

USERS MANUAL

Golf Cart Lithium Battery



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BSL NEW ENERGY CO., LIMITED

· US Warehouse Address :1036 Jacobson Road.Garland, TX75042

· Hong Kong Address: Flat A112, 1/f, Lee Ka Industrial Building, 8 Ng Fong Street, San Po Kong, Kowloon, Hong Kong, China Vat: 74592871

Tel: +86-752-2819469

www.lithium-battery-factory.com

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WARRANTY INFO:

Serial number _____

Purchase date _____

Welcome to BSLBATT Products

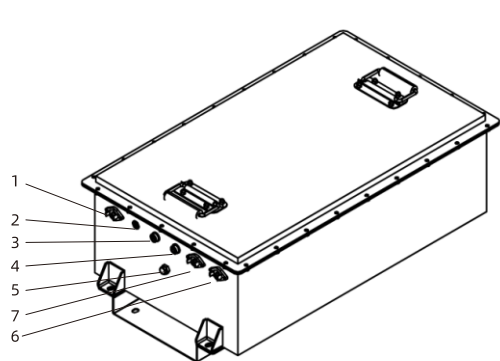
BSLBATT provides safe and renewable golf cart battery. Our golf cart lithium battery packs are designed with integrated golf cart battery system, the batteries are used in replacement for the lead-acid battery, which are available for drop-in replacement in most brands of golf cart.

Please read the user manual carefully before using the product and always take care when using this product. This product is not intended for use by young or infirm persons without supervision.

OVERVIEW

The B-LFP48-105GC, B-LFP48-135GC, B-LFP48-150GC, and B-LFP48-205GC are part of the golf cart series of lithium batteries. These batteries are equipped with an integrated cell management system which features:

- Cell balancing
- Battery voltage monitoring
- Battery current monitoring
- Pre-warning when battery is almost empty (communication by means of RS485)
- Battery temperature monitoring (integrated temperature sensor)



	NAME	PARAMETER	
1	BAT-	M8*15mm	Battery string charge and discharge negative port
2	Switch	Locking press button	Battery string power switch
3	Comm	GX16-4	Charging communication interface
4	Screen	GX16-6	Display screen interface
5	C BAT+	M8*15mm	Positive battery pack charging port
6	D BAT+	M8*15mm	Positive battery string discharge port
7	PRV	Explosion proof valve	

Note: Press "MAIN SWITCH" button to turn on/off the battery, green light indicates power on.



LFP BATTERY

LINE OF COMMUNICATION

SCREEN

USERS MANUAL

Note: Follow next steps to install the gauge:

1 Install the gauge in a suitable position on the golf cart.

2 Connect the instrument cable, one end to the battery communication port and the other end to the instrument. Fix the instrument near the steering wheel for easy viewing.

INSTALLATION STEPS

1 Fix the battery pack and fixing bracket

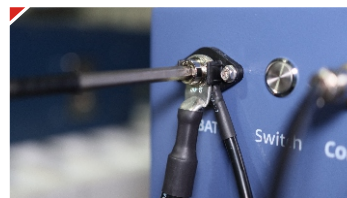


2 Put the battery pack in the corresponding position of the bracket and fix it with the screw



3 Connect the corresponding power output line, input line and communication output line according to the mark

3.1 Connect the charging and discharging common negative pole and lock it tightly



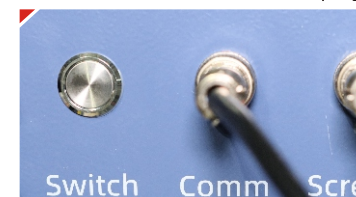
3.2 Dock the charging positive pole and lock



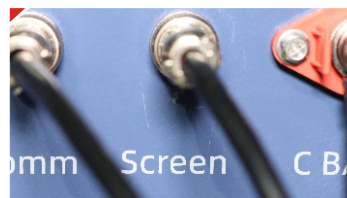
3.3 Connect the positive electrode of discharge and lock



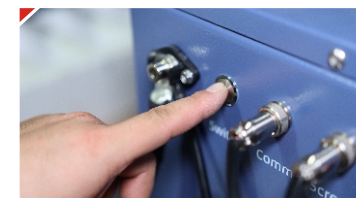
3.4 Dock the charging communication cable (the charging communication connector is GX16-4P female plug)



