

REVOV Product Warranty

Applicable country: **South Africa**
Effective date: **November 2023**

Governing all REVOV battery modules and Energy Storage Systems (ESSs) built, created, or re-sold by REVOV Batteries (PTY) LTD.

A) Preamble

This limited warranty described below applies to the REVOV lithium battery supplied by REVOV BATTERIES (PTY) LTD.

Warranty claims may only be made by or on behalf of:

1. an authorized service partner;
2. an authorized distributor;
3. the first end user of the product provided the installation was effected by an authorized installation partner; or
4. any owner of the product subsequent to the first end user who holds a valid warranty provided that the owner can produce proof of title and transfer and provided further that the product has not been relocated from its original installation location, except under the supervision of a REVOV authorised partner or distributor.
5. Any of the persons referred to in 1. – 4. above shall be referred to hereinafter as “the customer”. This limited warranty is applicable to residential and commercial applications in the Low Voltage (LV) and High Voltage (HV) range, defined at nominal battery voltages less than 60V for LV and less than 1000V but higher than 60V for HV. Any installation using REVOV LV battery modules or (Energy Storage Systems) ESS with capacity above 100kWh may only be effected after consultation with REVOV directly.

B) Definitions

The following expressions shall bear the meanings assigned to them hereunder and cognate expressions shall bear corresponding meanings

1. “Agreement” means this warranty agreement provided by REVOV to the Beneficiaries;
2. “Beneficiary or Beneficiaries” means one or more of the parties referred to in A1 to A4 above who benefit from the warranty;
3. “BMS” means battery management system;
4. “ESS” means energy storage system;
5. “Manufacturer Warranty” means the warranty of supplies by the manufacturer of the Product, which warranty, once it has lapsed shall be substituted by the warranty, issued to Beneficiaries by REVOV;
6. “Product” means the REVOV lithium supplies to Beneficiaries by REVOV;
7. “REVOV” means REVOV Batteries (Proprietary) Limited, the suppliers of the product;
8. “Warranty” means the limited warranty provided by REVOV to the Beneficiaries, as more fully described in paragraph 1 below.

1. PRODUCT WARRANTY AND DEFINITIONS

The warranty is that of a manufacturer warranty. The product will be free from manufacturing, production, or workmanship faults for the specified period – indicated for each product as either a number of cycles or a number of months/years, while warranty clauses and proper treatment of the system is followed. The warranty is not a service warranty or an extended warranty. The warranty covers the function of the battery. The warranty does not cover the external appearance of the battery.

Cycle

A cycle is defined as an accumulative discharge of the battery from 100% State of Charge (SoC) to the defined depth of discharge as stated for that specific battery or system, followed by a full charge to 100% SoC. The final cycle count will be determined as recorded by the Battery Management System (BMS) governing each battery system, in conjunction with REVOV’s assessment of cycles that a battery or system has run.

Registration of Warranty

Within 7 (seven) days after purchase, any REVOV product must be registered on the REVOV Website. Failure to do this may result in any warranty claim that is submitted being denied without further investigation.

Connectivity

In the case that multiple batteries need to be electrically connected to a central location (for example, an inverter or a rectifier etc.), the Direct Current (DC) impedance/resistance for the electric round trip to and from a given battery to the inverter should not be more than 1% different from the DC impedance/resistance from the electric round trip of any other battery to and from the inverter i.e., equal cable lengths or current paths between each battery to the load unit, avoidance of hotspots as well as good electrical wiring practices that promote good DC reticulation.

Experienced Failure

Any product failure must be reported to REVOV or a REVOV authorised service partner within 7 (seven) days of its occurrence. Should there be an issue with heat generation, unexpected noise, or function, failed equipment or any matters suggesting battery failure, the site should be immediately de-commissioned at once and REVOV should be notified of the fault.

Installation

For a valid warranty, the installation must be effected by qualified personnel. The product must be installed and operated according to the specified installation and user manual as well as regional and national requirements for installation.

Treatment

All units must be kept within operating conditions, including but not limited to installation in specified Ingress Protection (IP) rated environment; no water or dust ingress permitted.

Electrical safety must be followed.

