

# Take charge of your batteries with a BCDC In-vehicle Battery Charger



THE POWER OF  
**REDARC**®

Most vehicle alternators are not designed to fully charge secondary batteries. In fact most aren't designed with secondary batteries in mind at all.

An insufficient charge rate will, at best, shorten the life and performance of your battery. It will more likely result in it being flat when you least expect it.

This situation is further complicated by the introduction of smart alternators on Euro 6 compliant vehicles. These alternators control the output voltage based on vehicle operating conditions to reduce the electrical load and, in turn, the mechanical load on the engine. This renders it unsuccessful at charging a secondary battery system to a useable level.

The solution to this problem is the REDARC BCDC... a three-stage In-vehicle Battery Charger that operates from a wide input voltage range, making it suitable for 12 or 24 volt vehicles.

Its advanced electronics ensure that your secondary battery always receives the ideal voltage and current for maximum battery life and performance.

It is also a highly advanced battery isolator that protects your start battery from excessive discharge, while allowing your secondary battery to supply additional loads.

The REDARC BCDC series of In-vehicle Battery Chargers let you charge a 12 or 24 volt secondary battery from a 12 or 24 volt system so you can operate a wide range of equipment:

- Recreational vehicles
  - Fridge
  - Driving lights
  - Heater and air conditioner
  - Television
  - Stereo
  - Water pump
- Emergency devices:
  - Communications
  - Emergency startup
  - Water pump starter
  - Rotating beacons
- An inverter to run:
  - A/C recovery unit
  - Laptop computer or printer
  - Chargers
- For heavy vehicles featuring:
  - Leg lift
  - Tarp winder
  - Metering/monitoring
  - Fridge motor start
  - Truck weigher
  - Logging truck tyre pressure controller
- Towed vehicle lights

#### **Features**

- Designed and built for extreme conditions
- Charges all major automotive battery types
- In-built MPPT solar regulator\*
- Multi-stage, battery-type specific charging algorithms
- Built-in battery isolator
- Suitable for 12 and 24 volt automotive electrical systems
- Simple LED status indication
- Suitable for harsh and marine environments
- Compact and lightweight
- 98% efficient with no forced cooling (fan)

#### **Benefits**

- Charges your battery while you drive
- Won't flatten your start battery
- Saves money by maximising battery life
- Overcomes voltage drop caused by long cable runs

\* Non-1220 models only



REDARC's in-vehicle battery chargers feature technology designed to fully charge your batteries, regardless of their type or size.

By providing a unique charging profile to each specific battery type, the REDARC in-vehicle battery charger is able to achieve and maintain an optimal charge in your secondary battery even in vehicles with a smart alternator.

The BCDC automatically senses once the vehicle has started charging your main battery, then turns on to charge your secondary batteries.

The three stage charging process starts with the 'boost' stage, providing maximum current until the battery reaches its predetermined 'absorption' voltage.

The BCDC will then remain in the absorption stage holding its set voltage until the battery is 100% charged.

