

TBB ES100 LITHIUM BATTERY MODULE LIMITED WARRANTY

This limited warranty (hereinafter Warranty”) specified below applies to the Battery Energy Storage system and the accessory Components (hereinafter “Products”) supplied by TBB Power Co., Ltd. (hereinafter or “TBB”) to End User through Authorized Seller (hereinafter or “Seller”).

End User definition

End User (hereinafter “Buyer”) is the buyer who puts the Products into operation for the first time via the way authorized by TBB.

Authorized Seller

Authorized Sellers refer to the Agents, Distributors, and Partners authorized by TBB.

1. Purpose

The primary purpose of the limited warranty letters part is to clearly define the matters related to the warranty policy of Products.

The primary purpose of After-sales service part is to clearly define the matters related to the precautions for the use of Products.

2. Applicable product type

Battery Energy Storage system:

TBB Battery Module Unit:

Applicable product types: ES100 lithium battery module.

TBB warrants to the End User as follows.

3. Product Warranty

3.1. Warranty start date definition

The warranty starts from the ex-factory date.

The warranty period for Products will remain unchanged after the warranty is completed within the warranty period.

3.2. Warranty Period

The Products warranty period is seven (7) years from the warranty start date. If the customer fills in the battery information collection card and send it to the TBB official email: batterysupport@tbbpower.com and obtains TBB's official approval, the product warranty period can be extended to ten (10) years.

This Warranty covers a capacity equivalent to 1 full cycle per day. 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 the amount of energy charged and discharged. Note: Products are unavailable to protect itself from the deep discharge/charging in condition of without communication connection.

The warranty period of the products without communication connection is four (4) years from the warranty start date.

4. Performance Warranty (standard)

4.1. Capacity performance warranty

The warranty expires when either of the following situations comes first:

After 10 years from the warranty start date, products remain seventy-five percent (75%) of the Nominal Energy;

When it reaches the Minimum Through Output Energy as shown in the figure below;

The term "Nominal Energy" herein means the initially Nominal Energy of the products as printed on the label of Products. The precondition for enjoying the valid 10-year Performance Warranty is that the Products should be used in accordance with the Appendix.

1 - Usage and Transportation requirements

Product Type	Nominal Energy	Minimum Energy Through Output
ES100 lithium battery module	5.04kWh	15.8Mwh

4.2. Capacity measurement condition

Ambient temperature: 25~30°C

Initial battery temperature from BMS: 25~30°C

Charging/discharging method

Charge: (0.2) CC/CV (Constant voltage: (53.5) V/ Cut-off current (0.05) C)

Discharge: (0.2)CC (Cut-off voltage: (40)V) Current at (0.2)C

Note. Current and voltage measurement at battery DC side

5. Exclusion of Warranty

Damage to the Products resulting from any of following activities is not covered by this Limited Warranty:

- (1) Without payment to the Seller, the Buyer may pay the unpaid amount to the Seller in support of the warranty claim under the circumstances that the Seller has the right to refuse the warranty request in accordance with this clause.
- (2) Not complying with TBB's official user manual of the product and "Appendix 1 - Usage and Transportation requirements".
- (3) Product damage caused by modification, alteration, disassembly, repair or replace maintenance and other services conducted by personnel unauthorized by TBB.
- (4) Damage or defect arise due to the buyer's unauthorized use of his own design, materials, mixed, function changed or service to the Products.
- (5) Product damage and defect caused by buyer's improper use, mixed-use, misuse, abuse, which non-conforming with User Manual.
- (6) Appearance damage, deformation, abrasion, stain, rust, mildew, or similar external

influences caused by the buyer during use.

- (7) Improper transportation, storage, installation, wiring and use with faulty or incompatible devices by Buyer. If Buyer fails to use the original packaging materials provided by Seller during the transportation of the equipment, the Products damage or failure shall not fall under the warranty scope of the product.
- (8) The model number, nameplate or product serial number of the product has been altered, erased or unrecognizable or the tamper-evident logo has been arbitrarily damaged.
- (9) Products suffered any external influences including unusual physical, natural force, electrical stress (power failure surges, inrush current, lightning, flood, fire, accidental breakage, etc.)
- (10) Product damage caused by external force, force majeure (causes of natural disasters such as unforeseeable, unavoidable and insurmountable objective events, including but not limited to war, civil war, strike, riot or other activities intervened by government, terrorism, war, riots, strikes, unavailability of suitable and sufficient labor or materials and other events which are out of control of TBB) or other third party.
- (11) Damage of Products arise due to renewal of the national or regional laws or regulations.
- (12) Product damage and defect caused by End User deliberately or by willful act.
- (13) Use of an incompatible inverter, rectifier or PCS.
- (14) Products failure is not reported to Seller or TBB Authorized Service Partner within 2 weeks of appearance.
- (15) The defect cannot be overcome under the technology condition when the Product sold to End User.
- (16) Warranty period specified above has already expired.

6. About Service Products/Parts

6.1. Fault Handling

- (1) If the product fails, the Buyer shall cooperate with the Seller to obtain the faulty

equipment usage information, including but not limited to: faulty equipment serial number, working temperature, usage mode, supporting energy storage inverter manufacturer/model/specification, power consumption equipment power information, PV system configuration information, fault phenomena, operating procedures, battery operation logs, etc.

