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User Manual

12V/24V
Rechargeable Battery
Lithium Iron Phosphate(LiFePO4)

BASENGREEN YOUR RELIABLE POWER



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PRODUCT INFORMATION

The battery is designed and intended only for using in energy storage applications. Equipped with JBD battery management system (BMS), it can manage and monitor the performance of the battery during charging and discharging to ensure the safety and optimization of the battery. Common applications include utility trucks, emergency vehicles, RVs, yachts, golf carts, solar street lighting, UPS, emergency lighting, alarm systems and photovoltaic energy storage.

| Specification | | | | | | | | | | |
|---------------------------------|---------------------|-------------|---------------------|-------------|-------------|---------------------|-------------|---------------------|-------------|-------------|
| Model | BG-12100 | BG-12160 | BG-12200 | BG-12230 | BG-12300 | BG-12460 | BG-24100 | BG-24200 | BG-24230 | |
| Nominal Voltage | 12.8V | | | | | | | | | |
| Capacity | 100Ah | 160Ah | 200Ah | 230Ah | 300Ah | 460Ah | 100Ah | 200Ah | 230Ah | 230Ah |
| Cycle times | 4000(DoD 80%, 25°C) | | 5000(DoD 80%, 25°C) | | | 4000(DoD 80%, 25°C) | | 5000(DoD 80%, 25°C) | | |
| Discharge | | | | | | | | | | |
| Max. Continue Discharge Current | 100A | 150A | 100A | 150A | 150A | 150A | 100A | 100A | 100A | 150A |
| Discharge Cut-off voltage | 10.8V | | 21.6V | | | | | | | |
| Operation Temperature | | | | | | | | | | |
| Charge Temperature | 0°C-55°C | | | | | | | | | |
| Discharge Temperature | -20°C-60°C | | | | | | | | | |
| Storage Temperature | 0°C-45°C | | | | | | | | | |
| Protection Class | IP65 | | | | | | | | | |
| Charging | | | | | | | | | | |
| Charging Method | CC-CV | | | | | | | | | |
| Cut-off Charging Voltage | 14.6V | | | | | | | | | |
| Max. Charging Current | 100A | 150A | 100A | 150A | 150A | 150A | 100A | 100A | 100A | 150A |
| Other | | | | | | | | | | |
| Terminals | M8(Threaded-hole) | | | | | | | | | |
| Size(mm) | 330*172*220 | 330*172*220 | 384*194*255 | 384*194*255 | 522*269*220 | 522*269*220 | 522*240*218 | 522*269*220 | 522*269*220 | 522*269*220 |
| Weight | 12kg | 17kg | 24kg | 25kg | 30kg | 41kg | 24kg | 41kg | 41kg | 41kg |

Installation Instructions

- When replacing various deep cycle applications, please ensure the battery capacity is not less than the original lead-acid battery
- Please check the "Charging Instructions" before installation
- When connecting in series or in parallel, please ensure that the capacity and voltage of each battery are consistent (see "SERIES AND PARALLEL CONNECTION INSTRUCTIONS")
- Please check the battery to ensure the terminals are clean and rust-free, the screws are clean and free of foreign objects
- Please ensure that the screws on the terminals are fixed/tightened to the maximum to avoid loosening during operation. Make sure the washers are not placed between conductive connectors
- Please ensure that the cable connecting to the battery terminals is rated for the Max Continuous Amperage

Charging Instructions

- Please ensure the charging voltage is 14.6V (+/- .2V) to 12V battery, 29.2V(+/- .2V) to 24V battery when charging the battery
- The charging current must not exceed the maximum charging current indicated in the PRODUCT INFORMATION section of this User Manual
- The batteries used in series do not need to be disassembled for separate charging. Also ensure that the individual batteries are fully charged before connecting in series (For more details refer to "SERIES AND PARALLEL CONNECTION INSTRUCTIONS")
- Please charge at an ambient temperature of 32°F to 131°F (0°C to 55°C). Charging below 32°F or above 131°F may cause irreversible damage to the battery or pose a safety risk
- Do not leave the battery charger connected to maintain or store the battery unless specifically programmed for 3-stage LiFePO4 battery charger. Leave the charger unattended at your own risk

- To charge a battery with a solar charging system, make sure the charging voltage is <14.6V(+/- 0.2V) to 12V battery/29.2V(+/- 0.2V) to 24V battery. If charging the 12V battery in a series, please ensure the charging voltage is <14.6V times the series number(e.g. The charging voltage for a 4 Series Battery should be <58.4V, and the charging current must follow the instruction outlined in "Charging Instructions")

