KICKASS

AUSTRALIAN OWNED AND OPERATED

20A & 40A / 12V/24V/36V/48V MPPT SOLAR CHARGE CONTROLLER & MPPT REMOTE CONTROL DISPLAY

OWNER'S MANUAL

KA48MPPT20A | KA48MPPT40A | KA48MPPTRC

V1.6

SAFETY NOTES

- WARNING: Read and understand this manual before installing and using your device.
- WARNING: Significant heat can be generated by the device while in operation and extracted via the integrated aluminum heat sink. Keep away from flammable materials.
- 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.
- Solar panels can produce high voltages and currents. Ensure that solar panels are completely shielded from sunlight during installation.
- 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.
- Connecting live equipment to this device, such batteries or solar panels, can cause arcing to occur. Ensure all devices are isolated prior to installation where possible and ensure appropriate PPE is worn at all times.
- This device has a common negative design. If grounding is required, ensure that the negative terminal is grounded.

TABLE OF CONTENTS

1. PRODUCT SPECIFICATIONS

1.1 KA48MPPT20A | KA48MPPT40A SPECIFICATIONS

Parameter	Specifications							
Model	**KA48MPPT20A**				**KA48MPPT40A**			
System Voltage	12V/24V/36V/48V AUTO in GEL/FLD/AGM AUTO; USER OR LI(MANUAL)							
Standby Power	0.3W Max							
Battery Voltage	9V TO 60V							
	12V SYSTEM	**24V** SYSTEM	**36V** SYSTEM	**48V** SYSTEM	**12V** SYSTEM	**24V** SYSTEM	**36V** SYSTEM	**48V** SYSTEM
Max. Solar Input Voltage Range	150V	150V	150V	150V	150V	150V	150V	150V
Min. Solar Input Voltage Range	15V	27V	39V	51V	15V	27V	39V	51V
Max. System Input Power	300W	600W	900W	1200W	600W	1200W	1800W	2400W
Rated Charging Current	20A				40A			
Conversion Efficiency	>98%							
MPPT Tracking Efficiency	>99%							
Operating Temperature	-35°C ~ +45°C | -31°F ~ +113°F							
Ingress Protection	IP43							
Communication Method	RS485 & Integrated Bluetooth							
Altitude	≤3000m							
Product Dimensions	190 x 125 x 60mm				218 x 150 x 65mm			
Weight	1.22kg				1.9kg			
Certifications	RoHS CE							

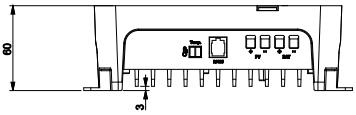
1.2 KA48MPPT20A | KA48MPPT40A BATTERY TYPE SPECIFICATIONS

The KickAss 20A and 40A MPPT Solar Controllers can operate at 12V, 24V, 36V or 48V nominal system voltages. In the battery parameters table below, "n" is a multiplier for calculating system voltages. For example, the Boost (BULK) charge voltage for a lithium battery is 14.2*4 = 56.8V.

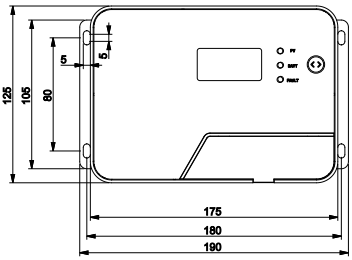
n	1	2	3	4
Battery Voltage	**12V**	**24V**	**36V**	**48V**

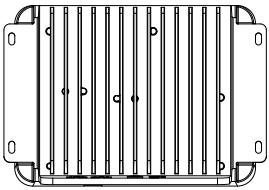
Battery Types	FLD	SLD (AGM)	GEL	USER	LITHIUM
Equalize Charge Voltage	14.8V*nV	14.6V*nV	-	-	-
Boost (Absorption) Charge Voltage	14.8V*nV	14.4V*nV	14.2V*nV	14.2V*nV	14.2V*nV
Float Charge Voltage	13.8V*nV			-	-
Boost Charge Recovery Voltage	13.8V*nV			13.7*nV	13.8*nV

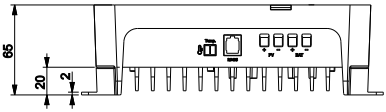
1.3 KA48MPPT20A | KA48MPPT40A DIMENSIONS



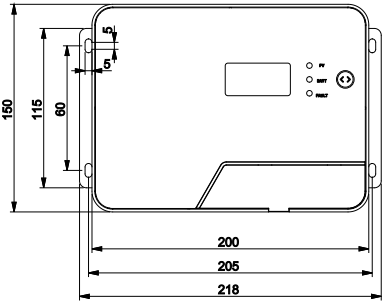
KA48MPPT20A
Product Dimension: 190*125*60mm
Installation Area Dimension: 180*80mm
Installation Hole Size: 5*5mm
Connection Socket Size: 7.5*7.5mm

