

# ALPHA 5 PRO

## 51.2V 100Ah

### LiFePO<sub>4</sub> 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.

## SPECIFICATIONS

|   |   |
|---|---|
| Battery Type                            | LFP Battery   |
| Nominal Voltage                         | 51.2V   |
| Nominal Capacity                        | 100Ah   |
| Minimum Capacity                        | 99.5Ah  |
| Nominal Energy                          | 5120Wh  |
| Charging Voltage                        | 56V   |
| 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°C±2°C)             | ≥7000; Capacity Retention≥70%   |
| <b>Charging Temperature</b>             |   |
| 0°C~10°C                                | 0.1C  |
| 10°C~20°C                               | 0.2C  |
| 20°C~25°C                               | 0.5C  |
| 25°C~45°C                               | 1.0C  |
| 45°C~55°C                               | 0.3C  |
| 55°C~60°C                               | 0.2C  |
| Discharge Temperature                   | -20°C~65°C (The surface temperature of the cell should not exceed 65°C)       |
| Storage Temperature                     | -20°C~45°C 90%RH Max (1 month)<br>0°C~35°C 90%RH Max (6 months)               |
| Recommended                             | 0°C~35°C 85%RH Max  |
| Storage Temperature                     | (The battery life would be reduced if battery is stored in high temperature.) |



US CONFORMS TO  
ANSI/CAN/UL 1973

Intertek  
5029113

## 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<br>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<br>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°C   |
|                             | Temperature Protection Release Value  | 50°C   |
| Discharge Low               | Temperature Protection Value  | -20°C  |
|                             | Temperature Protection Release Value  | -15°C  |
| Charging High               | Temperature Protection Value  | 60°C   |
|                             | Temperature Protection Release Value  | 50°C   |
| Charging Low                | Temperature Protection Value  | 0°C  |
|                             | Temperature Protection Release Value  | 5°C  |
| High Temperature Protection | Temperature Protection Value  | 115°C  |
| Of FET (Built-in)           | Temperature Protection Release Value  | 85°C   |
| 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°C   |
| Storage Temperature         | Humidity Below 70%, Time ≤1 year  | -10~75°C   |
| Charge Discharge Circuit    | Charge Discharge Circuit  | Same port for charging and discharging   |