	PowerBoss Chasis Earth
16	KickAss LiFePO4 RJ45 Cable



1	PowerBoss to Draw Bar 3 Pin Anderson Cable	KA3PINTODCDCWK
2	PowerBoss 3 Pin Anderson External Mounting Cover	KA3PINTODCDCWK
3	KickAss Heavy Duty (6.5m / 8m) Plug & Play DCDC Wiring Kit	KAHDDBWKPP65 / KAHDDBWKPP8

NOTE: The PowerBoss to Alternator Wiring Kit (6.5m/8m) is not required for a trailer installation.

AC INPUT
(KAPB2K1280)

AC OUTPUT
(KAPB2K1280)

DC LOAD
(KAPBPCONN)

SOLAR CABLE
(KAPBPCONN)

BMS CABLE
(KAPB2K1280)

TEMPERATURE SENSOR
(KAPB2K1280)

ISOLATOR AND FUSE KIT
(KAPBPCONN)

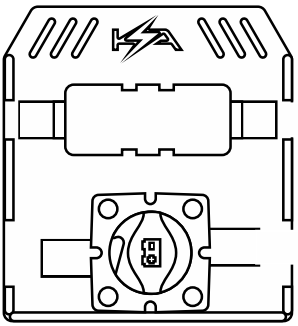
POSITIVE (1 x 1m, 1 x 0.5m)
(KAPBPCONN)

NEGATIVE (1 X 1.5m)

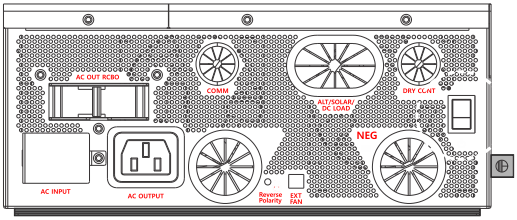
MULTI BIT SCREW DRIVER
(KAPBPCONN)

13mm SOCKET DRIVER
(KAPBPCONN)

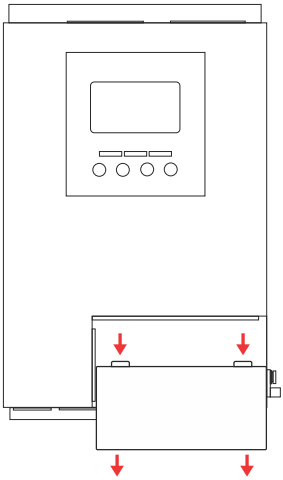
1) MAKE SURE THE ISOLATOR IS OFF.



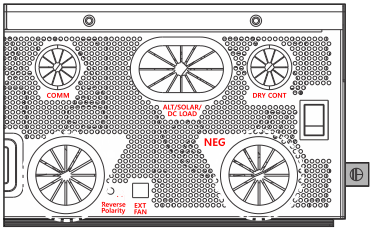
2) TURN OFF HARDWARE SWITCH ON THE UNIT.



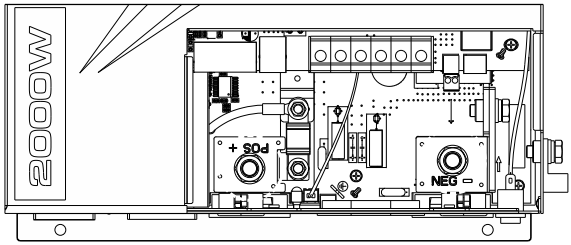
3) REMOVE THE CASE COVER USING THE PHILLIPS HEAD SCREWDRIVER.



