STEALTH
ENERGY

Specifications

LTO (Lithium Titanate) Battery 13.8V 40Ah

Model# ABLT40

StealthEnergyUSA.com | 440.248.5858

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No	Item	Specifications
1	Nominal Voltage	13.8V
2	Nominal Capacity	40Ah
3	Cell inside	LTO Cylindrical cell 66160 2.3V 40AH
4	Configuration	6S1P
5	Continuous Discharge Current	400A (10C)
6	Peak Discharge Current	800A (20C)
7	Discharge Cut-off Voltage	9V (1.5V per cell)
8	Charge Cut-off Voltage	16.8V (2.8V per cell)
9	Balancing Start Voltage	2.7V per cell (adjustable between 2.5V ~2.8V)
10	Battery Net Weight	15.6 Kg (approx.)
11	Battery Dimension	14.2" (L) *10.1" (W)*9.3" (H) 360 (L)*255(W)*235 (H) mm
12	Connector	Pair of 3-hole aluminum blocks
13	Operating Temperature	Charging: 0°C ~ 45°C Discharging: -20°C ~ 55°C
14	Storage Temperature	Recommended to store 20 ± 5°C for long term storage
15	Life Cycle	>20000 times (80% of initial capacity at 1C rate, IEC Standard)

Technical Specifications

Test Condition:

1.) **Standard Charge:**
Charge the battery with constant current 0.5 C5A, when the voltage of battery reaches the charge limited voltage; charge the battery with constant voltage until the charging current below 0.05 C5A,the whole process is at 20±5°C.

2.) **Standard Discharge:**
Discharge the battery with constant current 0.5 C5A to the cut-off voltage at 20±5°C.

3.) **Standard Test Environment:**
Temperature: 25±2°C, Relative Humidity: 65±20%RH, Atmospheric Pressure: 86kPa~106kPa.

Electrical Performance:

No	Item	Testing Procedure	Requirements
1	Nominal Capacity	0.5~1h rest period after standard charge, the capacity shall be measured by discharging with constant current 0.5C_5A to the cut-off voltage of 39.0V at 20±5°C.	40Ah
2	High Capacity Discharging	0.5~1h rest period after standard charge, discharge with constant current 1C5A.	Discharge period is not less than 51 minutes. No strain, no explosion.
3	Low Temperature Discharging	After standard charge, put the battery in a box, the temperature of the box is -10±2°C at which temperature the box is to remain for 16~24h ,discharging with constant current 0.2C_5A, note the discharging time. After 2h rest period at 20±5°C, check the appearance of the battery.	Discharge period is not less than 3.5 hours. No strain, no explosion.
4	High Temperature Discharging	After standard charge, put the battery in a oven, the temperature of the oven is 55±2°C at which temperature the box is to remain for 2h, discharge with constant current 1C_5A,note the discharging time. After 2h rest period at 20±5°C, check the appearance of the battery.	Discharge period is not less than 51 minutes. No strain, no explosion.
5	Shelf Life	After standard charge, have a 28d rest period at 20±5°C, then discharge with constant current 0.2C5A ,note the discharging time.	Discharge period is not less than 4.25 hours.
6	Cycle Life	Fully discharge the battery before this test ,then charge it with constant current 1C_5A,when the voltage of the battery reaches the charge limited voltage, charge the battery with constant voltage until the charging current below 20mA,then have a 0.5h~1h rest period, next, discharge with current 1C_5A to the cut-off voltage .After a 0.5h~1h rest period ,begin next charge and discharge cycle when two times over discharge time is less than 36min, life of the battery is end.	Cycle life is not less than 20000 cycles. No liquid leakage during the test.

