

WARNINGS & SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS — This manual contains important safety instructions. Do not operate the system unless you have read and understood this manual. REDARC recommends that the products referenced in this manual be installed by a suitably qualified person.

Disclaimer: REDARC accepts no liability for any injury, loss or property damage which may occur from the improper or unsafe installation or use of its products.

⚠ WARNING

RISK OF EXPLOSIVE GASES: Working in vicinity of a Lead-Acid battery is dangerous. Batteries generate explosive gases during normal operation. For this reason, it is of utmost importance that you follow the instructions when installing and using the Main Unit and Battery Monitor.

⚠ CAUTION

1. The Main Unit and Battery Monitor should not be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are supervised or have been instructed on how to use the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the Main Unit and Battery Monitor.
2. DO NOT alter or disassemble the Main Unit or Battery Monitor under any circumstances. All faulty units must be returned to REDARC for repair. Incorrect handling or reassembly may result in a risk of electric shock or fire and may void the unit warranty.
3. Only use the Main Unit and Battery Monitor with standard automotive lead acid, calcium content, gel, AGM, SLI, deep cycle, heated or standard lithium iron phosphate (LiFePO₄) type 12 V batteries.
4. When using the Main Unit to charge a lithium iron phosphate (LiFePO₄) battery, only batteries that have an inbuilt battery management system featuring under and over voltage protection and cell balancing are suitable.
5. The heated lithium (H) charging profile should only be used with lithium batteries that have a functioning heating element. If unsure, the standard lithium (Li) charging profile must be used. Using the wrong charging profile may damage your heated lithium battery.
6. Check the manufacturer's data for your battery and ensure that the maximum voltage of the profile you select does not exceed the manufacturer's recommended maximum charging voltage. If the maximum voltage is too high for your battery type, select another charging profile.
7. Check the manufacturer's data for your battery and ensure that the continuous current rating of the Main Unit does not exceed the manufacturer's recommended maximum charging current. The battery charge current can be configured to match the manufacturer's recommendations if required.
8. The Main Unit is not intended to supply power to a low voltage electrical system other than to charge a battery.

9. Cable and fuse sizes are specified by various codes and standards which depend on the type of vehicle the Main Unit and Battery Monitor is installed into. Selecting the wrong cable or fuse size could result in harm to the installer or user and/or damage to the Main Unit or Battery Monitor or other equipment installed in the system. The installer is responsible for ensuring that the correct cable and fuse sizes are used when installing this product.
10. Wiring must be installed in protected areas away from heat sources and sharp objects. Cables must not be routed over or through moving parts of the vehicle. Additional protection such as conduit may be required, especially if routing cables through the engine bay.
11. NEVER smoke or allow a spark or flame in the vicinity of the battery or engine. This may cause the battery to explode.

PERSONAL SAFETY PRECAUTIONS

To assist with the safe operation and use of the Main Unit and Battery Monitor when connected to the battery:

- a. **HOT SURFACE:** High amperage loads connected to the Battery Monitor can cause the terminals and metal components to become extremely hot. To avoid burns, do not touch the hot parts without suitable personal protective equipment.
- b. Wear complete eye protection and clothing protection. Avoid touching eyes while working near a battery.
- c. If battery acid contacts your skin or clothing, remove the affected clothing and wash the affected area of your skin immediately with soap and water. If battery acid enters your eye, immediately flood the eye with running cold water for at least 10 minutes and seek medical assistance immediately.



NOTICE

1. Keep the Main Unit and Battery Monitor away from major heat sources, high voltages, and avoid extended exposure to sunlight.
2. DO NOT install the Main Unit, Battery Monitor or R-Bus Wiring Adaptor in the engine bay, they are not designed to operate in engine bay environments.
3. The installer is responsible for applying the correct torque to the Terminal Bolts on the Battery Monitor. Over-torquing bolts may damage the Terminals.
4. DO NOT bottom-out the bolt threads when fastening Terminal Bolts to the Battery Monitor Terminals, this may cause a poor electrical connection.
5. For fastening lugs to the Main Unit Terminals, only use the supplied M3 × 8mm / M5 × 10mm Hex Head Phillips Screws or equivalent. Using longer screws may lead to poor electrical connection or may damage the Main Unit.