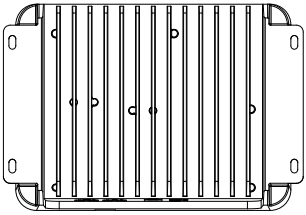






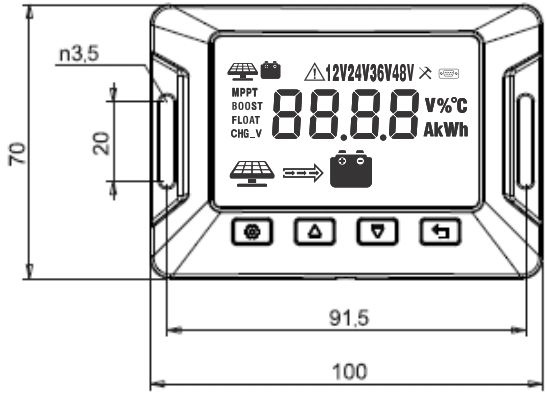
KA48MPPT40A
Product Dimension: 218*150*65mm
Installation Area Dimension: 205*60mm
Installation Hole Size: 5*5mm
Connection Socket Size: 7.5*7.5mm





1.4 KA48MPPTRC SPECIFICATIONS

Parameter	Specifications
Model	**KA48MPPTRC**
System Voltage	TBC
Standby Power	0.4W Max
Operating Temperature	-35°C ~ +45°C / -95°F ~ +113°F
Communication Method	RS485
Altitude	≤3000m
Product Dimensions	100 x 70 x 15mm
Weight	TBC
Certifications	RoHS CE



2. WHAT'S INCLUDED

KA48MPPT20A

20A MPPT SOLAR CHARGE CONTROLLER

SENSOR

KA48MPPT40A

40A MPPT SOLAR CHARGE CONTROLLER

SENSOR

KA48MPPTRC

REMOTE LCD DISPLAY

2M RJ12 DATA CABLE

2 X 4G 16MM PAN HEAD
SELF TAPPING SCREW

3. PRODUCT FEATURES

3.1 KA48MPPT20A | KA48MPPT40A PRODUCT FEATURES

1. **Advanced MPPT Technology** – The 20A and 40A MPPT charge controller utilise Maximum Power Point Tracking (MPPT) technology. This technology allows the MPPT Solar Charge Controller to dynamically track the input power generated by the sun to optimise the charge output to the battery. The charge controllers operate at 98% conversion efficiency, meaning that 98% of the power received by the MPPT Solar Charge Controller from the connected solar array is converted into output charge current.
2. **20A and 40A Charging Outputs** – The KickAss MPPT Solar Charge Controllers are available in 20A and 40A versions. The multiple variants allow the MPPT Solar Charge Controller to be correctly aligned to the capacity of the battery bank and wattage of the solar array used in the installation.
3. **Supports 12V – 24V – 36V – 48V Battery Systems** – The KickAss MPPT Solar Charge Controllers support battery arrays of 12V, 24V, 36V or 48V systems. When the configured battery type is GEL, SLD (AGM) or FLD, the MPPT Solar Charge Controller will automatically detect the nominal voltage of the connected battery array. When the configured battery type is Lithium or USER, the nominal voltage of the connected battery array needs to be set via the Remote LCD Screen or the Bluetooth Application.
4. **Wide Input Voltage Range** – The KickAss MPPT Solar Charge Controllers accepts a maximum solar array input voltage of 150V. The Voc of the connected solar array should not exceed 150V. The minimum solar array voltage is determined by the battery voltage. The minimum solar array voltage must be 3V higher than the battery voltage. For example, if the battery voltage is 24V, the MPPT Solar Charge controller will not operate unless the voltage generated by the connected solar array is > 24V + 3V = 27V. Please refer to the Product Specification section of this manual for the recommended minimum solar array voltages for 12V, 24V, 36V and 48V nominal voltage battery arrays.
5. **Parallel Charge Configuration** – The KickAss MPPT Solar Charge Controllers can be connected in parallel which enable the charging outputs to be synchronised and increase the charging output power. When connected in parallel, one of the MPPT charge controllers must be configured as the primary device, and the other configured as the secondary device. When connected in parallel, the data is exchanged between the two units to ensure the charging stages of each device is synchronised. Only two MPPT Solar Charge Controllers of the same output power can be connected in parallel.

6. **Bluetooth Connectivity** – The KickAss MPPT Solar Charge Controllers has an integrated Bluetooth module that supports communication with the KA Solar App. The app provides the ability to configure and monitor the real-time and historical performance of the MPPT Solar Charge Controller. Scan QR code to install app.

7. **Multi Stage Charging** – The KickAss MPPT Solar Charge Controller implements a multi-stage charging profile to ensure each battery chemistry is charged correctly.

Charging Stage	Description
MPPT (BULK)	In the MPPT charging stage, commonly referred to as BULK, the MPPT Solar Charge Controller will charge at 100% of the available current. The battery voltage will continue to increase until the BOOST (Absorption) Voltage is reached.
BOOST (ABSORPTION)	In the BOOST charging stage, commonly referred to as Absorption, the MPPT Solar Charge Controller will maintain the BOOST (Absorption) Voltage while the charge current gradually reduces below the BOOST (Absorption) exit current.
FLOAT	In the Float charging stage, the battery will slowly reduce until the Float Charge Voltage is reached. The battery is then considered fully charged. The MPPT Solar Charger will provide the required amount of current to maintain the Float Charge Voltage.
EQUALIZATION	In the equalization mode, the MPPT Solar Charge Controller will provide a pulse charging voltage at the end of the charge cycle to balance the cells and help reduce any sulfation that may have occurred on the battery plates. The pulse stage will last for two hours, and will occur automatically ever 30 days for applicable battery types.
MPPT (BULK) RECOVERY VOLTAGE	Once the battery voltage reaches the MPPT (BULK) Recovery Voltage, the MPPT Solar Charge Controller will begin charging from the MPPT (BULK) charging state again.

