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DC-DC Charger

Installation User Manual

850W DCDC, 80/40Amps

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OzXCorp Pty Ltd strives to ensure all information within this manual is correct and up to date at the time of publishing. However, the company reserves the right to change, without notice, any features and specifications of either its products or associated documentation.

Translations: In the event that there is a difference between a translation of this manual and the English version, the English version should be considered the official version.

Our products are designed to the highest quality and will adhere to all applicable local and international standards in the region where this product was purchased. However, any changes, updates, or additions to these governing standards after the product has been sold may conflict with the information provided within this manual. In such an event, the governing standards will provide the overwriting rules and may leave this manual or parts thereof obsolete.

It is the owner's sole responsibility to operate the OzX Corp DCDC Charger, and all auxiliary devices in such a manner that will not cause accidents, personal injury, or property damage.

This installation document becomes uncontrolled when printed.

PLEASE KEEP AND RETAIN THE MANUAL WITH THE DCX DC-DC SYSTEM.

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1. Introduction

1.1 Product Description

The OzX Corp DC-DC Charger is a high capacity, intelligent DC-DC Charger, designed to charge the OzX DCX 51.1V battery from a vehicle alternator. This unit is fully isolated charger without common ground, therefore uniquely suitable for the floating DCX Battery Pack Architecture.

1.2 Key Features

Power Output: 850W Peak Power

Ingress Rating: IP69

Smart Protection Features including, Low-voltage Shutdown, Thermal Overload Protection, Output regulation with Remote Sense

High Conversion Efficiency: > 90%

Easy to Install: Plug-n-play Anderson connectors

1.3 Limited Warranty

OzX Corp understands the importance of a reliable electrical system. Our design, production, test, and quality control processes are all set up to ensure the highest quality of products.

Covered by a **2-Year Limited Warranty** from the date of purchase.
This warranty ensures that the product is free from defects in materials and workmanship under normal use and proper installation.

Repair or replacement of the product due to manufacturing defects.
Coverage of components supplied with the DC-DC Charger.

The warranty does not cover:

- Damage caused by improper installation, misuses or failure to follow the user and installation manual
- Modifications, repairs or use of incompatible components
- Physical damage resulting from accidents, environmental exposure, or external factors beyond OzX Corp's control (e.g., flooding or fire)
- Normal wear and tear of consumables, such as fuses and connectors

For full warranty terms and conditions, please refer to the web address and contact details applicable to your region.

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1.4 Liability

OzX Corp cannot be held liable for:

- Consequential damage resulting from the use of the OzX DC-DC Charger, including of excessive alternator load leading to premature failure
- Any errors in the included manual and the consequences of these
- Incorrect installation not in accordance with local and regional standards
- Any omission of or incorrect or negligent fitment of electrical sub-systems including vehicle architecture
- Failure of this product as a result of incorrect fusing of systems, appliances, or fitment of incorrect fusing not in accordance with product service requirements
- Used for purposes other than for it's intended purpose and as described in this manual

Never remove or deface the OzX Corp product serial numbers. Important technical information required for service, maintenance, and secondary delivery of parts can be derived from the product serial numbers.

2. Safety guidelines and measures

2.1 Warnings and Symbols

WARNING
This symbol indicates a potentially dangerous situation which could result in serious personal injury or death.

CAUTION
This symbol indicates a potentially hazardous situation. If not handled with care, this situation could lead to minor personal injury or property damage.

NOTE
This symbol indicates an instruction or reference of significant importance.

2.2 Intended Use

The DC-DC Should only be used when:

- The user has read and understood the content of this user manual
- The system has been installed by a suitably competent person and/or organisation
- The DCX Battery and Power System are within their recommended operating conditions
- It is confirmed that the external battery and or alternator is capable to handle the loads before making any connection

For your personal safety and to avoid possible property and/or system damage, do **not** use the DC-DC:

- There is visual damage to any of the components or connected wiring
- There are loose electrical connections
- When there are signs the system has been opened and/or modified
- The DCDC Charger is loose and not securely fixed.
- When the vehicle ignition is on. There is a risk of personal injury and damage to the vehicle and aux battery

Never smoke or allow a spark or flame in the vicinity of battery or engine

Any damage to the DC-DC should be carefully inspected by an authorised representative. For any damage to the connected wiring, and/or electrical network, please contact the original manufacturer or RV dealer.

