

KICKASS



20A 12V/24V MPPT IN-LINE SOLAR CHARGE CONTROLLER

OWNER'S MANUAL

KA24MPPTIL20A

V1.1

SAFETY INFORMATION

Safety Notes

- Read and understand this manual before installing or using the device.
- The device generates significant heat during operation, which is extracted via the integrated aluminium heat sink.
- Do not exceed the electrical specifications of the device.
- Do not connect an AC power source to this device. Doing so may result in fire or damage to the device.
- Do not connect lithium batteries in reverse polarity. Doing so may result in fire or damage to the device during the lithium activation process.
- Ensure that children are kept away from this device at all times.
- Do not leave the battery disconnected while the solar input is connected for an extended period of time. Doing so may result in damage to the unit's LCD display.
- Ensure the device is installed by competent and trained professionals where required.
- Ensure appropriately sized wiring, fuses, or circuit protection devices are used in the installation.


Warnings

- Do not exceed the PV open-circuit voltage (Voc). The PV Voc cannot exceed 30V for 12V batteries or 60V for 24V batteries, to prevent product damage.
- Keep space around the controller for proper heat dissipation.
- Avoid placing solar panels in partially sunny or shaded environments for best performance.
- PV voltage must be at least 3V higher than the battery voltage for charging to start. For example, PV minimum charging voltage is 15V or higher for 12V systems and higher than 27V for 24V systems.

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PRODUCT SPECIFICATIONS

PRODUCT DIMENSIONS	150 x 80 x 35 mm (LWH)	
PRODUCT WEIGHT	0.35kg	
CHARGING MODE	Maximum Power Point Tracking (MPPT)	
SYSTEM INPUT VOLTAGE	12V/24V	
STANDBY POWER	0.3W Max	
BATTERY TYPES	AGM / GEL / LiFePO ₄	
BATTERY VOLTAGE	13.8V – 28.8V	
MAX. CHARGING CURRENT	20A	
SYSTEM INPUT VOLTAGE	12V	24V
MAX. SOLAR INPUT VOLTAGE	30V (Voc)	60V (Voc)
MAX. SOLAR INPUT POWER	300W	600W
OPERATING TEMPERATURE	-20°C TO +45°C / -4°F TO +113°F	
IP RATING	IP45	
COMMUNICATION METHOD	Integrated Bluetooth	
ALTITUDE	≤3000 meters	
CERTIFICATIONS	RoHS CE 	

