LiFePO4

FULBAT®

Motorcycle battery
Batterie pour moto
Batteria per moto
Batería de moto
Bateria de motocicleta
Мотоциклетный аккумулятор


FULBAT®

UK, INSTRUCTION MANUAL P.4

FR, MANUEL D’INSTRUCTION P.12

IT, MANUALE D’ISTRUZIONI P.19

ES, MANUAL DE INSTRUCCIONES P.26

PT, MANUAL DE INSTRUÇÕES P.33

RU, РУКОВОДСТВО ПО ЭКСПЛУАТАЦИИ P.40

EN

INSTRUCTIONS FOR USE AND CARE

WARNING

Please read the instructions carefully before using the battery.



Fulbat could not be held responsible for the consequences of improper installation and/or misuse of the battery inside your vehicle.
If you have any problem or doubt, for your security we recommend you to contact a professional.



Read and understand all safety information before using this product. Failure to follow these safety instructions may result in electrical shock, explosion, fire, which may result in a serious injury, death, or property damage.



Wear eye protection when operating product. Batteries can explode and cause flying debris. In the case of contamination of eyes or skin, flush affected area with running clean water and contact poison control immediately.



Keep children away from batteries.



Never short-circuit the battery terminals. Do not use with an incompatible charging device. Do not attempt to jump start, charge, or discharge the battery if damaged or frozen. Never charge or discharge the product outside its operating temperatures. Never over-charge or over-discharge the battery. Never exceed the maximum charging currents of the battery. Never incinerate.



The product is an electrical storage device that can emit heat. Do not cover product or place objects on top of the product. Keep the product away from combustible materials.



The instructions must be followed during transportation. Never dispose old batteries in a domestic bin.

FEATURES

- Long lifespan: it can serve for 5-8 years if operated properly, whichis at least twice of lead acid battery's lifespan.
- High effective lithium iron phosphate (LiFePO4) cell technology, and max instantaneous discharge current is higher than 80°C.
- Better low-temperature starting performance than similar products, and is more ideal for application under low-temperature condition.
- Low self-discharge rate: without periodic charging, the battery is still able to start the engine after it has been stored for 12 months at room temperature (the suitable temperature is 10°C - 25°C).
- Light weight: high energy density, with only one third of lead acid battery's weight.
- Very safe: the product utilizes a dynamic Battery Management System (BMS) that monitors the internal lithium-ion cells and disconnects them if a fault occurs. The BMS protects against over-charge and over-discharge. The BMS also includes cell balancing to maintain voltage balance between individual cells to ensure optimal battery performance. The BMS automatically recovers from fault conditions without user intervention.
- Waterproof design.
- Truly green energy and environment-friendly.
- Working temperature: -20°C~80°C

CAUTIONS

- The battery can not catch fire or explode in normal operation. If the battery is used in an environment that is not referred to in this document, please contact us for authorization. We will bear no responsibility or compensate any loss as a result of incorrect usage.

- Do not charge battery by charging voltage more than 15V.
- Do not charge battery by charger with function of automatic desulfation mode.
- Do not short-circuit batteries or reverse polarity.
- Do not disassemble, deform or modify batteries.
- Do not directly connect the battery to an electrical outlet.
- Do not overcharge or overdischarge batteries.
- Keep batteries out of the reach of children.
- Make sure batteries are fully discharged before proper disposal.
- Store batteries in a cool, dry, well-ventilated area.
- Charge batteries at least every 6 months or when the voltage is less than 12.8V.
- Fit batteries with spacer if necessary.
- Do not try to take apart the battery! Do not touch the battery directly if the electrolyte leaks, as the electrolyte may cause hurt to skin & eyes. If skin contact occurs, wash skin immediately with soap and water. If eye contact occurs, flush immediately with water and get prompt medical help.
- The function can become poor when environment temperature is lower than 0°C.
- Do not use the battery in combination with primary batteries (such as dry cell batteries) or batteries of different capacity, type or brand.
- Please follow the instructions strictly, and failure to obey (i.e. short-circuit the battery or discharge it by a bigger current than it allows) may cause battery smoke, fire and endanger person safety.

