

# DISCOVER ADVANCED ENERGY SYSTEM - AES WARRANTY POLICY

DOCUMENT NUMBER

**885-0008**

**READ THIS DOCUMENT CAREFULLY:** Discover has spent over 10 years developing what we know to be some of the highest quality Advanced Energy Systems available in the market today. We have vast field and testing experience that we incorporate into our design criteria. This document attempts to educate and inform you on what to do and what not to do to protect your investment, and to provide you with the best warranty in the business. Most importantly we want to give you confidence you are buying an excellent product from a great company.

## LIMITED PERFORMANCE WARRANTY

Discover Energy Corp. ("Discover"), together with its agents, dealers, and distributors, warrants to the original product purchaser ("User"), that Discover Advanced Energy System batteries ("Battery(ies)") will provide unlimited cycles while maintaining at least 60% of their original "Nominal Energy" for the earlier of the listed "Energy Period" or total "Energy Throughput" depending on the User's application of the Battery as per Table 1 or Table 2 below, subject to the terms and conditions outlined herein.

Discover warrants the "Control Systems" for 3 years from the initial installation date, regardless of User's application.

Table 1 – Mobile Application: Warrantied Energy Throughput and Period

Battery Model	Nominal Volts / Wh	Energy Period	Total Energy Throughput	Annual Energy Throughput Limit	Warranty Service Level
15-24-1000	24V / 1024 Wh	4 Years	2 MWh	600 kWh	4 years free replacement or repair.
15-36-1000	36V / 1008 Wh	4 Years	2 MWh	600 kWh	
14-24-2800	24V / 2816 Wh	4 Years	5.6 MWh	1600 kWh	
12-36-6700	36V / 6720 Wh	4 Years	13 MWh	3800 kWh	
12-48-6650	48V / 6656 Wh	4 Years	13 MWh	3800 kWh	

Table 2 –Solar Energy Storage Application: Warrantied Energy Throughput and Period

Battery Model	Nominal Volts / Wh	Energy Period	Total Energy Throughput	Annual Energy Throughput Limit	Warranty Service Level
44-24-2800	24V / 2816 Wh	10 Years	16 MWh	1600 kWh	4 years free replacement or repair. Prorated repair or replacement thereafter.
14-24-2800	24V / 2816 Wh	10 Years	16 MWh	1600 kWh	
42-48-6650	48V / 6656 Wh	10 Years	38 MWh	3800 kWh	
12-48-6650	48V / 6656 Wh	10 Years	38 MWh	3800 kWh	

### Definitions

**"Control Systems"** means the Battery Management System and Solid State Relay ("BMS") together with the communications, firmware, and software found in the BMS.

**"Energy Throughput"** means the aggregate energy charged and discharged through the Battery as logged by the onboard data logger.

**"Mobile 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 a moving apparatus.

**"Nominal Energy"** means the nominal rated watt-hour ("Wh") energy published for the Battery in Discover technical documentation at the time of manufacture.

**“Solar Energy Storage Application”** means product applications where the Battery is operated in a fixed and stationary position and is NOT a Mobile Application.

**“Service Life”** means the total period in years from the initial installation date that the Battery is covered by this Limited Performance Warranty.

## **LIMITATION ON APPLICATIONS**

Without the involvement of Discover in system design and Discover’s express written authorization, Batteries are not intended for use in energy storage applications of greater than 100kW AC power, 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. To the extent permitted by law, Discover disclaims any and all liability arising out of any such use. Further, Discover reserves the right to refuse to service any Battery used for these purposes and disclaims any and all liability arising out of Discover’s refusal to service.

## **WARRANTY LIMITATIONS AND EXCLUSIONS**

**EXCEPT AS HEREIN EXPRESSLY STATED, THERE ARE NO WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, FOR ANY BATTERY IDENTIFIED IN THIS LIMITED PERFORMANCE WARRANTY. DISCOVER DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL OTHER WARRANTIES AND/OR GUARANTEES, EXPRESS OR IMPLIED, AND, AS SUCH, THE SAME SHALL NOT APPLY TO THE BATTERIES. IN NO EVENT SHALL DISCOVER BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER FOR ANY REASON (INCLUDING, WITHOUT LIMITATION, LOST PROFITS, LOSS OF USE, LOST EQUIPMENT OR LOST REVENUES) REGARDLESS OF THE LEGAL THEORY ON WHICH ANY SUCH CLAIM MAY BE MADE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.**

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, or accidents. This warranty does not cover any damage that may occur as a result of improper connection, incorporation, or installation. This warranty does not cover consumable components including but not limited to fuses (or the cost to change fuses) that are incorporated within the Battery for protection against external phenomena or operation outside of the batteries pre-set parameters.

