

Technical specification

LITHIUM-ION BATTERY

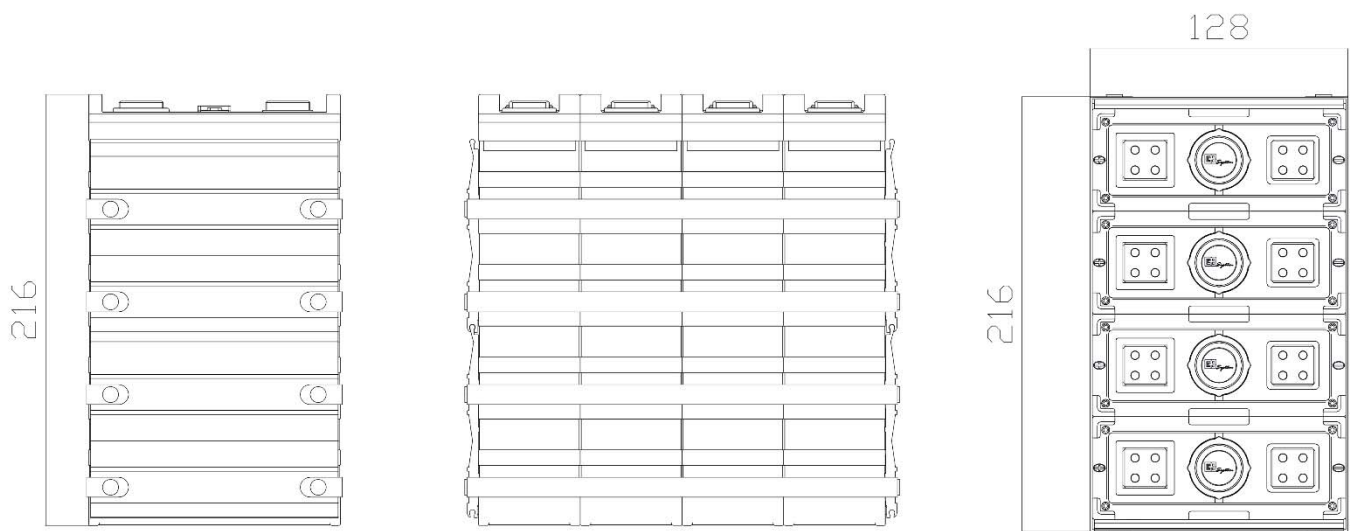
GBS-12V100Ah-E

(V3.0)



This specification describes the technical requirements, test procedure and precaution notes of LiFePO4 type Lithium Ion Battery.

1. Appearance



GBS-12V100Ah-E

Length	216 mm
Width	128 mm
Height	216 mm

2. Designation

1. Product: Lithium Ion Battery
2. Model: GBS-12V100Ah-E
3. Designation: **GBS - 12V 100Ah - E**
 - GBS** - Indicates manufacturer.
 - 12V** - Indicates voltage of battery.
 - 100Ah** - Indicates capacity of battery.
 - E** - Indicates type of battery.

3. Specification

Item	Specifications
Model	GBS-12V100Ah-E
Rated capacity	100Ah
Nominal voltage	12V
Standard charge rate	0.25C
Fast charge rate	1.0C
End of charge voltage	14.2V
Standard discharge rate	0.5C
Max discharge rate	1.0C
Instantaneous discharge rate	3C (10s)
End of discharge voltage	11.2V
Working temperature	-20 ~ 65°C
Cycle life	3000 cycles (0.5C)
Weight	9.5 ± 0.5 kg
Dimension	216x128x216 ± 1 mm
Shell	PP

4. Basic Performance

1. Output with high rate. Instantaneous impulse discharge current can reach 10C for 2 seconds.
2. Good performance at high temperature. It can work at 65°C with safe and good battery structure.
3. Good performance at low temperature. Discharge capacity is no less than 90% of rated capacity when discharging with 1C at -20°C, no less than 70% of rated capacity with 0.33C.
4. Good safety performance. When the pressure inside the battery is too large, the one-way safety valve will release gas and heat to make sure battery works well. When the internal pressure reaches a certain level, the valve will be open immediately which can protect the battery from burning and explosion.
5. Good cycle life. The discharge capacity is still over 80% after 3000 cycles of charge and discharge (80% DOD).
6. Fast charging. It can be charged to 80% within 0.5h and charged full with 1h.
7. Low cost.
8. Environmentally friendly. No pollution during production and usage.

5. Matters needing attention



ATTENTION

Please read and understand the safety Guidelines and Instructions before using or changing GBS Lithium ion battery. Failure to do so may result in fire, personal injury, or property damage if it is used improperly. GBS assumes no liability or warranty claim for failure to comply with the Guidelines and Instructions.

1. Lithium ion battery cell must be used with battery management system(BMS). Every Lithium ion battery cell must be monitored and automatically protected by BMS against over charging and over discharging. They will cause permanent damage to battery cells and packs, and possibly lead to unsafe operating conditons, such as fire.
2. Always implement safety devices such as fuses and contractors together with BMS to disrupt charging and discharging circuits when unsafe conditions occur, such as over voltage, under voltage, over current, short circuit, over temperature, under temperature, etc.
3. If a non-GBS provided BMS is desired, buyer must send BMS specification to GBS for review and approval prior to installation.
4. If a non-GBS provided charger is desired, buyer must submit the charger specification to GBS for review and approval prior to use.
5. Read the specifications of GBS Lithium ion battery before use and charging. Always charge and discharge Lithium ion battery within the specified parameter ranges based on individual cell voltages and temperatures.
6. Battery, BMS, charger and other control delectronics must be installed or kept in a dry area. Avoid exposure to water, such as rain, splashes and moisture condensation.
7. Battery packs and control systems must be securely installed. Avoid any movment of battery, connections, wiring and electronics during use.
8. Avoid short circuiting battery cells or packs. A short circuit condition will cause permanent damage to battery cells and packs, and possibly lead to unsafe operating conditions, such as fire. Attention shall be paid when installing bus bars, cables and BMS components on the cell terminals. Tools, such as screw drivers and wrenches should be of a properly rated, electrically insulated type.
9. Make sure that the surfaces of battery terminals and bus bars are clean and dry. All screws must be tightened properly on the battery terminals before battery is used. Loose connections will result in high contract resistance, heat generation, and can potentially be a fire hazard.
10. Make sure bus bar stacks, terminal connectors and cables are adequately sized to handle the maximum charge and discharge current. Inadequately sized bus bar stocks, connectors and cables will cause over heating and result in a potential fire hazard. Always use current limiting devices such as fuses or circuit breakers.
11. There is a risk of electric shock when working on a Lithium ion battery pack. Always wear personal protective equipment(PPE) when working on a battery pack as per relevant standard.

12. GBS batteries are strapped with Aluminum plates and steel bars. The strapping hardware provides compression to the pack and prevents possible swelling. Removing this strapping hardware may result in cells swelling during use, which will result in accelerated aging and shorter lifetime.

6. Requirement for safety assurance

For the sake of safety, please discuss with us if you have any question about battery system design, BMS etc. We will serve you as always.

Thank you!