4) LOCATE THE BATTERY NEGATIVE AND POSITIVE TERMINALS

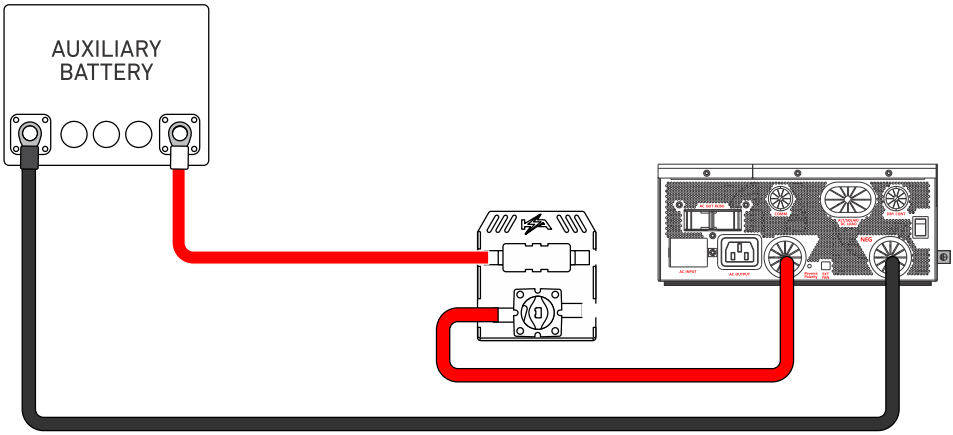


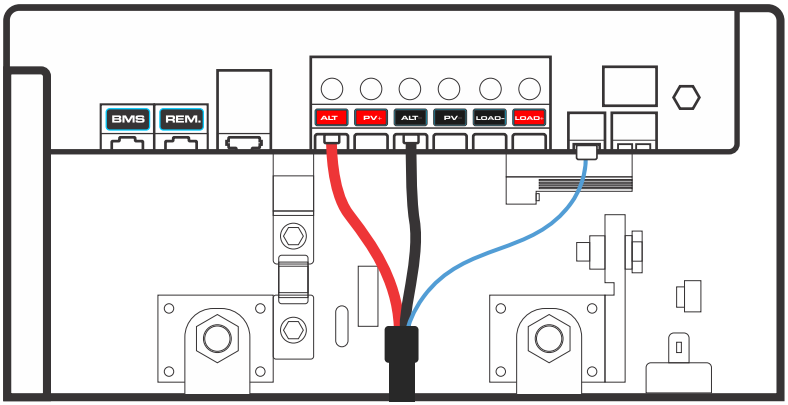
BOTTOM

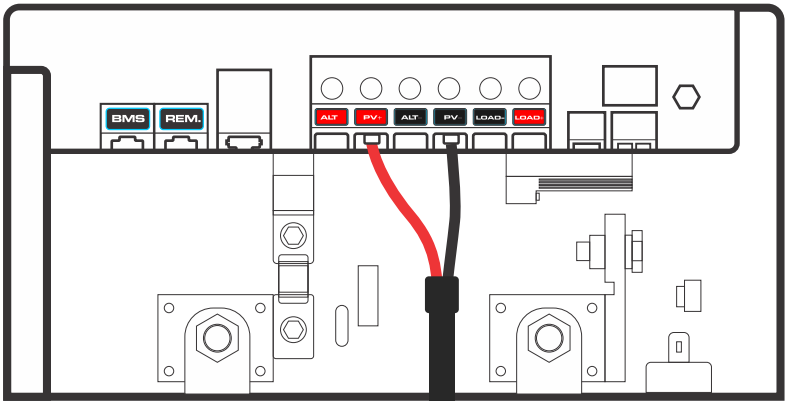


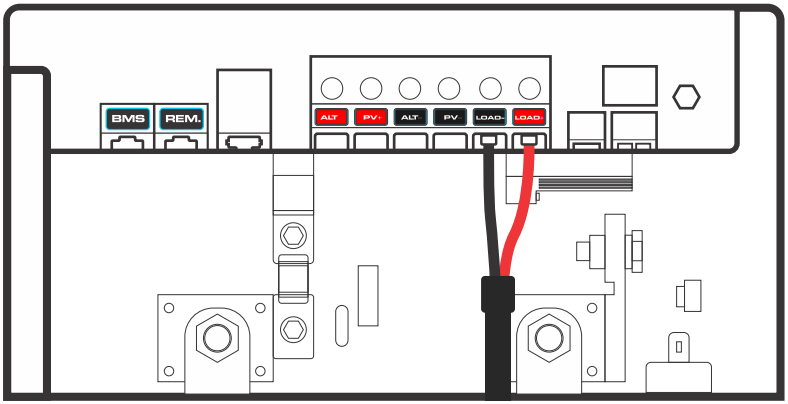
FRONT

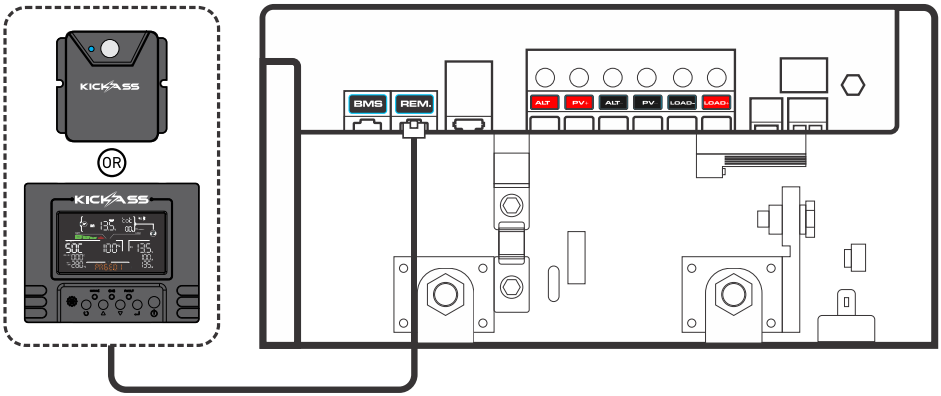
5) ISOLATOR SETUP WITH THE POWERBOSS.

