



GridX Series
Product Warranty

Applicable area:

The republic of South Africa

Applicable to:

Product type: GridX Series BESS

This warranty (hereinafter "warranty") specified below applies to IONX (PTY) Ltd lithium-ion battery and the accessory components (hereinafter "products"), manufactured by IONX through authorized reseller.

LIMITED WARRANTY FOR COMMERCIAL, INDUSTRIAL, UTILITY & AGRICULTURAL APPLICATIONS OF FOR BATTERY ENERGY STORAGE SOLUTION

This Limited Warranty ("Warranty") indicated below applies to the IONX Liquid-cooled LifePO4 batteries (hereinafter collectively "Products" or singularly "Product") produced by IONX.

1. **Purpose** The main purpose of this document is to define conditions and procedures relating to the warranty policy applied to products for use in, enclosed commercial & industrial, manufacturing and agricultural energy storage applications.
2. **Warranty period** IONX warrants that the product will be free of defects caused by poor workmanship or defective materials during its manufacturing process, and the product will retain at least sixty five percent (65%) of nominal energy either for ten (10) years, or 10000 cycles, calculated from when the warranty commences, whichever comes first, when used within its specified operating parameters.
 - a. **Capacity performance warranty for increased battery capacity:** IONX also warrants that any additional battery modules added later shall retain sixty-five percent (65%) of its nominal energy for ten (10) years after the warranty commences thereon.

The warranty commences for the period of ten (10) years from, the earlier of:

- a) Invoice provided by customer: standard warranty of 120 months (10 years) from customer invoice date.
- b) If Customer fails to provide invoice: then (10) years from four (4) months after the date the product was manufactured.

3. Warranty Conditions

a. General

The product:

- i. Is a DC/AC BESS designed for operating for industrial & manufacturing, commercial and agricultural applications, for Energy Arbitrage, Power Security, Off Grid and Self consumption with Renewable Sources.
- ii. Is purchased from IONX or an authorized reseller in the territory
- iii. Has a registered and official IONX serial number.
- iv. Is installed in a battery energy storage system in the territory.
- v. Is installed, operated, and maintained in accordance with the product instructions and manuals

b. Technical:

- i. The module's structure allows continuous 0,5C charge / discharge operations and peaks of 1C for a limited time according to the thermal and voltage condition of the system.
- ii. The DoD must not exceed an average of 90%
- iii. The Battery Modules must have an average SOC (State of Charge) above 50% over the operating lifetime
- iv. The PCS operational load to be in line with the PCS operating conditions of the product manual received with the product.

c. Limitations and Liability

- i. IONX liability under this warranty is limited to the replacement, repair and/or compensation of the products. IONX is not responsible for any direct or indirect damages related to failure to achieve performance, unproductive stop of the system, or any other damages deriving from any malfunctions.
- ii. Replaced or repaired Products will be warranted for the remainder of the duration of the replacement battery warranty. The act of replacement will not justify the renewal of the original duration of the warranty without exception.
- iii. IONX is not responsible for damages and/or losses resulting from non-use of the battery, loss of profit, or interruption of any services or supplies.
- iv. IONX's Battery Management System data must be readable, if the memory has been damaged due to improper usage of the battery or if the BMS has been disconnected, removed or replaced without the approval from IONX, the Warranty becomes ineffective.
- v. Auxiliary Equipment:
 1. PCS, MPPT, Rectifiers, STS, Hybrid Inverters, extra control system and other energy conversion equipment have a basic warranty that will be applicable based on the choice of equipment selected for the build and will be agreed upon per PO.
- vi. Accessories:
 1. Airconditioning & other cooling Systems: 3Yr warranty
 2. Container Distribution, Fire Suppression
 - a. Warranty subject to the warranty and maintenance being completed as per product instructions
- vii. The following auxiliary materials and mechanical parts are not covered by the standard 10yr warranty but include 1year workmanship warranty
 1. Consumable: Including but not limited to cables, door locks, light tubes, batteries (small batteries other than battery packs)
 2. Cabling: AC Side Cable
 3. Mechanical Parts: Including but not limited to battery racks and mechanical components
 4. ESS Accessories: Including but not limited to cabinet mechanical components, documents, product accessories, installation accessories, and tools

d. Warranty Exclusions

- i. Damage to products caused by any of the following activities is NOT covered by this Warranty:

1. Transport, storage, installation or non-compliant wiring carried out by the Company.
2. If product seal is broken on the Products by non-certified IONX technicians.
3. Incorrect parallel connection of multiple units, wrong configuration of parallel units, parallel connection of incompatible batteries or of different power and/or type and/or brand
4. Reverse polarity
5. Incorrect series connection of multiple units, wrong configuration of series units, series connection of incompatible batteries or of different power and/or type and/or brand
6. Failure to follow the instructions in the respective Products manuals.
7. Modification, installation, alteration, disassembly, repair or replacement by anyone other than personnel certified by IONX.
8. Failure to disconnect the battery from the system in the presence of continuous related inverter or battery alarms.
9. Failure to charge and discharge the battery for prolonged periods (over 3 months) or following the relocation of the battery from the initial installation location or the replacement of the inverter with an inverter that is not in the list of inverters approved by IONX.
10. Failure to connect the SCU (System Control Unit) to the inverter as per Product manuals, incorrect wiring, incorrect cable section choice, polarity inversion and the use of unsuitable cables.
11. External influences including unusual physical or electrical stress (power surges, high inrush current, lightning, flood, fire, fall, accidental breakage, cover opening, cable removal, manual actuation of the contactor, etc.)
12. Any condition in contradiction with the Indoor application as per IP20 rating
13. Use of incompatible inverter, rectifier, battery charger, BMS, etc., with the battery even if on a temporary basis.
14. Product label removed or cancelled.

For acceptable claims, IONX will honour the warranty applicable through the claim's procedure. Modules used outside the standard operating conditions of the "Installation and operation mandatory conditions", are excluded from the warranty.

It is the responsibility of the buyer to ensure that any future Firmware Upgrade is implemented through their re-seller channels to every battery within 60 days of receiving the Firmware Upgrade if applicable.

4. Standard Product Warranty

- a. IONX Warrants that the cells of the Product will maintain a Residual Value (*) of 65% provided prescriptions laid out in this document have been respected
 - i. (*) Residual value of the discharge capacity of the complete battery could be up to 3% lower than cells, due to losses and internal consumption of the assembled pack

5. Installation and operation mandatory conditions

The warranty is recognized if the below conditions are respected

- a. The Products must be installed away from moisture in a dry environment. Cannot be installed outdoors.
- b. The technical environment shall be suitable for the battery IP rate (IP54) and ensure a proper air circulation

- c. The technical room in which the Products are installed must maintain an average ambient temperature of $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$
- d. Operating temperature must be within the STC (Standard test conditions) as an average over warranty period lifespan
- e. The BMS shall not record an ambient Temperature below 13°C and above 30°C
- f. The Battery module must be installed in a technical room with controlled temperatures with A/C or Cooling/heating systems to ensure the optimal working temperature of the system
- g. The coefficient of charge must not exceed 0.5C (limited by the BMS)
- h. The coefficient of discharge must not exceed 0.5C (limited by the BMS)
- i. Depth of Discharge (DoD) must not exceed average of 90% over warranty period lifespan
- j. The maximum altitude must be below 3000mt above the sea level
- k. The maximum degree of humidity in the room must not exceed 80%, and the ventilation must be such as to avoid the formation of condensation
- l. Products must be protected from liquids, including nebulized liquids, and direct or indirect impacts of water or other liquids, which, in addition to causing the immediate loss of the warranty, can be dangerous for users.
- m. Products must not be installed under direct sunlight nor inside areas closed by means of glass surfaces which can contribute to raising the temperature of the battery even if exposed only for a few hours.
- n. Products must not be installed in rooms with a high saline concentration in the atmosphere or near sources of forced air recirculation. The battery must not be installed in rooms with an atmosphere contaminated by acids, salt, water vapor, solvent vapours or Products that can cause damage to lithium cells, inner circuits, BMS and other parts such as contactors, fuses, sensors, etc. Installations in such environments are prohibited.
- o. Installation in the vicinity of fuels, flammable material in general, or GAS storage is prohibited.
- p. The side and rear ventilation areas of Products must be checked and cleaned regularly according with the site conditions. Accumulations of dust or dirt void the warranty. The Products must be used and maintained as indicated in the user manual and exceptions are not allowed.
- q. The Products controller units must be installed in a vibration-free environment.

The Standard Product Performance Warranty is void if the installation and operating conditions referred to in this section are not complied with and associated costs to repair or replace failed components will be borne by the Buyer.