Operating the DCDC under any of the above-listed conditions is potentially dangerous and could cause property and/or system damage, serious personal injury, or death.

2.3 General Safety

The DC-DC Charger is provided with fuses and connectors, which are carefully selected, and that are in accordance with the various applicable codes and standards. For a typical installation given the wide installation variety of the DC-DC Charger, it is solely the installer's responsibility to select the correct cable size and type, as well as the correct fusing.

Always use correct tools to perform the installation and do not install or use the DC-DC Charger if damage to the appliance can be observed.

The DC-DC Charger is a non-serviceable appliance and should not be opened, disassembled or altered.

Hazardous voltage may be present once connected to the OzX Corp DCX Power System. Touching any exposed terminals may pose risk of severe injury (shock / burn) or death. The smart sensing technology will automatically adjust this down to below 30VDC when the DCX Battery is no longer connected.

2.4 Installation Safety

The charger is for 12V input battery banks only. Make sure your voltage specification is within the input voltage range expressed.

The DC-DC charger is designed to be mounted to flat metal surfaces offering optimum heat transfer from the converter base in environments where air flow may be restricted. Adequate clearance is required for cooling (> 50mm).

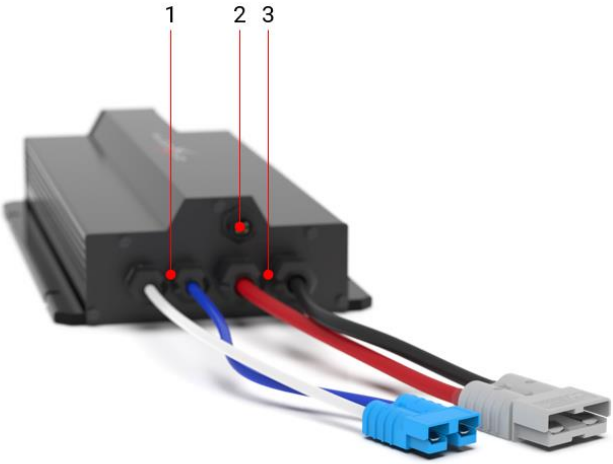
Ensure cables are secured away from sharp edges and moving parts.

Avoid wearing metal objects when working with batteries. including the use of goggles, gloves or other protective clothing.

