

HARDKORR™

USER MANUAL



12V CONTROL HUB WITH DC-DC CHARGER

HKPPWRHUB25 / HKPPWRHUB40

V1.0 - 9.2023

CONGRATULATIONS ON PURCHASING THIS HIGH QUALITY **HARDKORR PRODUCT!**

In doing so, you now have the assurance and peace of mind that comes from purchasing a product that has been manufactured to the highest quality standards.

Our aim is for you to be completely satisfied with your purchase, and therefore your new Hardkorr product is backed by a comprehensive warranty and an outstanding after-sales customer service team.

We hope you will enjoy using this product for many years to come.

If you require technical support, or in the unlikely event your purchase appears to be faulty, please contact our support team for immediate assistance. Contact details for each country are contained within this user guide.

- THE HARDKORR TEAM

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DISCLAIMER

While caution has been taken to ensure the accuracy of the contents of this guide, Hardkorr assumes no responsibility for errors or omissions. Please note that specifications and product functionality may change without notice.

For assistance with assembly or installation, parts and service, please visit www.hardkorr.com or contact customer service through the following:



Toll Free:

1800 533 544

Monday - Friday

9AM - 4PM (AEST)



Language spoken: English

support@hardkorr.com

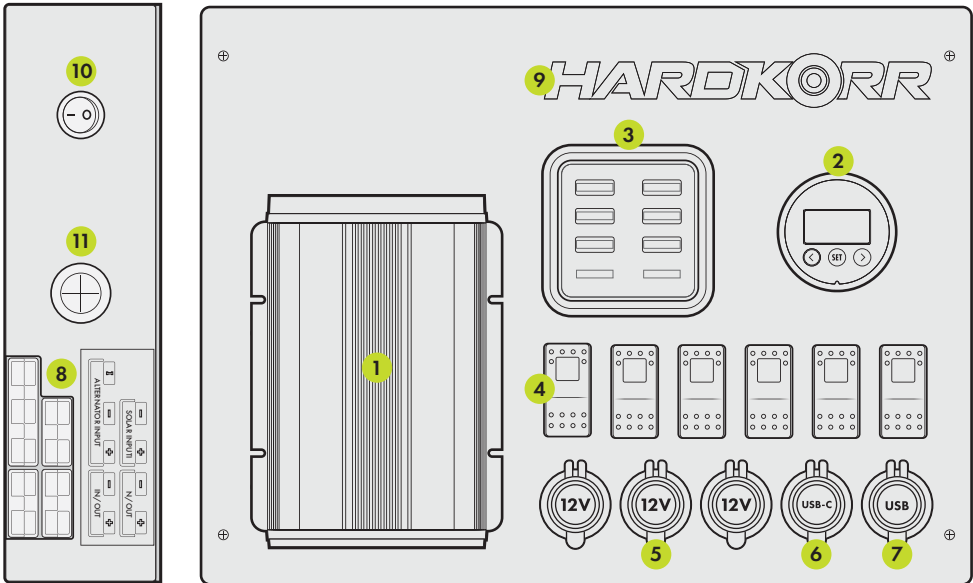
IMPORTANT, RETAIN FOR FUTURE REFERENCE: READ CAREFULLY

- Before installing or using the product, ensure you have read and understood all the warning and safety messages supplied with your product.
- Children, those without the proper training or experience, or those under the influence of drugs or alcohol should not operate this unit.
- Before installing, cleaning, or inspecting the unit for maintenance, ensure that the box's accessories are off/disconnected.
- We recommend that the control hub be wired by a qualified professional. Those with no/limited 12V electrical experience should not attempt to wire up or install the unit.
- Ensure that the control hub's lid is fastened shut when using any of the unit's external features.
- Only use the box's outputs with appliances that are in safe working order. Make sure to inspect the appliance thoroughly before plugging it into the unit.
- The control hub contains sensitive equipment which may be damaged if the unit is subjected to pressure or impact. Ensure that the control hub is securely mounted to prevent it from falling.
- The control hub should be mounted in a location that will allow for adequate ventilation. Additionally, it should be mounted in a location that shelters the unit from dust and water.
- Before wiring the unit, make sure to inspect the leads to make sure they are the appropriate gauge, and free from fault or frays. Failure to use leads fit for purpose may cause damage to the unit, or reduce the hub's operating capacity.
- Keep loose metal objects away from the inside of the control box and away from the ports.

