



PRODUCT MANUAL

EVO-TEC™ DC to DC Battery Chargers

Read and understand this manual before the use or installation of your Norsk Lithium® battery, charger, or accessory. Refer to the **SAFETY INFORMATION** section for additional information. Save these instructions for future reference.

WARNING: The use of electricity and the installation of batteries and/or electrical equipment or electrical systems present several hazards including electrocution, fire, injury, and death. Norsk Lithium is not liable for property damage, personal injury, or death resulting from using or installing a Norsk Lithium battery, charger, or accessory or from following the actions recommended in this document. Refer to the **SAFETY INFORMATION** section for additional information.

IF YOU DO NOT FEEL SAFE, OR COMFORTABLE, OR ARE NOT QUALIFIED TO PERFORM A BATTERY INSTALLATION OR OTHER ACTION OUTLINED IN THIS MANUAL, CONSULT A QUALIFIED PROFESSIONAL ELECTRICIAN.

THANKS FOR YOUR PURCHASE!

Welcome to the Norsk Lithium family and thank you for purchasing a Norsk Lithium product. This user guide will provide you with essential information on how to use, install, and maintain your battery charger to ensure optimal performance. Please read this user guide in full before using your new Norsk Lithium EVO-TEC™ DC to DC Battery Charger.

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For the latest news and product releases from Norsk Lithium, follow us on Facebook and Instagram (**NorskLithium**).

You can also share your fishing experiences with us by tagging Norsk Lithium and using the hashtag **#NorskLithium** in your post. For the latest product videos, comparison videos, and how-to videos, subscribe to our YouTube Channel:

www.youtube.com/@NorskLithium

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CUSTOMER SERVICE HOURS

Monday–Friday:
9:00 am–5:00 pm

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INCLUDED EQUIPMENT

All Norsk Lithium Marine DC to DC Battery Chargers include the following:

- Qty. (1) DC to DC Battery Charger
- Pre-installed terminal rings
- User manual

KEY FEATURES

Norsk Lithium EVO-TEC™ DC to DC Chargers have been engineered to optimize the performance and lifespan of Norsk Lithium Batteries while fully supporting advanced features such as Thermal Core Heating Technology (standard on all starting batteries and optional on all deep cycle models) wake from Shut-Down Mode and the ability to reach 100% state of charge due to the optimized charger output voltage profile found in all EVO-TEC™ Chargers.

SELECTING A DC to DC CHARGER

Norsk Lithium offers the following EVO-TEC™ DC to DC Charger Models:

- 12V 15A (Part # NCDC12015)
- 16V 15A (Part # NCDC16015)

The 12V 15A (Part # NCDC12015) Charger will output a 15A charge current at 14.2V and is designed to charge a 12.8V LiFePO4 lithium battery when connected to the OUTPUT side of the DC to DC charger body.

The 16V 15A (Part # NCDC16015) Charger will output a 15A charge current at 17.75V and is designed to charge a 16V LiFePO4 lithium battery when connected to the OUTPUT side of the DC to DC charger body.



DO NOT use an EVO-TEC™ DC to DC charger to **CHARGE** Lead-Acid, AGM, or Lithium Batteries of chemistry that is not LiFePO4. **ALWAYS** verify battery and charger compatibility prior to installation and use.

INPUT VOLTAGE RANGE

The 12V 15A and 16V 15A EVO-TEC™ DC to DC models have an INPUT voltage range of DC 10-36V.

When connected to the **INPUT** side of the charger body, EVO-TEC™ DC to DC models are **COMPATIBLE** with lead-acid, AGM, and lithium batteries that have an operating voltage range that **DOES NOT** exceed 36V.



WARNING: EVO-TEC™ DC to DC charger models **ARE NOT** compatible with 36V batteries of any chemistry as these batteries can output 42.6V or more when fully charged.

Connecting a 36V battery, regardless of chemistry, to the **INPUT** side of the DC to DC charger body may result in undesirable outcomes or dangerous conditions such as, but not limited to, severe and irreparable damage to the charger, damage to the connected battery(s), over-heating, and fire. Norsk Lithium **IS NOT** responsible for any property damage or personal injury caused by the use of a battery connected to the INPUT side of the DC to DC charger body that has an operating voltage range that exceeds 36V.

ALWAYS verify charger compatibility before charging.