8. **High thermal efficiency** – The MPPT Solar Charge Controller uses an integrated aluminium heat sink to assist with thermal dissipation. When the internal temperature of the MPPT Solar Charge Controller reaches the maximum threshold, the unit will begin to derate the charging output to sustain operation in high temperature conditions.
9. **Lithium Recovery Mode** – When the battery type of the MPPT Solar Charge Controller is set to Lithium, the device will automatically activate lithium recovery mode when it detects no battery at the battery output. Lithium recovery mode is able to automatically wake up a lithium battery that has entered low voltage protection mode and disabled the output of the battery.

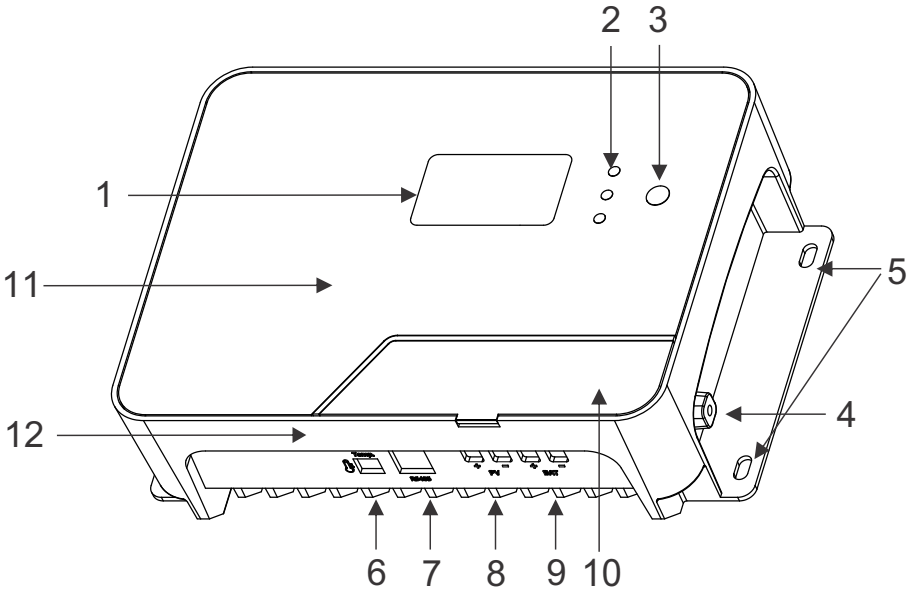
10. **Safety Protection Features** – The MPPT Solar Charge Controller has the following inbuilt protection features:
    - Battery Over-voltage Protection
    - PV Over-voltage Protection
    - Over-temperature Protection
    - PV Reverse Polarity Protection
    - Battery Reverse Polarity Protection
11. **Negative Earth** – The MPPT Solar Charge Controller supports negatively earthed systems.

3.2 KAMPPTRC PRODUCT FEATURES

1. **Remote Control and configuration** – Access the full power of the KickAss MPPT Solar Charge Controller with the Remote LCD Display. This display allows access and configuration to parameters and performance information otherwise not accessible with the integrated LCD display on the MPPT Solar Charge Controller.
2. **Easy to mount** – The Remote LCD Display utilises mounting slots on either side of the screen, and is easy to install.
3. **Push button interface** – The Remote LCD Display utilises four touch buttons and is easy to configure.
4. **Plug and Play operation** – Simply plug the Remote LCD Display into the MPPT Solar Charge Controller using the supplied RJ12 data cable.

4. PRODUCT OVERVIEW

4.1 KA48MPPT20A | KA48MPPT40A COMPONENT OVERVIEW



1. Integrated LCD Display Screen
2. LED Indicators (Top: Solar | Middle: Battery : Bottom Fault)
3. Capacitive Touch Function Key
4. Ground Terminal
5. Mounting Holes
6. External Temperature Sensor Input
7. Remote Screen | Parallel Communication Port
8. Solar Input Terminals
9. Battery Output Terminals
10. Magnetic Snap Cover
11. Tempered Glass Cover
12. Aluminium Heatsink Housing

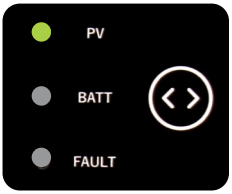
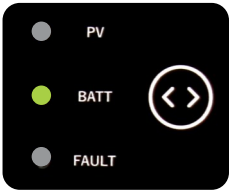
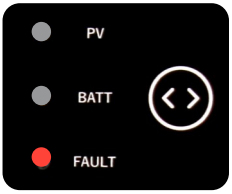
4.1.1 Capacitive Touch Function Key

The capacitive touch function key allows users to navigate between system view and set modes to monitor system performance and set system parameters.

Capacitive Touch Function Key	System Mode	Operation	Action
	View Mode – Allows the user to view system information	Short Press	View next page
		Long Press	Enter Set Mode
	Set Mode – Allows the user to configure system parameters	Short Press	Adjust parameter value
		Long Press	Save parameter value and return to review mode

4.1.2 LED Indicators

The LED Indicators provide high level feedback relating to solar input, battery status and system faults.