PRODUCT SPECIFICATIONS

SPECIFICATIONS	HKPPWRHUB25	HKPPWRHUB40
BATTERY TYPE COMPATIBILITY	12V SLA, AGM, Gel, Calcium, LiFePO ₄	
DC-DC CHARGING CAPABILITY	25A	40A
ROCKER SWITCH RATING	Max. 20A	
ANDERSON PLUG OUTPUT RATING	Max. 30A	
DC-DC ANDERSON PLUG RATING	Max. 50A	
CIGARETTE SOCKET RATING	Max. 15A	
USB-C PORT RATING	5V/3A, 9V/2A	
USB-A QUICK CHARGE PORT RATING	5V/3A, 9V/2A	
USB 2.0 PORT RATING	5V/3.1A	
BLADE FUSE SIZES	3x 20A (+1 spare), 3x 15A (+1 spare)	
MIDI FUSE SIZE	1x 40A	

CONTROL HUB EXTERNAL OVERVIEW



#	ITEM	DESCRIPTION
1	DC-DC charger	Charges auxilliary battery via alternator input/solar input.
2	Battery monitor	Displays information based on the connected battery's status.
3	Fuse box	Compact housing of blade-type fuses with two spares.
4	Rocker switches	Used to control hard-wired 12V accessories.
5	12V cigarette sockets	Used to power appliances with a 12V cigarette plug.
6	USB-C / QC USB	USB-C and quick-charge USB ports to deliver higher wattage/voltage than USB 2.0.
7	USB 2.0	Dual USB 2.0 ports for charging small electronic devices.
8	Anderson-style plugs	Array of Anderson plugs for DC-DC charger input and 12V output.
9	Illuminated logo	Backlit LED logo.
10	Logo light on/off switch	Switch to control logo backlight.
11	Cable grommet	Used to neatly run cables into the control hub. Positioned on all 4 side profiles.

COMPONENT OVERVIEW

1 DC-DC CHARGER

Charge your batteries with your alternator or with the sun. The charger comes with an inbuilt 25/40A MPPT solar regulator which has been pre-wired to a dedicated solar Anderson input on the side of the box. Compatible with LiFePO₄, AGM, SLA, Gel, and Calcium batteries, it's the perfect addition to any 12V touring setup.

2 BATTERY MONITOR WITH 500A SHUNT

Get up-to-date information on your battery in an instant. The inbuilt battery monitor has a measure of your battery's voltage, current draw, and state of charge as well as a temperature gauge and two timers that track your battery's remaining charge and discharge time.

3 FUSE BOX

Easy to access fuses. Made to protect the panel's outputs, the fuse block contains six fuse ports, with an additional two to hold your spares. There's also an LED indicator that lights up when a fuse has blown.

4 BACKLIT ROCKER SWITCHES

Take control of your 12V accessories. Designed to give you a quick DIY install for your hardwired accessories, the switches are ideal for control of items such as lights, pumps, and fridges. Each switch is backlit, and the kit comes with an array of adhesive emblems to make identifying your switches easy.

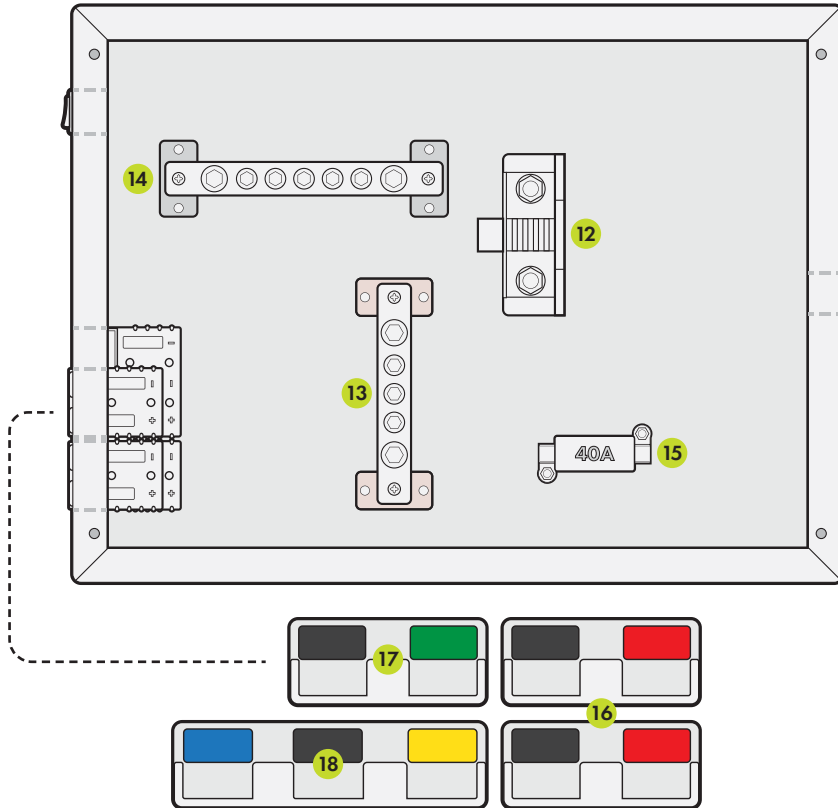
8 ANDERSON-STYLE PLUGS

The side of the box has two DC-DC ports – one as a dedicated solar input, the other, as a three-pin Anderson-style plug used to hook into your alternator and ignition source.