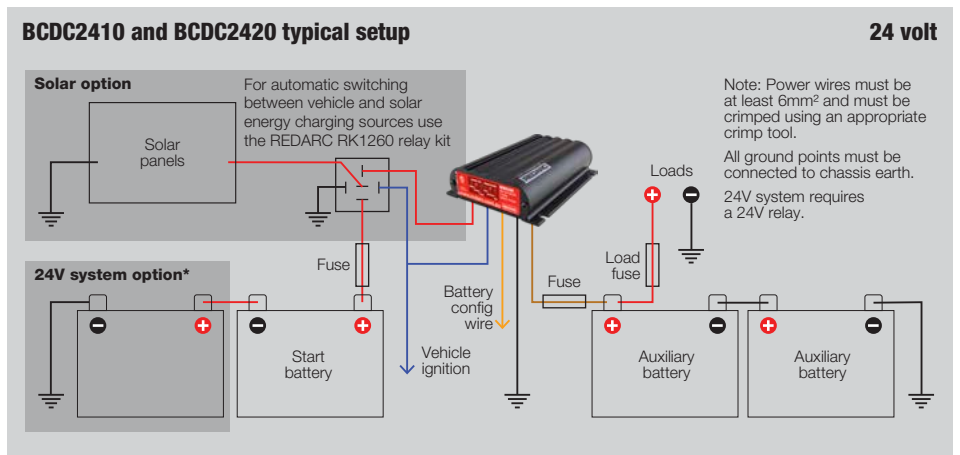
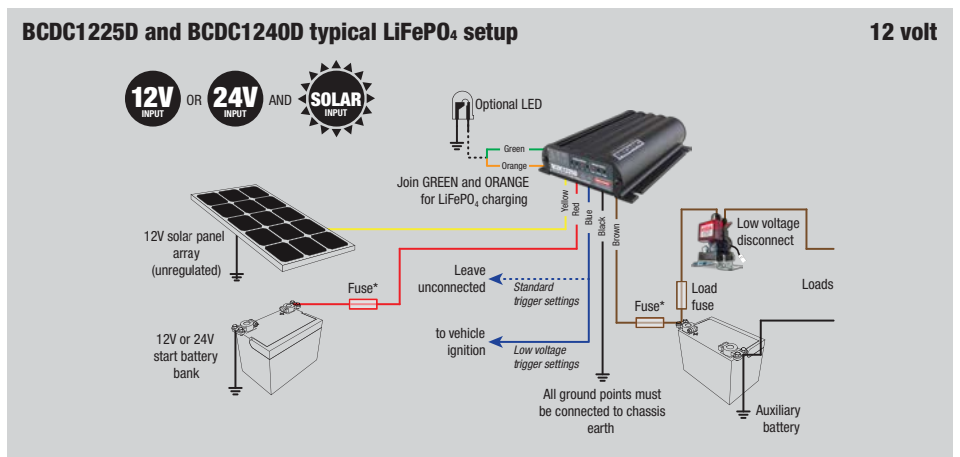
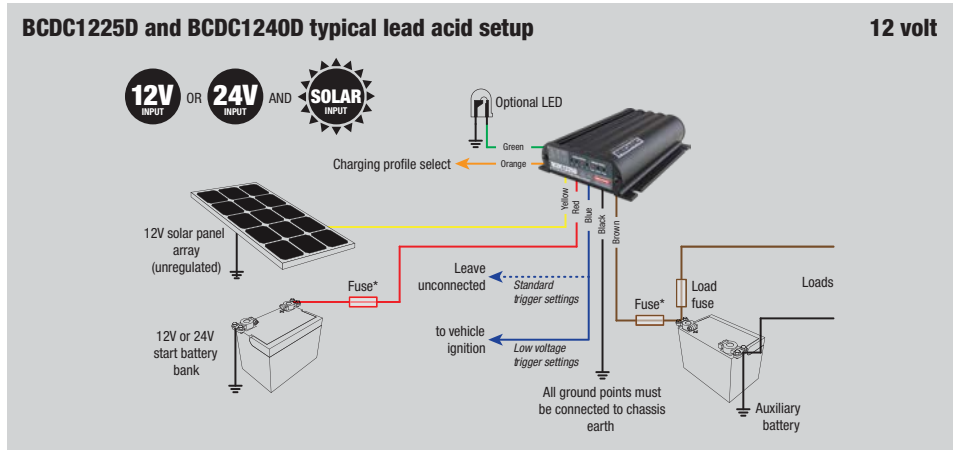
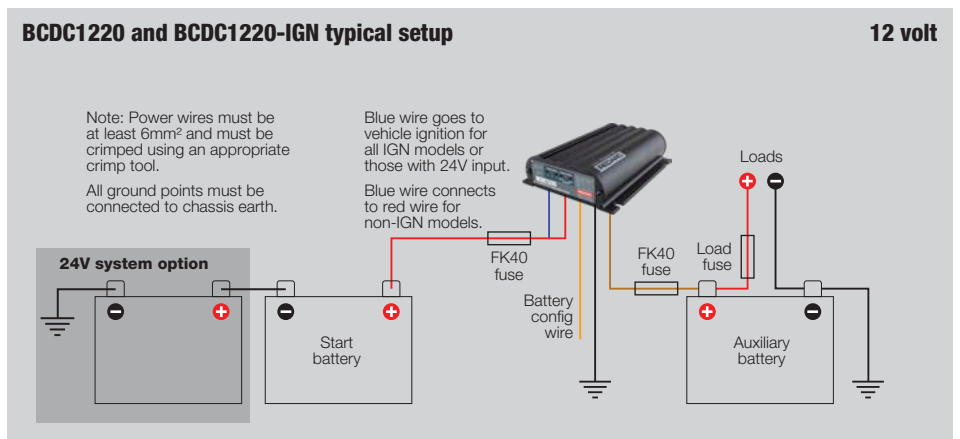
The BCDC then switches to the 'float' stage where it retains the 100% charge until the secondary battery voltage falls below 12.7 volts (12 volt) or 25.4 volts (24 volt) due to a large load, when it will recommence the boost stage.