3.5 Dock display communication line (display communication line is GX16-6P female plug)



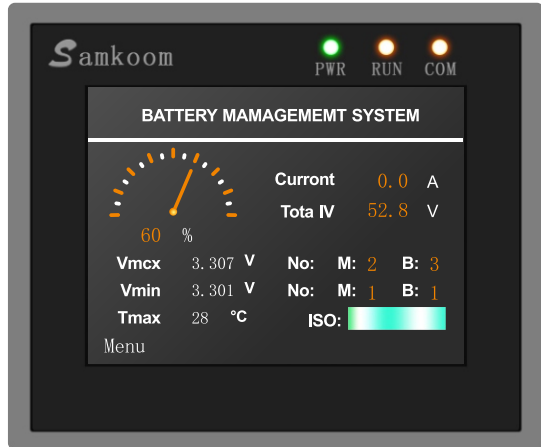
3.6 Check whether the screw of each connecting wire is locked; after completion, it can be tested



SCREEN 1 OPERATION

Screen display

The debugging screen is connected to the (J6) port, turn on the switch, the debugging screen is powered on and display the main interface. Main interface shows integrated display of total voltage, real-time current, real-time capacity, maximum and minimum cell voltage and temperature.



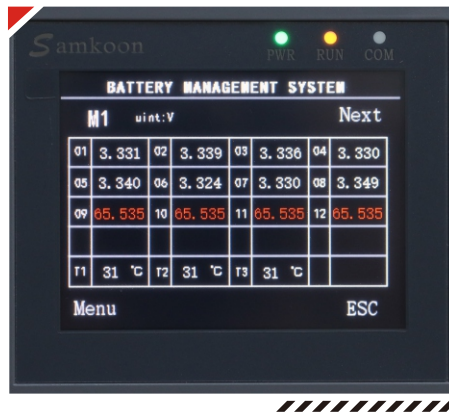
1 Main menu page

Click "Menu" to enter the main menu interface. This page is the operation channel, you can enter several interfaces of "settings", "Single cell information" and "version information".



2 Single cell information page

Click the main menu, and then click "CELL INF" to enter the interface (cannot be modified). This page can view the real-time voltage and temperature of all single cells in modules 1 and 2 (each module includes a maximum of 12 strings of cell voltage collection points and 2 temperature collection points).



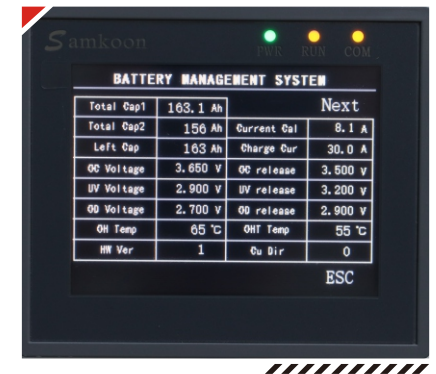
3 VERION page

Click "Main Menu", and then click "VERION" to enter the version information interface (cannot be modified). Display program version information and discharge time statistics.



4 Setting page

Click "Main Menu", then click "SETWP" to enter the screen saver password interface, input the password to enter the parameter setting interface. This page can modify the internal parameter settings. That is, the actual capacity value, the charging and discharging protection trigger voltage, the alarm trigger voltage, the detection current correction value, the maximum charging current, the alarm temperature, the number of serial ports of the module, etc.

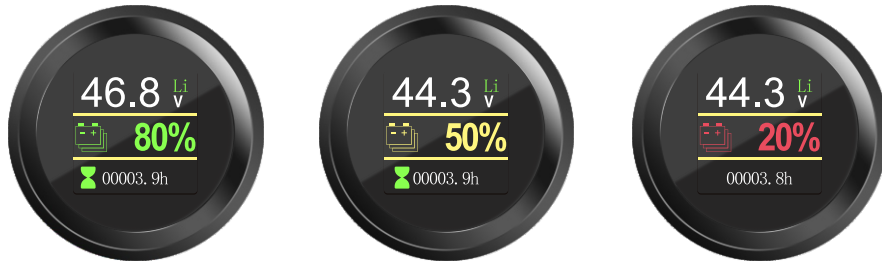


Note: The data of this page is adjustable, which is set by the manufacturer before it leaves the warehouse. If it is necessary to match and adjust individual parameters during on-site use, please contact the professional technicians of the manufacturer for confirmation.