INCLUDED COMPONENTS



MPPT Solar Charge Controller

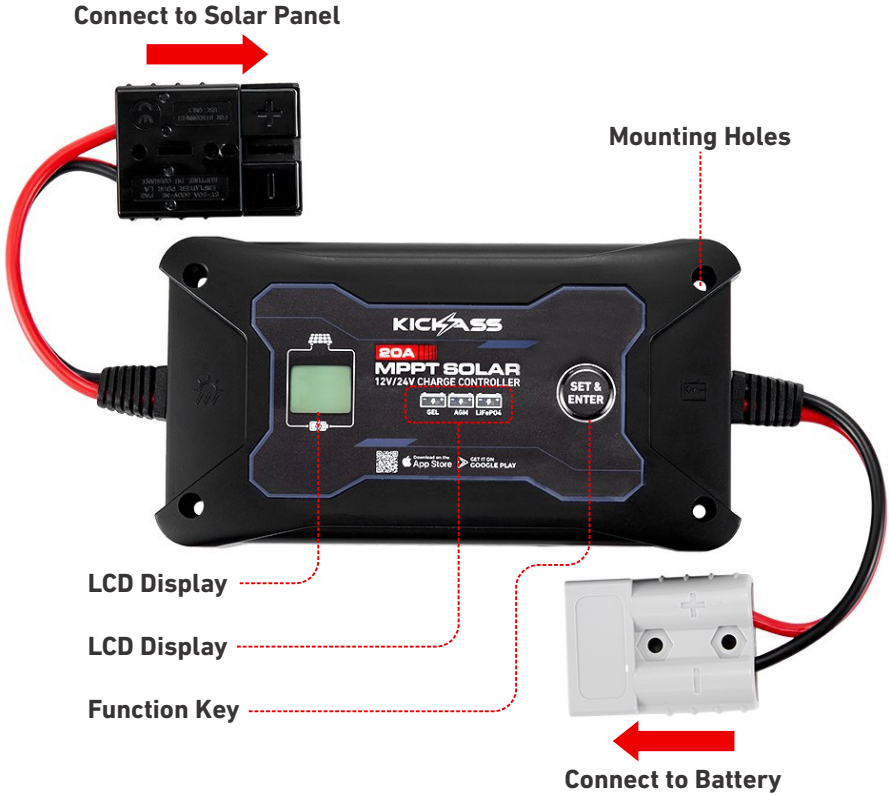


4 x 25mm Pan Head Self-tapping Screw

PRODUCT FEATURES

- 20A MPPT Controller delivers up to 20A of charging power for efficient solar energy conversion.
- High conversion efficiency maximises energy harvested from solar panels for faster, more reliable battery charging.
- Ready to plug and play with 50A Anderson connectors for quick connection of solar panels and batteries without any wiring required.
- Quick setup design allows instant integration with portable solar panels or existing Anderson power systems.
- Bluetooth monitoring provides real-time tracking via the KA Solar App, including solar voltage, charge current, charge status, and historical data.
- Onboard LCD display shows key charging parameters and system information for quick setup and monitoring.
- Designed for use with portable solar panels, allowing flexible setup even when parked in the shade.
- 12V and 24V compatible, the unit automatically detects or can be set for 12V or 24V battery systems.
- High power support handles up to 300W for 12V systems and 600W for 24V systems.
- Multi-stage charging algorithm ensures optimal battery health through bulk, absorption, and float charging phases.
- Compatible with multiple battery chemistries – supports AGM, GEL, and LiFePO₄ batteries.
- Lithium battery ready, the unit includes configuration options for 12V or 24V lithium batteries via the onboard control button.
- A compact and durable design, which is lightweight and easy to carry and install.
- IP45 protection rating provides resistance against dust and water ingress for reliable outdoor performance.

PRODUCT OVERVIEW




PRODUCT INSTALLATION

There are two ways to install and use the inline 20A MPPT solar charge controller:

PORTABLE (NO MOUNTING)

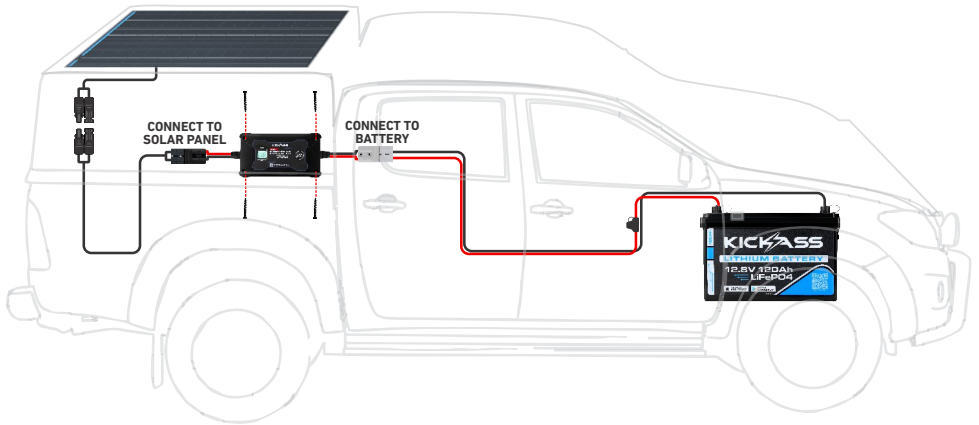


1. Connect the black Anderson connector to your solar panel, this side is marked with sun symbol ☀️. If your solar panel uses PV connectors, use a PV to Anderson adapter cable such as the [KickAss Solar Panel PV to Anderson Extension Cable](#) (sold separately) to make the connection.
2. Connect the grey Anderson connector to your battery, this side is marked with battery symbol .
3. Check the LCD screen for voltage/current reading to confirm connectivity on both ends.



KickAss Solar Panel PV to Anderson Extension Cable

FIXED MOUNTING FOR POWER STATION



1. Choose a location to permanently mount the 20A Inline MPPT Solar Controller. Ensure that the location you have chosen is suitable for mounting.
2. Using the four provided screws, attach the solar charge controller to the surface. Do not overtighten.
3. Connect the black Anderson connector, marked with sun symbol ☀️, to your solar panel.

Note: If your solar panel has PV connections, you may have to use a PV to Anderson adapter such as the [KickAss Solar Panel PV to Anderson Extension Cable](#) (sold separately).

4. Connect the grey Anderson, marked with the battery symbol 🔋, to your battery.

Note: in this example you will require an Anderson to ring terminal adapter cable such as the [KickAss Automotive Inline Maxi Fuse Holder with Anderson Plug](#) (sold separately) to complete the installation.