- (2) When both parties agree that the product belongs to the warranty scope, Buyer can use spare parts to replace the fault equipment, before using of spare parts to replace the fault equipment, the Buyer shall confirm with the Seller in writing and provide the serial number of the failure equipment and the serial number of the spare parts to be installed in time.
- (3) After both parties have jointly agreed that the product belongs to the warranty scope, Buyer may replace the faulty components with the spare parts. Before replacing the faulty components with the spare parts, the Buyer shall confirm with the Seller in writing and provide the serial number of the failure equipment and the serial number of the spare parts to be installed in time.
- (4) If the two parties disagree with whether the faulty equipment meets the warranty conditions, the products may be tested jointly by the ways approved by both parties, or the products shall be submitted to the third-party testing institutions recognized by both parties. Both parties can provide reasonable opinions on the test methods, basis and conclusions. The testing fee shall be borne by the Buyer first. If the testing result proves that the product meets the warranty conditions, the Seller shall pay the transportation fee and testing fee generated in full to the Buyer, and assume the responsibility for the faulty equipment warranty.

7. Claim payment policy

TBB reserves the right to refuse product warranty claim for lacking proper documentation and information.

Claims under this Warranty must be made by notifying the Seller from whom Products

was purchased within 2 weeks of appearance.

For a Warranty Claim to be processed, it must include but not limited following items:

- (1) Proof of the original
- (2) Description of the alleged defect(s) from authorized service center
- (3) The relevant Product's serial number and the initial date of the warranty

Buyers who are unable to contact the Seller from whom Product was purchased should contact TBB POWER Co., Ltd at the Contact us Section of our official website.

Website <http://www.tbbpower.com>

Email: sales@tbbpower.com

Fax: +86-592-5796070

8. Applicable Law

The Warranty is subject to the global law.

Appendix 1

Usage and Transportation requirements

This product includes Lithium iron phosphate battery and the Accessory Components. In order to ensure that the buyer is entitled to full warranty policy, the following clauses should be strictly observed in the transportation and use of products. The product failure or damage caused by violation of the following requirements is not covered by this Limited Warranty.

1. Operating environment requirements

Operating temperature: 0~50°C .

Operating humidity: 5%~85% RH. Altitude: <4000m.

No conductive dust and corrosive gas.

Installation location should be away from the sea to avoid brine and high humidity environment. The ground is flat and level.

There is no flammable explosive near to the installation places.

Keep away from dust and messy zones, water source and heat source; prevent equipment from entering water and overheating.

2. Storage environment requirements

Short-term storage environment:

Within 3 months of temperature range is $-20\sim 40^{\circ}\text{C}$. Relative humidity $<85\%$ RH. No corrosive gases.

More than 3 months long-term storage environment:

temperature range for $-10\sim 35^{\circ}\text{C}$. Relative humidity $<65\%$ RH.

No corrosive gases.

If long-term storage is required, it should be recharged every 6 months, and no less than 80% of SOC should be charged.

Keep away from dust and messy zones, water source and heat source, prevent equipment from entering water and overheating.

3. Transportation requirements

- (1) When the product is transported separately, the individual products should be transported with the original packaging materials of the Seller. If long-distance transportation such as sea transportation is required, additional packaging measures should be taken to ensure the safety of transportation. The product stack in transportation does not exceed 4 layers.
- (2) If the product does not use Seller's original packaging material transportation, Buyer shall fully consider the risks of vibration, drop and collision in the transportation process, and adopt adequate product protection measures.

4. Equipment installation requirements

1	Visual inspection	Check the appearance of the damage and check the attachment variety and quantity according to the packing list. Verify that the device is in off state.
2	Electrical specification confirmation	The rated working voltage of the energy storage PACK is 48V, and it should be confirmed that the battery interface parameters of the energy storage inverter are consistent with the battery parameters. Confirm that the maximum charging and discharging current designed by the system meets the specification requirements of the energy storage PACK. The external power supply should not generate a surge, otherwise it will cause damage to the battery or BMS.
3	Connection	When connecting the power line, pay attention to the positive and negative electrode, avoid reverse connection and short circuit. It is forbidden to connect the battery directly to the ac power. The battery can be used in parallel but not in series. Do not mix batteries with other factory batteries or other types of batteries. The battery should be reliably grounded and the grounding resistance should be less than 1 Ω .

5. Equipment Use

1	Charging	The battery's long-term continuous charging current should be $\leq 0.5C$ Once the battery capacity is empty, please charge it within 48 hours.
2	Discharging	The long-term continuous discharge current of the battery should be $\leq 0.5C$ The recommend maximum depth of discharge (DOD) of the Battery PACK is not more than 90%.
3	Cycles	This Warranty covers a capacity equivalent to 1 full cycle per day for ten (10) years. 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.
4	Move	To remove the battery, disconnect the external power supply and turn off the switch.
5	Maintain	It is forbidden to open the battery shell or dismantle the components before obtaining the written authorization from the Seller.
6	Fire emergency	In case of emergency for the use of fire-fighting equipment, please use dry powder fire extinguishers only.