



LIMITED WARRANTY

TRILLIUM® LITHIUM ION LIMITED WARRANTY

Trojan Battery Company, LLC, (“Manufacturer”) warrants, to the original purchaser, (“User”) that its Trillium Lithium Ion (“Battery(ies)”) listed in the table below, if purchased from Manufacturer or an authorized distributor or dealer, and used in a deep-cycle application, will be free of defects in material and/or workmanship from the date sold and for the duration stated in the table below (the “Warranty Period”). If the Battery becomes unserviceable (not merely discharged) due to defect in material and/or workmanship within the Warranty Period, subject to the exclusions listed below, Manufacturer will replace the battery free of charge. **This warranty is non-transferable.**



Subject to the terms and conditions outlined herein, Manufacturer warrants to the User that the Battery(ies) will deliver 60% or more of rated capacity when tested at 70-85°F (21-29°C) for the application-specific Warranty Period as per Table 1 below.

Manufacturer warrants the Battery Management System (as defined below) for 4 years from the initial purchase date, regardless of User’s deep-cycle application.

Table 1 – Warranty Period

MODEL	WARRANTY PERIOD FOR MOTIVE APPLICATION	WARRANTY PERIOD FOR STATIONARY APPLICATION
TR 12.8-92	4 years	8 years
TR 12.8-110		
TR 25.6-25		

DEFINITIONS

Battery Management System (“BMS”) - means the printed circuit board together with the communications, firmware, and software found in the BMS.

Motive Application - means product applications where the Battery is routinely exposed to vibration, lateral and/or vertical forces as a result of installation on or inside of moving equipment. Examples include, but are not limited to, golf cars, floor cleaning machines, aerial work platforms, utility vehicles, personal electric vehicles.

Stationary Application - means product applications where the Battery is operated in a fixed and stationary position and is NOT a Motive Application.

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WARRANTY EXCLUSIONS

This Limited Warranty does not cover Batteries sold by Manufacturer or any authorized Manufacturer distributor or dealer to third-party Original Equipment Manufacturers (“OEMs”). Please contact the OEM for warranty information.

Without the involvement of the Manufacturer in system design and Manufacturer’s express written authorization, Batteries are not intended for use as a primary or backup power source for life support systems or other medical equipment, or any use where product failure could lead to injury to persons or loss of life or catastrophic property damage. Use in this manner is at purchaser’s or end users own risk. To the extent permitted by law, Manufacturer disclaims any and all liability arising out of any such use. Further, Manufacturer reserves the right to refuse to service any Battery used for these purposes and disclaims any and all liability arising out of Manufacturer’s refusal to service.

This warranty does not cover defects that are caused by normal wear and tear, inadequate maintenance, insufficient ventilation, transportation, storage or faulty repair, misuse, neglect, accident or abuse, modification to the Battery, failure to observe operating instructions and parameters or improper installation. This warranty does not cover defects caused by external influences while in the User’s possession, including unusual physical or electrical stress such as power surges, uncontrolled voltages and currents, system harmonics, lightning, flood, fire, exposure to excessive hot or cold temperatures, or accidents. This warranty does not cover any damage that may occur as a result of improper connection, incorporation, charging (undercharging, overcharging, over-discharging), or installation.

For further clarity, this warranty is also void if the Battery:

1. operates (charge or discharge) below or above its authorized temperature range (as measured and logged by the Battery internal data logger),
2. operates at an average temperature exceeding 80°F (27°C) over the life of the Battery (as measured and logged by the Battery internal data logger),
3. is not maintained in accordance with the parameters as set forth in the English language version of the User’s Guide,
4. is charged with a battery charger, charging algorithm or unregulated charge source that does not comply with the Manufacturer’s recommendation as set forth in the English language version of the User’s Guide,
5. is subjected to excess vibration as might be caused by out of balance or improperly operated pads in floor burnishing machines,
6. data logger is destroyed or altered,
7. manufacturing date codes, safety certification numbers or serial and tracking numbers are destroyed or altered,
8. is disassembled, altered, or repaired by someone other than an authorized Manufacturer’s agent,
9. is not installed with adequate balance of system components,
10. is directly connected to DC motors without proper safety protection, motor controllers, and external motor voltage clamping systems, as recommended below,
11. is not properly protected from inrush currents, as recommended below, or
12. is installed with other makes and/or models in the same string,
13. improper connection or usage of the CAN bus interface on the Battery as set forth in the English language version of the User Guide.