Repair/Replace

If there is a fault with the battery: REVOV, at its discretion, will first attempt to repair the units before offering to replace the unit. Where a replacement is required, REVOV will provide a replacement battery with the same or similar expected remaining lifespan.

Retained Capacity

In the 12 (twelve) month period following the end of the warranty, the battery should have at least 60% of starting capacity remaining if proper installation and running practices were applied during the system's operational and storage lifetime. REVOV's battery is defined as satisfactory if it is still able to produce 60% or more of the model's stated new capacity in kWh from a 100% State of Charge to 0% State of Charge, during REVOV's warranty period. This will be verified with an industry standard capacity test; The discharge test shall be done under the following conditions, a) The ambient temperature of the REVOV battery must be 25°C ±2°C. b) The terminals of the REVOV battery must be 25°C ±2°C. c) The discharge current by the REVOV battery will be 0.2C of the original nominal capacity in Ah, as measured at the DC terminals of the REVOV battery from an initial 100% State of Charge capacity.

Claims

Claims must be submitted with supporting documentation: Pictures of sites, clear explanation of failure, proof of purchase, proof of installation by an authorised installer, information on other equipment on site (for example, the inverter, Maximum Power Point Trackers (MPPTs), and any other information or supporting documents requested must be submitted. All batteries subject to a warranty claim must have an unaltered Battery Management System reflecting performance measurements around the type of failure. Battery Management System Records and settings may not be tampered with.

Electronics

Electronics in the case of batteries refers to any circuitry, printed circuit boards (PCBs), semi-conductors, mechanical relays, actuators, light or luminating devices.

Depth of Discharge (DoD)

In the case that a lower DoD than 100% is utilised in a system installation and this is coupled with an increased number of cycles in the warranty condition, the proof of proving this DoD amount during the system lifecycle must be supplied by the person or parties making the warranty claim. For example, should a battery be set in an installation to 90% DoD, and a warranty claim is made against that battery, the person or parties making the claim should show REVOV the inverter or site settings that limited the battery to 90% DoD. Failure to do this will result in the battery/system being processed as a battery/system run at a 100% DoD as well as its respective cycle count.

In the case that no communications for SoC based DoD regulation are used in the setup and control, the following may be provided to show DoD:

- A battery usage shutoff based on a cell voltage of 3.00V in the lowest cell in the pack will be used as an equivalent for 100% DoD.
- A battery usage shutoff based on a cell voltage of 3.05V in the lowest cell in the pack will be used as an equivalent for 90% DoD.
- A battery usage shutoff based on a cell voltage of 3.10V in the lowest cell in the pack will be used as an equivalent for 80% DoD.

Time passed against cycles

REVOV batteries and ESSs are generally given a warranty consisting of either a time period or a number of cycles. In the case that any given unit is governed by a number timeframe or number of cycles, the first expiring value will conclude the warranty period. For example, a battery system that hits 3500 cycles at 100% Depth of Discharge in 9 years is no longer covered by warranty. Similarly, a battery that extends past its 10th year will no longer be covered by warranty, regardless of the number of cycles completed.

2. Life of the Manufacturer Warranty: C8, R9 200Ah, R9 220Ah and R9 250Ah

2.1. A maximum of 10 years or 3500 cycles at most for cells and inter-cell connections.

2.2. 2 Years for:

2.2.1. BMS (regardless of what BMS is supplied).

2.2.2. Cables that connect between battery and BMS (both BMS Monitoring Cables - also referred to as ACB cables, and power cables).

2.2.3. Cell housing (Mechanical integrity of shell of C8 or R9 unit).

2.3. Each battery comes in defined and marked pairs, generally with an A and B variant. When connecting the packs together with the allocated BMS, the specifically paired batteries must be used together to create the full pack. Failure to do this will result in the warranty not being valid.

2.4. The BMS that is allocated to the specified pair of batteries must be registered and used to connect and manage the batteries for the full life cycle of the battery.

2.5. The installation must adhere to local and national installation standards, and all required protective equipment must be correctly installed.