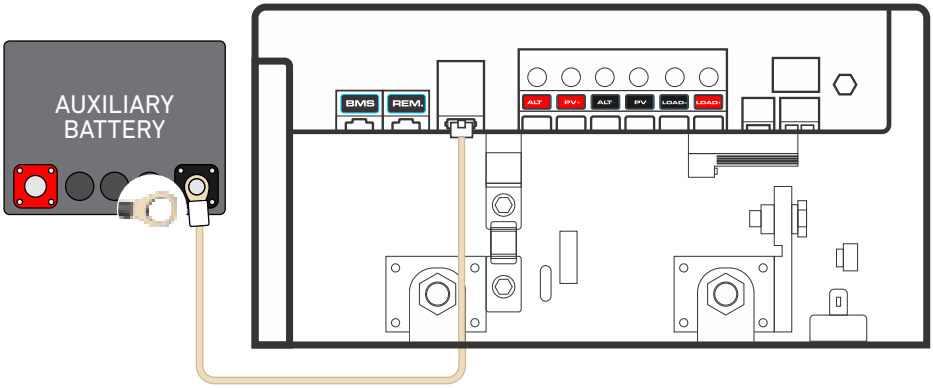


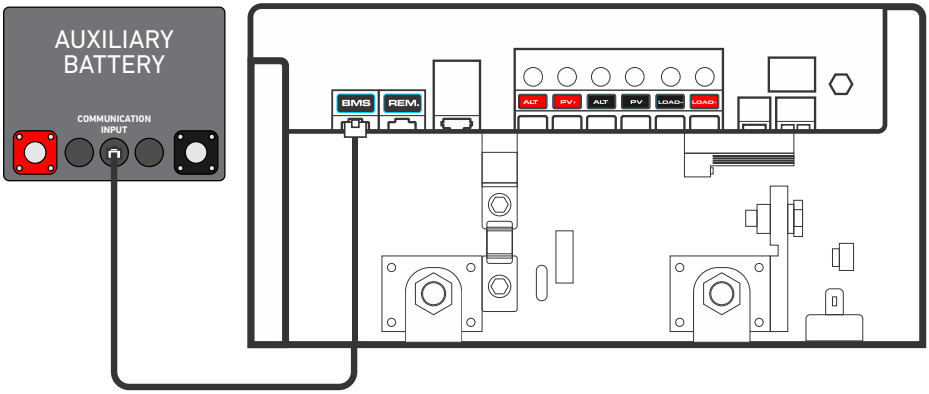

BMS
REM.
ALT
PV+
ALT
PV
LOAD-
LOAD-

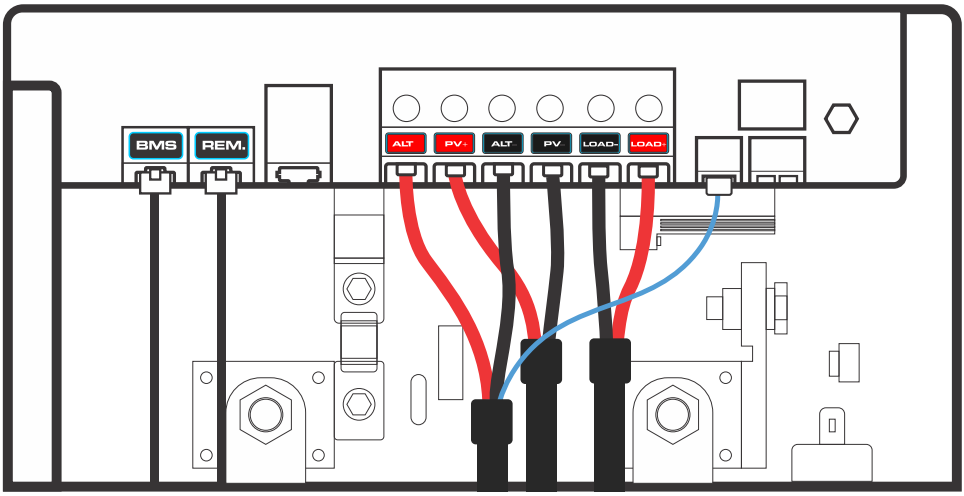

BMS
REM.
ALT
PV+
ALT
PV
LOAD-
LOAD-


BMS
REM.
ALT
PV+
ALT
PV
LOAD-
LOAD-

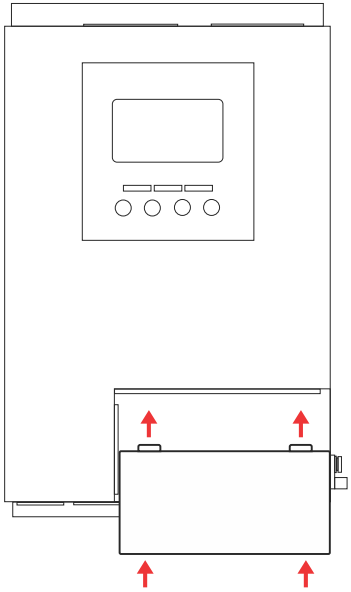

KICKASS
OR