Discharge Instructions

- Please do not exceed the maximum discharge current listed in the table under the "PRODUCT INFORMATION" section
- The maximum continuous power should not exceed "Volt*Capacity" W (i.e. In 12.8V100Ah, the maximum continuous load should not exceed 1280W)
- Do not mix a new battery with a used battery in the same configuration

RECOMMENDED CHARGING/DISCHARGE SETTING

| Model | 12V LiFePO4 Battery | 24V LiFePO4 Battery |
|----------------------------|---------------------|---------------------|
| Charging Limit Voltage | 14.6V | 29.2V |
| Equalizer Charging Voltage | 14V | 28V |
| Floating Charging Voltage | 13.8V | 27.6V |
| Balancing Voltage | <13.2V | <26.4V |
| Discharge Cut-off Voltage | 10.8V | 21.6V |
| Low voltage of Recover | 11.8V | 23.6V |
| Short Circuit Protection | 250μs | 250μs |

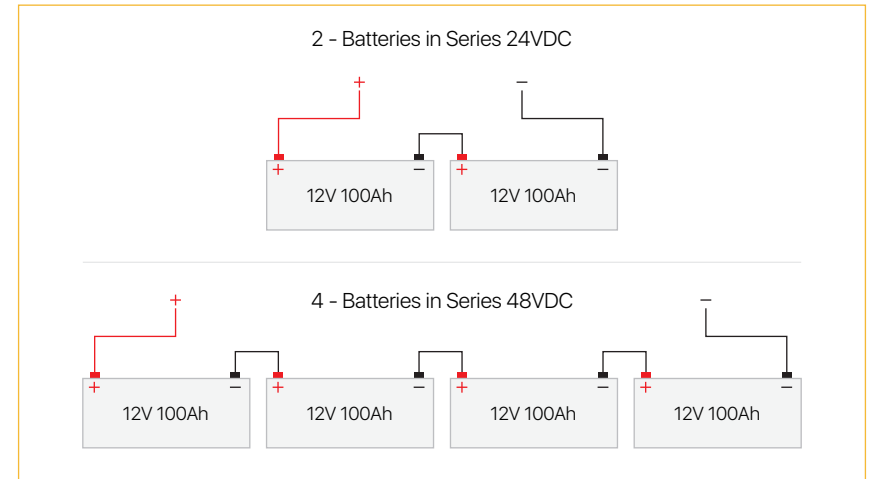
SERIES AND PARALLEL CONNECTION INSTRUCTIONS

| Model | Threading | Torque | Recommended Wire Gauge | Length |
|----------|-----------|--------|------------------------|-------------------|
| 12V100Ah | M8 | 10 Nm | 4AWG | 30~40cm /12~16int |
| 12V160Ah | M8 | 10 Nm | 4AWG | |
| 12V200Ah | M8 | 10 Nm | 4AWG | |
| 12V230Ah | M8 | 10 Nm | 2AWG/4AWG | |
| 12V300Ah | M8 | 10 Nm | 2AWG/4AWG | |
| 12V460Ah | M8 | 10 Nm | 2AWG/4AWG | |
| 24V100Ah | M8 | 10 Nm | 4AWG | |
| 24V200Ah | M8 | 10 Nm | 2AWG/4AWG | |
| 24V230Ah | M8 | 10 Nm | 2AWG/4AWG | |

- To tighten bolts, use the correct tightening torque, as shown in the table above, and use insulated tools corresponding to the size of the nuts
- This battery supports 4 sets of batteries connected in parallel. For example, four 12V 100AH batteries can be connected in parallel to obtain a 12V 400AH battery, and if connected in series, a 48V100AH battery can be obtained. In the state of parallel connection, the length and gauge of the positive and negative power wiring need to be exactly the same.