2.6. The charge and discharge rate of the battery must be adhered to for the warranty to be valid.

2.7. There is no change in the supplied warranty between first and second life batteries.

3. Manufacturer Warranty: R100, B100, R200 and B220 Batteries

- 3.1. The warranty is valid for either a time period of 10 years or a cycle count of:
 - 3.1.1. 6000 cycles at 80% Depth of Discharge (DoD)
 - 3.1.2. 5000 cycles at 90% Depth of Discharge (DoD) or
 - 3.1.3. 3500 cycles at 100% Depth of Discharge (DoD)- whichever lapses first.
- 3.2. 2 Years for:
 - 3.2.1. BMS inside the unit, including but not limited to – the screen, buttons, and electronics.
 - 3.2.2. Mechanical integrity of battery enclosure.
 - 3.2.3. Provided cables.
- 3.3. The installation must adhere to local and national installation standards, and all required protective equipment must be correctly installed.
- 3.4. The charge and discharge rate of the battery must be adhered to for the warranty to be valid.
- 3.5. There is no change in the supplied warranty between first and second life batteries.

4. Manufacturer Warranty: 12V 100Ah, 120Ah and 200Ah

- 4.1. 3 years or 2000 cycles at most for cells, and inter-cell connections for an 80% Depth of Discharge (DoD).
- 4.2. 2 Years for:
 - 4.2.1. BMS inside the unit, including but not limited to – the screen, buttons, external connectors (USB etc.)
 - 4.2.2. Mechanical integrity of battery enclosure.
- 4.3. There is no change in the supplied warranty between first and second life batteries.
- 4.4. The installation must adhere to local and national installation standards, and all required protective equipment must be correctly installed.
- 4.5. The charge and discharge rate of the battery must be adhered to for the warranty to be valid.

5. Manufacturer Warranty: Remote Monitoring Devices

- 5.1. All external remote monitoring devices, including their support kits (cables etc) sold by REVOV, which are sold externally such as the following:
 - 5.1.1. The REVOV RC kit or
 - 5.1.2. The MUST RTUAre governed by a 1-year manufacturing warranty.

6. Manufacturer Warranty: Inverters and Inverter Packages

- 6.1. Should an inverter be purchased from REVOV Batteries that fulfils ALL of the following conditions:
 - 6.1.1. The inverter is of brand DEYE or Sunsynk, utilises ONLY REVOV batteries in the lifespan of usage of the inverter.
 - 6.1.2. The inverter has a pre-existing 5-year warranty that is correctly registered in accordance with that inverter's requirements.
 - 6.1.3. The inverter is registered as well as the batteries on the REVOV Warranty registration page as per REVOV warranty requirements.
 - 6.1.4. The inverter functions in the 48V range of batteries.If ALL the above is valid and followed, then REVOV will underwrite the warranty of the inverter for another 5 years, resulting in a full 10-year, combined battery and inverter warranty.
- 6.2. Should an inverter be purchased from an external party that fulfils ALL of the following conditions:
 - 6.2.1. The inverter is of brand DEYE.
 - 6.2.2. The purchase is made from an approved distributor of the inverter.
 - 6.2.3. Utilises ONLY REVOV batteries in the lifespan of usage of the inverter.
 - 6.2.4. The inverter has a pre-existing 5-year warranty that is correctly registered in accordance with that inverter's requirements.
 - 6.2.5. The inverter is registered as well as the batteries on the REVOV Warranty registration page as per REVOV warranty requirements.
 - 6.2.6. The inverter functions in the 48V range of batteries.If ALL the above is valid and followed, then REVOV will underwrite the warranty of the inverter for another 5 years, resulting in a full 10-year, combined battery and inverter warranty.

7. Manufacturer Warranty: LV ESS – CUBE 5.1 kW, CUBE 10.2 kW and CUBE 800

- 7.1. The Warranty of any batteries included in the ESS unit is governed by the Manufacturer Warranty of the specific batteries that were included in the ESS system.
- 7.2. 2 Years for:
 - 7.2.1. Mechanical integrity of ESS enclosure.
 - 7.2.2. Provided cables.
- 7.3. 1 year for the Must inverter – if any other variant is used by REVOV in its place – the warranty for the inverter will be 1 year.
- 7.4. 10 years for the CUBE 800 inverter, generally a Sunsynk Rack Mount Inverter – Provided that the unit is bought completely from REVOV.
- 7.5. For the Warranty of any Sunsynk inverter to be valid, the final installer of the ESS unit and subsequently the ESS system should register the Sunsynk inverter and any other applicable included devices at the following URL: <https://www.sunsynk.org/warranty>

8. Manufacturer Warranty: LV ESS – Atom 24V 100Ah, 120Ah and 200Ah

- 8.1. The Warranty of any batteries included in the ESS unit is governed by the Manufacturer Warranty of the specific batteries that were included in the ESS system.
- 8.2. 2 Years for:
 - 8.2.1. Mechanical integrity of battery enclosure.
 - 8.2.2. Provided cables.

