

Solectria DC-DC 750 Converters

Owner's Manual

First Edition
Solectria Corporation
33 Industrial Way
Wilmington, Massachusetts
01887

Foreword

Caution

The information provided in this manual is intended for use by persons with appropriate technical skills. Any effort to perform repairs to, or service your unit without the proper tools or knowledge required for the work can result in personal injury and product damage.

How To Report Errors

If, while reading through this manual, you discover an error in the technical information provided, Solectria asks that you notify its Customer Service Department at the phone number provided in your warranty. Please be prepared to provide the following information:

- Your name
- Name and edition of your manual
- Page number(s) where the error(s) appear
- Serial number of your unit

Please feel free to call with any suggestions that you may have regarding the content of your manual.

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Safety

<p>CAUTION</p> <p>(Indicates the possibility of personal injury or damage to your unit)</p>	<p>WARNING</p> <p>(Indicates the serious risk of personal injury or damage to your unit)</p>	<p>DANGER</p> <p>(Indicates the risk of being killed)</p>
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Warning Labels

Notices will be located on the right-hand side of the page to indicate areas in a procedure where precautions should be taken. In areas of a procedure where safety equipment is needed or hazardous conditions may exist, you will find the following symbols:

Hearing Protection Required



Eye Protection Required



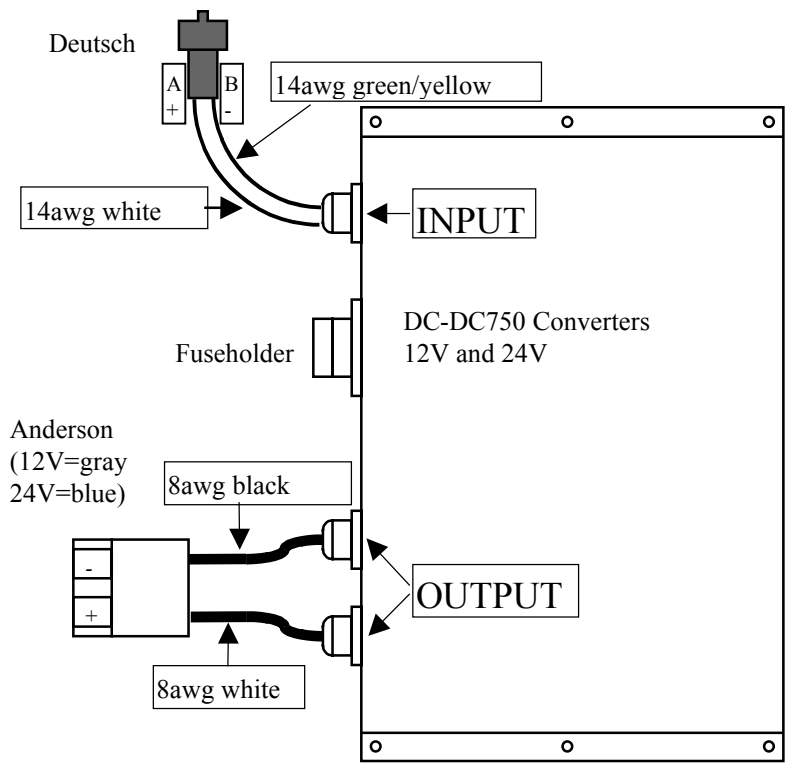
Risk of Electrical Shock



Risk of Burns from Battery Acids



Always follow any safety instructions that are given at the beginning of a procedure. If you are uncertain as to the safe and proper handling of your unit, contact the Solectria Customer Service Department.



Drawing is shown without the looms that protect the wires.

Overview

This sealed, solid-state DC-DC Converter takes a range of input voltages and delivers a fixed 12, 13.2 or 24VDC output (depending on model) VDC at a maximum of 63A to run your vehicle's accessories such as fans, lights, horn, etc. The unit is very efficient and has high power-to-weight and power-to-volume ratios.

Applications and Features

These DC-DC Converters are fully automatic. The input supply voltage can be turned on whether or not the load is connected. The device will achieve 12, 13.2 or 24VDC output (depending on model) within a fraction of a second after input is connected.

The unit also includes:

- Modular packaging
- High efficiency
- Factory-adjustable output voltage
- Heat sink thermal protection
- Automatic “shutdown” (over-current)
- Low “idle” power use
- Over output voltage shutdown

This unit is not to be used to charge batteries.

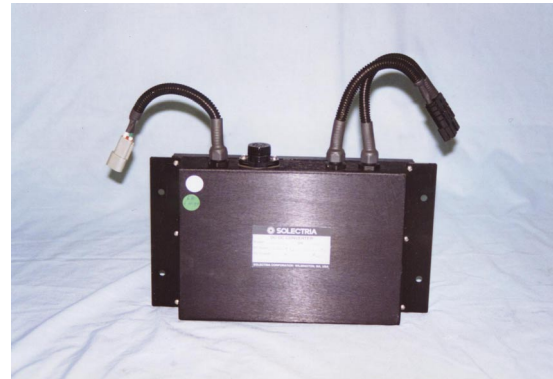
See the DCDC750BC data sheets for information on units designed to operate with 12/24V batteries. Also, this unit is not designed to be used in parallel with 2nd or 3rd units on same circuit. If more than 750W is needed, use separate circuits with one DCDC750 on each circuit.