3. Product Overview

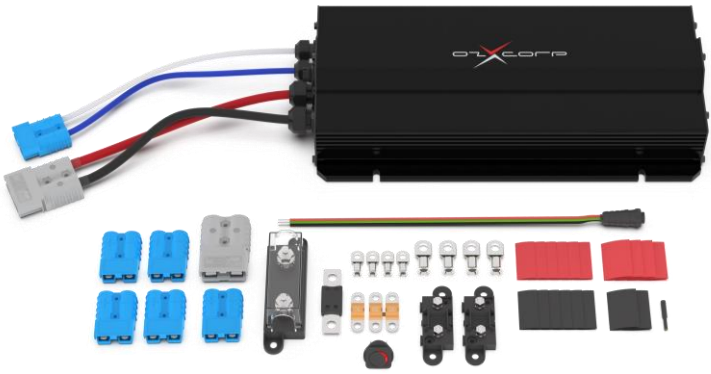
3.1 Identification of Parts

1. Power Output, SB50 Blue Anderson
2. Signal Auxiliary Control
3. Power Input, SB120 Grey Anderson

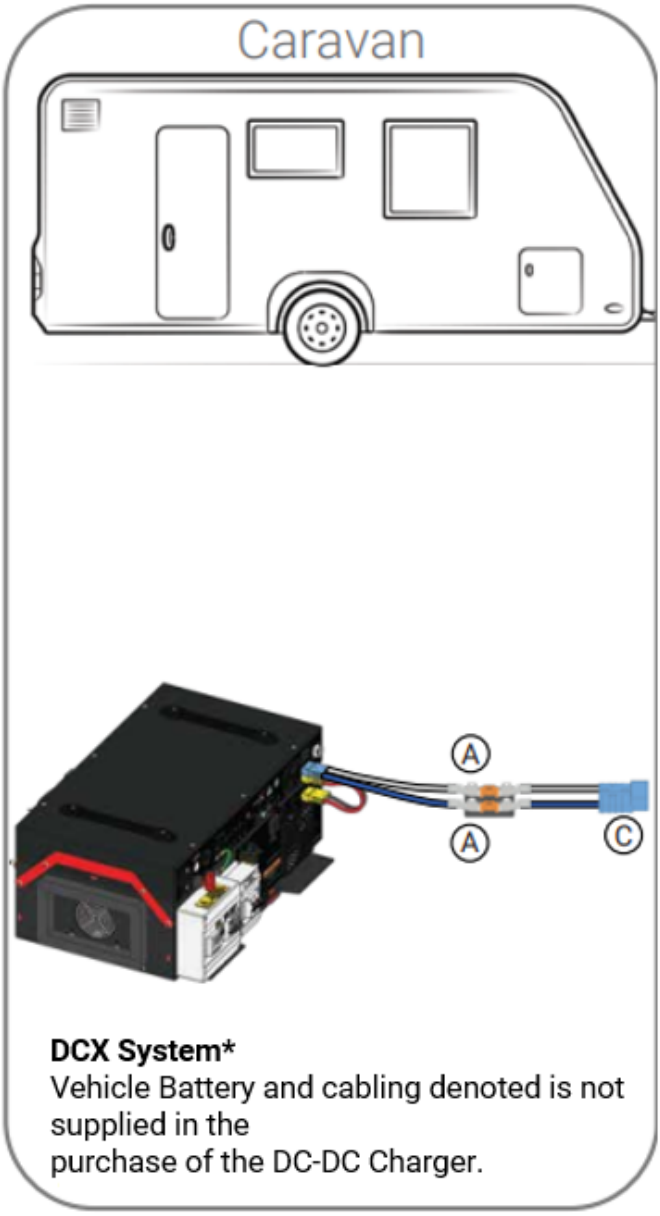


3.2 Included Kit Contents

The DC-DC Charger comes as a complete supplied kit ensuring the DC-DC Charger will be installed in line with all relevant codes and standards.
If any of the following items are not included with your purchase, please contact your supplier.
Refer to the signed checklist found in the DC-DC Charger packaging for the full list of parts supplied.