BATTERY CHARGER INSTALLATION

Norsk Lithium **RECOMMENDS** the following when selecting a mounting location for your EVO-TEC™ DC to DC charger:

- **DO NOT** mount your charger immediately above a lead-acid or AGM battery. Gasses vented by the batteries may corrode and damage the charger
- **DO NOT** lengthen the battery charger wires on the **INPUT** side of the charger body. Doing so may cause undesirable performance, and excessive heat generation due to the increased resistance caused by the longer leads, and may significantly shorten your charger's lifespan.
- **DO NOT** mount your charger below the waterline in the event the bilge or under-deck area fills with water due to leaky plumbing or rough conditions
- **TO COMPLETE** your installation, wires on the **OUTPUT** side of the charger body only can be lengthened using quality 12 AWG wire rated for marine installation and heat shrink butt connectors that provide a marine-grade electrical connection.
- **ALLOW** for visual monitoring of the charger when in operation
- **PROVIDE** additional space around your charger to allow for cooling of the charger body during a charge cycle
-
- **USE** stainless steel fasteners to install the charger using the predrilled mounting holes found in the side flanges of each charger
- **INSPECT** the backside of the selected mounting position to ensure the fasteners will not puncture the hull, livewell, baitwell, or wiring installed **BEHIND** the selected mounting location
- **CHECK** the charger installation regularly to ensure the charger remains properly mounted and all fasteners are properly secured and corrosion-free
- **VERIFY** battery and charger compatibility prior to installation and use

EVO-TEC™ DC to DC CHARGER INSTALLATION

To install an EVO-TEC™ DC to DC charger follow the instructions and reference the wiring diagram below.

When connecting the EVO-TEC™ DC to DC charger to batteries on the INPUT and OUTPUT sides of the charger body, make the following connections:

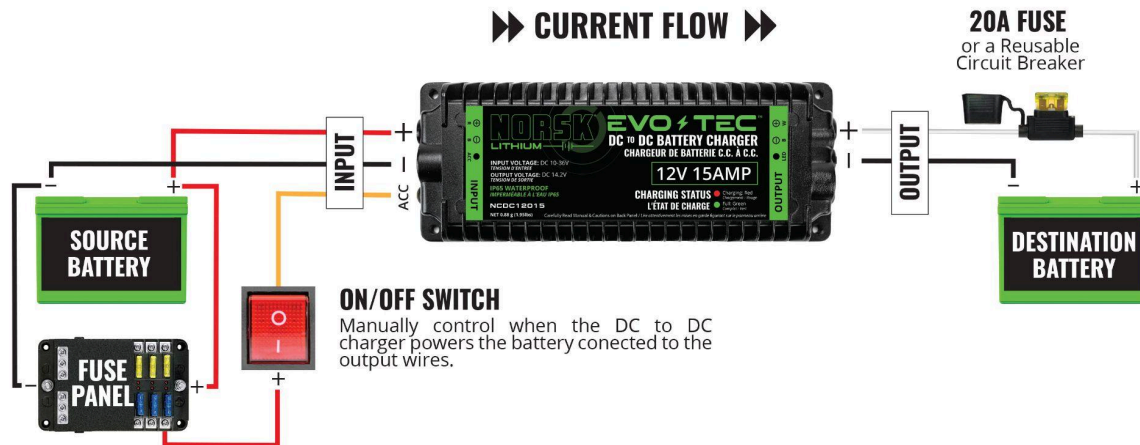
On the **INPUT** side of the charger body, connect the **RED** wire to the positive (+) terminal and the **BLACK** wire to the negative (-) terminal. **DO NOT** connect the **YELLOW ACC** wire at this time.

On the **OUTPUT** side of the charger body, connect the **WHITE** wire to the positive (+) terminal and the **BLACK** wire to the negative (-) terminal of the battery to be charged.

Once the INPUT and OUTPUT connections have been made, to test the functionality of the EVO-TEC™ DC to DC charger, TEMPORARILY connect the YELLOW ACC wire to the positive (+) terminal of the battery on the INPUT side of the charger body. If wired correctly, the LED indicator light, located on the OUTPUT end of the charger will show **RED** if the charger is outputting a charge current.

NOTE: If the LED indicator shows GREEN during the functionality test described above, the battery to be charged is likely at 100% State of Charge. This is normal behavior. The LED indicator will not show RED unless the battery on the OUTPUT side of the charger is capable of accepting a charge.

NOTE: To finalize the installation, the YELLOW ACC wire can be connected to a (+) switched source of power so the charger will be operational when the outboard is running OR the YELLOW wire can be lengthened and connected to (+) at the dash and controlled by a switch that allows manual control of the charger.