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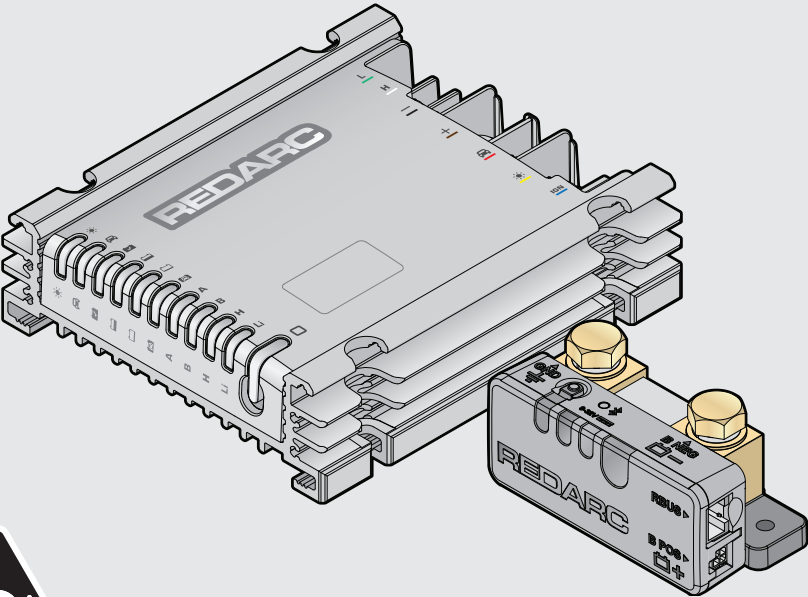
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INSTALL GUIDE

BCDC ALPHA® 50R
BCDC12050R

12 V 50 A DC-DC Battery Charger with
Smart Battery Monitoring and Bluetooth®



BCDC ALPHA 50R OVERVIEW

The BCDC Alpha 50R charges all common 12V automotive battery types including standard and heated lithium. It is equipped with screw terminals for easy installation, and has a push-button interface for simple operation.

The BCDC Alpha 50R prioritises charging from solar before supplementing from the vehicle start battery to lighten the load on your alternator and maximise the collection of free solar energy, with an option for excess solar energy to then top-up the vehicle start battery.

The Battery Monitor provides critical system information including battery voltage, current, State of Charge (SoC) and temperature information of the connected battery via the RedVision® app.

The Battery Monitor can be combined with REDARC R-Bus compatible products, including the TVMS Rogue with the RedVision® Display. Note, to add a RedVision device to your system, a TVMS and Display are BOTH required.

The BCDC Alpha 50R also features the capability to seamlessly revive and charge a fully flattened lithium battery.

FULL-LENGTH MANUAL

This document contains everything you need to know to complete a basic install of your BCDC Alpha 50R.

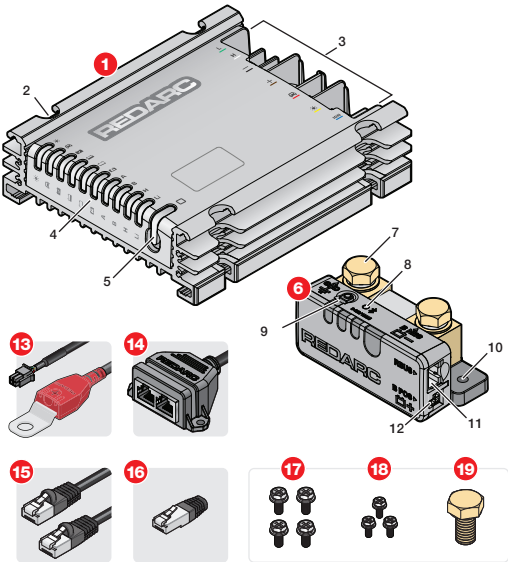
Note that there is a full-length manual available that contains expanded installation information for more complex systems.



For the latest version of this document and any available translations, visit the REDARC website: www.redarcelectronics.com

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1 MAIN UNIT

- 2. Mounting Points
- 3. Terminals
- 4. Status LEDs
- 5. Control Button

6 BATTERY MONITOR

- 7. Terminal Bolts M10 x 16 mm (x2)
- 8. Status LED
- 9. Control Button
- 10. Mounting Points (x2)
- 11. R-Bus Socket
- 12. Battery Sense Lead Socket

13 BATTERY SENSE LEAD – 1 m (3'3")

14 R-BUS WIRING ADAPTOR

15 R-BUS (RJ45) CABLE – 2 m (6'7")

16 TERMINATING RESISTOR

17 M5 x 10 mm HEX HEAD PHILLIPS SCREW (x4)

18 M3 x 8 mm HEX HEAD PHILLIPS SCREW (x3)

19 M10 x 20 mm ALTERNATIVE TERMINAL BOLT

MAIN UNIT PARTS

STATUS LEDs

SOLAR AND VEHICLE LEDS

ON when the input is available and in use. OFF when the input is not available or not in use.