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

1. continually 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 30 degrees Celsius / 86 degrees Fahrenheit over the life of the Battery(as measured and logged by the Battery internal data logger),
3. surpasses annual or average annual EnergyThroughput thresholds which indicates the system is undersized (as measured and logged by the Battery internal data logger),
4. is not maintained in accordance with the parameters as set forth in the English language version of the Operating Manual(all warnings and faults are measured and logged by the Battery internal data logger),
5. is charged with a battery charger, charging algorithm or unregulated charge source that has not been approved by Discover as set forth in the English language version of the Operating Manual(as measured and logged by the Battery internal data logger),
6. is subjected to excess vibration as might be caused by out of balance or improperly operated pads in floor burnishing machines (as measured and logged by the Battery internal data logger),
7. data logger is destroyed or altered,
8. manufacturing date codes, safety certification numbers or serial and tracking numbers are destroyed or altered,
9. is disassembled, altered, or repaired by someone other than an authorized Discover agent,
10. sustains shipping or installation damage,
11. is not installed with adequate balance of system components,
12. is directly connected to a DC motors without proper safety protection, motor controllers, and external motor voltage clamping systems,
13. is not properly protected from inrush currents, or
14. is not registered leading to a failure to install system updates or upgrades when provided or to provide data logged information upon request.

## **IMPORTANT:** 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.

## **CAUTION:** DC MOTOR BREAKING VOLTAGE SPIKES

In operation, DC motors build up a lot of energy (like a rubber band). When the Battery reaches its low voltage fault level and the Battery's BMS disconnects or interrupts the load, this built up load energy has to go somewhere! This energy cannot be used as current or amperage flow any longer and converts to high voltage spikes when the motor is breaking or stopping. This happens quickly and aggressively and can damage the Battery's BMS electronics. Direct connection to DC motors without proper safety protection, motor controllers, and 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 unsafe system conditions, and will void the warranty.

## **WARNING:** DC MOTOR INRUSH CURRENT

A one horsepower DC motor will continuously draw 746 watts of energy. At 24 volts that is over 30 amps (746 W/ 24 V = 31 A). When typical induction motors become energized, a much larger amount of current (in amps) than normal rushes into the motor to set up the magnetic field surrounding the motor to overcome the initial load. As the motor overcomes the initial resistance and increases in speed, the current drawn subsides to a steady state level that equals (a) the current required at the supplied voltage to supply the motor load plus (b) losses to windage, cabling and friction in the motor and in the load. Initial inrush currents normally reach 3 times the steady state level but can easily equal 6 times the horsepower rating in watts of the motor. Inrush current limiters must be used when connecting the Battery to DC motors to protect the Battery's BMS and electronics.

## **REMINDER:** REGISTER YOUR BATTERY AND PROVIDE DATA LOG WHEN REQUESTED

In order to provide this Limited Performance Warranty, Discover requires the ability to update and upgrade your Battery's Firmware and Software. If your Battery is not registered with Discover, we may not be able to provide important system upgrades. All system updates or requests for system data can be performed during regular system maintenance. Any failure to install system updates or upgrades when provided or to provide data logged information upon request will void this Limited Performance Warranty.

## **Exclusion for failure to provide data access or failure to register your Battery**

In order to provide this Limited Performance Warranty, Discover may require the ability to update and upgrade your Battery's Firmware and Software. If your Battery is not registered with Discover, we may not be able to provide important system upgrades. All system updates or requests for system data can be performed during regular system maintenance. Any failure to install system updates or upgrades when provided or to provide data logged information upon request will void this Limited Performance Warranty.

## **WARRANTY CLAIM PROCEDURE**

In the event of an alleged defect or Battery failure, you must make a warranty/service claim to the original Discover agent, dealer, or distributor that sold the Battery to you within fifteen (15) days of the alleged defect date. If you are unable to contact the original seller, you should contact Discover by visiting [www.discoverbattery.com/support](http://www.discoverbattery.com/support).

**NOTE:** If your Battery was included in a purchase from an Original Equipment Manufacturer ("OEM") as part of the equipment, you must contact the OEM for service and support in the event of an alleged defect or Battery failure.

A Battery warranty or parts and service claim must include:

1. Proof of original purchase that includes date and identity of purchaser, name of authorized seller, Battery model number, serial number and purchase price. Please notate the transaction currency if not in USD.
2. Description of the alleged defect.
3. Battery data logger download for analysis.
4. A description of the installation location and environment.
5. The shipping address for the repaired or replaced product.

After receiving a return materials authorization ("RMA"), you must pack the authorized Battery, along with copies of the information provided in 1~5 above, in an appropriate shipping container or packaging with the Discover RMA number clearly marked on the packaging. Unless directed otherwise, you will be required to prepay all shipping charges to the destination designated by Discover. You must insure the shipment or accept the risk of loss or damage during shipment. Discover is not responsible for shipping damage caused by an improperly packaged Battery, or the repair costs that might result therefrom. Alternatively, Discover may require you to hold the Battery on site and permit an examination by a Discover representative.

**HELPFUL HINT:** Take pictures of the Battery before and after packaging it for shipment!

If Discover determines that the defect or Battery failure is a warrantied event, in Discover's sole discretion, Discover will repair or replace and return the Battery without charge to the User.

In the event that replacement is warranted and that the needed Battery is not in production or available, Discover at its option, may replace it with a different Battery with equivalent function and performance or provide a prorated refund based on the original purchase price and the remaining portion of the Service Life.

Any repaired or replacement Battery will only be warranted for the remaining unused portion of the original Limited Performance Warranty. The cost and responsibility for removal of the defective Battery and its shipment to Discover, and all other costs related to the replacement process will be the responsibility of the User.

#### **Applicable Law and Effective Period**

This Limited Warranty is subject to the laws of the province of British Columbia. This Limited Warranty is effective for sales of Batteries occurring after October 1, 2016.