

ALPHA 1 LITE

12.8V 100Ah

LiFePO₄ Battery



FEATURES

- Longevity of service
- IP65 waterproof and dustproof
- Flame retardant rating: UL94 V-0 (Plastic shell)
- Green energy without metal contaminant
- Extremely high number of charge / discharge cycles
- Light weight, small size
- In the extreme performance safety test, the battery will not catch fire, explode, or leak, and will be safer to use
- Sophisticated Battery Management System (BMS)

BMS OPERATION

Typical Charging Current	50A
Maximum Charging Current	100A
Typical Discharge Current	50A
Maximum Discharge Current	100A
Maximum Charge Voltage(CC/CV)	14.4V

Over Charge Protection

Voltage(Cell)	3.75V±0.03V
Delay Time	1000ms±500ms
Recovery Voltage(Cell)	3.55V (Min 3.40V, Max 3.60V)

Over Discharge Protection

Voltage(Cell)	2.20V±0.08V
Delay Time	1000ms±500ms
Recovery Voltage(Cell)	2.70V±0.10V

Over Discharge Protection Release Conditions	Disconnect load or charge release
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Over-Current Charge

Primary Charge Over Current Protection Value	180A±50A
First Stage Charge Over Current Delay	1000ms±500ms
Over-current Charge Release Conditions	Disconnect the charger

Over-Current Discharge

Primary Discharge Over Current Protection Value	900A±200A
Primary Discharge Over Current Protection Delay	10ms±5ms
Secondary Discharge Over Current Protection Current Value	1800A±400A
Secondary Discharge Over Current Protection Delay	1000us±500us

Over-current Discharge Release	Disconnect load or charge release
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Short Circuit

Short Circuit Protection Value	3600±600A
Short Circuit Protection Delay Time	200μs-800μs
Short Circuit Protection Recovery	Disconnect load or charge release

Discharge High Temperature Protection

Temperature Protection Value	167°F±9°F / 75°C±5°C
Temperature Protection Release Value	136.4°F±9°F / 58°C±5°C

Charging High Temperature Protection

Temperature Protection Value	129.2°F±9°F / 54°C±5°C
Temperature Protection Release Value	120.2°F±9°F / 49°C±5°C



ALPHATM Series Batteries

1-800-831-9889

www.richsolar.com

support@richsolar.com

5550 Jurupa St, Ontario, CA 91761



Charging Low Temperature Protection

Temperature Protection Value	28.4°F±9°F / -2°C±5°C
Temperature Protection Release Value	37.4°F±9°F / 3°C±5°C

High Temperature Protection Of FET(Built-in)

Temperature Protection Value	179.6°F-208.4°F / 82°C-98°C
Temperature Protection Release Value	122°F-176°F / 50°C-80°C

Balance Function

Equalizing Opening Voltage	3.50V±0.05V
Min Balance Current	150mA
Max Balance Current	250mA
Operation Temperature	-4°F-167°F / -20°C-75°C
Storage Temperature	23°F-104°F / -5°C-40°C (Humidity below 70%, time ≤ 1 year)

SPECIFICATIONS

Battery Type	LFP Battery
Nominal Voltage	12.8V
Nominal Capacity	100Ah
Minimum Capacity	99.5Ah
Nominal Energy	1280Wh
Charging Voltage	14.4V
Discharging Cutoff Voltage	11.2V
Standard Charging Current	50A
Maximum Charging Current	100A
Standard Discharge Current	50A

Continuous Discharge Current	100A
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Maximum Discharge Current	100A
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Shell Material	Plastic Shell
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Weight	About 24.3lb/11.0kg
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Initial AC (1000HZ) Internal Resistance	≤50mΩ, New battery within 3 months, ACIR, 1000HZ
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Monthly Self-Discharge Rate	≤5%
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Overall Dimensions	10.2x6.6x8.3in
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Cycle Life(Times)(25°C±2°C)	≥4000
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Charging Temperature

30A	32°F-50°F / 0°C-10°C
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50A	50°F-68°F / 10°C-20°C
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100A	68°F-104°F / 20°C-40°C
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30A	104°F-131°F / 40°C-55°C
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Discharge Temperature	-4°F-140°F / -20°C-60°C (The surface temperature of the cell should not exceed 60°C)
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Storage Temperature	-22°F-131°F / -30°C-55°C 90%RH Max (Less than 1 month) 14°F-113°F / -10°C-45°C 90%RH Max (More than 3 months)
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Recommended Storage Temperature	14°F-95°F / -10°C-35°C 85%RH Max (Battery life decreases when stored in high temperature)
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If the battery needs to be stored for a long time (more than 3 months), it should be stored in an environment which require temperature at a range of 14°F to 95°F (-10 to 35°C) @ 85% RH Max and no corrosive gases. It is recommended to charge and discharge the battery every 3 months and keep the SOC between 40-50%.