CHARGING

- The new battery can be used directly if the voltage is above 13V, while an initial charging is still recommended until battery is fully-charged.
- Charge the lithium battery with a lithium charger battery or with a 12V lead acid battery charger without desulfation or pulse charge function. The maximum charge current recommended is 1C, corresponding to one time the capacity of the battery. (Example: for a 3Ah battery, a charge current of 3A will be the maximum.)
- Charge the battery with a lower current than the Maximum Charging
- In order to maximize the battery lifespan, please ensure the charging time not exceed 30 minutes while charging at the maximum current even if the battery has been completely discharged.

- The charging voltage should never be higher than 15V.
- When charging separately, always remove the battery from the vehicle.
- Current found in the specifications Data.
- If the battery seems hot when touching, stop charging. Allow battery to cool down before resuming.
- After charging, leave the battery for 1 to 2 hours before checking the voltage.
- If the voltage is less than 12.4V, additional charging is necessary.

INSTALLATION

- Please check the battery state before installation, and charge it if necessary.
- Press test button in order to check the battery voltage and SOC in %.
  LCD screen will automatically set off after 10 seconds.

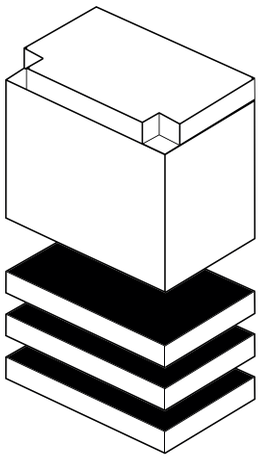
Voltage	13.2	13.0	12.8	12.6	12.4	12.2	12.0	11.8	11.6	11.4	11.2
SOC	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%

- When the battery voltage is lower than 12.8V (80% of SOC), a charge is recommended. When the battery voltage is lower than 12V (40% of SOC), the battery must be charged.
- Please make sure the electrical system of your motorcycle functions properly before installation. Please follow steps below:
  1. Connect motorcycle red cable to the positive terminal, black cable to the negative terminal, and then start the motorcycle.
  2. Connect a multimeter red cable to positive, black cable to negative. The multimeter will indicate the battery open circuit voltage.
  3. Disconnect positive battery terminal from the motorcycle. The multimeter will indicate the motorcycle output charging voltage. The charging voltage should be between 14V and 15V. The battery will not be fully charged if the charging voltage is less than 14V, and the battery will be overcharged if the charging voltage is above 15V. Either circumstance will damage the battery. This test should be repeated at 2,000 and 5,000 RPM.
  4. Switch off the motorcycle and take out the key. Connect the multimeter (milliamperes function) between battery and motorcycle cable (either positive or negative terminal) in series.

Then check the motorcycle power consumption in milliamps to make sure the drain current is less than 1mA when motorcycle is switched off

5. If the motorcycle passes the above tests, FULBAT lithium battery can be installed on the motorcycle.

- Remove the old battery from the motorcycle.
- Compare the new battery with the old one, and use the attached plastic spacers to adjust the dimensions if necessary, to make sure new battery can be installed firmly in the battery box.
- By using the plastic spacers, the battery can be installed firmly, and meanwhile it has better vibration resistance and better heat dissipation.
- Depending of the Lithium battery model, 1 to 3 spacers could be necessary to fit perfectly the motorcycle battery box.



- The rubber covers on the positive terminal care for preventing battery's short circuit during the transportation. Please remove them before installation.
- Any questions about the installation or operation, please contact the dealer directly for help.

USAGE

- When use this battery to start a vehicle, each starting time should not exceed 5 seconds, with an interval of not less than 5 seconds between 2 times starting. Battery should rest at least 3 minutes after a continuous starting of 5 times. Due to different vehicle's performance, we recommend using a higher capacity battery once the battery is found weak power.
- Keeping the motorcycle's lights on for long time after switching off the engine will over-discharge the battery, which may result in difficult restarting.

