BATTERY LINK

Part Number: DCDC10S / DCDC20S

DC to DC Dual Battery Charger Manual

For your personal safety read, understand and follow the information provided in this instruction manual.

Important Safety Instructions

⚠ WARNING!

To avoid any personal injury, please read the safety instructions below.

This battery charger is not intended for use by children or infirm persons without supervision.

FOR AUTOMOTIVE AND RECREATIONAL VEHICLE 12V DEEP CYCLE BATTERY USE ONLY.
NOT TO BE USED WITH DRY CELL BATTERIES.

- During the charging process, do not use a naked flame near a battery. Batteries generate explosive gasses during the charging process that may explode.
- Never smoke or light cigarettes near a battery.
- Do not place tools on top of a battery or allow tools to fall on the battery to prevent the chance of a short circuit and sparks.
- Always wear eye protection when charging a battery.
- Ensure charging and testing is conducted in a well-ventilated area.
- Inadequate ventilation may over-heat the charger and cause in-efficient operation.
- This battery charger is not intended for outdoor operation. Do not expose it to moisture or extreme weather conditions.
- The ACID/FLUID within a battery is highly corrosive and poisonous. It can produce flammable and toxic gases when recharged and will explode if ignited, When working with batteries, always wear eye protection, remove jewellery and ensure the area is well ventilated. If spilt - it will cause severe burning to eyes, skin, clothing, damage paintwork and corrode many metals. Ensure that power is disconnected from any appliance in the vicinity of the spill and immediately wash any area that has been affected with water.

The warnings, cautions and instructions detailed in this instruction manual cannot cover all possible conditions and situations that may occur. Common sense and caution are factors, which cannot be built into this product and must be supplied by the operator.

Key Charger Features

This DBDC10/ DBDC20 charger is a sophisticated multi stage charger, utilizing switch mode and fully automatic computerised control, designed to charge most 12 Volt Gel, Lead Acid and Calcium batteries.

- Heavy duty aluminum case and mounting brackets
- Microchip monitoring and control
- Fully automatic hi frequency multi stage charging
- Pulse mode technology that reduces oxidation, evens electrolyte consistency and minimizes temperature equating to longer battery life
- Easy push button chemistry select; GEL, Calcium, Deep Cycle, VRLA and conventional flooded lead-acid batteries.
- Internal charger temperature monitoring and power output control.
- LED indicators showing state of charge
- Over charging, short circuit and over temperature protection.
- Reverse polarity protection:

  1. Input reverse polarity protection;
  2. Output reverse polarity protection;

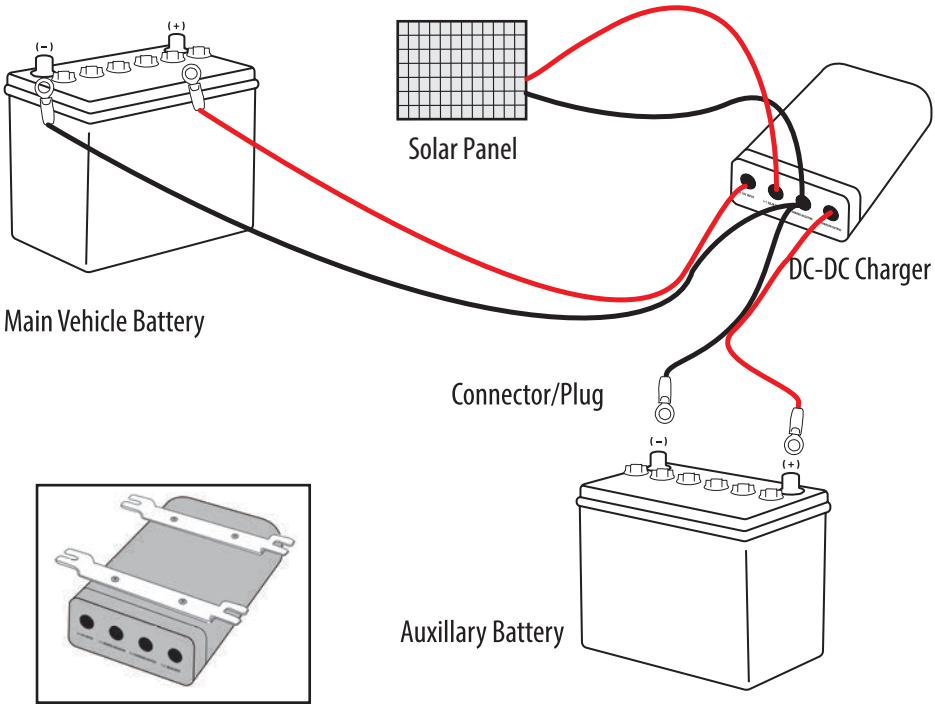
- Charger internal over temperature protection
- Solar input over load protection
- Power cut memery function: once selected, the charger will remain on this battery type until it is changed.