During these charging stages (including float) the BCDC is able to supply loads (up to maximum current output) without switching back to the boost stage. This protects the battery from overcharging.

The micro-processor constantly monitors your main vehicle battery, automatically switching off the BCDC so it will not flatten your start battery.

**You will no longer be troubled by:**

- Smart alternators
- Voltage drop as a result of long cable runs
- Inability to fully charge a secondary battery of different chemistry to the start battery
- Over-charging your secondary batteries leading to damage and failures
- Limited charging levels resulting in reduced battery output.



**The REDARC BCDC overcomes voltage drop caused by long cable runs - your secondary battery always receives the correct voltage to keep it fully charged.**



	BCDC1220 BCDC1220-IGN	BCDC1225D	BCDC1240D	BCDC2410	BCDC2420
Input voltage range	9V-32V	9V-32V	9V-32V	9V-32V	9V-32V
Vehicle voltage range (IGN/LV models)	9V-32V	N/A	N/A	N/A	N/A
Solar voltage range	N/A	9V-32V	9V-32V	9V-28V	9V-28V
Solar switch on voltage*	N/A	9.0V	9.0V	17.5V	17.5V
Maximum charging voltage	14.6V/15.0V/15.4V	14.6V/15.0V/15.4V	14.6V/15.0V/15.4V	29.2V/30.0V/30.6V	29.0V/29.8V/30.6V
Output current	20A	25A	40A	10A	20A
No load current	<100mA	<100mA	<100mA	<100mA	<100mA
Standby current	<5mA	<8mA	<8mA	<8mA	<8mA
Recommended input fuse**	40A	40A	60A	30A	60A
Recommended output fuse**	40A	40A	60A	15A	40A
Output power	300W	375W	600W	600W	600W
MPPT solar regulator	No	Yes	Yes	Yes	Yes
Ambient temperature	-20°C to +80°C	-15°C to +80°C	-15°C to +80°C	-20°C to +80°C	-20°C to +80°C
Dimensions	100 x 120 x 37mm	165 x 120 x 37mm	165 x 120 x 37mm	150 x 120 x 37mm	150 x 120 x 37mm
Weight	450g	850g	850g	680g	680g
Compliance	CE	CE, E-Mark	CE, E-Mark	CE, E-Mark	CE, E-Mark

\*Requires unregulated solar panel. \*\*Fuses not supplied. Voltages specified are  $\pm 100\text{mV}$ .

## Works best with...

REDARC has a comprehensive range of accessories including fuse kits, relays, cables, connectors and mounting hardware to complete your installation.



Relay kit - RK1260



Fuse kits - FK40 and FK60



profile



## Smart alternator compatible models

Vehicles with a smart alternator will require either the BCDC1220-IGN, BCDC1225D or BCDC1240D model.

These alternators vary the voltage to the start battery based on driving conditions.

The BCDC-IGN operates purely on an ignition input, switching the unit on and off with the vehicle ignition.

The BCDC1225D and BCDC1240D variants feature lower voltage settings so that it can continue operating with a low input voltage from the alternator.



All models except BCDC1220 and BCDC1220-IGN comply with regulation 10.05 with approval number E11 IOR-059620

For more information on model selection, wiring diagrams and technical specifications visit [redarcelectronics.eu](http://redarcelectronics.eu)

For technical support contact your regional distributor or send an email to [power@redarc.com.au](mailto:power@redarc.com.au)

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