- If the motorcycle needs left unused for more than 7 days, we suggest taking the battery out of the vehicle for separate storing, to avoid losing too much electricity. (The motorcycle with anti-theft system consumes more electricity, and battery loses power faster).
- Low temperature has bad effect on battery's starting performance, so when used below 0°C, it is recommended to warm up the battery first before starting, by turning on the headlamp for 1-2 minutes. By doing this, a better starting performance can be achieved, and battery's service life can be extended accordingly.
- Do not use or store the vehicle which is equipped with lithium battery in high temperature environment for a long time, and avoid parking the vehicle in direct sun exposure, otherwise battery's service life will be shortened.
- The battery does not need special maintenance and it can serve your motorcycle for 5-8 years, as long as the vehicle's power supply system functions well and battery is used correctly.
- The rated voltage of lithium battery is about 0.8V higher than lead acid battery, so it has more power to discharge. Theoretically, using a lithium battery to replace lead acid battery, the fuel combustion efficiency inside the engine cylinder can be improved accordingly. Therefore, the drivers may feel easier starting, lighter accelerator, easier speeding up, stronger power and lower fuel consumption, which are all normal phenomenon.
- The lithium iron phosphate battery has a cell voltage of 3.2V, while the lead-acid battery has a unipolar voltage of only 2V. A battery composed of a lithium iron phosphate battery, its voltage platform is high (higher than 13V) , the discharge voltage platform of the lithium battery is stable and can be charged and discharged at a high rate. Therefore, when the lithium battery is used as the starting battery, the battery voltage will not pulled too low at the moment of starting and it can be kept above 11V (lead acid may be drop to below 7V), so the motorcycle ignition system maintains a higher and more stable voltage and the ignition system of the spark plug is a in an optimal state. The stable voltage of the engine at high-speed operation can ensure the pressure balance in each cylinder and the fuel is fully burned, which makes the engine powerful while refueling and speeding up. In addition, the high rate charge and discharge characteristics of the lithium battery also make the battery fully charged quickly, achieving efficient power conversion. The battery charging speed is fast, which also reduces the engine load. Therefore, the drivers may feel easier starting, lighter accelerator, easier speeding up, stronger power and lower fuel consumption when using lithium-ion batteries instead of lead-acid batteries.

STORAGE

- Do not store the battery in high temperature or humid environment for a long time. Battery's lifespan will be definitely shortened if it is kept in high temperature (above 40°C) for a long time (i.e. more than 30 days), and battery will be damaged if it is kept in extremely high temperature (above 55°C). Damaged batteries caused by incorrect storage are not covered by the warranty.
- To maximize the lifespan, the battery should be kept in dry and ventilated environment, and the suitable warehouse temperature is 0°C - 25°C.

TRANSPORTATION

- Please make sure the battery is packed properly before shipping.
- The battery should be handled with care during transportation and moving. Don't throw the battery or squeeze the package.
- The battery should be prevented from heavy vibration and impact during transportation.
- Do not transport batteries together with flammable & explosive objects or goods with sharp metals.
- Any damage during transportation must be reported to the shipper and dealer immediately, and all original packages should be retained until further notice.

WARRANTY

A new battery enjoys warranty if operated properly, except followings:

- The package is damaged after purchasing, or battery stickers have been torn up or destroyed.
- The battery is operated improperly, such as external short circuit, impact, fall, soak, etc.
- The battery is damaged in any natural disasters or man-made disasters, such as earthquake, rainstorm, fire, traffic accident, etc.
- The battery is damaged because of motorcycle's problem.
- The battery is used for other purposes (not for starting motorcycle).
- The battery is kept under temperature over 55°C for a long time.

DISCLAIMER

FULBAT will not be responsible for any problems caused by operation beyond this instruction sheet.