Installation Options/ Instructions

Installing the Charger

Installation of this unit will require twin core wiring - and suitable cable connectors (not included). See specifications page for details.

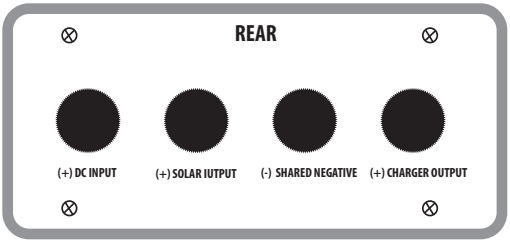
Any existing cables used in conjunction with this charger will require checking to ensure size is suitable gauge. Where necessary replace with suitable gauge wiring if they do not meet minimum specifications.



- Locate where you are going to install the DC-DC charger. Ensure the charger is located in a suitable non-wet area in the vehicle or caravan.
- Ensure the charger is securely mounted using the brackets and screws provided. Charger can be mounted overhead, vertically or horizontally.
- Next, measure required cable length from the main vehicle battery through to the location of the DC-DC charger.
- Ensure ALL cabling meets specification and will not be exposed to excessive heat/moving parts or abrasion.

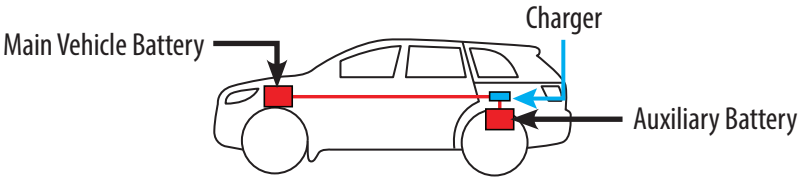
- If the charger is located in a camper/caravan we recommend the use of an Anderson style plug between the tow vehicle and the camper/caravan as shown below.

- Fit suitable connectors on either end of the twin core cables.
- Connect the auxiliary battery to (-) shared negative and (+) charger output using twin core wiring as per recommended cable size.

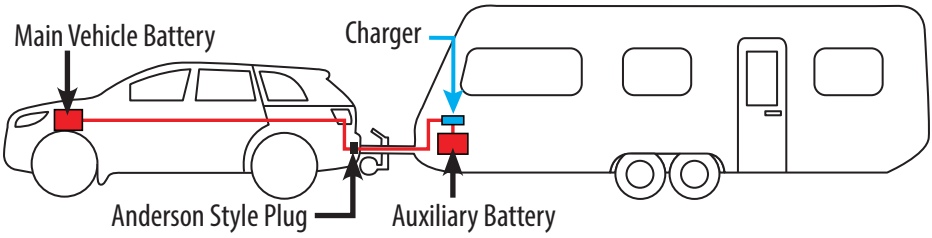


- Using the twin core wiring laid between the main starting battery and the DC-DC charger, connect the red (+) to the (+) DC input terminal and the black (-) to the (-) shared negative on the rear of the charger. Finally, make the power connections to the main starting battery of the vehicle. It is recommended to install a 25amp circuit breaker (not included) as shown on main diagram. The circuit breaker should be located close to the starting battery.
- Check all connections are tight.