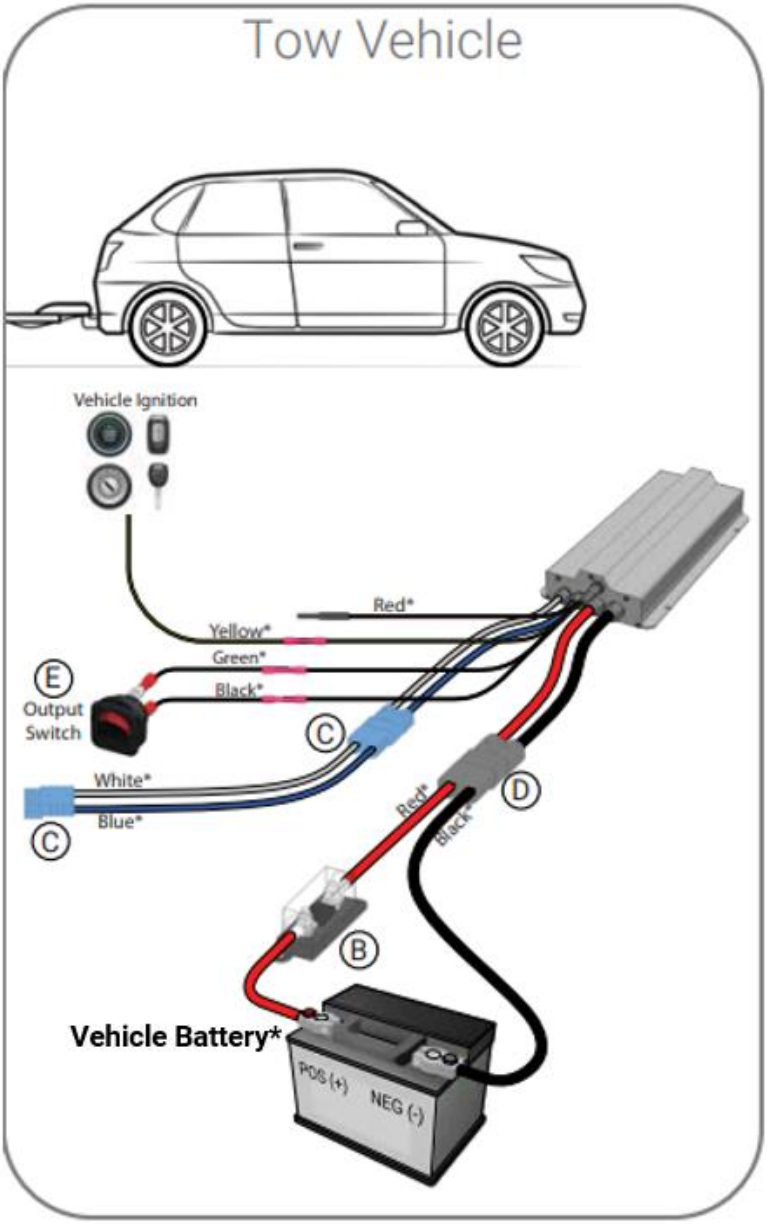


3.3 Typical RV Installation Wiring Diagram

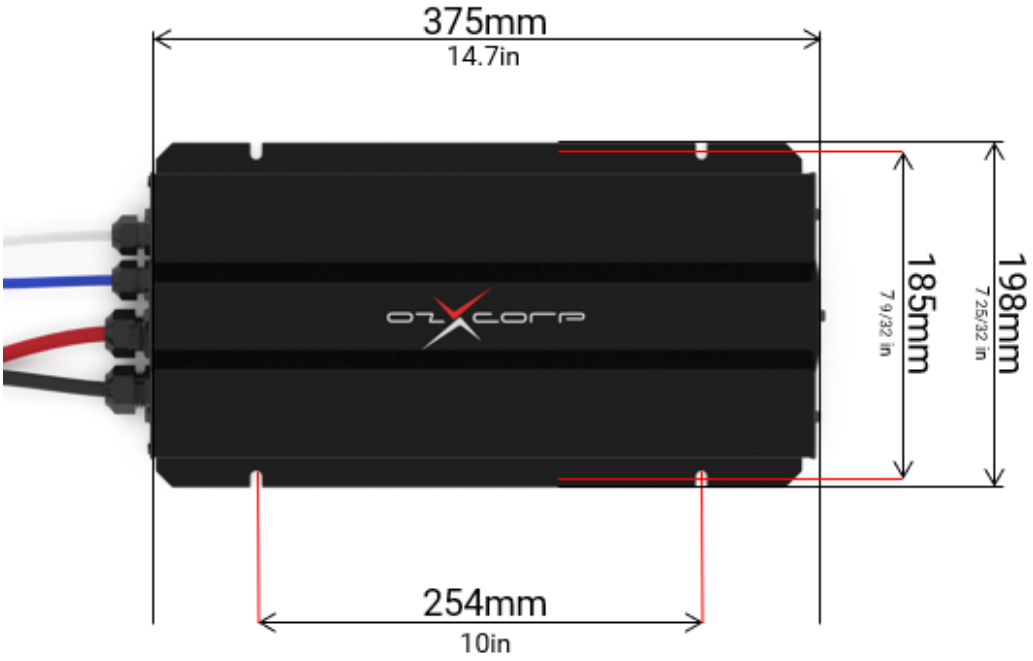


Hardware Included In Kit

	Description	Qty
A	Midi Fuses	2
B	Mega Fuse	1
C	Anderson SB blue	4
D	Anderson SB Grey	1
E	Output switch	1


Tow Vehicle
Vehicle Ignition
Red*
Yellow*
Green*
Black*
E
Output
Switch
C
White*
Blue*
C
D
Red*
Black*
B
Vehicle Battery*
POS (+)
NEG (-)

3.4 Product Dimensions



Mounting Slot ⌀ 6.7mm

4. Installation

4.1 Mounting & Locations

The DC-DC Charger is designed to be mounted to flat metal surfaces offering optimum heat transfer from the converter base.