EXCLUSION FOR FAILURE TO PROVIDE DATA ACCESS

In order to provide this Limited Warranty, Manufacturer may require the ability to update and upgrade the Battery’s Firmware and Software. Any failure to install system updates or upgrades when provided or to provide data logged information upon request will void this Limited Warranty.

DISCLAIMER

EXCEPT FOR THE LIMITED WARRANTY SET FORTH ABOVE, SELLER MAKES NO WARRANTY WHATSOEVER WITH RESPECT TO THE BATTERIES, INCLUDING ANY (A) WARRANTY OF MERCHANTABILITY; OR (B) WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; WHETHER EXPRESSED OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE.

BREACH OF WARRANTY REMEDY

Manufacturer will not be responsible for any expenses for transportation, installation, freight, recharging, electrical system tests, loss of time, loss of use of equipment, service calls, labor, use of rentals or other expenses which would be considered as incidental or consequential damages. The only remedy available under this warranty is Battery replacement.

HOW TO MAKE A WARRANTY CLAIM

To process a claim under this Limited Warranty, please contact your authorized Manufacturer distributor or dealer. Proof of purchase will be required. If the Battery needs to be returned for inspection, return the Battery, at your expense in accordance to the UNDOT 3480 shipping requirements for Class 9 Hazardous Goods, to your authorized Manufacturer distributor or dealer. Acceptance of the Battery for inspection does not mean the Manufacturer will accept the warranty claim. Please refer to the Manufacturer’s website for a list of distributors and dealers or call the Manufacturer’s customer service department at 562-236-3000.

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WARNINGS

PROPERLY PROTECT THE BATTERY WITHIN THE OVERALL INSTALLATION

Proper grounding, isolation, fusing, breakers and disconnects must be correctly used throughout the balance of systems to effectively isolate and protect all components of the system against faults, short circuits, reverse polarity or component failure. The sizing of all system components should be determined using established electrical codes and standards and evaluated by certified engineers, electricians, and licensed installers. Although every Battery has system protection and fuses to protect the Battery from operation outside of its pre-set limits, additional balance of system protections must always be included (such as charge controllers) to protect the Battery from high voltage sources such as open PV voltage. The internal circuitry, protection and fusing will not protect the Battery from extreme electrical phenomena.

DC MOTOR VOLTAGE SPIKES

In operation, DC motors represent an inductive load. If the Battery's BMS disconnects from a DC motor while it is operating, a voltage transient will result unless there is proper protection included in the system. Direct connection to DC motors without proper protection, motor controllers, and/or external motor voltage clamping systems (such as high power anti-parallel diodes or braking resistor systems) may result in damage to the internal Battery protection system, creating potentially damaging conditions, and will void the warranty.

DC MOTOR INRUSH CURRENT

When typical DC motors become energized, a much larger amount of current than normal rushes into the motor until it reaches its steady-state speed. Initial inrush currents can significantly exceed the steady state levels. Inrush current limiters must be used when connecting the Battery to DC motors to protect the Battery's BMS and electronics. Failure to do so will void the warranty.



Trojan batteries are available worldwide through Trojan's Master Distributor Network. We offer outstanding technical support, provided by full-time application engineers.

**For a Trojan Master Distributor near you,
call 800.423.6569 or + 1.562.236.3000 or visit www.trojanbattery.com**

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