CONSTRUCTION

Constructed using heavy-duty grey powder-coated aluminium, our 12V Control Hub is perfect for mounting in the back of the canopy, in DIY camper trailer or van builds. The box is easy to mount: simply use the pre-drilled holes on the back of the unit to screw, rivet, or bolt it into place, to give you convenient access to just about everything you need in your 12V setup. The system comes completely fused and pre-wired, meaning all you've got to do is hook up your accessories.

CONTROL HUB INTERNAL OVERVIEW



#	ITEM	DESCRIPTION
12	500A shunt	The apparatus that measures that battery's condition.
13	Positive busbar	A distribution point used to manage all of the box's positive leads.
14	Negative busbar	A distribution point used to manage all of the box's negative leads.
15	40A Mid-fuse	Used as an over-load protection, dedicated to the DC-DC input.
16	Anderson output	30A Anderson-style plugs ideal for plugging in 12V appliances.
17	Solar input	A dedicated solar input that connects to the DC-DC's MPPT regulator.
18	Alternator input	A three-pin connection designed to connect the vehicle to the DC-DC unit.

CONTROL HUB INSTALLATION

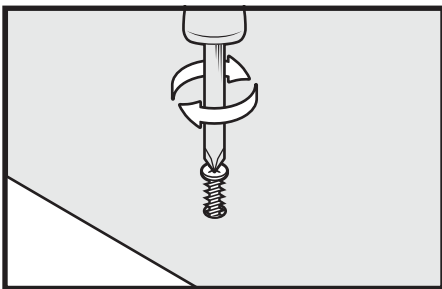
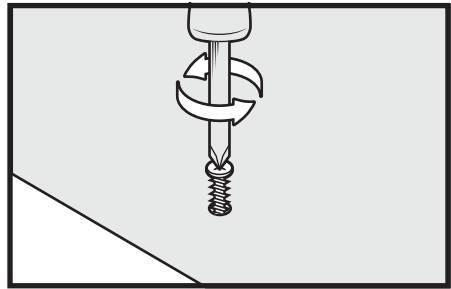
PREPARATION

Ideally suited to being mounted up on a 4x4 canopy wall, or in a camper trailer, the control hub is best located in an area that's easy to access and offers protection from dust and water ingress.

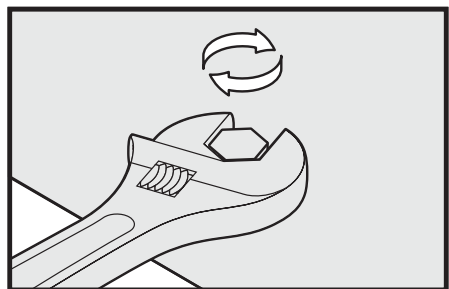
The unit should be mounted with consideration as to where/how you will be running your wires into/out of the box. Make sure the box has adequate space around it to make wiring easy.