CHARGING STAGE LEDS

Shows the current charging stage the Main Unit is in when charging the auxiliary battery. See "Charging Stages" for information about each charging stage: **Float, Absorption and Boost.**

CHARGEBACK LED

ON when the Start Battery Charge Mode is enabled and active, or when Start Battery Recovery is in progress.

CHARGE PROFILE LEDS

Shows the charging profile of the auxiliary battery, as configured via the Control Button or the Configurator app **Battery Type** setting.

- A** AGM/Gel
- H** Heated Lithium
- B** Standard Lead Acid / Calcium
- Li** Standard Lithium

CONTROL BUTTON

Controls the Main Unit and can be used to configure essential settings — additional settings are configured via the Configurator app.

Refer to the full-length manual for detailed operation instructions of the Control Button on the Main Unit.

TERMINALS

The Main Unit has female screw terminals.

- L** R-Bus Input (2x M3)
- H** Connects to the R-Bus Wiring Adaptor.

- Ground (M5)
- Connects to common ground.

- +** Auxiliary Battery (M5)
- Connects to the auxiliary battery positive (+) terminal.

- 🚗** Start Battery (M5)
- Connects to the start battery positive (+) terminal.

- ☀️** Solar (M5)
- Connects to the solar panel positive (+) wire.

- IGN** Vehicle Ignition (M3)
- Connects to an ignition signal for vehicles with smart alternators.

INSTALLATION – MOUNTING

DON'T:

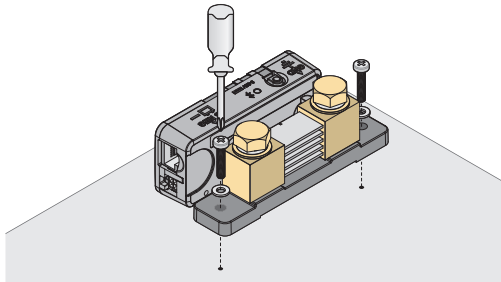
- ✗ DO NOT install the Main Unit, Battery Monitor and R-Bus Wiring Adaptor in the engine bay.
- ✗ Do NOT mount the Main Unit in an orientation that allows liquid to pool at the terminals.
- ✗ DO NOT mount the Battery Monitor with the R-Bus and B POS sockets facing upwards.
- ✗ DO NOT mount using adhesives or adhesive tape.

DO:

- ✓ Use all mounting points on the Main Unit and Battery Monitor.
- ✓ Mount in a location where all Control Buttons and Status LEDs are accessible and visible.
- ✓ Mount in a dry and protected location e.g. inside the vehicle's cabin, ute canopy, caravan or battery box.
- ✓ If installing the Main Unit or Battery Monitor in an enclosed space, make sure there is adequate venting at the top and bottom of the enclosure for cross-flow of air.
- ✓ Mount the Main Unit and Battery Monitor to fixed surfaces.
- ✓ Mount on flat a surface. Check the reverse side before drilling.
- ✓ Leave 40 mm (1.6") clearance around the Main Unit.
- ✓ Leave 30 mm (1.2") clearance around the Battery Monitor.

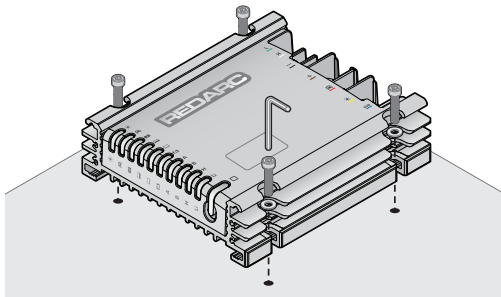
MOUNT THE BATTERY MONITOR

Mount using two **M6 (1/4")** to **M4 (5/32")** fasteners with washers.



MOUNT THE MAIN UNIT

Mount using four **M6 (1/4")** fasteners with washers.