KICKASS
BMS
REM.
ALT
PV-
ALT
PV
LOAD-
LOAD


AUXILIARY
BATTERY
BMS
REM.
ALT
PV-
ALT
PV
LOAD-
LOAD

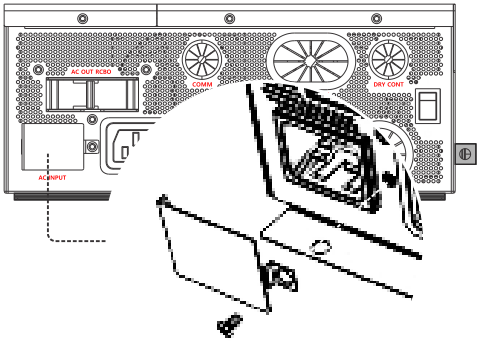

AUXILIARY
BATTERY
COMMUNICATION
INPUT
BMS
REM.
ALT
PV-
ALT
PV
LOAD-
LOAD



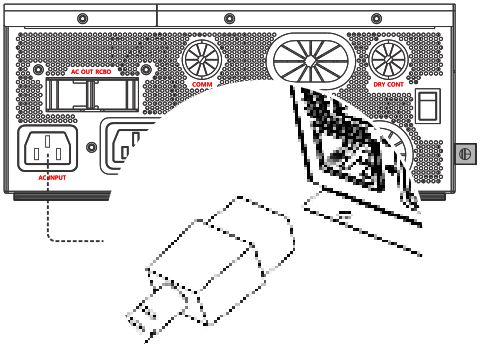
1) PLACE THE CASE COVER BACK.