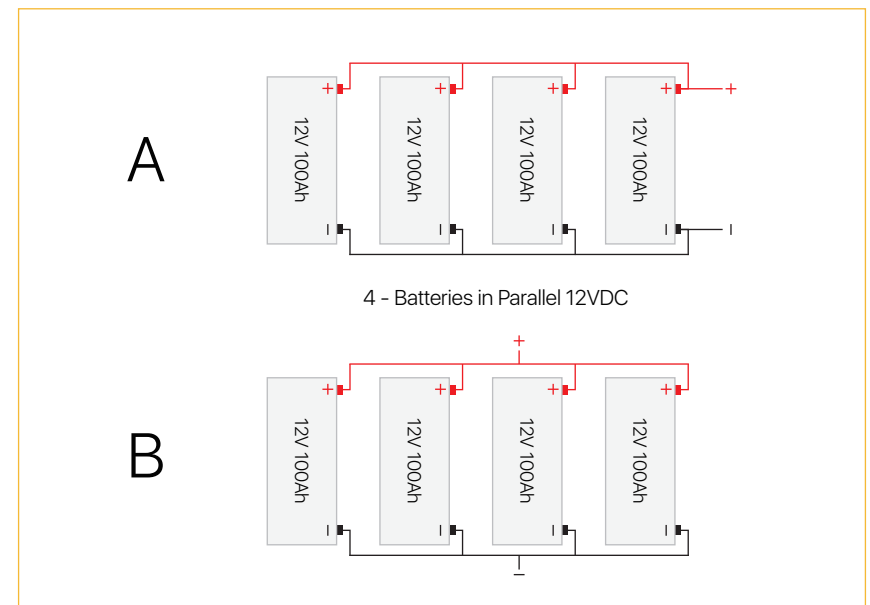
Wiring Diagram for Batteries in Series

Lithium Batteries in Series



Wiring Diagram for Batteries in Parallel

Lithium Batteries in Parallel



Note: parallel wiring for the positive and negative must be the same gauge and length

Warning and Attention

- Do not reverse the positive and negative of the battery
- Do not touch or store the electrodes of the battery with unnecessary wires or other metal materials to avoid short circuit
- Do not puncture, impact, drop, or step on the battery
- Do not disassemble the battery or modify the outer casing
- Do not expose the battery to the sun since this may cause overheating, fire, or failure of the battery
- Do not put the battery in a fire or heat the battery. Do not store the battery in a high temperature environment
- Do not put the battery into water or expose it to rain for a long period of time. The battery should be stored in a cool and dry environment
- If you detect any abnormal smell or noise while charging or discharging, remove the battery immediately and contact the dealer
- When the battery is operated in the temperature range of 32°F to 122°F (0°C to 50°C) the capacity may decrease, but this does not mean that the battery is damaged

Storage and Transportation

| Item | | Criteria |
|---------------------|-----------|-----------------------------|
| Storage temperature | <1 month | 32°F to 113°F (0°C to 45°C) |
| | <3 months | 32°F to 104°F (0°C to 40°C) |
| | >3 months | 32°F to 86°F (0°C to 30°C) |
| Relative Humidity | | <75% RH |
| SOC | | 40%~60% |

- To ensure longer battery lifespan, please recharge the battery every 3-6 months

- Please ensure the battery terminals and screw holes are clean and securely connected
- If the load is in an unused situation for a long time, disconnect the battery from the load to prevent the battery from leakage and causing the battery to be over-discharged
- Insulation and shockproof materials should be used for the outer packaging to avoid sudden collisions and squeezing during transportation

Troubleshooting

| NO. | Symptom | Possible Causes | Corrective Actions |
|-----|-----------------------------------|---|--|
| 1 | No DC Output | Battery being protected by BMS | Check the circuits/working environment and confirm the load power to ensure battery is being charged/discharged within Max charging/discharging current stated in the Specifications |
| | | BMS failed | Replace the battery |
| 2 | Battery working time is too short | The charging voltage is too low and battery cannot be fully charged | Adjust the charging voltage 14.4V(12V batt) 28.8V(24V batt) |
| | | The load voltage is too high and the battery cannot be fully discharged | Reduce the load voltage or replace the battery with a larger capacity one |
| | | Over temperature | Lower down ambient temperature |
| 3 | Battery heat up | Battery capacity becomes lower | Replace the battery |
| | | Over current | Reduce the load power |
| | | Over temperature | Working within the operating temperature |
| 4 | Spark occurs on cable terminals | Initial connect to capacitive or inductive load | No action is required |
| | | Power supply short circuit | Check the cause of the short circuit and disconnect it |

Bluetooth

Download the BASENGREEN app



Android



iOS

BASIC INFORMATION

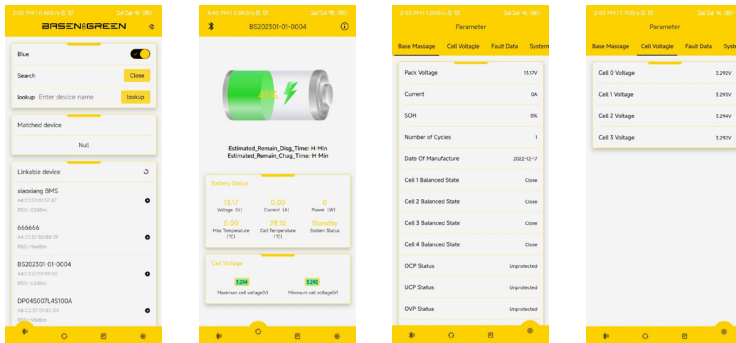
All information available in the battery, such as the state of charge, voltage, operating current, temperature, and other operating information are transmitted in real-time via the Bluetooth transmitter. The parameters can be made visible with the BASENGREEN App.