5. Check the LCD screen for voltage/current reading to confirm connectivity on both ends.



KickAss Solar Panel PV to Anderson Extension Cable



KickAss Automotive Inline Maxi Fuse Holder with Anderson Plug

PRODUCT CONFIGURATION



1. Press and hold the FUNCTION KEY for 3 seconds to enter settings.
2. The battery type will begin flashing, indicating that you have entered the battery selection mode.
3. Press the FUNCTION KEY to cycle through the available battery types:
GEL ► AGM ► LiFePO₄
4. Once the desired battery type is selected, press and hold the FUNCTION KEY for 3 seconds.
5. The voltage on the LCD will begin flashing, indicating that you have entered the battery voltage setup.
6. Press the FUNCTION KEY to select either 12V or 24V depending on your auxiliary battery setup.
7. Once the battery voltage setup is selected, press and hold the FUNCTION KEY for 3 seconds again to finalise your settings.

The controller uses different charging voltages and stages depending on the selected battery type. The table below shows the reference charging parameters for each supported battery type.

BATTERY TYPE	12V SYSTEM			24V SYSTEM		
	EQUALISE	BOOST	FLOAT	EQUALISE	BOOST	FLOAT
GEL	-	14.2V	13.8V	-	28.4V	27.6V
AGM	14.6V	14.4V	13.8V	29.2V	28.8V	27.6V
LiFePO4	-	14.4V	-	-	28.8V	-

The controller will automatically manage the charging process using the MPPT (Maximum Power Point Tracking) algorithm to optimise energy harvest and battery charging efficiency.

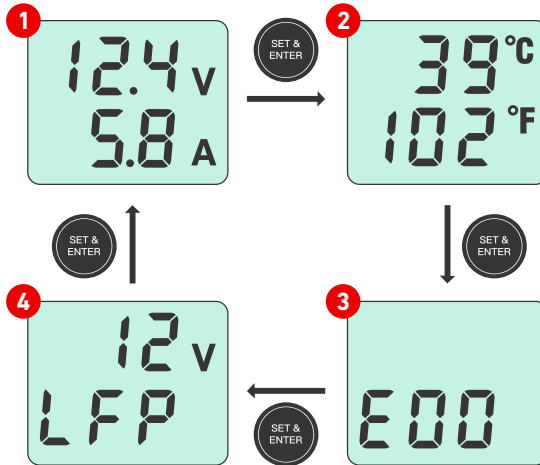
During charging, the system transitions between charging stages:

- **Boost Stage:** The battery is charged at a higher constant voltage until nearly full.
- **Float Stage:** The voltage is maintained at a lower, stable level to keep the battery topped up.
- **Equalisation Stage:** Performed periodically on compatible lead-acid batteries to balance cell charge.

USING THE MPPT CHARGE CONTROLLER

Once the system is installed and configured, the controller automatically begins operation.

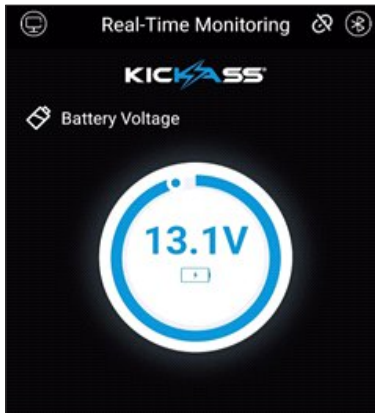
The LCD display shows real-time system information. Use the FUNCTION KEY to cycle through each screen display in sequence:



1. **Battery Status Screen:** Displays the voltage and current of the connected battery.
2. **Device Temp Screen:** Displays the controller's temperature in Celsius and Fahrenheit.
3. **Fault Code Screen:** Displays a fault code when the controller detects a fault within the system.
4. **System Type Screen:** Displays the system voltage and battery type selected.

For extended monitoring and configuration, use the built-in Bluetooth feature with the KA SOLAR App:


- Open the app and pair with the controller.
- View real-time charging data and historical performance logs.
- Monitor solar input, battery voltage, and charging current.
- Adjust compatible parameters and settings where available.

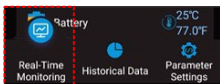


See here for a comprehensive guide for using the KA Solar App: [KA Solar App User Manual](#)

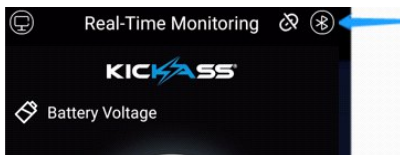
You can install the KA Solar App by scanning the QR code and following the prompts:



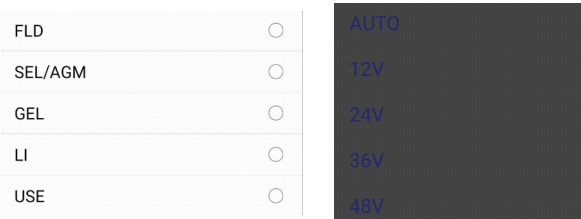
1. After installing the app, ensure Bluetooth is turned on.
2. Open the KA Solar App  and navigate to the Real-Time Monitoring tab.