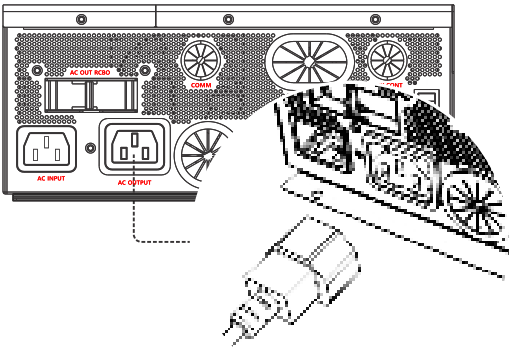
2) REMOVE AC INPUT SOCKET COVER.



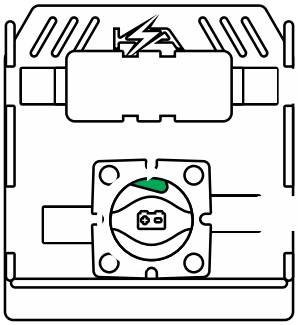
3) PLUG IN AC INPUT.



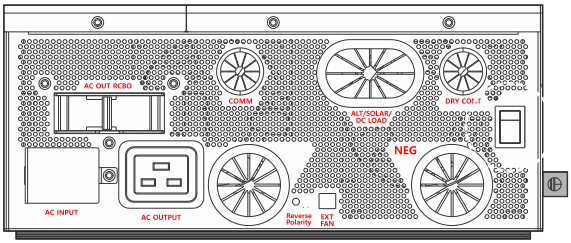
4) PLUG IN AC OUTPUT.



5) TURN THE ISOLATOR ON.



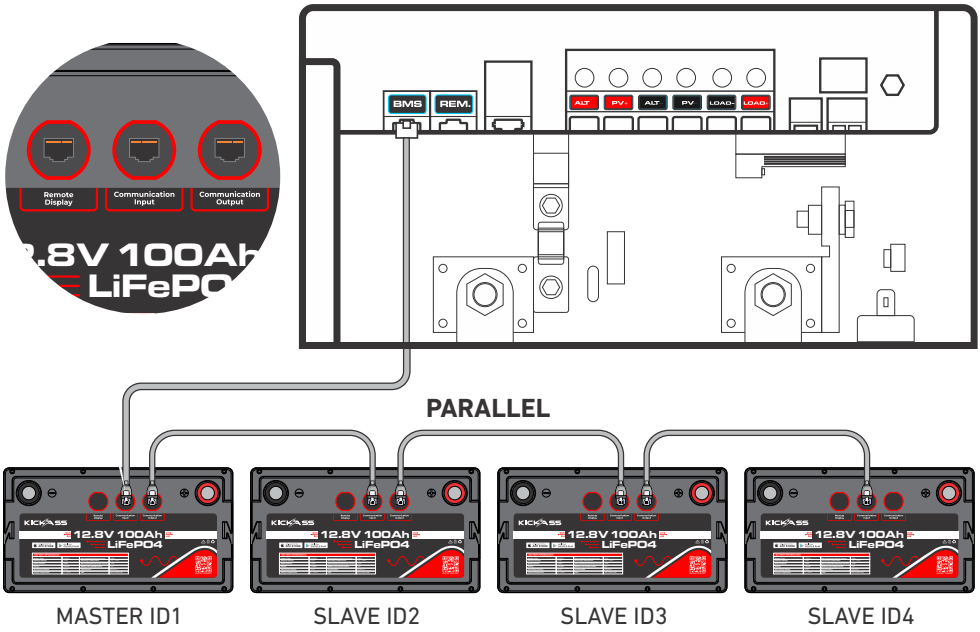
6) TURN THE HARDWARE SWITCH ON.



