RICH SOLAR | ALPHA™ Series Batteries

1-800-831-9889
www.richsolar.com
support@richsolar.com
5550 Jurupa St, Ontario, CA 91761

ALPHA 5 PRO

51.2V 100Ah

LiFePO4 BATTERY

FEATURE

CLOSED LOOP COMMUNICATIONS
Compatible with multiple brands of inverters.

REMOTE MONITORING APP
See real-time statistics of your battery.

PARALLEL UP TO 15 BATTERIES
Get the most power possible! Up to 76.8 kWh while maintaining BMS communications.

BUILT-IN CIRCUIT BREAKER
Offer fail-safe operation in high risk environments and protect against rare hardware failure on high voltage solar charge controllers.

WELDED PRISMATIC CELL CONNECTIONS
Never worry about losing power due to a loose internal connection.

RACK-MOUNT DESIGN
3U server rack mounting makes it convenient to store.

LOW TEMPERATURE PROTECTION
Charging off below 32°F feature ensures stable charging performance in cold weather conditions.

FC C ETL LISTED US Intertek 5029113 CONFORMS TO ANSI/CAN/UL 1973

SPECIFICATIONS

Battery Type	LFP Battery
Nominal Voltage	51.2V
Nominal Capacity	100Ah
Minimum Capacity	99.5Ah
Nominal Energy	5120Wh
Charging Voltage	57.6V
Discharging Cutoff Voltage	44.8V
Standard Charging Current	20A
Maximum Charging Current	100A
Standard Discharge Current	50A
Continuous Discharge Current	100A
Maximum Discharge Current	100A
Shell Material	Sheet metal casing
Weight	99.20lb
Initial AC (1000Hz) Internal Resistance	≤50mΩ
Monthly Self-Discharge Rate	≤5%
Overall Dimensions	17.7x17.8x5.2in
Cycle Life(Times)(25℃±2℃)	≥4000; Capacity Retention≥70%
Charging Temperature	
0℃~10℃	0.1C
10℃~20℃	0.2C
20℃~25℃	0.5C
25℃~45℃	1.0C
45℃~55℃	0.3C
55℃~60℃	0.2C
Discharge Temperature	-20℃~65℃ (The surface temperature of the cell should not exceed 65℃)
Storage Temperature	-20℃~45℃ 90%RH Max (1 month) 0℃~35℃ 90%RH Max (6 months)
Recommended Storage Temperature	0℃~35℃ 85%RH Max (The battery life would be reduced if battery is stored in high temperature.)

BMS OPERATION

Operation Voltage	Voltage Range	43.2~58.4V
Operation Current	Maximum Charging Current	100A
	Maximum Discharge Current	100A
Over Charge Protection	Maximum Charge Voltage (CC/CV)	57.6V
	Over charge Protection Voltage(Cell)	3.65V
	Over charge Protection Voltage (Battery)	58.4V
	Over charge Protection Delay Time	1000ms
	Over charge Protection Release Voltage (Cell)	3.38V
	Over charge Protection Release Voltage (Battery)	54V
	Over charge Protection Release Condition	Reaching release voltage, discharge current>2A or SOC<96%
Over Discharge Protection	Over Discharge Protection Voltage (Cell)	2.7V
	Over Discharge Protection Voltage (Battery)	43.2V
	Over Discharge Protection Delay Time	1000ms
	Over Discharge Protection Release Voltage (Cell)	2.95V
	Over Discharge Protection Release Voltage (Battery)	47.2V
	Over Discharge Protection Release Condition	Reach the recovery voltage or charging current > 1A
Over-Current Charge	Primary Charge Over Current Protection Value	110A
	First Stage Charge Over Current Delay	1S
	Charging Overcurrent Release Conditions	Delay automatic recovery or discharge recovery The lock is locked after the protection count reaches 10
	Release Conditions After Locking	Discharge current > 1A or restart the battery after shutdown
Over-Current Discharge	Primary Discharge Overcurrent Protection Value	110A
	Primary Discharge Overcurrent Protection Delay	1S
	Secondary Discharge Overcurrent Protection Current Value	150A
	Secondary Discharge Overcurrent Protection Delay	500ms
	Over-current Discharge Release	Delay automatic recovery or charge recovery The lock is locked after the protection count reaches 10
	Restore Condition After Lock	Charge current > 1A or restart the battery after shutdown
Short Circuit	Protection Delay Time	150μs
	Protection Release	Restore after charging or removing load
Discharge High	Temperature Protection Value	60℃
	Temperature Protection Release Value	50℃
Discharge Low	Temperature Protection Value	-20℃
	Temperature Protection Release Value	-15℃
Charging High	Temperature Protection Value	60℃
	Temperature Protection Release Value	50℃
Charging Low	Temperature Protection Value	0℃
	Temperature Protection Release Value	5℃
High Temperature Protection	Temperature Protection Value	115℃
Of FET (Built-in)	Temperature Protection Release Value	85℃
Balance Function	Equilibrium turning-on condition (turn-on voltage and turn-on/off voltage difference)	3.4V (0.03V)
Operation Temperature	Normal Operating Range	-20~75℃
Storage Temperature	Humidity Below 70%, Time ≤1 year	-10~75℃
Charge Discharge Circuit	Charge Discharge Circuit	Same port for charging and discharging