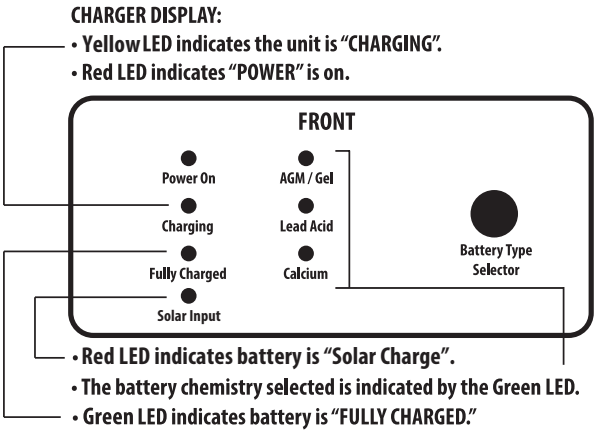
Suggested fitment to vehicle only



Suggested fitment to vehicle with caravan



Operating the Charger



1、DC BATTERY

Once correctly installed the Battery Link DC-DC charger is a simple set and forget dual battery switch.

- Start the vehicle and let it idle.
- The charger will now recognize that there is charge being applied to the main starting battery.
- Once the main starting battery has reached 12.5 volts the charger will begin to charge the auxiliary battery.
- The initial default setting is for lead acid batteries.
- If you are charging a battery with a different chemistry simply change the battery type by pressing the battery type selector button on the front of the charger.
- Once selected, the charger will remain on this battery type until it is changed.
- The charger will continue to operate even after the vehicle has been switched off, however once the main starting battery falls below 12.5 volts the charger will automatically shut off.

2、Solar Input

Once correctly installed the Battery Link DC-DC charger is a simple set and forget dual battery switch.

- Once connect the input terminal with solar panels positive and negative, the charger will transfer to solar charge mode.
- If you are charging a battery with a different chemistry simply change the battery type by pressing the battery type selector button on the charger; the first time to press button converse to lead acid mode (14.7 volt of full charged), the second time to press button converse to calcium charging mode(15.6 volt of full charged), the third time to press button back to AGM/Gel charging mode, followed by recycling.
- The charger will continue to operate even after the vehicle has been switched off, however once the main starting battery falls below 16 volts the charger will automatically shut off.

NOTE:

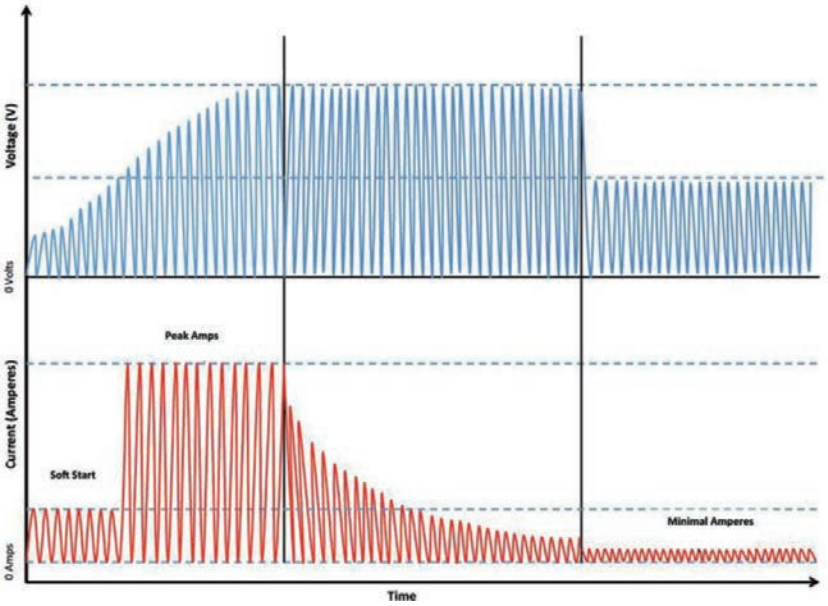
- DC Battery input has the first priority if solar input also produce electricity and it will shut off automatically.

Specifications

Model:		DCDC10S / DCDC20S
Type:		Multi Stage
Inputs :		DC Battery:12.5 - 16.0 Volts
		Solar input:16.0 - 27.0 Volts
Output / Charging Voltage:		13.3-16.2V (stops charging when alternator output or vehicle battery below 12.5V)
Output Current:	DCDC10S	DC output: 10A
		Solar output: 10A
	DCDC20S	DC output: 20A
		Solar out put: 20A
Minimum Start Voltage:		1.5 Volts - for battery being charged
Charge Control		
Soft Start:		Yes
Soft Current:		5A
Bulk Charge:		14.4V (Gel) 14.7V (SLA) 16.2V (Cal)
Absorption		Constant voltage with automatic amperage control
Equalisation		Automatic
Float		13.3V (Gel) 13.7V (Cal) 13.7V (SLA)
Float Current:		2A
Battery Range:		18 to 250Ah
Cable Length/ Twin Core		
0 - 1Mtr		11B&S/11AWG
1 -5 Mtr		8 B&S/8AWG
5 Mtr +		6 B&S/6AWG

⚠ WARNING!