3. Tap the Bluetooth icon [ICON] in the top-right corner and select KA24MPPTIL20A from the list.



4. Go to Parameter Settings. If Regular Settings is locked, you won't be able to adjust any parameters. To unlock, tap Locked and select Confirm.
5. Tap Battery Type and select the battery type you are charging.
6. Tap System Voltage and choose either 12V or 24V, depending on your battery setup.



7. To lock the settings again, simply tap Regular Settings. This will revert to the locked state.
8. You can now view detailed battery and solar input information.

TROUBLESHOOTING

ERROR CODES	FUNCTION
E00	No error detected.
E01	No battery detected.
E02	The battery voltage has exceeded the controller's limit. Check that your battery setup is within the allowable range (12V to 24V only).
E06	The controller has overheated. Place the controller in a well-ventilated cool, dry place.
E07	The surrounding temperature is too high. Ensure the area is well-ventilated.
E10	Solar panel voltage exceeds the controller's maximum input voltage. Check your solar panel setup is within the allowable range (12V: 30V(Voc), 24V: 60V (Voc)).
E13	Solar panel has been wired in reverse polarity. Disconnect and reconnect with correct polarity.
E14	Battery has been wired in reverse polarity. Disconnect and reconnect with correct polarity.

Note: Error codes not listed above indicate that the controller has no such error or alarm condition.

<p>The LCD display does not turn on</p>	<ul style="list-style-type: none"> • Verify that the battery is properly connected and has sufficient voltage. The controller requires a battery connection to power on.
<p>My battery is not charging from the solar panel</p>	<ul style="list-style-type: none"> • Solar panel voltage needs to be 3V higher than the battery voltage for charging to initialise. If your battery setup is 12V, the solar panel must have voltage higher than 15V. • Ensure that the solar panel is not shaded to avoid under-performance. It should be fully exposed to the sun at all times.
<p>Controller feels hot to touch</p>	<ul style="list-style-type: none"> • Heat can be generated by the controller while in operation. Keep away from flammable materials and ensure there is always space around the controller for effective heat dissipation.
<p>Battery not charging to full</p>	<ul style="list-style-type: none"> • Check that the selected battery type and voltage setting match your actual battery. Confirm that solar input power and sunlight conditions are sufficient. • Ensure that the solar panel is not shaded to avoid under-performance.

WARRANTY & SUPPORT INFORMATION

KICKASS LIMITED WARRANTY

Your KickAss product is backed by our limited warranty against defects in materials and workmanship for the applicable warranty period. Warranty periods vary by product - please check the product page or the KickAss Warranty Index for details.

If a fault covered by warranty occurs, KickAss will, at its discretion:

- Repair the product, or
- Replace the product with the same or equivalent model, or
- Provide another suitable remedy in line with Australian Consumer Law (ACL).

Warranty claims may be declined if the issue is caused by:

- Normal wear and tear.
- Improper use, faulty installation, or lack of maintenance.
- Modifications, tampering, or unauthorised repairs.
- Accidents, damage in transit (customer organised), or environmental causes.
- Consumable items, unless defective in materials or workmanship.
- Damage caused by external events such as severe weather (including storms, lightning, hail, or flooding), fire, impact, explosions, vandalism, or theft.

MAKING A WARRANTY CLAIM

1. Visit our Support Portal: supportportal.kickassproducts.com.au
2. Locate your product via the Products & Troubleshooting section.
3. Submit a claim through the product form and follow the guidance from our Customer Service Team.

All warranty claims must include a completed product form, proof of purchase, and clear evidence of the defect or fault. Incomplete submissions or missing information may cause delays in processing and could result in your claim being declined.

Costs from third-party inspections or repairs are not covered unless approved in writing by KickAss.

YOUR RIGHTS UNDER ACL

This warranty is provided in addition to your rights under the Australian Consumer Law. You may be entitled to a replacement or refund for major failures, and to compensation for other reasonably foreseeable loss or damage.

Need Help?

Product Support: support@kickassproducts.com.au

Warranty Claims: warranty@kickassproducts.com.au

Customer Support Portal: supportportal.kickassproducts.com.au

KICKASS

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