SPECIFICATIONS

MAIN UNIT SPECIFICATIONS	
Nominal Current Rating	50A
Operating temperature*1	−20°C to 60°C (−4°F to 140°F)
Start Battery Input	
Voltage Range	9–32 VDC ===
Maximum Input Current	55A
Solar Input	
Voltage Range*2	9–48 VDC ===
Maximum Input Current	55A
Maximum Array Size	1000W
Output	
Nominal Output Voltage	12V
Voltage Range	9–16 VDC ===
Maximum Output Current	50A
Battery Capacity Range	50 to 600Ah
Maximum Output Power	800W

*1 As the temperature of the Unit rises above a certain level the current capacity of the output is decreased gradually to protect the battery and the Unit.
*2 The maximum voltage of the solar array should be calculated for the minimum temperature that it would be exposed to. The value should be less than 48V or else damage to the unit may occur. The unit will not charge if the voltage is too high.

BATTERY MONITOR SPECIFICATIONS	
Operating voltage range	9–32 VDC ===
Operating temperature	−20°C to 60°C (−4°F to 140°F)
Current measurement range	± 500A
Current measurement accuracy	±0.3%, 1to 500A @ 50°C (122°F)
Voltage measurement accuracy	±0.7%
Battery temperature measurement range	−40°C to 100°C (−40°F to 212°F)
Temperature measurement accuracy	±3°C (±5.4°F)
Regulatory compliance	FCC ID: 2BAH6-SU601 IC: 30290-SU601

LIMITED WARRANTY

For full warranty terms and conditions, visit the Warranty page of the REDARC website at www.redarcelectronics.com/warranty

Australia, New Zealand & Europe:

REDARC Electronics Pty Ltd,
23 Brodie Road (North), Lonsdale SA 5160, Australia

North America:

REDARC Corporation, c/o Shalco, Inc.
308 Component Dr., Smithfield, NC 27577, USA

COMPLIANCE



INTERNAL TRANSMISSION NOTICE

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help

This device complies with Part 15 of the FCC Rules and with Innovation, Science and Economic Development Canada's licence-exempt RSS (s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) L'appareil ne doit pas produire de brouillage.

(2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillard est susceptible d'en compromettre le fonctionnement

This equipment complies with the FCC and ISED Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and all persons during normal operation.

Cet équipement est conforme aux limites d'exposition aux rayonnements de la FCC et ISED Canada établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et toutes les personnes pendant le fonctionnement normal.