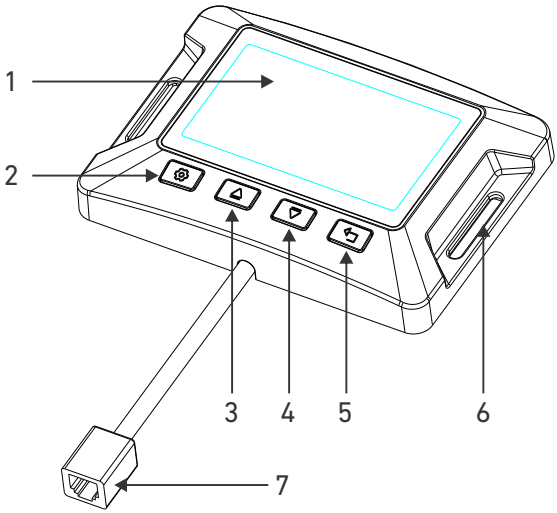
LED Indicator	LED Name	LED Status	Description
	Solar LED Indicator	Off	Solar input voltage is outside the MPPT operating voltage range. The device is not charging.
		On	Solar input voltage is within the MPPT operating voltage range. The device is charging the battery.
	Battery LED Indicator	Off	No battery connected or detected
		On	Battery is connected
	Fault LED Indicator	Off	No system fault detected
		On	System fault detected. Please refer to the Remote Display or Bluetooth App for further information

4.1.3 Integrated LCD Display View Modes

The integrated LCD provides real-time feedback on system performance and the ability for users to configure their devices.

LCD View Mode	LCD View Mode Name	Description
	Battery Voltage	Shows the real time voltage of the connected battery.
	Battery SOC	Shows an approximation of the State of Charge (SOC) of the connected battery based on the battery voltage. NOTE: Not applicable to Lithium battery type.
	Temperature	Shows the internal temperature of the MPPT Solar Charge Controller
	System Error Codes	See the trouble shooting section of this manual for further information regarding the error codes.

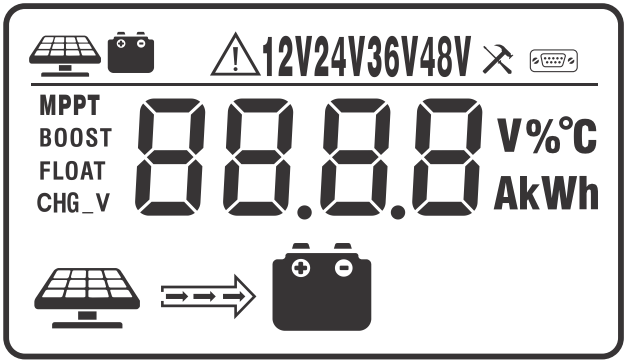
4.2 KAMPPTRC Component Overview



1. LCD Display Screen
2. Key: Settings
3. Key: Up
4. Key: Down
5. Key: Esc
6. Mounting holes
7. Remote Screen Communication Port

4.2.1 Remote LCD Display

The Remote LCD Display provides detailed system performance information and configuration options that are not accessible via the Integrated LCD and LED displays on the KickAss 20A and 40A MPPT Solar Charge Controllers.



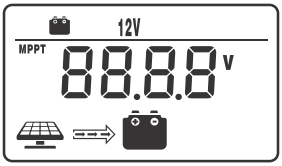
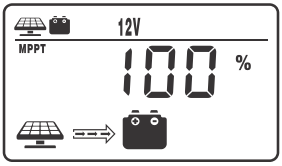
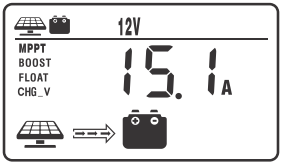
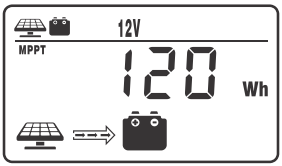
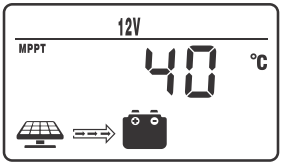
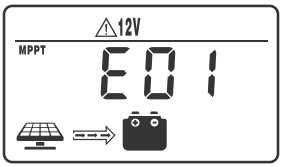
4.2.2 Remote LCD Display: Icons

The table below describes the status indicated by each icon on the Remote LCD Display.

Remote LCD Display Icon	Display Indicator	Status	Description
	Solar Charge Input	On	Solar Power Available
		Off	No Solar available, or outside the MPPT operation voltage range.
MPPT	Charge Status	On	MPPT icon indicates the battery is charging and that device is currently in the BULK charging stage.
BOOST		On	BOOST icon indicates the battery is charging and that the device is current in the ABSORBPTION charging stage.
FLOAT		On	FLOAT icon indicates that the battery is charging and that the device is currently in the FLOAT charging stage.
CHG_V	Voltage Setting	On	Indicates that the charge voltage setting can be adjusted.
	Solar Status Icon	On	Indicates Solar Array Voltage is within the MPPT operational Voltage range.
		Off	Indicates Solar Array Voltage is below the MPPT operational Voltage range.
		Flashing	Indicates that the Solar Array Voltage is above the maximum Solar Array Input Voltage.
	Battery Detection Icon	On	Battery is connected and operating correctly.
		Off	No battery connected or detected.
	Warning/Fault Icon	On	Indicates a system warning or fault has occurred
12V	12V Nominal Battery Voltage	On	Indicates the system is operating at a nominal battery voltage of 12V. Battery will be charged as a 12V system.
24V	24V Nominal Battery Voltage	On	Indicates the system is operating at a nominal battery voltage of 24V. Battery will be charged as a 24V system.
36V	36V Nominal Battery Voltage	On	Indicates the system is operating at a nominal battery voltage of 36V. Battery will be charged as a 36V system.
48V	48V Nominal Battery Voltage	On	Indicates the system is operating at a nominal battery voltage of 48V. Battery will be charged as a 48V system.

