

Warranty Certificate for Shoto Li-ion battery integrated power system

Shuangdeng Group Co., Ltd (hereinafter referred to as SHOTO) is pleased to offer **5 years of warranty** (date from bill of lading) in **Energy storage application** for SDA10-48V power system under the following terms and conditions:

1. The ambient temperature should be in the range of 10 to 30 degree Celsius. The cumulative duration of the battery temperature in the range of 30 to 40 degree Celsius must not exceed 300 hours per year, and the battery should be shaded.
2. The battery can be used for Energy storage application scenarios, and the total Depth of Discharge (DOD) of battery cannot be exceed 80% every day. The cycling frequency can not exceed 2 times every day.
3. The depth of discharge of battery should be limited, which means that the discharge voltage of the battery can not be lower than 42V.
4. The charge parameter settings should be as under:
 - Float Charge Voltage: 54 VPC at 25 °C
 - Equalize Charge Voltage: 57.6 VPC at 25 °C
 - Maximum Charging Current: 1C₁₀ A
5. Parameters not claimed here shall be set in accordance with requirements of User Manual and Product Specification of SHOTO
6. For the sake of safe transportation and storage, we recommend that the factory state SOC of the battery is 70% in order to reach the maximum storage time of 6 months; it needs to be recharged immediately after 6 months.
7. During battery use, the recommended recharging period and battery SOC relationship are shown in the following table; if the battery is under low SOC (50%) for a long time, it will shorten the battery service life, so we will not provide a warranty if this case happens more than 3 times.

SOC/%	≤30	30~50	≥50
Recharging period/h	24	168	360

8. SHOTO would replace the battery during warranty period based on faulty block but not as whole string.
 9. SHOTO should not be held responsible for any physical damage, improper installation, handling and damage caused by any disaster.
 10. SHOTO guarantees that the battery remaining capacity is more than 80% its rated capacity within the warranty period.
 11. SHOTO suggests that user should keep and provide the following monthly logs if possible:
 - Number of cycles, duration of each time, the end voltage of discharge, and other recorded data.
 - Ambient and battery surface temperature.
 - The data that buyer thinks is necessary.
 12. Any storage and maintenance of this battery should refer to SHOTO's User Manual.
 13. The warranty period starts from the date of delivery from factory. This date can be read from the battery's serial number.
 14. Warranty claims must inform SHOTO within 1 months of battery failure. The buyer must cooperate to provide the operating temperature and parameter settings and history logs and so on. If necessary, the buyer should cooperate with our technical engineer to check on site.
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