PROCESS

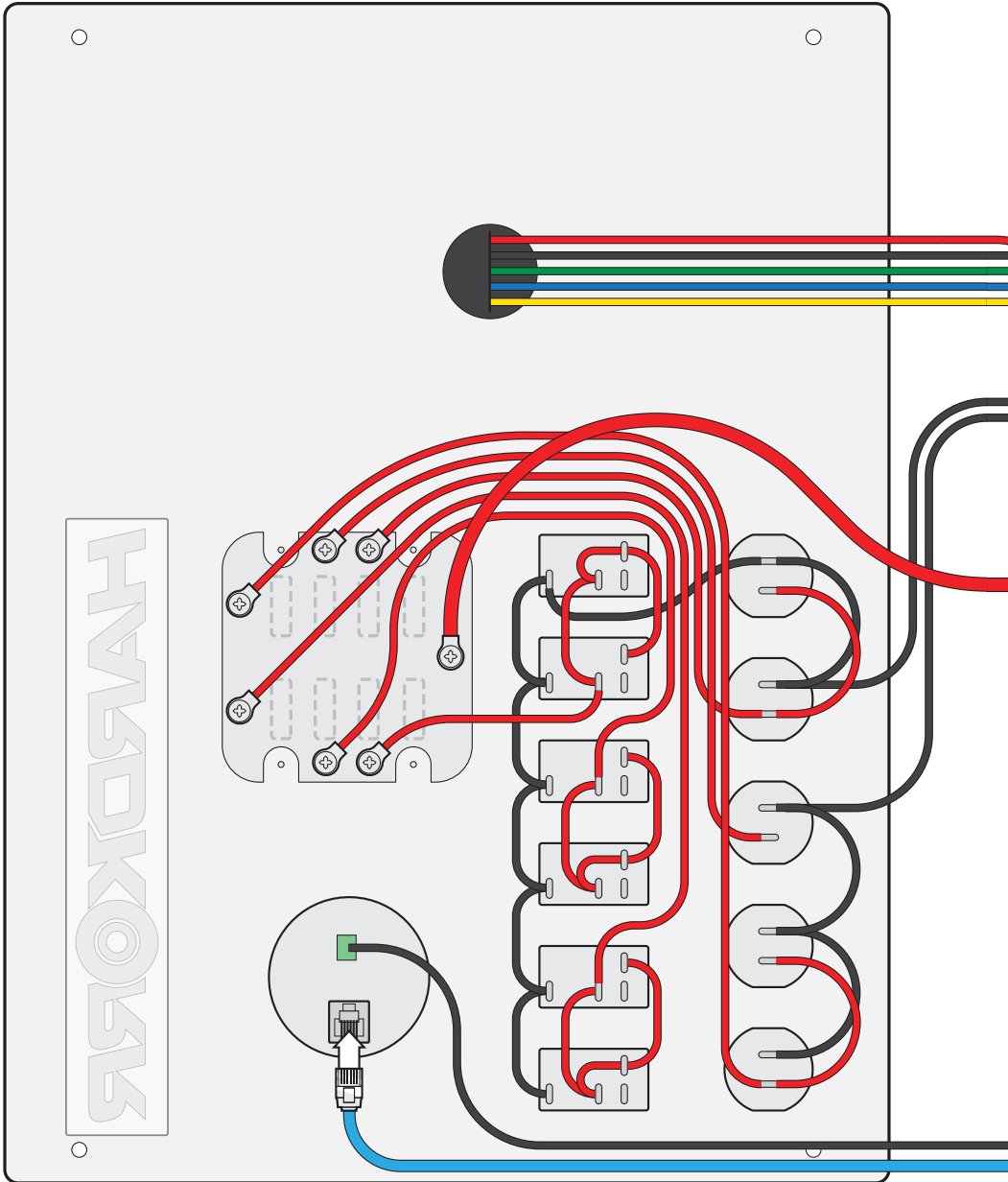
1. Using a Phillips head screwdriver, remove the four screws found on each corner of the front face of the unit.
2. Next, mark the mounting points on your wall/surface. To do this, hold the box up to the surface, and use a pen to mark the surface through the box's pre-drilled mounting holes.
3. Then, put the control hub down and drill through each marking on your surface. To match the box's holes, you'll need to create a 5mm hole. Note: If mounting to a metal surface, you may need to drill a smaller pilot hole before drilling it out.
4. The box can now be lifted into place and secured to the wall. Thread an M5 bolt through each hole and through the mounting surface, then fasten with suitable washers and nuts.