- 8.2.3. 1 year for the inverter included in Atom units.

9. Manufacturer Warranty: HV 100kWh

- 9.1. 10 years or 5000 cycle at 85% DoD warranty.
- 9.2. 2 years for all other items including:
 - 9.2.1. BMSs, Battery Management Modules (BMMs), internal cables, Power Distribution Units (PDU) boxes, attachments and casings and any other specified electrical items.
 - 9.2.2. Physical cabinets including buttons, switches (provided that breakers, fuses and isolators are not covered by warranty and are excluded).
- 9.3. Any items not mentioned above are not covered by the warranty.

10. Manufacturer Warranty: HV ESS – Optimus

- 10.1. 10 years or 3500 cycles for cells, and inter-cell connections.
- 10.2. 2 years for:
 - 10.2.1. Electrical items including BMSs, BMMs, internal cables, PDU boxes, attachments and casings.
 - 10.2.2. MPPT, Static Transfer Switches (STSs), Power Conditioning Systems (PCSs), DC to DC converter.
- 10.3. 1 year for the onboard computer, Wi-Fi connectivity hardware.
- 10.4. Any items not mentioned above are not covered by the warranty.

11. Manufacturer Warranty: HV ESS more than 100kWh – Other

- 11.1. 10 years or 5000 cycles at 85% DoD for cells, and inter-cell connections.
- 11.2. 2 years for:
 - 11.2.1. Electrical items including BMSs, BMMs, internal cables, PDU boxes, attachments and casings.
 - 11.2.2. Mechanical items such as cabinets, enclosures, doors, and frames.
- 11.3. Should the inverter for this ESS product be purchased from REVOV, and provided that the Inverter is a Sunsynk or DEYE model, REVOV will underwrite the existing warranty of the inverter system to 10 years from 5 years.
- 11.4. Any items not mentioned above are not covered by the warranty.

12. Manufacturer Warranty: HV and LV more than 100kWh – Custom projects

- 12.1. 5 years or 2000 cycles for cells and inter-cell connections. This may be increased to a 10 year increased cycle warranty with a signed Service Level Agreement (SLA) to be agreed upon between the purchasing or installing party and REVOV. An alternative warranty based on the nature of the custom project may be made valid if received in writing from REVOV.
- 12.2. 2 Years for:
 - 12.2.1. BMSs, PDU, BMMs.
 - 12.2.2. Provided cables.
- 12.3. Any other items are not covered by the warranty and will only be covered by the standard warranty provided by those third-party manufacturers (if any).
- 12.4. Any items not mentioned above are not covered by the warranty.
- 12.5. Due to the nature of custom projects, this warranty for this line of products may be amended at REVOV's discretion. Any alterations to the default warranty mentioned above will be communicated in writing to the person who acquired the battery directly from REVOV (REVOV's direct client). It is the responsibility of REVOV's direct client to make any of these changes known to any relevant personnel, including but not limited to any distributors, wholesalers, installers, or end-clients involved with the aforementioned product or service.

13. PRECONDITIONS FOR WARRANTY

- 13.1. Product life should fall within the warranty period.
- 13.2. Any system failure, fault or warning information must be reported to REVOV or authorized service partner within 1 (one) week of its occurrence.
- 13.3. Product must be installed by qualified personnel from an authorized service partner, proof of such installation and qualification could be requested.
- 13.4. The customer should correctly operate and use the product and system according to user and installation manual.
- 13.5. The customer must provide proof of the original purchase of the product, installation and any connected services.
- 13.6. The installation by an authorised installer of the product/system subject of the warranty should be completed within 1 (one) month from the date ownership of the product is transferred from REVOV to the first end user.
- 13.7. The Customer must register the product at REVOV's after-service website or contact the after-service person within one week of the first installation. The product registration should include a Certificate of Compliance (CoC) from a legally recognised, electrically compliant person or party who completes or validates the installation.
After-service person email: service@REVOV.co.za
- 13.8. The ambient temperature during the operation of the product must not fall outside the -5 °C~40 °C temperature range, the product should not be exposed to and stored in a temperature higher than 50 °C and should not be exposed, whilst installed, to direct sunlight. The battery room must be ventilated in accordance with the requirements of the battery manufacturer.