Interface package includes mating connectors and mounting hardware.

Available and Custom Options

- 100-CFM cooling fan with mounting brackets (helps maintain high output power)
- Custom output voltages available (factory-tuned)

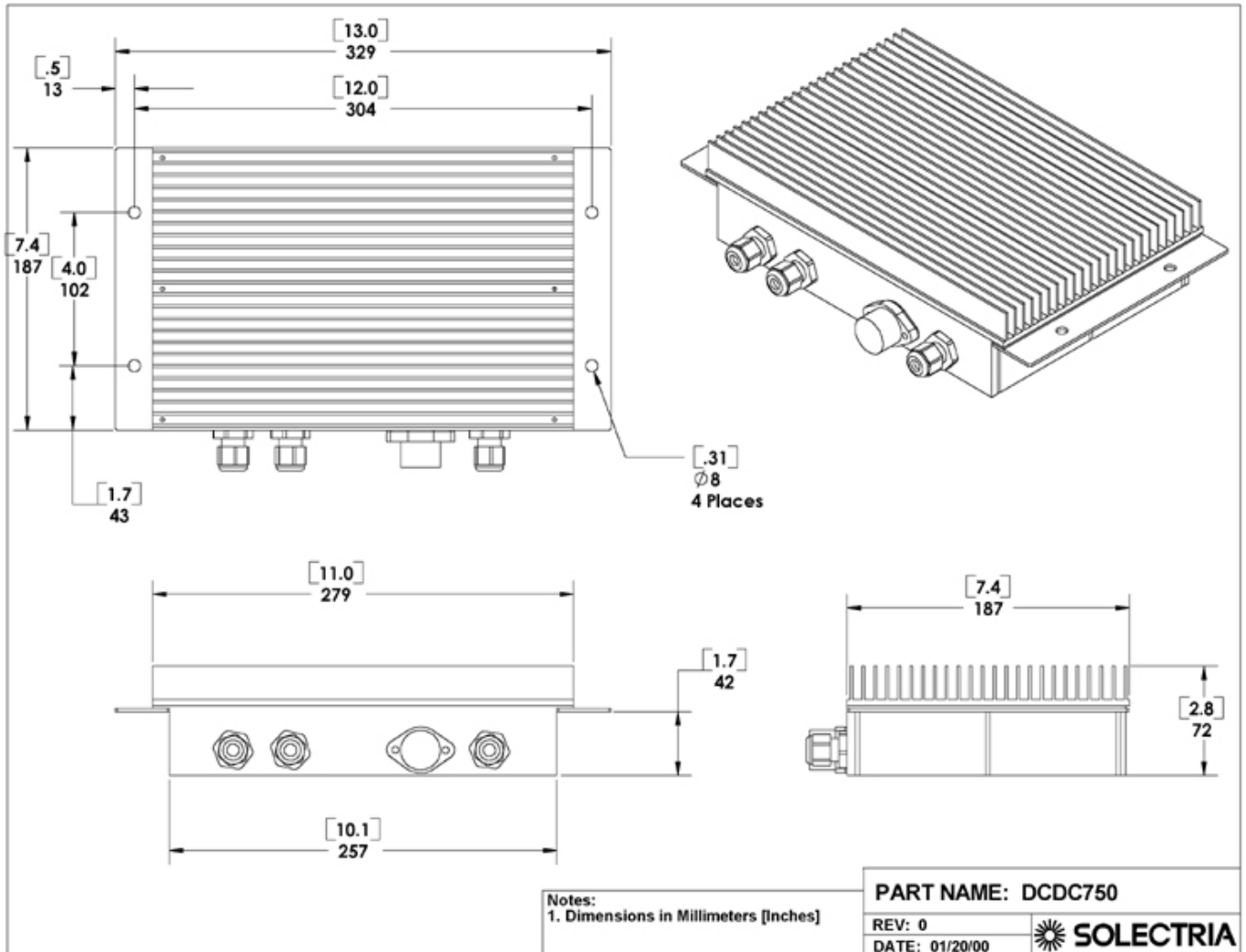
An engineering fee applies to all customized orders.



Specifications

Output Voltages	12V, 13.2V or 24V (depending on model)
Input Voltages (Output Voltages)	150V-50V (13.2V) 200V-400V (12V) 200V-400V (24V) 200V-400V (13.2V)
Output Power	750W
Efficiency	85-90%
Current Peak @ 12V	63A
Current Peak @ 24V	32A
Weight	3.1kg
Operating Temperatures	-40°C to +85°C
Fuses	150V-50V (13.2V) 8A midget 200V-400V (12V) 5A midget 200V-400V (24V) 5A midget 200V-400V (13.2V) 5A midget

Dimensions



Installation

Environment

Moisture

Your converter should be kept dry at all times. The unit is factory sealed to withstand moisture, but is **not waterproof**. Use the following guidelines regarding placement of your unit:

- Avoid locations where your unit will be routinely exposed to water.
- Do not wash your unit with a pressure sprayer. Large amounts of water will cause a malfunction.
- If you have reason to believe water has entered the unit, **Do Not** open the case. Disconnect your unit and return it for service as soon as possible. Units with extensive water damage may not be repairable. ***Units returned to Solectria with the factory seal broken will be ineligible for warranty service.***

Cooling Air Requirements

Ample airflow must be available to cool your converter. Your unit is forced-air cooled because this gives greater overall electrical efficiency.