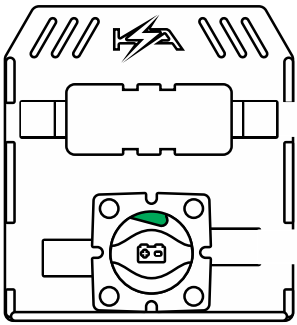
The PowerBoss features direct communication with KickAss LiFePO4 Smart and Ultra-X series batteries via an RJ45 cable. The Battery Management System (BMS) sends SoC, system alert and warning information to the PowerBoss. When multiple batteries are connected, the PowerBoss displays the average SoC of the connected battery bank. When configuring the system for use with supporting KickAss LiFePO4 batteries, the number of batteries to be connected must be defined in the system.

CONFIGURATION STEPS

1. Connect the slave batteries using RJ45 cables:
   a. Connect the master battery (ID1) communication output to the slave battery (ID2) communication input.
   b. Connect the slave battery (ID2) communication output to the slave battery (ID3) communication input.
   c. Connect the slave battery (ID3) communication output to the slave battery (ID4) communication input.
2. Connect the Master Battery:
   a. Set the battery type to LFP on the PowerBoss, or set the battery type via the Bluetooth app.
   b. Set the number of batteries connected to the PowerBoss. This can be set via Menu Item 23 on the LCD, or via the Bluetooth app.
   c. Connect the master battery (ID1) communication input to the PowerBoss BMS communication port using an RJ45 cable.



To power on the system, ensure the isolator is in the closed position.

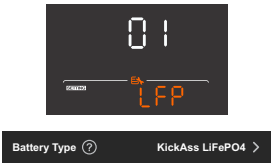
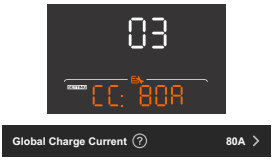
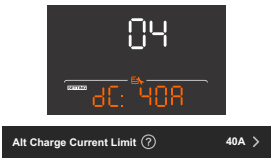


After the isolator has been closed, turn the system on either by the local hardware switch, or the remote switch located on the remote display or remote Bluetooth module.

The following settings are installation specific and must be configured correctly according to the type of installation.

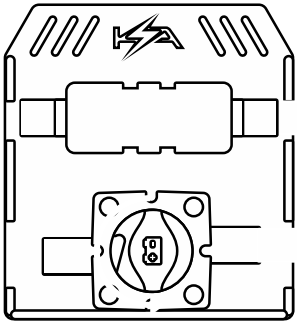
These settings should be configured the first time the unit is powered on.

Please refer to section 4.5: Menu Items on pg 42 for an overview of the menu system and additional parameters that can be configured in the PowerBoss.

Setting	LCD Menu Number / App Icon	Description
Battery Type		Set the battery chemistry type.
Global Charge Current Limit		Set the global charge current limit for the system. This setting relates to the charge current when charging from AC or combined AC and solar. If CC is set to a value greater than 40A, then the charge output from alternator and solar will be capped at 40A.
Alternator Current Limit		Set the maximum charge current when charging from the vehicle's alternator. The charge current can be lowered to reduce the load on the alternator.
IGN Setting		It is recommended to set this to ON for all installation types. When enabled, the PowerBoss will begin charging when it receives an IGN signal from the vehicle after the engine has started.
Bat Connect Number		This setting is only relevant when the battery type is set to KickAss LiFePO$_4$ (LFP). Specify the number of auxiliary batteries in the system so the PowerBoss knows how many batteries it should communicate with.

To power off the system, turn the unit off either by the local switch, or the remote switch in the remote display or remote Bluetooth module (if connected). The unit will take 30 seconds to completely power down.

After the unit has powered down, isolate the batteries from the system via the isolator.



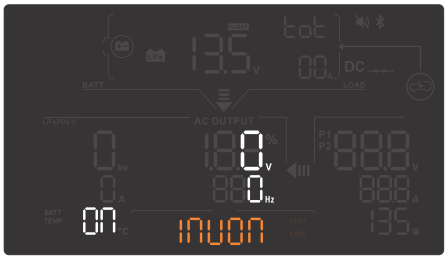
7. TROUBLESHOOTING

Q. The ON indicators on the PowerBoss display and PowerBoss Bluetooth app show that the inverter is on, but there is no power at the AC output.