WARNING: Reverse polarity connection of wires from the charger body to the battery terminals may cause a short and may cause significant and irreparable damage to the battery charger and the battery. **Damage of this type is NOT covered by warranty.**

Make sure all connections are in full contact with the battery terminals and a max torque force of 10ft-lbs is applied. If the max torque force of 10ft-lbs is exceeded, the terminal may be damaged. Loose connections will result in significant heating due to the increased resistance caused by the loose connection and can result in permanent damage to the battery charger or battery.

It is recommended to put DIELECTRIC GREASE on the outer exposed surfaces of your terminals after the connection is complete. DIELECTRIC GREASE stops air and moisture from corroding exposed metal parts of your connections.

DO NOT put DIELECTRIC GREASE in between the primary contact points of your electrically conducting components.

Install protective terminal covers on all battery terminals prior to use.

WATERPROOF RATING

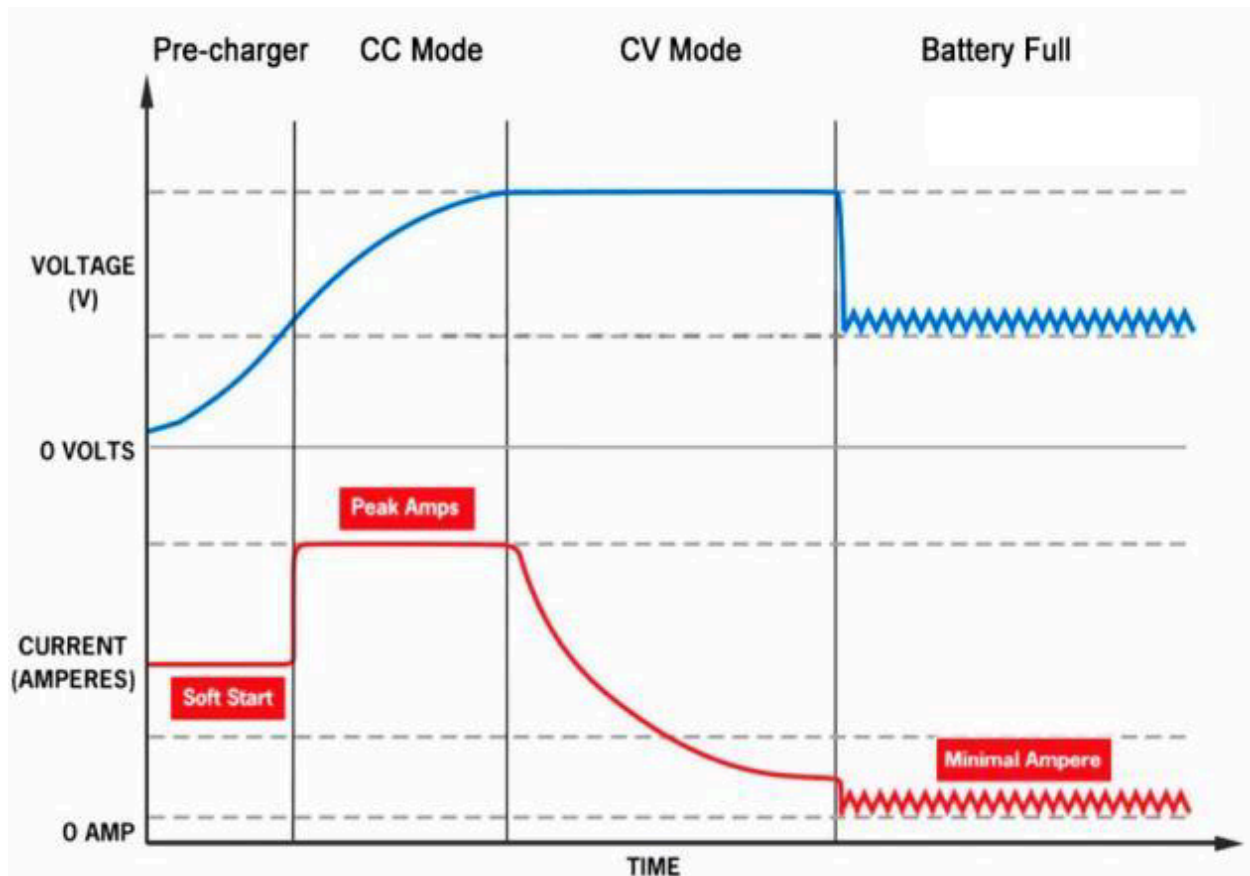
All Norsk Lithium EVO-TEC DC to DC Battery Chargers have an IP65 Rating and all internal components are fully potted in epoxy to ensure EVO-TEC Chargers are suitable for use in extreme conditions. Despite the IP65 Rating and the protection it provides, Norsk Lithium EVO-TEC Chargers should **NEVER** be intentionally submerged in water. If a charger is submerged in water, the user should **NOT** attempt to use the charger.