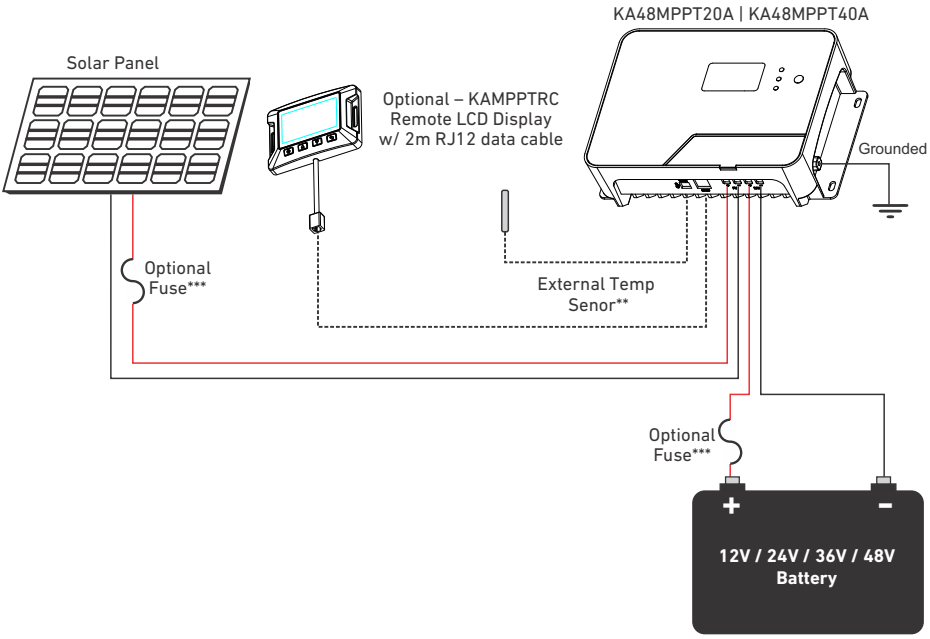
4.2.3 Remote LCD Display: View Modes

The following table describes each of the view modes of the Remote LCD Display, and the data and information each view mode displays.

View Mode	View Mode Name	Description
	Battery Voltage View Mode (Default)	Indicates the real time battery voltage (V) of a 12V battery system. Solar is currently charging the battery and the charge stage is MPPT / BULK.
	Battery Capacity View Mode	Indicates the SOC approximation (%) of a 12V battery system. Solar is currently charging the battery and the charge stage is MPPT / BULK. This display is not applicable for lithium battery type.
	Battery Charge Current View Mode	Indicates the real time charging current (A) of a 12V battery system. Solar is currently charging the battery and the charge stage is MPPT / BULK.
	Battery Charge Watt-Hours View Mode	Indicates the real time charging Watt-Hours (Wh) of a 12V battery system. Solar is currently charging the battery and the charge stage is MPPT / BULK.
	External Temperature Sensor View Mode	Indicates the temperature according to the external temperature sensor.
	System Error Code View Mode	Displays any active system error codes.

5. PRODUCT INSTALLATION

5.1 Wiring Diagram



Note*: Recommended Battery Connection cable is 8AWG with 80A Fuse

Note**: External Temp Sensor supplied with KA48MPPT20A | KA48MPPT40A

Note***: Solar Connection cable and appropriately sized fuse (if required) should be selected based on the maximum expected solar input current.

Solar Input Current	5A	10A	20A	30A	40A
Wire AWG	15AWG	13AWG	10AWG	8AWG	7AWG
Wire Cross Section	1.5mm^2	2.5mm^2	5mm^2	8mm^2	xxx

5.2 Installation Instructions

1. If permanently installing the device, use suitable mounting hardware (Recommended M4 bolts or 4G self-tapping screws) to secure the device to the mounting material.
2. If permanently installing the optional Remote LCD Display unit, mount the Remote LCD Display unit in the desired location using the supplied mounting hardware.
3. Connect the positive and then the negative battery cable. Ensure appropriately sized cable and fuses are used.
4. Connect the external remote temperature sensor (if using one in the installation).
5. Connect the optional Remote LCD Display (if using one in the installation).
6. Download the KA Solar Mobile Bluetooth Application.