IMPORTER CONTACT INFORMATION

UK: Ozparts UK Ltd, 1 Prospect Place, Pride Park, DE24 8HG, Derby, UK

Europe: Ozparts Sp. z o. o. Sp. kom., Slowackiego 32/5, 87–100 Torun, Poland

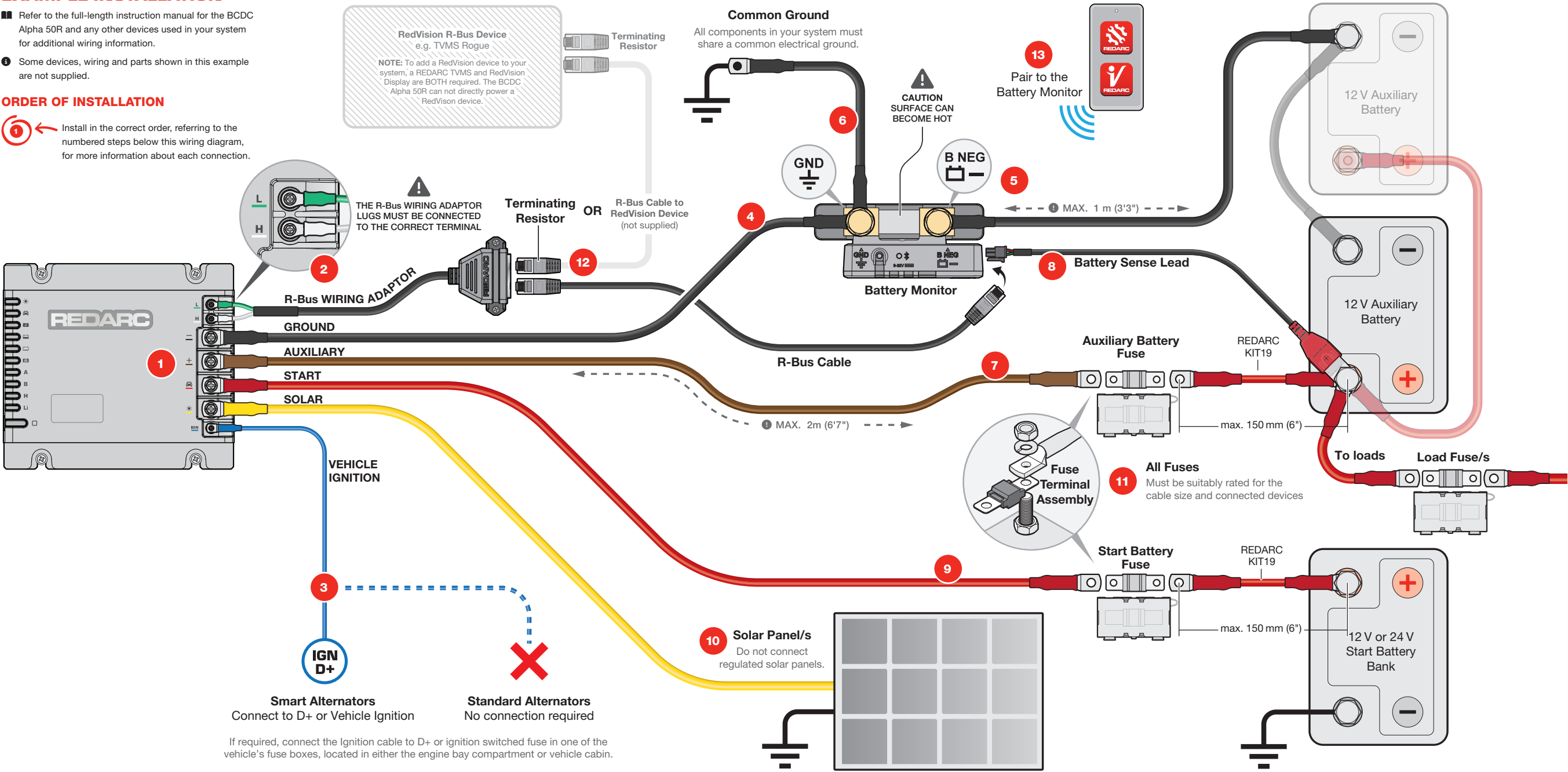
For written request please email power@redarcelectronics.eu

EXAMPLE INSTALLATION

- Refer to the full-length instruction manual for the BCDC Alpha 50R and any other devices used in your system for additional wiring information.
- ❗ Some devices, wiring and parts shown in this example are not supplied.

ORDER OF INSTALLATION

- 1 Install in the correct order, referring to the numbered steps below this wiring diagram, for more information about each connection.



DOWNLOAD THE APPS

CONFIGURATOR APP

The Configurator app lets you configure and customise the features and functions of your BCDC Alpha 50R and other RedVision devices in your system.

PAIRING INSTRUCTIONS

See "System Configuration" for pairing instructions.

REDVISION APP

The RedVision app gives you remote access to BCDC Alpha 50R functions and features including battery and system monitoring, and start battery recovery.

PAIRING INSTRUCTIONS

1. Download the RedVision app and make sure Bluetooth® is enabled on your smartphone.
2. Press and hold the Control Button on the Battery Monitor for 0.5 to 3 seconds. The Status LED will flash blue (pairing mode).
3. Open the RedVision app and allow the required permissions if it's the first time using the app.
4. Tap the **Menu** icon, then under the devices heading, tap **+ Add Device**.
5. Find and select the device that matches the Product Serial Number on your Battery Monitor. Read and agree to the disclaimer.
6. When the Bluetooth® pairing request appears, tap **Pair** (first time pairing may take a few minutes).
7. Once the Status LED turns solid blue, and the system information appears on your smartphone the Bluetooth® pairing is complete (first time pairing may take a few minutes).

CALIBRATION

When the battery is first connected, the system will start a calibration process to determine the State of Charge (SoC) of the battery — this value does not appear instantly after completing your installation. Calibration will continue until your auxiliary battery is fully charged.

CONFIGURATION GUIDE

For further assistance and information on configuring your system refer to the [RedVision Configuration Guide](#).