Failure to use recommended wiring will severely impact on performance of DC to DC charger.



Charging algorithm will change according to battery type.

Charging voltages:

	GEL	LEAD ACID	CALCIUM
Charging	14.3V	14.7V	16.2V
Boost	14V	14.3V	15.6V
Float	13.3V	13.7V	13.7V

Additional information

Deep cycle batteries

It is expected that this charger will be used to charge a 'deep cycle' type auxiliary battery. Deep cycle batteries are designed to provide battery power to run items like fridges and lighting in caravans and campers.

It is generally accepted that the life of a deep cycle battery can be extended if it is not discharged below 50% of its full capacity. A fully charged 100amp battery in good condition should offer 50amp hours of power without impacting on its normal life expectancy.

Your average compressor style fridge uses up to 5 amps. Over a 24 hour period it should use approximately 24 amp hours. Therefore if the 100AH battery is operating only the fridge (and receives no additional charge) it ideally will require recharging after 48 hours.

To replenish these 48 amp hours using a 10 amp DC-DC charger will require at least 5 hours of driving. A twenty amp unit will require at least 2.5 hours of driving to fully recharge the battery. Undercharging a battery and discharging to below 50% can severely impact on life expectancy of most deep cycle batteries.

Approximate state-of-charge	Average specific gravity	Open circuit voltage 12V
100%	1.265	12.65
75%	1.225	12.45
50%	1.190	12.24
25%	1.155	12.06
0%	1.120	11.89

The readings are taken at room temperature of 26°C (78°F); the battery had rested for 24 hours after charge or discharge.

Voltage readings & specific gravity of electrolyte (lead acid batteries) can give an indication of your battery' state of charge.

Additional information

TIPS

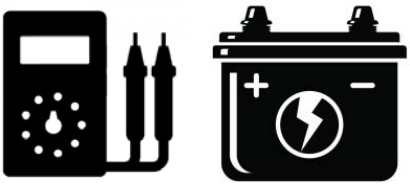
- We highly recommend that both the starting battery and deep cycle auxiliary battery are checked by a reputable automotive store or battery reseller to establish the 'health' of your batteries. (Most outlets offer this as a free service using digital equipment).

If your battery is:

1. Over 3 years old.
2. Has been fully discharged at some stage (Example: headlights left on for several hours then vehicle required jump starting).
3. Has not been recharged or used in past 3 months.
4. Has been stored in a discharged state.
5. Has any evidence of damage or bulging to battery casing .

- After returning from trip and 'parking-up' your camper/van it is good practise to remove all electrical connections from battery. The batteries should then be fully recharged and ideally maintained using a smart charger (see Battery Link Pro Series Smart chargers).

Fault Finding



» **Charger won't indicate charging.**	» • Charger not connected to battery. • Check terminal connection. • Battery is not 12V.
» **Battery won't charge.**	» • Verify that all wiring meets specifications. • Check condition of batteries. • Check performance of alternator.
» **Battery won't fully charge or hold charge.**	» Batteries that are over 3 years old; severely discharged (or previously been severely discharged) ; not regularly recharged; over- heated; low in electrolyte ; undercharged: overcharged or sulphated may not accept or hold a charge. A good automotive store or battery outlet often offer a free or low cost in store service to check condition of battery. Your battery may require replacement.

Warranty

Thank you for purchasing one of our quality products. Any claim against defects under this warranty must be made by the original purchaser within 12 months from the date of purchase.

To make a claim under the warranty, take the product along with your proof of purchase to the store where the purchase took place. Haigh Australia Pty Ltd bears reasonable expenses for claiming under the warranty. You must submit details and proof to Haigh Australia Pty Ltd for consideration.

This warranty is provided in addition to other rights and remedies you may have under law: 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 for compensation for any other reasonable 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.

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