The DC-DC Charger has a wide temperature operating range (-40 to +85°C), however installation in the engine bay and/or areas prone to an increase in heat, will result in a reduction in output power and performance.

When selecting a location for the DC-DC Charger, make sure the unit is as close as possible to the input supply battery to keep voltage drop to a minimum.

- The DC-DC Charger can be installed horizontally as well as vertically
- Do not install in the presence of flammable materials
- The place of installation must be well ventilated. A ventilation system must be available for installations in small, enclosed spaces
- For proper air circulation and heat dissipation, allow a clearance of approx. 20 above, below and to the sides of the unit
- The DC-DC Charger will operate best if there adequate air flow

Trace the mounting holes with a pencil/pen when placing the DC-DC against the desired area.

Use 4 x screws or suitable mounting method to secure the DC-DC onto the surface.

4.2 Wiring and Fusing

Always ensure the cable gauge is appropriately rated for the cable length and the current draw to minimize voltage drop. Using undersized cables can result in excessive voltage loss, reduced performance, and potential overheating or damage to the system. The installer is responsible for ensuring that the correct cable is used when installing the DC-DC Charger

For optimal operation, follow the recommended cable sizing guides based on the installation setup.

Input Wiring:

- Use #4 AWG cable with red for positive and black for negative
- Terminate with the Grey SB120 Anderson connectors provided
- Fuse with the 100A Mega Fuse supplied close to the house battery

Output Wiring:

- Use #8 AWG cable
- Terminate with the Blue SB50 Anderson connectors provided
- Fuse positive and negative output with the 2 x 30A Midi Fuses and Fuse Holders provided
- Fuse as close to the DCX Power System as possible

Signal Auxiliary Control

Pin	Colour	Description	Note
1	Red	Auxiliary Voltage (12VDC) Connect to 12V+ Starter battery if no Vehicle Ignition+ Available	Use insulation boot if not required (supplied in kit)
2	Yellow	Ignition Enable Connect to Vehicle Ignition + to turn on the DC-DC Charger	Use fuse tap for fast and reliable connection (not supplied)
3/4	Black/Green	Ground / Power Limit Connect to Output Switch (E) to enable Low Power Mode	

Refer to Section 3.3 for detailed DC-DC Wiring Diagram.

Figure 1 - Front View of Signal Auxiliary Control

Extending Signal Auxiliary Control Wires:

When extending wires, cover it with the supplied heat shrink to insulate and prevent short circuits.

Output Wiring Grounding Warning:

Do not ground the output of the DC-DC Charger to the vehicle or chassis ground. The charger is designed with a fully isolated output to ensure compatibility with floating battery systems. Grounding the output can create ground loops, compromise system performance, and potentially damage the charger or connected components voiding warranty.

4.3 Pre-Connection Checklist

1. Verify all cables are securely crimped and connections are tight. Replace any compromised components before proceeding with the installation.
2. Polarity Verification. Incorrect polarity can damage the charger and connected devices.
3. Ensure fuses are installed as per the wiring diagram. Missing or incorrect fuses can lead to system failure and safety risks.
4. Ensure the entire system, including alternator and battery, is isolated from the power source to prevent accidental short circuits during installation.
5. Ensure that the alternator capacity supports the charger's current draw (up to 85A).
6. Verify that the charger is securely mounted on a flat, stable surface with proper clearance for ventilation. Loose mounting can lead to overheating or physical damage due to vibrations.

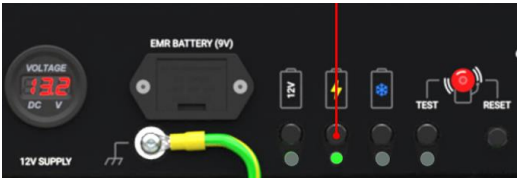
5. Product Operation

Once the DC-DC Charger has been installed, follow these steps to ensure proper operation:

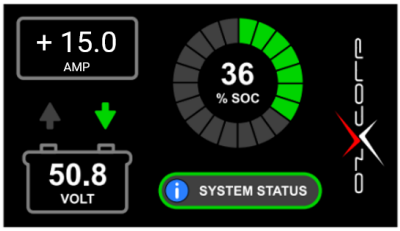
1. Ignition Activation:
    a. The charger requires the vehicle ignition to be switched on for operation. Ensure the ignition is active before attempting to use the charger