OR

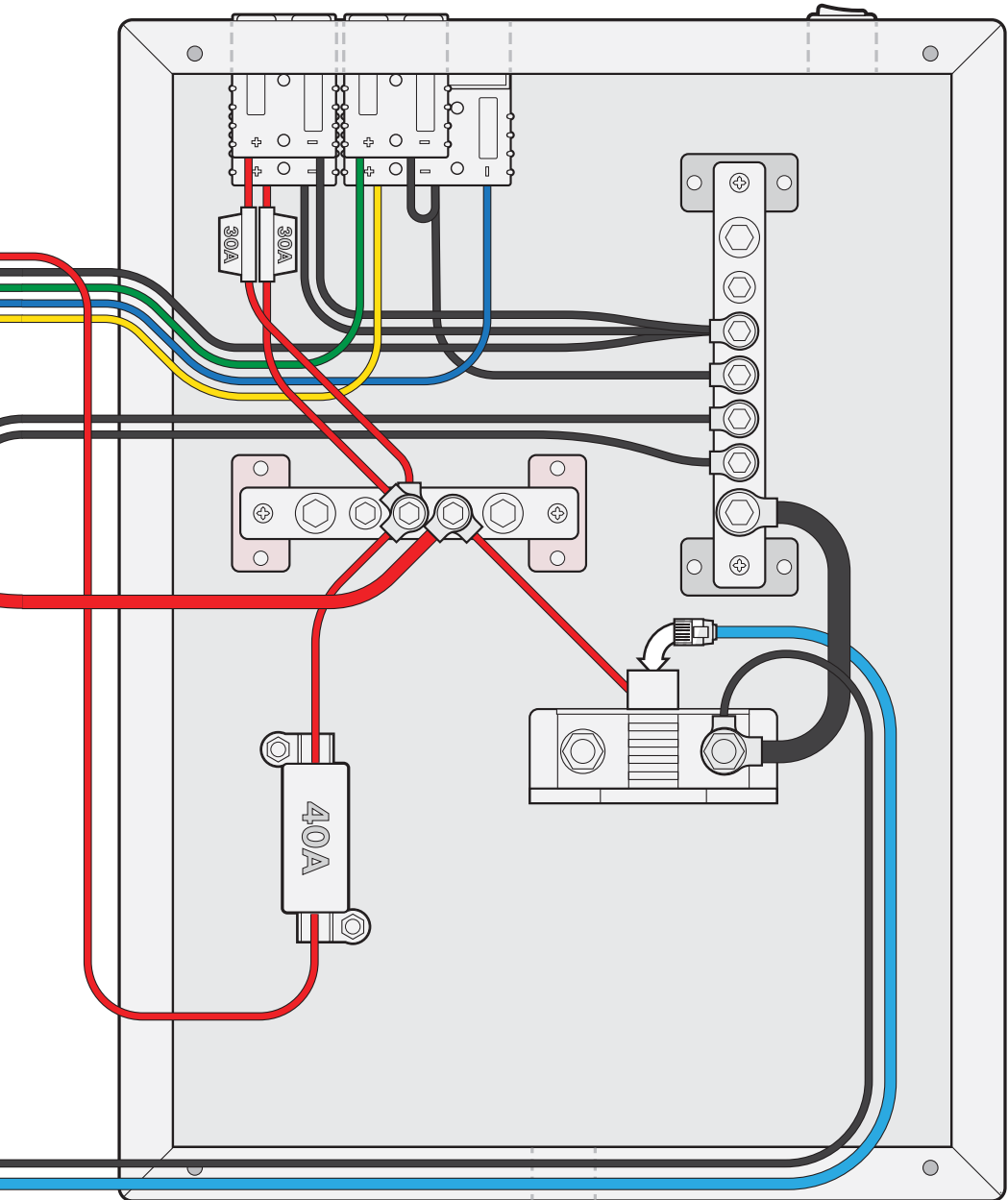


LID INTERNAL WIRING DIAGRAM



Wiring indicative only. Your hub may exhibit minor variations in connectivity.

CHASSIS INTERNAL WIRING DIAGRAM



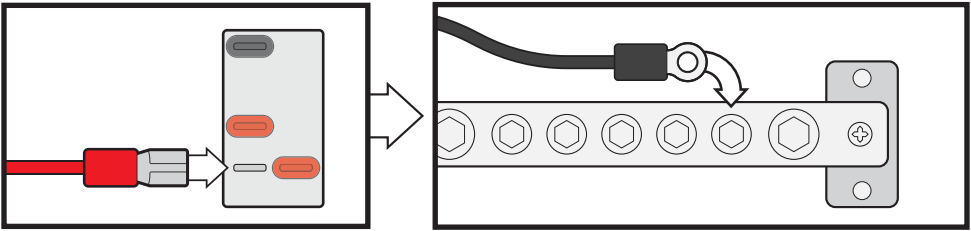
Wiring indicative only. Your hub may exhibit minor variations in connectivity.

CONTROL HUB WIRING - ACCESSORIES

- Disconnect the unit from power prior to wiring the switches.
- To wire into the switches, make sure your appliances are fitted with leads that are a minimum of 14AWG cable. Larger appliances may require cables at up to 10AWG.
- Each negative lead will require a **6mm ring terminal**, whilst the positive requires a **6.3mm female spade connector**.

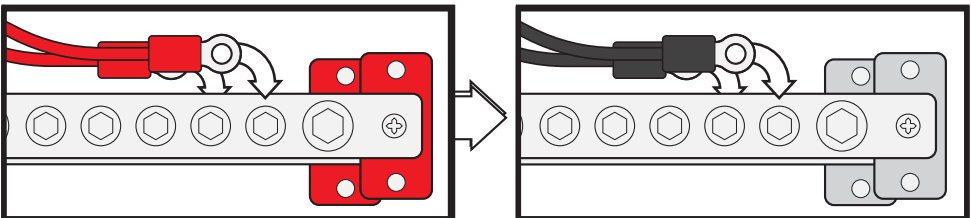
WIRING ACCESSORIES TO A SWITCH

1. Remove the front face of the unit by unscrewing the four screws found on each corner.
2. Locate a practical route for the wires to enter the hub from the appliance. Choose from one of the four grommets on the unit, cut a cross through the centre of them, then run the cords from the appliance into it so that there is about 30cm worth of lead in the box.
3. The positive lead can then be connected to the back of the switch. If your wiring is dual-core, you may need to separate the two wires to do this, otherwise, place the female spade connector from the positive lead onto the vacant male spade on your chosen switch.
4. Next, connect the negative eye terminal to one of the bolts on the negative busbar. Then repeat the process for your other appliances, tucking the cables into the box once complete.