Environment Adaptability:

No	Item	Testing Procedure	Requirements
1	Constant Humidity and Temperature	After standard charge, have a 48h rest period in a box with a constant relative humidity 90 95% and a constant temperature 40±2°C,take out and have a 2h rest period, check the appearance. Finally discharge with constant current 1C5A to the cut-off voltage, note the discharging time.	No visible distortion, no rust, no smoke, no explosion. Discharging time is not less than 36min.
2	Vibration Test	After standard charge, fix the battery to oscillatory board, cycle scan in X/Y/Z axis three directions with a frequency from 10Hz to 55Hz for 30min,the scan velocity is 1oct/min, then check the appearance and measure the voltage of the battery. Frequency: 10Hz~30Hz; Displacement Amplitude/Single Amplitude: 0.38mm, Frequency: 30Hz~55Hz; Displacement Amplitude/Single Amplitude: 0.19mm	No visible damage, no liquid leakage, no smoke, no explosion.
3	Impact Test	After the vibration test, fix the battery to the board in X/Y/Z axis three directions. Pulse peak acceleration: 100m/s^2; Impact times /sec: 40~80; Pulse duration: 16ms; Impact times: 1000±10. Check the appearance and measure the voltage of the battery.	No visible damage, no liquid leakage, no smoke, no explosion.

Safety Performance:

No	Item	Testing Procedure	Requirements
1	Thermal-Shock Test (Heating Test)	24h rest period after standard charge ,put it in a oven, the temperature of the oven is to be raised at a rate of 5±2°C/min to a temperature of 150±2°C at which temperature the oven is to remain for 30 minutes ,then check the appearance of the battery.	No explosion, no fire
2	Short Circuit Test	24h rest period after standard charge, then short the positive and negative terminals of the battery with copper wire(maximum resistance ≤50mΩ),watch the change in temperature, when the temperature of the battery is 10°C lower than the peak value, end the test, check the appearance and the temperature of the battery.	No explosion, no fire. The temperature of the exterior cell casing shall not exceed150°C.

Storage and Others

Long Time Storage:

If the battery should be stored under -20°C~45°C. If it is stored for a long time (exceed three months) the battery should be stored under temperature of 23°C±3°C and humidity of 65%±20%RH at dry and cool place.

Others:

Any matters that this specification does not cover should be conferred between the customer and American Bass.

Handling Precautions and Guideline For Lithium Titanate Battery

Preface

This document of 'Handling Precautions and Guideline' shall be applied to the cell manufactured by AB (AB POWER LIMITED).

Note (1):

The customer is requested to contact AB in advance, if and when the customer needs other applications or operating conditions than those described in this document. Additional experimentation may be required to verify performance and safety under such conditions.

Note (2):

AB will take no responsibility for any accident when the cell is used under other conditions than those described in this document.

Note (3):

AB will inform, in a written form, the customer of improvement(s) regarding proper use and handling of the cell if it is necessary.

WARNING AND MATTERS NEED ATTENTION IN USAGE OF BATTERY

PLEASE PAY ATTENTION TO FOLLOWINGS IN CASE OF BATTERY WILL HAVE LEAKAGE, HEAT OR EXPLOSION.

Warning!

- Do not immerse the battery in water or seawater, and keep the battery in a cool dry surrounding if it stands by.
- Do not use or leave the battery near a heat source as fire or heater.
- Use the battery charger specifically for that purpose when recharging.
- Do not reverse the position and negative terminals.
- Do not connect the battery electrodes to an electrical outlet.
- Do not discard the battery in fire or a heater.
- Do not short-circuit the battery by directly connecting the positive and negative terminals with metal objects.
- Do not transport or store the battery together with metal objects such as hairpins, necklaces, etc.
- Do not strike, trample or throw the battery .
- Do not directly solder the battery and pierce the battery with a nail or other sharp objects.

Be Careful!!!

- Do not use or leave the battery at high temperature (for example, at strong direct sunlight or in a vehicle in extremely hot weather). Otherwise, it can overheat or fire or its performance will be degenerate and its service life will be decreased
- Do not use the battery in a location where static electricity and magnetic field is great, otherwise, the safety devices may be damaged, causing hidden trouble of safety.
- If the battery leaks and the electrolyte gets into the eyes , do not rub the eyes, instead, rinse the eyes with clean water, and immediately seek medical attention. Otherwise, it may injure eyes.
- If the battery gives off strange odor, generates heat, becomes discolored or deformed, or in any way appear abnormal during use, recharging or storage, immediately remove it from the device or battery charger and stop using it.
- In case the battery terminals are dirty, clean the terminals with a dry cloth before use. Otherwise poor performance may occur due to the poor connection with the instrument.
- Be aware of discarded batteries may cause fire or explosion; tape the battery terminals to insulate them.