2. Connection to the DCX Battery
    a. The DC-DC Charger operates exclusively when connected to the DCX Battery through the OzX Power System. Verify that all connections are secure and the battery is properly linked to the power system

3. Charger Enablement:
    a. Use the external charger switch to enable the DC-DC Charger. This switch must be turned on to activate charging functionality with green LED indication



4. Monitoring:
    a. The DC-DC Charger does not have its own LED indicators. Instead, system performance and charging status can be monitored through the DCX Power System interface with a positive charger to the battery.
    b. The true charging current present on the battery screen can be influenced by many factors including appliance usage and external charging sources.
    c. The DCX Power System and appliances will use the DC-DC power generated as a first priority and the remaining balance stored to the battery.



5. Shutdown Procedure:
    a. To stop the Charger, turn off vehicle ignition or the external charger switch found on the front of the OzX Power System. This ensures that the system powers down safely.

By adhering to these steps, the DC-DC Charger will operate reliably and efficiently.

6. Troubleshooting

The following table provides some additional fault-finding advice should any potential issues arise with the system installation, or unexpected system behaviour is identified.

Behaviour	Troubleshooting Steps
Not Charging	• No Ignition • Blown Input / Output Fuse • Not installed as per wiring diagram • Low Battery Input Voltage • Load battery is full (> 57.6V) • Thermal Overload • Output power is being used by an appliance inside the RV or Motorhome • Load battery is Off • Load Power System switch is Off • Cables with improper wiring gauge • High resistance due to corroded or loose connections
Only high-power mode enabled	• Auxiliary Signal Connector incorrect wiring.
Overheating	• Ensure proper ventilation and airflow around the unit • Confirm alternator capacity is sufficient • Mounting surface not dissipating heat effectively

To stay up to date and for any further troubleshooting support, navigate to our helpdesk, by clicking on '**SUPPORT**' on our website www.ozxcorp.com.

7. Maintenance

Regular maintenance of the DC-DC Charger ensures optimal performance, safety, and longevity.

Follow these guidelines to keep the product in excellent condition:

Maintenance Task	Description	Frequency	Notes
Visual Inspection	Check for physical damage to the charger housing, loose connections, and damaged cables	Every 3 Months	Replace any damaged components immediately
Ventilation Check	Ensure at least 20mm clearance around the unit for proper airflow and heat dissipation	Weekly	Remove any obstructions around the charger
Connection Tightness	Verify that all cables and connections are securely fastened	Every 3 months	Use appropriate tools to re-tighten loose connections
System Performance Check	Monitor charging performance, battery SoC, and fault codes on the BMS screen	Monthly	Address any warnings or fault codes immediately
Cable Management	Ensure cables are properly routed, secured, and protected from sharp edges, excessive bending, or heat	Every 6 months	Replace damaged cables to maintain system safety and reliability

8. Technical Specifications

Key Features:	
Power Output	850W Peak Power
Ingress Rating:	IP69
Weight:	5.2kg (11.5 lbs)
Dimensions:	375 x 198 x 76 mm (Excluding leads)

Input Specifications:	
Operating Voltage Range:	11.4 VDC to 16.0 VDC
Max Input Current:	85A @ 11.5 Vin, 57.5V Out
No-Load Current:	< 0.85 A

Output Specifications:	
Output Voltage:	57.6 VDC
Max Supply Current:	15 A

Protection Features:	
Low Voltage Shutdown	< 11.4 VDC, Recovery @ 12.3 VDC
High Voltage Shutdown	> 18.0 VDC
Thermal Overload Protection	Power limit to 50%, internal temperature exceeding > 85ºC; Auto reset after cooling
Battery Sense	SELV (Safe Extra Low Voltage) protection

General	
Operating Humidity	100%
Housing Material	Aluminium with polymer cover and aluminium anodized panels

Electrical & Safety	
Voltage	Input/output are galvanically isolated to 1800 VAC or 1500 VDC
Resistance	1.5Mohm minimum with floating housing.
Certification	UL 458, RoHS, CE, RCM, FCC, UNECE R10

Notes

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