WIRING ACCESSORIES WITHOUT A SWITCH

For wiring up any accessories that don't require a switch, simply wire the positive lead to the positive busbar rather than the switch. The positive lead will need a 6mm ring terminal

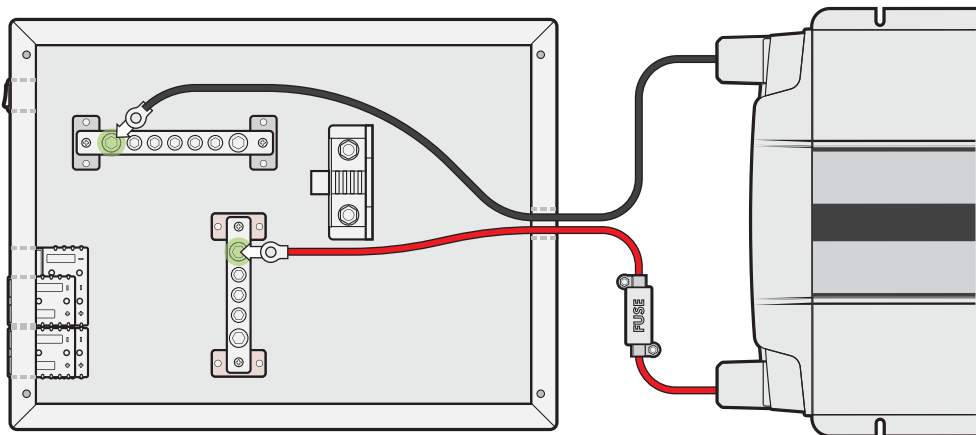


CONTROL HUB WIRING - INVERTER

- Consult your inverter's user guide prior to installing through the hub.
- Take into consideration the appropriate cable gauge and fuse size needed to run your inverter. You will need to use heavier gauge cables running from both the battery into the hub and from the hub to the inverter.
- Some cables used will be too large to fit into the existing rubber grommets. You may need to modify the box, drilling in larger holes to fit them.
- The positive and negative cables used to connect to the box should have **8mm eye terminals**.

PROCESS

1. Remove the front face of the unit by unscrewing the four screws found on each corner.
2. Locate a practical route for the wires to enter the hub from the appliance. Run your leads from the inverter into the box through one of the four grommets, or drill another hole if necessary.
3. There should be a vacant large bolt on the positive busbar. Secure the positive lead to this bolt.
4. Repeat the process above for the negative lead to the negative busbar.

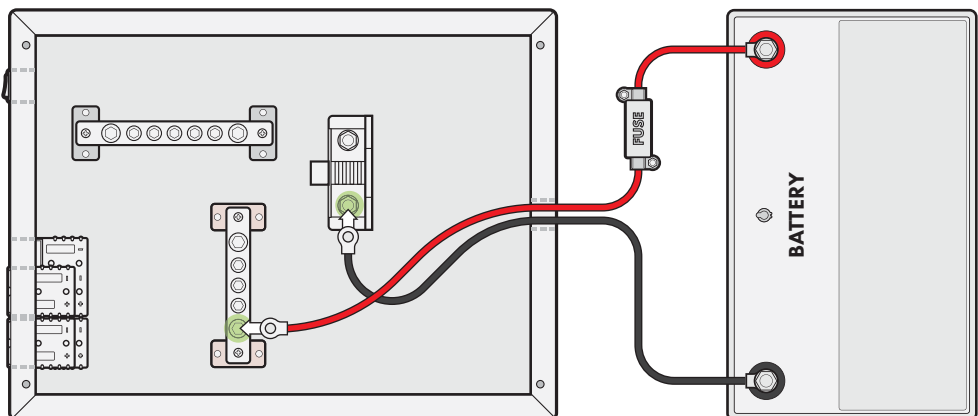


CONTROL HUB WIRING - AUXILLIARY BATTERY

- Ensure that only a dedicated 12V battery/battery bank is used with the system.
- Make sure that the battery is of either SLA, AGM, Gel, Cal, or LiFePO4 chemistry.
- Inspect the unit internally to make sure that all the leads are in good working order and are of an appropriate gauge.
- The kit does not come with any additional leads to wire the battery. Make sure to use leads that are free from faults or frays and are of a suitable size being at least 6AWG. The leads used to connect to the hub should have an **8mm eye terminal** for the positive, and a **10mm eye terminal** for the negative as it will be attached to the shunt.