A. The PowerBoss includes a No Load Power Save function, which disconnects the AC output and places the unit into a low-power standby mode by turning off the inverter output.

If this function is enabled, the PowerBoss continuously monitors the AC output load. If the load does not exceed 100W for the duration defined in the No Load Power Save setting, the unit will enter Power Save mode.

In this mode, the Inverter ON indicators on the PowerBoss will remain illuminated, but the AC output indicators will display 0V, indicating that no output is available and the unit is in Power Save mode.



LCD: Inverter On – Power Save Mode

BT App: Inverter On – Power Save Mode

To re-activate the inverter output, turn the inverter off and then on again, either via the PowerBoss Inverter ON/OFF function key, or the BT app.

Inverter ON/OFF Function Key

BT App Inverter Control

Q. Why am I not charging at full power when charging from the alternator?

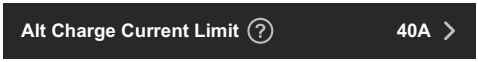
A. Three things could cause this:

1. Alternator Current Limit

The alternator current limit restricts the maximum charging current when using the alternator as the input source.

Check that this setting is configured to your desired value via the LCD display or the Bluetooth app.

LCD: Alternator Current Limit



BT App: Alternator Current Limit

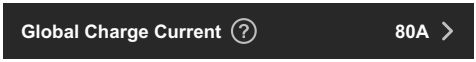
2. Global Charging Current Limit

The global charging current limit sets the maximum allowable charging current across all input sources – AC, solar, or alternator.

If this value is set lower than the alternator current limit, charging from the alternator will be restricted by the global limit.

Ensure this setting is configured to your desired value.

LCD: Global Charge Current Limit



BT App: Global Charge Current

3. Input Voltage Derating (Voltage Drop Protection)

The PowerBoss includes an automatic charge current derating feature to compensate for voltage drops across the alternator input cable.

As the input voltage approaches the configured charging cut-out value, the PowerBoss reduces the output charge current to lower the input current and reduce voltage drop.

This helps prevent premature charging cut-out due to cable losses and reduces strain on underpowered alternators.

With **IGN ON**, derating begins as input voltage approaches **10.5V**.

With **IGN OFF**, derating begins as input voltage approaches **12.6V**.

If you're experiencing derating and the IGN setting is OFF, switch it to ON and ensure the IGN wire is connected.

If IGN is already ON, check that all alternator wiring kit terminations are secure and correctly installed.

Also confirm that your alternator has sufficient output capacity to supply both the PowerBoss and any 12V auxiliary loads in the vehicle.

Q. Why won't the Bluetooth app connect to the PowerBoss?

A. The PowerBoss remote display and Bluetooth module have a typical range of up to 10 metres in direct line of sight.

Obstructions – particularly metal surfaces – between the Bluetooth module and your mobile device can reduce range or block the connection entirely.

For best performance, install the Bluetooth module or remote display in a location with minimal obstructions between it and the area where the app will be used.

Q. The PowerBoss is showing an over-temperature alert

A. The PowerBoss will issue an over-temperature alert (warning code 3) before triggering an over-temperature fault (fault code 3), which temporarily disables charging and discharging.

Make sure there is adequate clearance above and below the unit for proper fan airflow.

If the PowerBoss is installed in an enclosed space (such as a cabinet or canopy), an external fan may be required to circulate air and maintain an optimal operating temperature. The PowerBoss includes a 12V fan output that can be used to power an external cooling fan for this purpose.

8.1 WARRANTY AND SUPPORT

Need help? For product support or to make a warranty claim, reach out to the KickAss Customer Service team on (07) 3123 4715 or at support@kickassproducts.com.au.
Alternatively, visit our Customer Support Portal at:
https://supportportal.kickassproducts.com.au/

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