The RedVision® app and the Configurator app and their interactions with the Battery Monitor have not been tested on all smartphone models. Visit the application pages within your app store to view compatibility details.

INSTALLATION – WIRING

MAIN UNIT CABLE AND FUSE SIZING

Refer to this table to identify the cable sizes needed for the **Ground**, **Auxiliary**, **Start Battery** and **Solar** connections on the Main Unit. Source lugs with a hole suitable for an M5 screw and barrel size to suit the required cable gauge.

IMPORTANT: The **Auxiliary** and **Start Battery** cables must be fused to protect wiring. The **Auxiliary Battery** and **Ground** cable must be sized to conduct the full rated capacity, and the **Start Battery** cable must be sized to conduct the configured **Vehicle Input Current Limit** of the start battery terminals (configured via the Control Button or via the Configurator app).

The **Solar** cable must be sized to conduct the short circuit current of your solar panel/s, regardless if it is below or greater than the maximum solar input current (55A).

Expected Current	MIDI Fuse Rating (REDARC Fuse Kit)		One way length		Cable Gauge	
	Auxiliary Battery Fuse	Start Battery Fuse			mm²	AWG/B&S
25A – 28A	-	50A (FK50)	0 – 2m	0 – 6'7"	6	-
			2 – 5m	6'7" – 16'5"	7.7	8
			5 – 12m	16'5" – 39'4"	13.5	6
40A	-	60A (FK60)	0 – 5m	0 – 16'5"	13.5	6
			5 – 12m	16'5" – 39'4"	20.2	4
			0 – 9m	0 – 29'6"	20.2	4
50A – 55A	60A (FK60)	70A (FK70)	9 – 12m	29'6" – 39'4"	26.6	3

BATTERY MONITOR CABLE SIZING

Refer to this table to identify the cable gauge needed for the **B NEG** and **GND** connections on the Battery Monitor. Source lugs with a hole suitable for an M10 bolt and barrel size to suit the required cable gauge.

IMPORTANT: The sizes given are a reference only, considerations when selecting an appropriate cable for your installation include cable length, peak current draw, time spent at high current and environmental ambient temperature.

System Current	100A	200A	300A	400A	500A
Recommended Cable Cross Section	35 mm²	70 mm²	95 mm²	120 mm²	150 mm²
Equivalent B&S, BAE, AWG	2	3/0	4/0	250 kcmil	300 kcmil

1 CONNECT LUGS TO MAIN UNIT

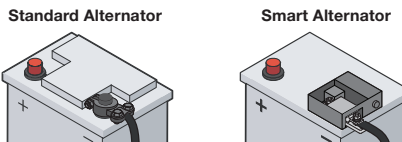
- 1.1 Connect all M5 lugs to the Main Unit using the M5 screws and torque to 4 N·m (2.95 lbf·ft).

2 R-BUS WIRING ADAPTOR TO MAIN UNIT

- 2.1 Mount the R-Bus Wiring Adaptor using two M4 fasteners or 4 mm (0.15") wide cable ties. Ensure the Adaptor reaches comfortably to the R-Bus Terminal on the Main Unit.
- 2.2 Connect the **Green** cable lug to the **L** terminal and the **White** cable to the **H** terminal on the Main Unit.
- 2.3 Secure using an M3 Screw, torque to 1 N·m (0.74 lbf·ft).

3 VEHICLE IGNITION CABLE

- 3.1 Determine if your vehicle has a smart alternator by checking for a battery sensor on your vehicles start battery.



STANDARD ALTERNATOR

No connection required.

SMART ALTERNATOR

- 3.2 Connect the **Ignition** cable with an M3 lug to the **Ignition** terminal. Secure using an M3 Screw, torque to 1 N·m (0.74 lbf·ft).

- 3.3 Depending on the type of smart alternator your vehicle has, connect the **Ignition** cable to the following:

CONTINUOUS IDLE vehicles (the engine keeps running when the vehicle is stationary) connect the **Ignition** cable to a point that is live only when the ignition is turned on.

IDLE STOP vehicles, (the engine automatically shuts off when the vehicle is stationary) connect the **Ignition** cable to **D+** or a similar pick up point.

4 COMMON GROUND CABLE

- 4.1 Connect the **Ground** cable to a ground point that forms a common ground with all devices in your system. This can be achieved by connecting the **Ground** cable to the **GND** terminal on the Battery Monitor. Alternatively connect the cable to a common ground busbar or the vehicle chassis.