- 13.9. This warranty covers a capacity equivalent to 1 full cycle¹ per day, and only applicable to installations operated in residential or telecommunications energy storage applications. The REVOV lithium battery storage systems is not suitable for supplying life-sustaining medical devices and automotive applications. The warranty will be void if usage is outside of residential or telecommunications and energy storage applications unless otherwise stipulated by REVOV.
- 13.10. The Product must be operated with a REVOV BMS as sold by REVOV.
- 13.11. It is the responsibility of the qualified installer or designer to ensure that the solar and battery ratings are adequate for the rated load, so that the REVOV battery can achieve 100% State of Charge daily or that the recharge State of Charge is 100% achieved before a new discharge cycle. Proof of installation (site pictures) and/or load profile could be requested by REVOV in order to validate a warranty claim.

14. REPLACE OR REPAIR

- 14.1. In the event that any product covered by the warranty is confirmed by REVOV to be defective or non-conforming, REVOV will replace or repair the defective or non-conforming product, at its sole discretion. Any maintenance, repair or replacement should not be considered as an extension or recalculation of the warranty period.
- 14.2. REVOV or a designated service provider should respond within 10 (ten) working days of receipt of a service request.
- 14.3. REVOV will be responsible for the approved repair or replacement costs in connection with such non-conforming or defective product. REVOV reserves the ownership of replaced battery or product. Unless otherwise agreed by REVOV, the replaced battery or product should be returned by the customer to the place designated by REVOV in the same or similar package within 4 weeks.
- 14.4. In the event that REVOV has discontinued the manufacture of the product in issue at the time of the related warranty claim, which is confirmed by REVOV, REVOV may, at its sole discretion, replace it with a similar type of product (of mutually agreed size, colour, shape and/or capacity) or refund the purchase price pro-rated by the days of the relevant warranty period remaining.
- 14.5. Replacement of battery, components or products may be limited to the equivalent power output of product at the time of failure should it occur. The quality and specification compliant with the product specifications will be adhered to.
- 14.6. As applicable, the replacement battery will have a similar energy capacity as expected from the faulty battery.
- 14.7. The SOH of the faulty battery will be determined by analysing the statistics of the BMS.

15. WARRANTY EXCEPTIONS:

REVOV may, at its sole discretion, reject any warranty claim if: -

- 15.1. The Customer failed to register the product on REVOV's after service website or did not contact REVOV's after-service personnel on time.
- 15.2. The product exceeds the quality or capacity warranty period or terms.
- 15.3. The product damage and/or defect is caused by improper installation, modification or use, misuse, abuse, or any use that does not conform with the user manual or is not in line with the intended use of the product. There shall be no removal of REVOV labels and stickers.
- 15.4. Any damage caused during transport.
- 15.5. Unauthorized wiring and/or use with faulty or incompatible devices or devices with safety issues.
- 15.6. Any third-party tool, device, or product causes damage to the battery or BMS.
- 15.7. The product is arbitrarily modified, or its function changed without authorization from REVOV.
- 15.8. Any changes are effected to the installation which are not in accordance with the REVOV LITHIUM BATTERY STORAGE SYSTEMS installation manual.
- 15.9. The product damage is caused by maintenance and other services conducted by personnel who are not authorized or approved as such by REVOV.
- 15.10. The customer fails to provide the correct product serial number, or the product serial number is undecipherable or modified without permission.
- 15.11. The battery or ESS system has swapped out components that were not part of the original supply package (different BMS, different inverter or any other components)
- 15.12. Firmware versions or parameter settings have been altered without instruction from REVOV.
- 15.13. External influences including unusual physical or electrical stress (including but not necessarily limited to power failure surges, inrush current, lightning, flood, fire or accidental breakage.)
- 15.14. The product damage is caused by external force, force majeure (unforeseeable, unavoidable and insurmountable objective events, including but not limited to war, civil war, strike, riot or other activities not within the control of either party, intervened by a government or other third party with authority.
- 15.15. Defects of the product which occurs due to technology update, or renewal of the national or regional laws or regulations.
- 15.16. The product damage is caused by the customer deliberately or arising from the gross negligence of the Customer.
- 15.17. The failure report is not provided within 2 (two) weeks of any fault occurrence or manifestation.
- 15.18. Purchase and installation of battery system falls outside of the applicable countries listed in this warranty.
- 15.19. Fusing and protective equipment is not covered under warranty.