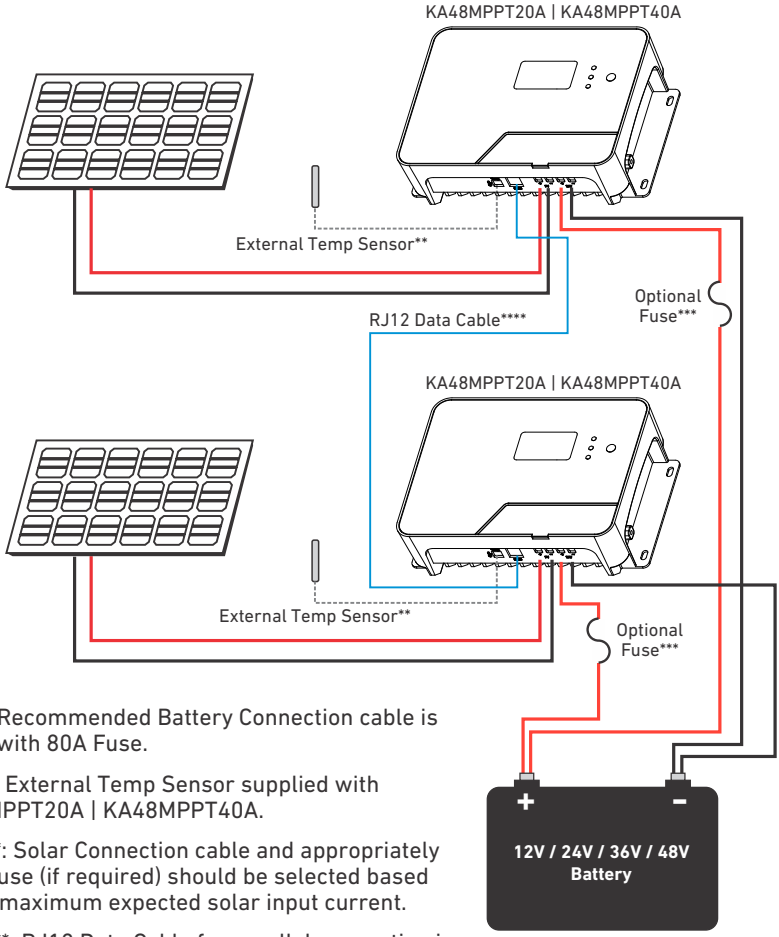
AVAILABLE ON THE APP STORE

GET IT ON GOOGLE PLAY

7. The battery type and nominal voltage of this system need to be set before connecting the solar array. Please refer to the Configuration section for instructions.

   NOTE: If configuring the device for a Lithium or User Battery type, the device MUST be set through either the Remote Bluetooth App or the Remote LCD Display. It is not possible to configure the device for a Lithium or User Battery type through the Integrated LCD.
8. Once the device has been correctly configured based on the battery type and nominal battery voltage of the system, connect the positive and then the negative solar array cables to the device. Ensure appropriately sized cable and fuses are used.

5.3 Wiring Diagram – Parallel Operation



Note*: Recommended Battery Connection cable is 8AWG with 80A Fuse.

Note**: External Temp Sensor supplied with KA48MPPT20A | KA48MPPT40A.

Note***: Solar Connection cable and appropriately sized fuse (if required) should be selected based on the maximum expected solar input current.

Note****: RJ12 Data Cable for parallel connection is supplied separately.

Solar Input Current	5A	10A	20A	30A	40A
Wire AWG	15AWG	13AWG	10AWG	8AWG	7AWG
Wire Cross Section	1.5mm^2	2.5mm^2	5mm^2	8mm^2	xxx

5.4 Installation Instructions – Parallel Operation

NOTE: The 20A and 40A MPPT Solar Controllers can only be used in parallel if both controllers are from the same series. A 20A MPPT Solar Controller can only be connected in parallel with another 20A MPPT Solar Controller. A 40A MPPT Solar Controller can only be connected in parallel with another 40A MPPT Solar Controller.

1. If permanently installing the device, use suitable mounting hardware (recommended M4 bolts or 4G self-tapping screws) to secure both MPPT Solar Controllers to the mounting material.
2. Connect the positive and then the negative battery cable of MPPT Solar Controller Number One to the battery. Ensure appropriately sized cable and fuses are used.
3. Connect the positive and then the negative battery cable of MPPT Solar Controller Number One to the battery. Ensure appropriately sized cable and fuses are used.
4. Connect the external remote temperature sensor if this is to be used in the installation.
5. Connect the two MPPT Solar Controllers together via the RJ12 data ports on each device. Note that the RJ12 communication cable is supplied separately.
6. Download the KA Solar Mobile Bluetooth Application.

AVAILABLE ON THE APP STORE

GET IT ON GOOGLE PLAY

7. One of the MPPT Solar Controllers needs to be configured as the primary device for the parallel operation to activate the synchronised charge output. Please refer to the Configuration section for instructions.
8. The battery type and nominal voltage of this system need to be set before connecting the solar array. Please refer to the Configuration section for instructions. The battery type and nominal voltage needs to be configured on both MPPT Solar Charge Controllers.

   NOTE: If configuring the device for a Lithium or User Battery type, the device MUST be set through either the Remote Bluetooth App or the Remote LCD Display. It is not possible to configure the device for a Lithium or User Battery type through the Integrated LCD.
9. Once both devices have been correctly configured based on the battery type and nominal battery voltage of the system, connect the positive and negative cables of Solar Array 1 to the primary MPPT Solar Charge Controller. Connect the positive and negative cables of Solar Array 2 to the secondary MPPT Solar Charge Controller. Ensure appropriately sized cable and fuses are used.

5.5 Device Configuration via the Integrated LCD Display

Note: If using a Lithium or USER battery type, the device must be configured through the Bluetooth Mobile application or the Remote LCD Display.

5.5.1 Setting the battery type:

1. To set the battery type, long press (LP) the Function Key to enter the Battery Type Set Mode.

2. Short Press (SP) the function key to select Flooded (FLd), Sealed Lead Acid (SEL) or Gel (GEL).

   NOTE: For Absorption Glass Mat Battery (AGM) battery type, select Sealed Lead Acid (SEL).