Note: The battery needs two deep charge/discharge cycles before it can be calibrated to the correct nominal capacity.

SEARCH & CONNECT TO THE BATTERY

1. Turn on the Bluetooth & GPS on your phone, search the devices
2. Choose devices connecting
3. Real-time page display
4. Check more information of the battery pack

NOTE: If you selected a battery to connect to and the app doesn't confirm the connection, it might be someone else is already connected to the battery. Only one device connects to the battery at the same time.



FAQ

1. Why choose BASEN

A: -----

- Worry-free after-sales service with a 5-year battery warranty
- Ready stock in US/EU warehouses, faster lead & delivery time.
- All required professional certificates: CE/ROHS/IEC.
- Automotive-grade battery cells with the most competitive price

2. What battery do I need for different applications?

A: To choose a proper battery for your application, you need to refer to the required wattage of power draw & running time of the application, and choose a suitable battery model accordingly. Please feel free to email us to chat with us or consult us at info@basengroup.com and we will help recommend the proper battery for your application

3. Compared with lead-acid batteries, what are the advantages of LiFePO4 batteries?

A: -----

- DEPTH OF DISCHARGE (DOD): About 85% of the energy capacity can be drained before they need to be charged 95% EFFICIENCY over 950W can be used for every 1000w of solar power absorbed by batteries.
- HIGHER ENERGY DENSITY OR CAPACITY Store a higher amount of energy for the same size
- LESS COST: while lead-acid batteries may ostensibly be more affordable, the long-lasting life cycles and effectiveness of LiFePO4 batteries offset that costs.
- 4000+CYCLES LIFESPAN: BASEN LiFePO4 batteries can be for 4000+ cycles while lead-acid batteries typically only have about 200-500 charge cycles

4. If my package has been damaged or defective, what should I do?

A: We have analyzed and tested every battery before they're ready to be sold. However, sometimes the battery may be damaged or defective due to incorrect handling in transit or delivery. If unfortunately the battery you receive is damaged or defective, please don't worry and feel free to contact us at any time. We will always try our best to provide you with the best solution

5. Does your battery have a low-temperature cut-off function?

A: Yes, all of the 12V/24V battery pack has low-temperature protection function. But if you need the battery packs to work under 0°C, please contact BASEN for the optional self-heating function.

6. How to choose the right battery chargers?

A: Before choosing a charger for your BASEN LiFePO4 battery, you can refer to the following info: Dedicated LiFePO4 battery charger /support LiFePO4 charging mode: DC charging voltage and DC charging current match the requirement that we list in the user manual. Please contact BASEN customer service center for more details

7. Are the batteries waterproof?

A: Our batteries are IP65 rated. Because the battery terminal's positive and negative electrodes are charged. So even if the battery is sealed, waterproof and dustproof grade to IP65, the battery is not allowed to be used in water. Therefore, our batteries require special battery box protection

3 WAYS TO RECHARGE THE BATTERY



12V(14.6V)10A
Lifepo4 Battery
Charger: 10 hrs



Solar Panels
(Recommend ≥300W)
within 4.26 hrs



Generator
(Add a 20A DC
to Charger): 5 hrs

5-Year Battery Warranty

Start Date:
(Receiving Date) _____

Alibaba Order ID _____

Take a little time to leave us a FRIENDLY REVIEW on Alibaba & get your FREE GIFT by contacting us.

Warranty:

BASEN warrants this battery is free from defects for 5 years. If the battery was defective by some improbable circumstances(including transportation or non-human factors), BASEN will replace the battery and cover the replacement shipping fees, proof of purchase and details(picture or video) will be requested. BASEN does not warrant batteries that have been poorly maintained, charged incorrectly, reversed polarity, improperly installed, stored, and used in excessive heat, physical damage, fire, freeze, water damage, tampered, damage to terminals, failing to keep the correct charge to the battery or use that exceeds rated charge/discharge cycles.

BASEN has a technicians team to provide technical support when needed. The customer is responsible for shipping fees if the product defected by human factors.

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