5 B NEG (-) TO AUXILIARY BATTERY

- 5.1 Connect a cable between the **B NEG** Terminal on the Battery Monitor and to the auxiliary battery's negative (-) terminal.
- 5.2 Torque the **B NEG** Terminal Bolt to 20 N·m (14.7 lbf·ft).

6 GND TO GROUND

- 6.1 Connect a cable between the **GND** terminal on the Battery Monitor and a ground point that forms a common ground with all devices in your system.

NOTICE: If the combined thickness of the lugs connected to the **GND** terminal on the Battery Monitor is more than 4 mm (5/32"), use the supplied Long Terminal Bolt.

- 6.2 Torque the **GND** Terminal Bolt to 20 N·m (14.7 lbf·ft).

7 AUXILIARY BATTERY CABLE

- 7.1 Mount a MIDI fuse holder within 150 mm (6") of the auxiliary battery positive (+) terminal.
- 7.2 Take out the MIDI fuse from the holder and connect the **Auxiliary Battery** cable to the MIDI fuse holder.
- 7.3 Connect a short cable between the fuse holder and the positive (+) terminal on the auxiliary battery. The short cable must be no longer than 150 mm (6"), REDARC KIT19 is recommended for this connection.

8 B POS (+) TO AUXILIARY BATTERY

- 8.1 Connect the Battery Sense Connector to the **B POS** socket on the Battery Monitor.
- 8.2 Connect the Battery Sense Lug to the auxiliary battery positive (+) terminal.

NOTICE: Do not fit the Battery Sense Lug in between the auxiliary battery positive terminal and lugs that carry high currents. Connect the lugs carrying high-currents to the auxiliary battery first, then add the Battery Sense Lug on top (last).

9 START BATTERY CABLE

- 9.1 Mount a MIDI fuse holder within 150 mm (6") of the start battery positive (+) terminal.
- 9.2 Take out the MIDI fuse from the holder and connect the **Start Battery** cable to the MIDI fuse holder.
- 9.3 Connect a short cable between the fuse holder and the positive (+) terminal on the start battery. The short cable must be no longer than 150 mm (6"), REDARC KIT19 is recommended for this connection.

10 SOLAR CABLE

DON'T:

- ✗ DO NOT connect solar panels that have inbuilt regulators. The Main Unit has an inbuilt regulator that may not function correctly if regulated solar panels are connected.
- ✗ DO NOT connect solar panels that have an open circuit voltage that exceeds the 48V limit of the Main Unit input.

DO:

- ✓ Make sure all wiring, components, and fuses used with your solar panel or solar array are compliant with local codes and standards.

- 10.1 Cover the solar panel/s before wiring into the system.

- 10.2 Connect the **Solar** cable to the solar panel/array using suitable connectors (e.g. MC4 connectors) for your system setup.

CONNECTING MULTIPLE SOLAR PANELS

- Refer to the full-length manual for instructions on how to connect multiple solar panels.

11 FUSE CONNECTIONS

- 11.1 To complete the **Auxiliary Battery** cable connection, install and secure the auxiliary battery MIDI fuse to the fuse holder.
- 11.2 Install and secure the start battery MIDI fuse to the fuse holder to complete the **Start Battery** cable connection.

12 CONNECT REDVISION R-BUS DEVICES

- 12.1 Connect the **R-Bus** cable into the R-Bus Wiring Adaptor and to the R-Bus socket on the Battery Monitor.
- 12.2 Insert the Terminating Resistor into the R-Bus Wiring Adaptor or into another R-Bus device to expand your RedVision system.

CARE & MAINTENANCE

Periodically check that all wiring and connections are secure. Parts of the system may have moved during normal use.

TROUBLESHOOTING

- Refer to the full-length manual for complete troubleshooting information.

FAULTS

- Faults are indicated by the Status LEDs on the Main Unit and Battery Monitor. In the event of any Status LEDs flashing red, refer to the RedVision app or to the full-length manual to identify the cause of the fault.

SYSTEM CONFIGURATION

13 CONFIGURE YOUR SYSTEM

Once installed, configure the system by pairing your smartphone to the Battery Monitor via Bluetooth®.