16. COSTS

Where a warranty claim is validly rejected any costs incurred by REVOV arising therefrom shall be payable by the customer, including any legal costs on an attorney and own client scale.

¹ Full cycle: Discharge the nominal capacity of a fully charged battery and fully charge it afterwards. Micro-cycles sum up to full cycles according to amount of energy charged and discharged unless designated by the BMS.

17. WARRANTY RESTRICTION

Unless otherwise specified herein, to the extent permitted by applicable law, the warranty and the remedies contained herein are exclusive and replace all other guarantees and/or remedies, whether made orally or in writing and whether given expressly, tacitly or by implication. To the extent permitted by applicable law, REVOV expressly rejects any and all implied warranties as warranties not expressly specified herein including but not limited to warranties of merchantability, fitness for a particular purpose and hidden or potential defects. The terms of this warranty may not be varied unless by written confirmation of a person authorized to do so on behalf of REVOV. No distributor, agent or employee of REVOV is authorized to make any revision, extension or addition to the warranty. If any provisions of this warranty are declared invalid or unenforceable for any reason, the remaining provisions shall not be invalidated but shall continue to be and remain of full force and effect.

Unless otherwise specified herein, to the maximum range permitted by applicable law, REVOV will not be liable for any direct, indirect, special, accidental or derivative losses caused by the purchase or use of products and its system, including but not limited to the loss of use, loss in income, actual or expected loss in revenue (including contract revenue losses), loss of the use of money, loss of anticipated savings, loss of business, loss of opportunity, loss of goodwill, loss of reputation, personal injury or damage loss, or the indirect or derivative loss or damage (including any expense arising from the replacement of equipment and property, resumption of production, etc.) caused by any reasons.

The REVOV liability from any cause whatsoever should in any event not exceed the amount of the purchase price paid by the customer for such product giving rise to the liability.

18. UPDATE OF WARRANTY

To the extent permitted by the applicable law, REVOV reserves the right to update or amend this warranty from time to time, and such update or amendment will be published on the official REVOV website or sent by email or to the address of the customer (if provided by customer when purchasing the products).

19. OUT OF WARRANTY

In relation to products out of warranty, REVOV agrees to provide, at its discretion, certain after sales service to the customer upon written request, and all the costs and expenses which include but not limited to the materials, parts or labour costs, will be borne by the customer. In the case of the customer giving written notice to request the out of warranty service, the customer should provide a detailed description of the defects to enable REVOV to assess whether such defect can viably be repaired. For the avoidance of doubt, in no event will REVOV be liable for the service out of warranty, and this clause will not constitute a promise by REVOV to provide any such service out of warranty.

20. REPORTING OF WARRANTY

Warranty claims should be noted via our Technical Service Desk number +27 (0)10 035 0680 or via our email address warranty@REVOV.co.za so that a Warranty/Service ticket may be raised and tracked by REVOV and the installer. No warranty claims will be honoured via our sales channels or without a ticket number as reference to fault.

You can report warranty requirement with product information in below table to REVOV or REVOV's service provider:

No.	Information needed	Fill in information
1	Battery product type/model	
2	BMS type/model	
3	Serial numbers of products	
4	Installation date	
5	Pictures of the Installation	Showing cable runs, fusing, bus bars, all batteries, supplies and loads.

21. ADDITIONAL WARRANTEES*

Additional warrantees will apply in accordance with specific system sizing and project needs. This may range to a maximum of 20 years subsequent to terms and conditions set forth during the scope of specific projects and their locations however this remains subject to written approval from REVOV.

South Africa:

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Cranberry Street
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