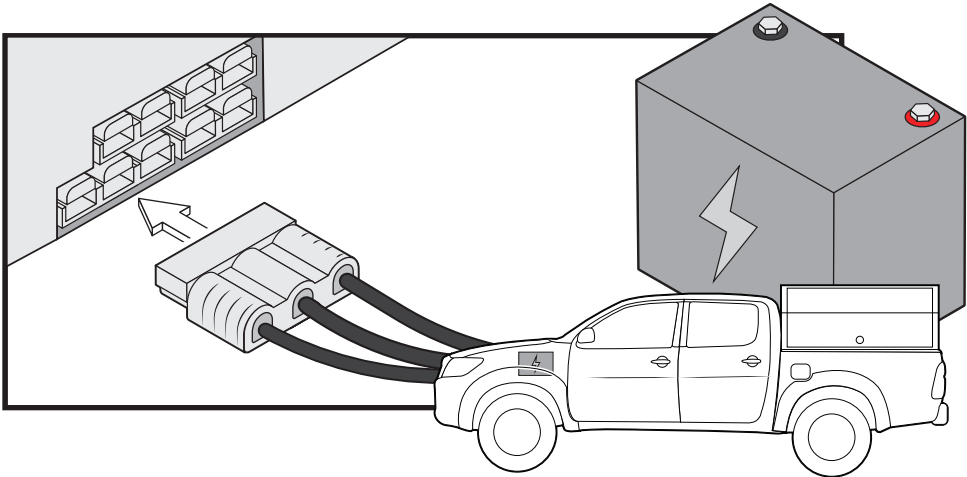
PROCESS

1. Remove the front face of the unit by unscrewing the four screws; one on each corner.
2. Locate the most practical route for the wires to run from the battery into the control hub. There are grommets on all four sides giving you multiple options. Once located, cut a cross into the centre of the rubber grommet using a knife.
3. Run your battery leads through the cut grommet so that there is about 30cm worth of lead in the box. We recommend using a minimum of 6AWG cable, however, if the battery is located a considerable distance from the box, you will need to use a larger gauge wire.
4. In the box, connect the terminal end from the positive lead to the main bolt on the positive busbar.
5. Next, connect the terminal end from the negative lead to the negative bolt on the shunt.
6. To complete this process, connect the cables to the battery. Connect the other end of the positive cable first to the battery's positive terminal, then connect the negative end to the battery's negative terminal.



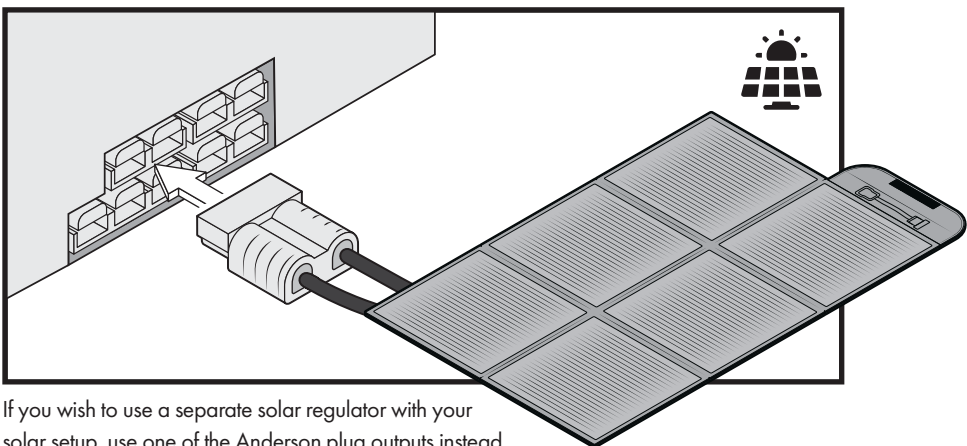
DC-DC INPUT WIRING - VEHICLE BATTERY

The 12V Control Hub's DC-DC charger allows charging an auxiliary battery with the vehicle's alternator using an Anderson 3-pole connector attached to your vehicle's battery and ignition source. For more information, please consult the included DC-DC charger manual.



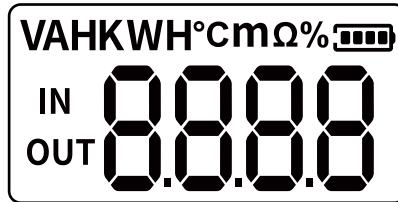
DC-DC INPUT WIRING - SOLAR

The 12V Control Hub's DC-DC charger allows charging an auxiliary battery with an input using an Anderson 3-pole connector attached to your vehicle's battery and ignition source. For more information, please consult the included DC-DC charger manual.



If you wish to use a separate solar regulator with your solar setup, use one of the Anderson plug outputs instead.

BATTERY MONITOR



ICON	FUNCTION / DESCRIPTION		
V	Battery voltage	%	Capacity percentage
A	Battery current		Battery state
W	Battery power	IN	Charging value
AH	Battery amp-hours	OUT	Discharging value
°C	Battery temperature		

DISPLAY SWITCHING

Press < or > to switch between the display screens. The monitor's default screen shows the battery voltage (V), ranging from 8V~100V. Continuously pressing >, the battery current (A), power (W), amp-hours (AH), temperature (°C), and capacity (%) will appear in order.

OVER/UNDER-VOLTAGE, OVER-CURRENT, OVER-TEMPERATURE, & AH CAPACITY SETTINGS

1. After switching to the corresponding interface, press **SET** for 2 seconds to enter the setting mode.
2. The setting value on the screen flashes 1 second on and 1 second off alternatively.
3. Use < or > to increase or decrease the value. Press **SET** to finish and exit.

BATTERY PERCENTAGE SETTING

The percentage displayed on the screen when using for the first time is not the accurate value of the battery. Thus, it is suggested to reset the monitor's capacity percentage. After the battery is fully charged, Press **SET** for 2 seconds to enter the corresponding setting mode. Press > until percentage is displayed 100%. Then press **SET** to confirm and exit.