PAIRING INSTRUCTIONS

1. Download the Configurator app.
2. Make sure Bluetooth® is enabled on your smartphone.
3. Press and hold the Control Button on the Battery Monitor for 0.5 to 3 seconds. The Status LED will flash blue (pairing mode).
4. Open the Configurator app and allow the required permissions.
5. In the **"Choose Configuration"** screen, tap **"Read Device"** then select the system that matches the Product Serial Number on the Battery Monitor.
6. When the **"Pair"** banner appears, tap **Pair**.

CONFIGURE THE BATTERY MONITOR

7. Under the **"Charger Settings"** heading tap **"Battery Sensor"** to navigate to the **"Configure Battery Sensor"** screen.
8. Under the **"Battery Settings"** heading, enter your auxiliary battery's **Type**, **Size**, and the **Max Charge Current**. Refer to your battery manufacturers specifications for these values.
9. The **Nominal Battery Voltage** MUST be **'12V'**.
10. Under the **"Alarms"** heading, configure the **Low SoC Alarm** and **Low Voltage Alarm**. When your battery goes below these configured values, the Status LED on the Battery Monitor and the Control Button on the Main Unit will turn red, and an alert will display in the RedVision app.
11. Once completed, tap **Save**.

CONFIGURE THE BATTERY CHARGER

12. Under the **"Charger Settings"** heading tap **"Charger Unit"** to navigate to the **"Configure BCDC Alpha"** screen.
13. Enter in the **Vehicle Input Trigger** and **Vehicle Input Current Limit**. These dictate the start battery turn on/off voltage of the Main Unit and defines the maximum current drawn from the start battery.
14. Set the **Start Battery Charge Mode** to On/Off.
15. Once completed, tap **Save**.

COMPLETE CONFIGURATION

16. Make sure the Battery Monitor is in Bluetooth® pairing mode, then tap **Program** in the app.
17. In the **"Choose Configuration"** screen, re-select your system. Do not exit the app until the success banner appears and the Status LED on the Battery Monitor is solid Blue. The system is now configured, and Bluetooth® pairing is complete.

OPERATION

CHARGING STAGES

- Boost charges the auxiliary battery at the fastest possible rate, maintaining a constant current until the battery reaches its maximum voltage.
- Absorption maintains a constant voltage level until the current being drawn by the output battery drops to a predetermined level for 5 minutes.
- Float maintains 13.3V (13.6V for Lithium) on the output battery, keeping the battery topped up. When the battery loses enough charge or the voltage drops significantly, the Main Unit returns to the Boost stage.

START BATTERY CHARGE MODE¹

If enabled in the Configurator app, the BCDC Alpha will keep the vehicle's start battery topped up to 12.8V or 25.6V² using the solar input once the auxiliary battery is fully charged.

When performing Chargeback, the **Chargeback LED** on the Main Unit will illuminate solid red.

START BATTERY RECOVERY¹

Start Battery Recovery charges a flat start battery from the auxiliary battery for approximately 15 minutes, providing enough charge to safely start the vehicle in the event of a flat battery.

The Main Unit delivers 50A to the start battery (unless the **Vehicle Input Current Limit** is configured lower) and aims to charge the start battery up to 14.6V or 29.2V².

START BATTERY RECOVERY VIA THE REDVISION APP

1. In the app, tap **Menu** , then tap **Recovery**.
2. When the **"Initiate Recovery Mode"** banner appears, tap **Accept**, the under **"Battery Recovery Ready"** heading on the home screen, tap **Go** to begin the Recovery process.
3. In the app, the screen will display the Recovery progress and the **Chargeback LED** will illuminate **solid red**.
4. The app will indicate when the Recovery is complete.

START BATTERY RECOVERY VIA THE MAIN UNIT

1. Push and hold the Control Button until it turns **blue**, then push the Control Button to cycle through each setting until it is **flashing green**.
2. To start the Recovery, press and hold the Control Button again until it turns **solid green**. The **Chargeback LED** will illuminate **solid red** while the start battery is charging.
3. When the **Chargeback LED** turns off, Recovery is complete.

NOTICE: Make sure that the Vehicle Input Trigger is set correctly to prevent unexpected charging behaviour or damage to the electrical system of the vehicle.

1. This mode requires the Vehicle Input Trigger to be set to 'Auto', '12V' or '24V' mode. 2. Start Battery Charge Mode and Start Battery Recovery for vehicles with 24 V starter batteries are only available for BCDC Alpha units with a serial number that starts with '2606' or higher.