3. Once the desired battery type has been selected, long press the Function Key to return to the View Mode.

5.5.2 Setting the nominal battery voltage:

1. The nominal battery voltage is automatically detected when Flooded (FLD), Seal Lead Acid (SLD) / Absorption Glass Mat (AGM) or Gel battery types are selected.

5.5.3 Setting the Temperature Units:

1. To change the temperature settings between Degrees Celsius (OC) and degrees Fahrenheit (OF), long press (LP) the Function Key on the Temperature View page:

5.5.4 Configuring the device for Parallel Operation:

1. For two devices to charge in parallel, one of the MPPT Solar Charge Controllers needs to be configured as the Primary device.
   To set the MPPT Solar Charge Controller as the primary device, Long Press the Function Key twice while in Temperature View Mode.

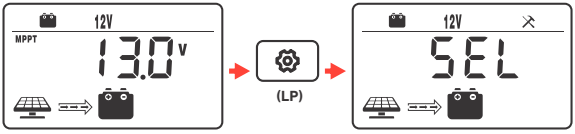
2. Short press the Function Key to set the MPPT Solar Charge Controller as the primary device during parallel operation. Long Press the Function Key to save the configuration and return to View Mode.

NOTE: Only the primary MPPT Solar Charge Controller needs to be configured as P-1 for parallel configuration. The second solar charge controller in the configuration should remain configured as P-0

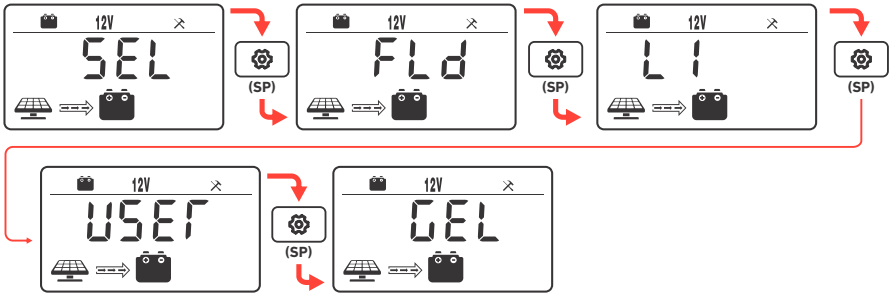
5.6 Device Configuration via the Remote LCD Display Set

5.6.1 Setting the battery type:

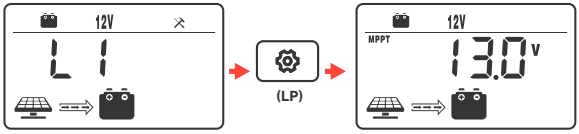
1. To set the battery type, long press (LP) the Settings Key from any view mode to enter the Battery Type Set Mode.



2. Short Press (SP) the up and down keys to cycle through the available battery types.



3. Once the desired battery type has been selected, long press (LP) the settings key to save the selection.



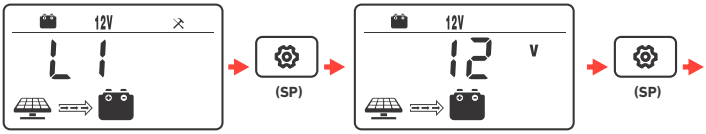
5.6.2 Setting the nominal battery voltage:

1. The nominal battery voltage is automatically detected when Flooded (FLD), Seal Lead Acid (SLD) / Absorption Glass Mat (AGM) or Gel battery types are selected. For instructions on setting the nominal battery voltage when the battery type is set to Lithium or USER, refer to the Lithium Battery and User Advanced Settings Section of the manual.

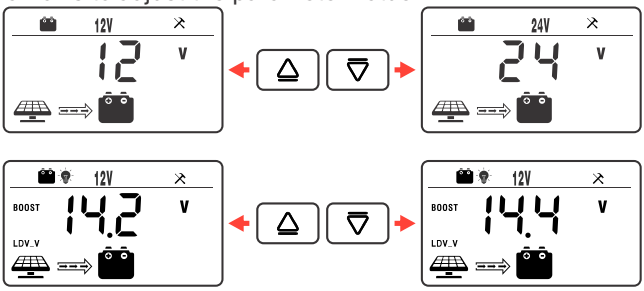
5.6.3 Configuration of Lithium Battery Advanced Settings:

Once the battery type has been set to Lithium, the user can access advanced menu options to set to nominal battery voltage and the BOOST (or BULK) charging voltage.

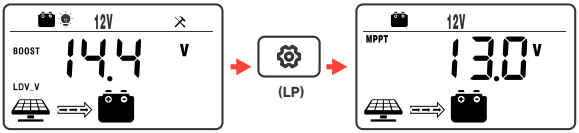
1. To access either the nominal battery voltage configuration page or the BOOST / BULK configuration page, Short Press (SP) the settings key when in lithium mode.



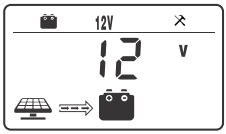
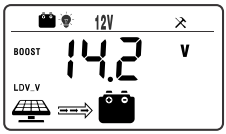
2. Once the designed configuration page has been selected, use the up and down arrows to adjust the parameter value.



3. Once the desired parameter value has been set, Long Press the Setting Key to return to the View Mode.



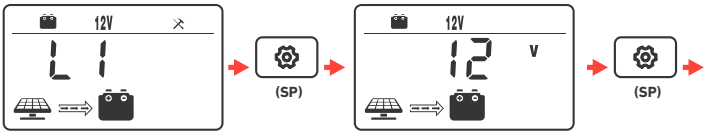
The following table describes the configuration pages that can be accessed in Lithium Battery mode.