6. Standard Test Conditions (STC) for the Capacity Measurement

To claim the activation of the Warranty, the performance of the module must be measured according to the procedure specified below which will be done at the discretion of the IONX technical assessor:

- a. Place the battery in the climatic chamber for not less than 30mins: before starting the testing phase, the temperature of the cells measured by the BMS must be $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$.
- b. Connect directly to negative and positive terminals of cells array and discharge with constant 0,5C current until the array reaches 43.2V
- c. Connect directly to negative and positive terminals of cells array and charge with constant 0,2C current until the array reaches the BMS protection limit (open circuit / OV protection)
- d. Wait 30 minutes and then restart the charge process at constant voltage with 0,05C until the BMS reaches again the OV protection, (Open circuit)
- e. Repeat the above discharge/charge cycle until voltage difference between cells is below 0,05V.
- f. Leave the array to rest until cells temperature, measured by the BMS, is $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$.

- g. When cells reach 25°C +/-1°C, connect directly to negative and positive terminals of cells array and discharge with constant 0,2C current until the array reaches 43.2V and measure capacity at negative and positive terminals of cells array using a certified DC meter with datalogger frequency of 1 second.

7. Replacement Parts

The Products or spare parts supplied for warranty claims that are approved by IONX in normal operations may come from new, equivalent, or reconditioned Products to maintain the warranted minimum residual performance.

For an approved warranty claim, if the Products are no longer available on the market or are not available in the short term (within 90 days), IONX, at its discretion, may replace them with other types of Products with equivalent functions and performances to the same value of the original purchase price.

The purchase price mentioned indicates the invoiced price actually paid by the Company to IONX for the Products

In the event of a manufacturer's defect during the warranty period, IONX will repair or replace the defective component/s.

8. Requests for intervention

For any assistance in dealing with an issue on site, whether for technical plant commissioning or warranty related, it is important to follow the correct procedures to receive the most efficient response. If the best method is unknown to the buyer, the buyer is to reach out to the place of purchase to receive the support needed.

Contacting customer support:

The Customer can reach our customer support team through the following channels:

- Email: email to techsupport@ion-x.co.za and IONX representative will revert within 48hours.
- Phone: call +27 82 741 4538 during 09:00 to 17:00 from Monday to Friday. Please note that these times normal operating time for local time zone of the republic of South Africa
- Whatsapp: +27 82 741 4538 available 06:00 – 00:00 for basic support and activate critical support
- Ticket login for critical 24/7 support availability [IONX Support Ticket](#)
- Online chat: visit www.ion-x.co.za and use the online chat feature for instant support during business hours.

What to expect: our customer support team is qualified to assist with any issues customers may encounter with the purchased product. This includes troubleshooting, warranty claims, product inquiries, and more.

9. Product maintenance & Safety procedures

Safety, Installation practices and Maintenance of IONX product is crucial to ensure its longevity and optimal performance for its warranted operation. Follow the guidelines provided in the product instruction manual to ensure correct operational practices.

10. Warranty claim procedures

If you believe your product has a defect under this warranty, please follow the steps below to submit a warranty claim:

Step 1: initial assessment - identify the issue with your product.

Step 2: contact IONX – use one of the following means to contact technical support to provide details about the issue:

- a. iONX Support Ticket to be logged on IONX website,
- b. techsupport@ion-x.co.za,
- c. call +27 82 741 4538,
- d. or Whatsapp chat on +27 82 741 4538.

Step 3: documentation needed for RMA:

- a. Proof of the original purchase of the Products
- b. Serial number of the Products in question
- c. The initial invoice date
- d. Description of the symptom / problem.
- e. Pictures of the installation (Minimum five clear pictures from different angles).

Step 4: product inspection in certain cases, we may require the product to be inspected by an authorized technician. If required, we will guide you through this process.

Step 5: claim review IONX will review your claim, taking into consideration the information provided and the terms of the warranty

Step 6: claim resolution If your claim is approved, IONX will repair or replace the defective product in accordance with the warranty terms. IONX will coordinate with the Buyer or the authorized reseller to manage the repair or replacement process, and IONX will cover the shipping costs for returning the product to the Buyers closest collection point.

If the warranty claim is not substantiated, IONX will provide the Buyer with a proposal to repair or replace the item at the Buyer's cost, where the buyer will also cover the return shipping.

For all warranty claims, the Buyer is responsible to return all Products to the seller, and that the shipment to Seller's warehouse is done following UN38.3 regulations.

The cells or the Products may be replaced with newer models. In this case, the most favourable technical solution for the customer will be proposed by IONX to ensure that the product operates optimally.

11. Product registration

Registering your IONX product is a key step to ensure the Warranty cover activation. Here is how you can register your product:

Visit www.ion-x.co.za and [Register your Account](#), then navigate to [Manage your Warranty](#).

Disclaimer

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