If a charger is accidentally submerged in water the charger should be removed from the water as soon as it is safe to do so and carefully inspected for signs of damage caused by water intrusion or unusual behavior before the charger is put back into service. If the charger shows signs of damage caused by water intrusion, discontinue the use of the charger immediately and contact Norsk Lithium customer service for further instructions.

2-STAGE AUTOMATIC CHARGING

This is a fully automatic battery charger with 2 charge stages. Automatic charging protects your battery from being overcharged so you can leave the charger connected to the battery indefinitely.

2-stage charging is a sophisticated charging technique that gives your battery a longer life and better performance compared to using traditional chargers.



BULK - CONSTANT CURRENT (CC) MODE

The Bulk Stage reduces charging time by charging the battery at the maximum rate (CC) to a set voltage, at which point the battery is approximately 80% charged.

ABSORPTION - CONSTANT VOLTAGE (CV) MODE

The absorption stage charges the battery to 100% by adjusting the charge rate allowing the battery to absorb more power.

SPECIFICATIONS

INPUT RATED VOLTAGE	12V/24V DC (36V BATTERIES NOT SUPPORTED)
INPUT VOLTAGE RANGE	10-36V DC
EFFICIENCY	96%
OUTPUT VOLTAGE	14.2V
CHARGE CURRENT	15A
OUTPUT POWER	213W
WORKING TEMP.	-40 ~ +176° F. / -40 ~ +80° C
WORKING HUMIDITY	10% - +90% RH
DIMENSIONS	7.87" x 3.07" x 1.3" / 200 x 78 x 33mm
WEIGHT	2.4# / 1.1 kgs
INPUT WIRES	10AWG @ 18" / 0.45m
OUTPUT WIRES	12AWG @ 18" / 0.45m
COOLING	PASSIVE COOLING / AIR CONVECTION

WARRANTY

Norsk Lithium offers a limited 2-year Warranty on all EVO-TEC Battery Chargers. The warranty coverage begins on the date of purchase as shown on the original purchase receipt.

This warranty covers manufacturing defects and does not cover damage caused by charging incompatible batteries, misuse, abuse, or neglect. Please visit the warranty page on our website at www.norsklithium.com/warranty/ for more information on our warranty terms and conditions.

WARRANTY REGISTRATION

Owners of a Norsk Lithium product are encouraged to maintain the required documentation for warranty coverage or register their product for warranty coverage using one of the three methods described below:

- Save a copy of your receipt showing the model and purchase date for submission to Norsk Lithium Customer Service in the event warranty coverage is needed.
- Register the product for warranty online at norsklithium.com by creating an account and filling out a Product Registration form found at www.norsklithium.com/product-registration/.

- Owners that register their chargers online can check the status of their warranty registration at www.norsklithium.com/product-registration/.

CUSTOMER SERVICE

We stand behind the quality of our products and are committed to providing you with excellent customer service. If you purchased your product from a retail location or Amazon and have any questions or concerns please **DO NOT return it to the store**. Instead, please contact us at support@norsklithium.com and we would be happy to help you resolve any issues you may be experiencing.

HELP CENTER

If you have any questions about your Norsk Lithium product, you can also visit our Help Center on our website. There you will find FAQs, How-to-Videos and Warranty Information:

www.norsklithium.com/help-center

You can also contact our customer support team via email or phone, and we will be happy to assist you.

ADDITIONAL RESOURCES

User Manuals for Norsk Lithium products are available for download online at

www.norsklithium.com/manuals/

- Norsk Guardian App
- EVO-TEC™ Multi-Bank and Single Bank Marine Chargers
- EVO-TEC™ DC-to-DC Chargers
- 16.4V Regulator
- Portable Sonar Batteries

SAFETY INFORMATION

Lithium batteries can present a fire and explosion hazard. To minimize these hazards use and install Norsk Lithium products only as directed and, where appropriate, seek qualified, professional assistance. During installation and use:

- Consider all battery terminals and connections live
- **DO NOT** place items on the battery or charger
- Inspect the battery and connections prior to installation and before each use. Do not use or install if the battery, charger, or battery connections are faulty or damaged.
- **DO NOT** short-circuit the battery or charger.
- Use insulated tools
- Avoid wearing metal, metallic, or other conductive jewelry or watches when working with the battery, charger, or electrical components.
- Verify the wire gauge is correct for the application and the length of the wire.
- Verify terminal connectors are tight and that wiring has an adequate surface connection on the terminals.
- **DO NOT** wire batteries with different voltages or chemistries in series or parallel.
- **VERIFY** your charger and battery are compatible prior to installation and use.