Make sure to set AH value at the first installation and that the , as the monitor will not do this automatically. If set incorrectly, it will not give you an accurate reading. If you are charging and discharging at the same time, the monitor shows the net amps. When the voltage is lower than setting value, the battery capacity is automatically set as 0%.

FAULT CODES

When over/under-voltage, over-current or over-temperature occurs, the buzzer sounds 0.5 seconds on and 0.5 seconds off alternatively. Press **(M)** to mute the buzzer and return to the normal status.

CODE	FAULT
F1	Input over-voltage.
F2	Input under-voltage.
F3	Input over-current.
F4	Over-temperature.

OUTPUT - CIGARETTE SOCKETS

The 12V control hub contains three cigarette sockets to allow you to plug in common appliances like camp-fridges, inflation devices and lighting. The two left-most sockets are fused in tandem with a single 15A blade fuse. The right-most socket is fused on its own with a 15A blade fuse.

OUTPUT - USB

The 12V control hub contains an array of different types of USB ports for various uses like charging phones and laptops, as well as using any small device that requires a USB connection. These are fused in tandem with a single 15A blade fuse allowing for a maximum combined current of 15A.

OUTPUT - ANDERSON

The 12V control hub contains two Anderson plug outputs. These are each fused with a 30A blade fuse.

ROCKER SWITCHES

The 12V control hub contains six rocker switches to provide direct switched control of your camp accessories. These are fused with a 20A blade fuse in banks of two, allowing for a maximum combined current of 20A between each pair of switches.

FUSE BOX

The 12V control hub contains an externally accessible fuse box housing the aforementioned blade fuses. These are standard blade fuses and the bottom two fuses are spares that can be swapped out in the event of a blown fuse. If you encounter a blown fuse, there is an indicator LED next to each socket that will show you which needs replacing.

HARDKORR



Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Hardkorr warrants that this product will be free from defects in material and workmanship for two years. The warranty commences on the date of purchase by the original purchaser, and is not transferable. To access the benefits of this warranty, you must retain your proof of purchase and follow any other direction we reasonably give you (e.g. completing and returning your warranty card if applicable).

TO BEGIN A WARRANTY CLAIM:

If you believe your Hardkorr product is defective, it must be returned to Hardkorr for inspection by our warranty claims department.

1. You must have a Return Authorization (RA) number. To get your RA number, please complete the form found on our website and wait for the warranty team to contact you.
2. Once you have an RA number, you must arrange for the product must be shipped at your own expense back to Hardkorr (keep your receipt). The address for shipment will be provided when we issue your RA number.
3. Please be sure that your RA number is clearly marked on the outside of the packaging used for shipping.

Completing the steps as mentioned will ensure a faster process of your claim, so that Hardkorr can get your product back to you as soon as possible.

Once we receive your returned product, our technicians will inspect it. We will then notify you of the outcome of your claim.

If we accept your warranty claim, we will either repair, replace or refund the goods at our discretion. We will also reimburse you for the shipping costs you incurred in sending the goods back to us. Any products that we choose to replace or refund become the property of Hardkorr.

If we do not accept your claim, we will advise you of the reason and hold your product for collection. You will need to arrange and pay for the product to be shipped back to you. If your product is not collected within 30 days of your warranty claim being finalised, we may destroy it.

Your warranty is voided if we (at our sole discretion) determine that there is evidence of one or more of the following:

Negligence: Improper installation, improper or extreme use, use that contravenes this instruction manual, etc.

Abuse: Road hazards, Damage beyond the limits of “normal wear and tear.”

Unauthorized Repair: Repair service performed by an unauthorised service centre.

Disassembly: Any attempt to open, tamper with or otherwise compromise the integrity of the product.

Consequential damage: damage to this product caused by the failure of another component of the vehicle or device in which this product is installed.

Additionally, in the case of battery products: the following will void your warranty:

Incorrect charger: The use of a battery charger that is not suitable for lithium batteries i.e. does not have a lithium battery charge profile.

Under bonnet use: Using this battery under the bonnet of a vehicle.

Overcharge/over-discharge: Charging or discharging your battery at a rate higher than those stipulated in the Specifications table of this instruction manual.

Water ingress: your battery is not designed to be installed in an area that is subject to water ingress.

It is reasonable to expect that over its service life the capacity of your battery will reduce. Natural capacity decrease, which we define as a decrease in capacity of less than 10% per year of ownership, is not covered by this warranty. All batteries are tested using our in-house equipment and if we decline your claim for capacity decrease we will provide you with a copy of the test report.

Exterior Finish: Hardkorr uses the highest quality materials available, but depending on location, environment and exposure, the colour of exterior surfaces can fade. We will not approve any warranty claims that relate to fade.

DISCONTINUED ITEMS

Discontinued items that are still under warranty will be reviewed by Hardkorr. If a discontinued item is covered under warranty it may be replaced by an equivalent or superior item. If an equivalent item is not available Hardkorr will determine terms of resolution on a case-by-case basis.

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