The touch screen is made of glass and is fragile. And the shell is not completely sealed, it needs to be waterproof, dustproof and drop-proof, and keep it properly. If the battery pack is abnormal and needs to be checked, you can disconnect the original (J6) communication terminal connector, and connect this screen to visually evaluate the general abnormality of the battery pack (pressure difference, temperature, current, etc.).

SCREEN 2 OPERATION

Screen display



Note:

Battery status

71%-100% It is displayed in **green**

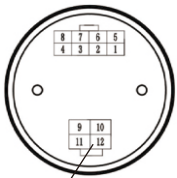
21%-70% It is displayed in **yellow**

0%-20% It is displayed in **red**

- 1.44 "full color TFT display, resolution :128*128
- CAN communication interface
- Lifting and locking function, when the remaining power is equal to 0, the internal normally closed relay is disconnected, lifting and locking (relay overcurrent capacity 1A)
- IP protection class: positive surface I67: bottom I54
- Supply voltage :9-80V
- Maximum current :30mA
- MOLEX 5559-8-core and MOLEX 5559-4-core physical plug-ins

Interface definition

Fully compatible
with 808 meter



CAN communication
interface

View for direction of appearance
(back of instrument)

Port definition	Remark	
1	Internal use	
2	Key switch	
3	Normally closed positive relay	
4	Normally closed relay negative pole	
5	Common burden	GND
6	Hour meter trigger	
7	VDD	Decide between
8	VDD	
9	CANL	
10	CANH	
11	NC	
12	CANR	Configure the terminal resistor to short-circuit the CANH

Function

The instrument is a terminal display of battery information and motor controller information. The practical application scheme supports analog acquisition system, CAN bus communication system and hybrid application of CAN communication and analog acquisition.

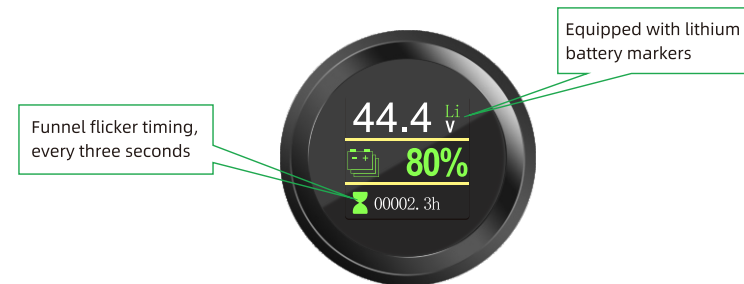
The instrument supports CAN communication Bootload online download program, support host computer to modify parameters.

Physical quantity display:

Voltage V

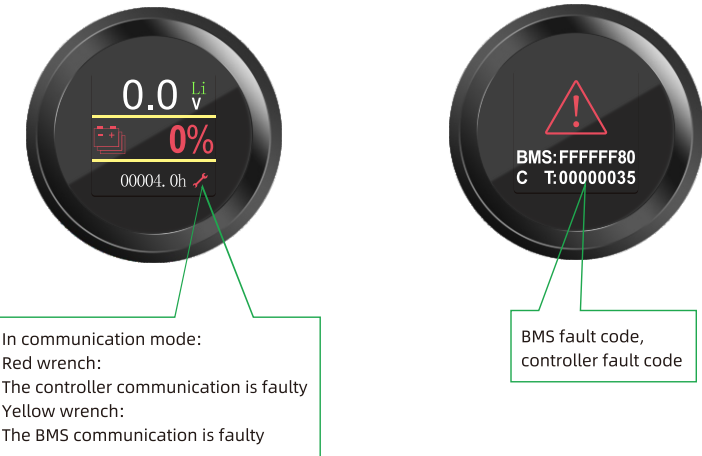
Power display %

Hour meter h



Logical display:

Fault code



In communication mode:
Red wrench:
The controller communication is faulty
Yellow wrench:
The BMS communication is faulty

BMS fault code,
controller fault code

THE FOLLOWING GENERAL ABNORMAL FAULT METHOD:

DESCRIPTION	REASON	SOLUTION
Large SOC deviation	1. The offset of the current sensor is large and the measurement is inaccurate 2. Incomplete charge and discharge, the capacity value is not corrected	1. Adjust the current correction value to make it return to 0 2. Fully charged or discharged, the capacity is automatically corrected
Abnormal alarm	1. Abnormal temperature alarm 2. Single unit undervoltage alarm 3. Single over-discharge alarm	1. Detect the actual ambient temperature, if it is consistent with it, it should be stopped immediately, and it can be used after cooling down. 2. The alarm is lower than the setting, and it needs to be charged in time
Not charging	1. The charger signal is interrupted 2. The charger fault light flashes 3. The charger is not powered on	1. Reconnect the charger and battery terminal connector 2. Check whether the 12V power supply of the charger is output normally. If not, replace the charger. 3. Directly replace the charger
Vehicle Power Outage, 12v Output	Small output current, 12 hours power failure protection	Reset the switch once

ALARM LIGHT FAULT INDICATION

CLASSIFICATION	CONTROL LOGIC	ALARM LIGHT INDICATION (BUZZER)	RESET INDICATION
General alarming	Power on for 5s and stop for 5s	Red -- Red -- Red --	Handle exceptions properly
Undervoltage alarming	Power on for 5s and stop for 5s	Red -- Red -- Red --	Charging, higher than undervoltage, release voltage value
Over-discharge alarming	Always powered on	Red	Charging, higher than over-discharge, release voltage value

OPERATION PRECAUTIONS AND PROHIBITIONS

- Be sure to read the user manual and precautions before using the battery system.
- Improper handling of lithium-ion batteries can cause leakage, heat generation, smoke, explosion or fire.
- This may result in poor performance or failure. In order to ensure the service life of lithium batteries, operators should pay attention to the following points:

- The manual should be placed where it can be seen, the operator should be trained, or work under the guidance of professionals, and read the manual in detail.
- The lithium-ion battery should be charged immediately after each discharge. If it is not used for a long time, the battery pack should be disconnected from the emergency power off or the button switch, and the power should be about 60% to avoid battery power loss.
- It is not recommended to exceed 80% of the total battery capacity for each discharge. At this time, the voltage of the single battery should not be lower than 2.8V. If it is lower than 2.8V, it is over-discharge. Frequent over-discharge will reduce the life of the battery.
- Foreign objects and tools should not be placed on the lithium battery to avoid short circuit of the battery.
- It is forbidden to expose or put the battery in an environment above 55°C for a long time, and it is forbidden to try to heat or put the battery into fire.
- The charging temperature range is: 0-55°C. High current charging in a low temperature environment below 0°C will cause damage to the battery; in a low temperature environment below 0°C, please charge the vehicle immediately after use.
- The discharge temperature range is: -20-50°C, the discharge capacity at low temperature (-20-0°C) may be lower than that at normal temperature; the battery can be used at 40-50°C ambient temperature, but the ambient temperature of the battery is too high, especially if the battery is in a high temperature environment for a long time, it will accelerate the aging of the internal materials of the battery and shorten the service life of the battery. Therefore, it is not recommended to use it at this temperature for a long time.
- It is forbidden to disassemble, squeeze, puncture, shove or bake the battery and battery box at high temperature, and avoid the battery from being subjected to excessive vibration, external force impact, and falling from a high place.
- It is forbidden to charge the battery without installing a reasonable charging protection device (lithium-ion battery protection circuit board, battery management system, etc.) or using non-battery manufacturer-approved charging equipment (charger, DC power supply, etc.). Non-manufacturer-designated technicians are prohibited from disassembling and assembling the battery without permission.
- Do not operate electric vehicles with lithium batteries in an environment where the temperature exceeds 55°C or is lower than -20°C.
- Do not wash the battery box directly to prevent water from entering the battery box to ensure the safety of the battery pack.
- Please store the battery module at room temperature (-20°C ~55°C, 15°C ~30°C is better; recommended temperature is lower than 20°C).
- Use a special charger for charging, reverse charging is prohibited, and the charging current must be controlled to the value specified in the battery specification.