IN THE EVENT OF A FIRE YOU MUST USE A TYPE D, FOAM, OR CO2 FIRE EXTINGUISHER. DO NOT ATTEMPT TO EXTINGUISH A LITHIUM BATTERY FIRE WITH WATER. Norsk Lithium recommends keeping a suitable fire extinguisher on hand during installation and use.

PRECAUTIONS

Norsk Lithium can't list every possible scenario or safety precaution. Use common sense. Follow manufacturer recommendations. If you are unqualified or do not feel comfortable, seek qualified professional help.

Below is a non-exhaustive list of precautions to take during the use and installation of your Norsk Lithium battery. Failure to follow these precautions may result in fire, property damage, personal injury, and/or death.

Use **ONLY** Norsk Lithium Chargers and charging components. **DO NOT** overcharge the battery. The Battery Management System (BMS) will turn the battery off in case of overcharging, but repeated overcharging may damage the battery.

DO NOT charge the battery unattended. See **Charging Procedure** section of your battery manual for more information.

DO NOT charge or operate a battery or charger that is visibly damaged, dented, bulging, punctured, or otherwise in an inoperable condition.

DO NOT short-circuit lithium batteries or chargers. Doing so can damage your battery or charger, and may cause high temperatures or currents which can cause fire, personal injury, or death.

DO NOT heat over 140°F (60°C). Doing so may cause damage to the battery, housing, or charger.

DO NOT exceed max discharge specifications for the battery.

DO NOT submerge the battery in water. Keep the battery in a dry environment. Norsk Lithium recommends the use of a battery box for use in marine applications or environments where the battery may get wet.

DO NOT store batteries, chargers, or accessories near heat sources, in direct sunlight, or near high-temperature sources or gas emitters such as fire, heaters, propane tanks, generators, fuel storage, etc.... Follow all other charging and storage guidance.

DO NOT store batteries, chargers, or accessories with other metal or metallic objects, batteries, or electronic devices. Failure to follow this precaution could result in inadvertent terminal connection and fire and/or explosion.

DO NOT dispose of lithium batteries in the trash. **DO NOT** dispose of the battery by crushing, cutting, or exposing it to fire, or high temperatures, as an explosion can result. Follow all local, state, and/or federal laws and regulations related to the disposal and recycling of batteries. Seek assistance if necessary.

HAZARDS

Norsk Lithium batteries are not hazardous when used according to the manufacturer's recommendations. In cases of abuse, damage, or destruction of the battery or battery cells there are hazards of rupture, fire, heat, and leakage of internal components which may lead to exposure to hazardous chemicals. Contact us at support@norsklithium.com if you have questions about uses or applications for Norsk Lithium batteries.

Internal battery cells contain hazardous materials. **NEVER** try to open or dismantle the battery or battery cells. **DO NOT** puncture the battery case, or cells, disassemble the battery, or expose it to fire or high heat. Damage to the battery or battery cells may result in fire, explosion, and/or burns.

Exposure to internal components may result in exposure to hazardous materials including Graphite, Copper, Aluminium, Nickel, and Lithium hexafluorophosphate.

In case of rupture, avoid contact with skin, eyes, or clothing, and avoid breathing any fumes.

If EYE exposure occurs, flush your eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.

If SKIN exposure occurs, remove contaminated clothes and rinse skin with plenty of water or shower for at least 15 minutes. Seek medical attention if necessary.

If INHALED, remove from exposure and move to fresh air immediately. Use oxygen if necessary and available.

If INGESTION occurs, **Seek medical attention if you feel unwell.** Do **NOT** induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

In all instances, symptoms may be delayed. In case of an accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Refer to Norsk Lithium Battery Safety Data Sheets for additional safety information. Safety Data Sheets can be found at: www.norsklithium.com.

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference., and (2) This device must accept any interference received, including interference that may cause undesired operation.

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 the receiver

- Connect the equipment to 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

Industry Canada Statement: CAN RSS-GEN/CNR-GEN

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science, and Economic Development Canada's license-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.

ADDITIONAL FCC/ISED STATEMENTS FOR NORISK GUARDIAN-ENABLED DEVICES:

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This equipment complies with FCC/IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada: CAN RSS-GEN/CNR-GEN

Under Industry Canada's regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p) is not more than that necessary for successful communication.