Your units' performance and lifetime will both be reduced if cooling air is not available. If your unit is running at a temperature of 75°C or greater, the output current will be limited to 50% of the rated maximum.

WARNING

Cooling air of 100CFM on the heat-sink fins must be maintained at all times, or your unit will shut down.

To check for proper airflow, operate the unit under the most demanding conditions for 15 minutes. Exhaust air temperature measured at the cooling fins should not exceed 65° C during this period. The unit should not be routinely exposed to ambient temperatures above 65° C unless equipped with high-power cooling fans designed for warmer climates.

Once you have decided upon a location for your unit, you can now mount it into position using the unit's flanges, industrial tape or Velcro.

Connections

There are **two** connections that must be made to operate your converter. Be certain that your low-voltage input harness is connected to your 12V system. Make the 2-pin Anderson SB-50 **low voltage output system connection to your low-voltage input harness**, as shown in photos one and two.

Low Voltage Output: Anderson Connector



Photo One



Photo Two

Reminder

Always use connector grease for all Anderson SB-50.

To bring **high voltage input** power to your unit you must connect the three-pin, two-wire high-voltage input Deutsch connector to your **high-voltage output harness**, as shown in photos three and four.

Photo Three

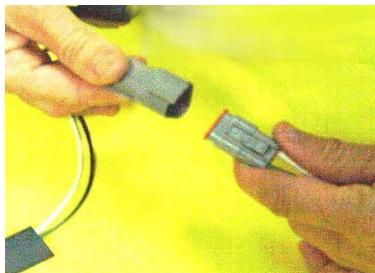


Photo Four



High-Voltage Input: Deutsch Connector

Operation of your converter begins as soon as the unit is connected to a power source.

If your unit is not operating after having been linked to a power source, **carefully** check for possible loose connections. If you are still experiencing difficulties in getting your unit to begin operation, call the Solectria Customer Service Department at the number provided in your warranty.

Warranty

In an effort to keep our customers completely satisfied with the quality and performance of items purchased from Solectria, the following warranty policy applies.

Solectria Corporation shall pay for the repair or replacement (at our option) of any component found to be defective due to flaws in materials and/or workmanship within the first 12 months following the date of sale with no (US\$0.00) deductible, with the exceptions noted below. The customer shall pay for the shipping cost (UPS ground) to return the unit(s) to Solectria. For warranty repairs and replacements, Solectria will pay the shipping costs (UPS ground) of returning the unit to the customer. Solectria will not pay for the cost of rush delivery.

For the purpose of this warranty, components include but are not limited to motors, motor controllers, DC-DC converters, battery chargers, amp-hour counters, etc.

This warranty **does not cover**:

- Products that have been opened, tampered with, or modified in any way.
- Items defined as routine maintenance.
- Damage caused by misuse, accident, alteration, lack of maintenance, inadequate packaging or use of incorrect lubricants.
- Damage or corrosion caused by exposure to after-market products, the environment, or chemical treatments, and;
- Wear items including but not limited to extension cords, plugs, connectors, cables, and enclosures.

In the event that it becomes necessary to return a product to us for service, call ahead for a Return of Merchandise Authorization Number to help expedite the repair. Any item being returned should be wrapped securely in the original or similar packaging to prevent damage in transit. Use the following guidelines for packing your unit for return shipment.

Keep your shipping carton!

Your carton is specially designed to prevent shipping damage to the metal case and cable connectors of your unit. If the carton is lost, Solectria will supply a replacement carton for a fee.

If the unit must be shipped immediately, you must triple-wrap it with large cell bubble-pack and place it securely in a double-walled, corrugated carton for shipment back to Solectria. Any repair costs for the unit that are associated with case damage due to improper shipment will be borne by the carrier or the customer and will affect your warranty.

Customer will be charged an evaluation fee for Non-Warranty items returned to Solectria. Warranty items returned to Solectria that are found operable will also incur an evaluation fee. Call Solectria's Customer Service Department for details.

Returned items should be sent to:

Solectria Corporation
Component Repair Department
33 Industrial Way
Wilmington, MA 01887
USA

All items returned for repair must include a letter indicating, return address and contact, model number, serial number, date of purchase (or receipt of purchase), and reason for return. If this information is not provided the repair will be delayed.

Customer will be charged an evaluation fee for Non-Warranty items returned to Solectria. Warranty items returned to Solectria that are operable will incur an evaluation fee.

Please call Solectria's Customer Service Department at 978-658-2231, fax us at 978-658-3224, or email us at customerservice@solectria.com if you have any questions.