Lithium Battery Advance Configuration Mode	Advanced Mode Name	Advanced Mode Description
	Nominal System Voltage	In this mode, the nominal battery voltage of the lithium battery system can be configured. Choose between 12V, 24V, 36V or 48V nominal system voltages.
	Boost (BULK) Charge Voltage	In this mode, the boost charging voltage (or BULK charging voltage) can be set. This value can be set between 0 and 15V. The default and recommended value is 14.2V

5.6.4 Configuration of User Battery Advanced Settings

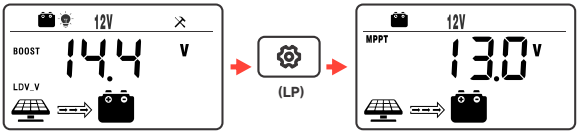
Once the battery type has been set to USER, the user can access advanced configuration pages to set the nominal system voltage, Equalization Voltage, Boost (or BULK) Voltage, Equalize Charge Interval, Boost Recovery Voltage and Float Charge Voltage.

1. To access the configuration pages available when USER battery type is selected, Short Press (SP) the settings key when in USER mode.

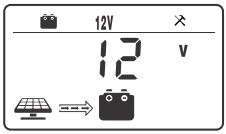
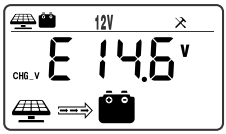
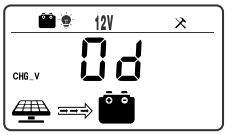
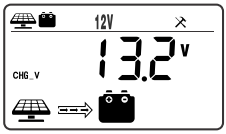
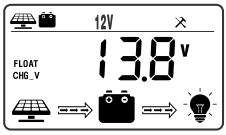


2. Once the desired configuration page has been selected, use the up and down arrows to adjust the parameter value.

3. Once the desired parameter value has been set, Long Press the Setting Key to return to the View Mode.



The following table describes the configuration pages accessible in Lithium Battery mode.

Lithium Battery Advance Configuration Mode	Advanced Mode Name	Advanced Mode Description
	Nominal System Voltage	In this mode, the nominal battery voltage of the lithium battery system can be configured. Choose between 12V, 24V, 36V or 48V nominal system voltages.
	Equalization Charge Voltage	In this mode, the MPPT Solar Charge Controller perform an equalization charge to help balance the internal battery cells and reduce sulfation to extend the life of the battery.
	Boost (BULK) Charge Voltage	In this mode, the boost charging voltage (or BULK charging voltage) can be set. This value can be set between 0 and 15. The default and recommended value is 14.2V
	Equalization Charge Interval	In this mode, the period between the automatic equalization charges occur can be defined.
	BOOST (BULK) Recovery Voltage	In this mode, the boost recovery charging voltage (or BULK charging voltage) can be set.
	Float Charge Voltage	In this mode, the float charge voltage can be set.

6. TROUBLESHOOTING

Code	Error	Description	Quick Troubleshoot
E00	No Error		
E02	Battery Over-Voltage	Battery voltage has exceeded controller limit.	Check battery bank voltage for compatibility with controller
E06	Equipment Overheating	Controller exceeds ambient temperature limit.	Ensure the controller is placed in a well-ventilated cool, dry place.
E07	Environment Over-temperature	The device working surrounding temperature is too high, and the controller would stop charging anytime.	try to lower the working surrounding temperature.
E10	Solar Over-voltage	Solar array voltage exceeds controller rated input voltage.	Decrease the voltage of solar panels connected to the controller.
E13	Solar Reverse Polarity	Solar array input wires connected with reverse polarity.	Disconnect and re-connect with correct wire polarity.
E14	Battery Reverse Polarity	Battery connection wires connected with reverse polarity.	Disconnect and re-connect with correct wire polarity

Note: The missing error codes in the above chart indicates that this controller has no such error or alarm condition.

KICKASS PRODUCTS PTY LTD.
WARRANTY DISCLAIMER

At Kickass Products Pty Ltd., we stand behind the quality and durability of our outdoor and camping products. Our product team rigorously tests every item in demanding conditions to ensure performance in normal use environments.

Limited Warranty Coverage

Kickass Products Pty Ltd. warrants that our products are free from manufacturing defects in materials and workmanship for the applicable warranty period. If a defect arises within this period, we will, at our discretion, repair, replace, or provide an appropriate remedy in accordance with Australian Consumer Law (ACL).

Exclusions

Warranty does not cover:

- Normal wear and tear
- Misuse, abuse or improper installation
- Damage caused by accidents, modifications, or lack of proper maintenance
- Consumable parts, unless a defect in materials or workmanship is present

Making a Warranty Claim

To initiate a claim, please retain your proof of purchase and contact our customer service team with details of the defect. We will guide you through the process, including potential return or assessment requirements.

Your Rights Under Australian Consumer Law

This warranty is in addition to any rights or remedies you may have under the ACL and does not exclude, restrict, or modify them.

Thank you for choosing Kickass Products Pty Ltd. We are committed to ensuring your outdoor adventures are backed with confidence.

KickAss is a registered trademark of
KickAss Products Pty Ltd

Designed & imported by
KickAss Products Pty Ltd
39 Iris Place, Acacia Ridge, QLD 4110
Australia

Made in China