Specification

Model	Capacity	Max continuous charge current (A)	Max continuous discharge current (A)	Max instantaneous discharge current (10S)	Battery system weight (Kg)	Battery box dimension (length*width*height) MM	Control method
B-LFP-48-105GC	51.2V105AH	50A	100A	200A	52	550*333*222	Relay
B-LFP-48-135GC	51.2V135AH	60A	130A	250A	67	610*333*236	Relay
B-LFP-48-150GC	51.2V150AH	80A	150A	300A	74	720*420*222	Relay
B-LFP-48-205GC	51.2V205AH	100A	200A	400A	92	800*400*270	Relay

Environment	Charge temperature range	32 °F~131 °F(0 °C~55 °C)
	Discharge temperature range	-4 °F~131 °F(-20 °C~55 °C)
	Storage temperature range	4 °F~113 °F(1 month) / (-20 °C~45 °C)32 °F~95 °F(1 year)(0 °C~35 °C)

Warnings

1. Do not disassemble, resemble, or repair the battery. Incorrect reassembly may cause combustion or electric shock.
2. If the battery is damaged, contact the place you purchased it.
3. Do not short--circuit the battery, use it near heat or water sources, or allow it to become wet.
4. Do not insert nails or other objects into the battery, strike it, or weld directly on the battery.
5. Do not use a badly damaged battery or operate it with damaged cables or charging adapters.
6. Do not operate this product in explosive atmospheres (i.e. flammable liquids, gases, or dust) or set the unit on flammable materials (i.e. carpeting, upholstery, paper, cardboard).
7. Do not permit the battery to freeze. Never charge a frozen battery.
8. In case of skin or eye contact, rinse immediately with clean water and seek medical attention.
9. Do not keep using this product if it is damaged, waterlogged, distorted, or broke.
10. This product contains lithium ion batteries. When it is worn out, dispose of it properly using local laws and regulations.

Handling and Maintenance

Storage:

- For storage over one month, place the battery in a dry and ventilated room that is 32 °F~95 °F.
- Do not store near corrosive material, fire, and heat sources.
- In order to avoid over discharge, for long-term storage, the power must be turned off and the SOC is kept about 60% to avoid over discharge the battery must be fully charged and must be charged every 3 months.

Operation

- **ATTENTION:** Before installing, make sure that all appliances are turned off.
- Turn on/off the battery
Press the "SWITCH" button to turn on/off the battery, green light indicates power on.
- Remaining battery capacity
Once the battery is turned on, you can press the "SOC" button to check the remaining battery capacity. The gauge will light up for 3 seconds, there are ten bars in total, and the reference power of each bar is 10%.
- Alarm
The battery may shut down immediately due to over-temperature, over-current, under-voltage, and external short-circuit. When there are only two bars left in the gauge, the gauge will sound an under-voltage alarm. It means the battery needs to be charged. When there is only one bar left in the gauge, the gauge will sound an under-voltage alarm again, and the LED indicator is blinking, once this happens, stop driving immediately and charge the battery as soon as possible.
Disclaimer: Once the gauge sounds an alarm, stop driving and charge the battery as soon as possible. Continue driving will cause the golf cart to suddenly stop. We are not responsible for any loss caused by the sudden stop of driving in this case.
- Charging
This battery needs to be used with the designated charger we sell, otherwise it may cause insufficient charging or battery damage. We are not responsible for any problems caused by this.

WARRANTY REPAIRS/REPLACEMENTS

Your Battery is warranted for FIVE years from date of purchase at retail against defective material or workmanship. We make no warranty other than this limited warranty and expressly exclude any implied warranty including any warranty for consequential damages. This limited warranty is not transferable. Seller warranty this product, if used in accordance with at applicable instructions. to be free from original defects in material and workmanship within the warranty period. If the product has any failure problem within the warranty period, Seller will repair or replace the product at its sole discretion according to the failure situation.

LIMITED WARRANTY

Save proof of purchase, such as a dated receipt. This warranty for the unit is extended to the original purchaser or user, and it may cover defects in materials and workmanship. For malfunction due to defects in materials or workmanship six months from the purchase date, we will repair or replace the unit at our discretion after inspection.

This warranty is invalidated if any of the following occurs, but not limited to:

- Failure to follow instruction in the User's Manual.
- Accidental or unreasonable use, misuse or mishandling, over charging or loading, or normal wear.
- Extended storage without recharging or repairs done by an unauthorized person or modification.

This warranty is in lieu of all other express warranties. BSLBATT will not be liable for consequential or incidental damages.