

ALPHA 1 PRO

12.8V 100Ah

LiFePO₄ Battery



FEATURES

- Internal heat technology
- Longevity of service
- ETL Certification
- Real-Time Monitoring
Monitors the battery operation status on mobile devices in real time with the built-in Bluetooth module
- 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)



Intertek
5029113

CONFORMS TO
ANSI/CAN/UL 1973

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)	3.65V±0.05V
Delay Time	2000ms±1000ms
Recovery Voltage(Cell)	3.55V±0.05V

Over Discharge Protection

Voltage(Cell)	2.50V±0.10V
Delay Time	2000ms±1000ms
Recovery Voltage(Cell)	3.00V±0.10V

Over Discharge Protection Release Conditions	Charge recovery or Voltage self recovery within 60s±20s
--	---

Over-Current Charge

Primary Charge Over Current Protection Value	110A±5A
First Stage Charge Over Current Delay	10s±3s
Over-current Charge Release Conditions	Automatic recovery after a delay of 32s±7s

Over-Current Discharge

Primary Discharge Over Current Protection Value	110A±5A
Primary Discharge Over Current Protection Delay	5s±2s
Secondary Discharge Over Current Protection Current Value	330A±80A
Secondary Discharge Over Current Protection Delay	320ms±150ms
Over-current Discharge Release	Automatic recovery after a delay of 32s±7s

Short Circuit

Short Circuit Protection Value	1000±250A
Short Circuit Protection Delay Time	400µs-800µs
Short Circuit Protection Recovery	Recovery by releasing load after approximately 5s±2s

Discharge High Temperature Protection

Temperature Protection Value	149°F±9°F / 65°C±5°C
Temperature Protection Release Value	140°F±9°F / 60°C±5°C

Low Temperature Protection Of Discharge

Temperature Protection Value	-20°F±9°F / -20°C±5°C
Temperature Protection Release Value	14°F±9°F / -10°C±5°C



ALPHATM Series Batteries

1-800-831-9889

www.richsolar.com

support@richsolar.com

5550 Jurupa St, Ontario, CA 91761



Charging High Temperature Protection

Temperature Protection Value	131°F±9°F / 55°C±5°C
Temperature Protection Release Value	122°F±9°F / 50°C±5°C

Charging Low Temperature Protection

Temperature Protection Value	41°F±9°F / 5°C±5°C
Temperature Protection Release Value	50°F±9°F / 10°C±5°C

High Temperature Protection Of FET(Built-in)

Temperature Protection Value	212°F-230°F / 100°C-110°C
Temperature Protection Release Value	176°F-194°F / 80°C-90°C

Balance Function

Equalizing Opening Voltage	3.45V±0.05V
Equalize The Opening Pressure Difference	15mV
Min Balance Current	40mA
Max Balance Current	100mA
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)

Heating Function

Heat the Opening Temperature	≤5°C
Heating Opening Conditions	charge
Heating And Closing Conditions	Disconnect the charger or Temperature ≥10°C
Heating Function	100W

SPECIFICATIONS

Battery Type	LFP Battery
Nominal Voltage	12.8V
Nominal Capacity	100Ah
Minimum Capacity	100Ah
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
Maximum Discharge Current	100A
Shell Material	Plastic Shell
Weight	About 24.3lb/11.0kg
Initial AC (1000HZ) Internal Resistance	≤50mΩ, New battery within 3 months, ACIR, 1000HZ
Monthly Self-Discharge Rate	≤5%
Overall Dimensions	10.2x6.6x8.3in
Cycle Life(Times)(25°C±2°C)	≥7000
Communication Mode	Bluetooth

Charging Temperature

30A	32°F-50°F / 0°C-10°C
50A	50°F-68°F / 10°C-20°C
100A	68°F-104°F / 20°C-40°C
30A	104°F-131°F / 40°C-55°C

Discharge Temperature	-4°F-140°F / -20°C-60°C (The surface temperature of the cell should not exceed 60°C)
-----------------------	---

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)
---------------------	--

Recommended Storage Temperature	14°F-95°F / -10°C-35°C 85%RH Max (Battery life decreases when stored in high temperature)
------------------------------------	---

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%.