

Smart Lithium Iron Battery RT12100B-G31 User Manual

Legal Information

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Disclaimer

The Manual contains instructions for the use of the product. All the pictures and charts hereinafter are for description and explanation only. The information in the manual is subject to change, without further notice.

Please read this manual carefully before using the product. Failure to do so may result in serious injury, property damage and may void the warranty. Please keep this manual for further reference.

By using this product, you hereby signify that you have read this manual carefully and that you understand and agree to abide by all terms and conditions of this manual and all relevant documents of this product. You agree that you are solely responsible for your own conduct in using this product, and for any consequences thereof. Pylontech shall not be liable for any damages resulting from the use of this product not in accordance with this manual. In the event of any conflicts between this manual and the applicable law, the latter prevails.

Safety Instructions



Warning

- The device should be used in strict compliance with local laws, electrical safety regulations, and fire prevention regulations of the nation or the region.
- Do not place the device near open fire, heat sources and flammable materials.
- Do not leave the device in an extremely hot environment.
- Do not place the device in damp locations.
- Do not expose the device to high electromagnetic radiation.
- Do not strike, mechanically crush or cut the device.
- Do not puncture the device with sharp objects.
- Do not stack heavy objects on the device.
- Do not place metal objects or wires on the device.



Caution

General

- For safety purposes, please use only the accessory (cable, charger, and etc) supplied or recommended by Pylontech. Pylontech shall not be liable for damage caused by third-party devices.
- Before first use, please check if the device is in good condition. If the device is deformed or has an odor, do not use the device and return it to the distributor.
- Keep the device out of reach of children and pets.
- If the device falls into water during use, please take it out immediately.
- If the battery leaks, avoid contact with the leaking liquid or gas. In case of contact with skin or eyes, flush immediately with plenty of clean water and seek medical advice.

Installation

- Do not install the device in an unstable place. Personal injury or property damage may be caused if the device falls.
- Do not place the device in dusty locations.

Operation

- Please ensure good ventilation while the device is in use.
- If the device has been stored for more than one year, please check it carefully to make sure there is no problem before using it.

Transportation

- Keep the device upright when moving it.
- Handle the device gently.

Safety Instructions

Maintenance

- Charge the device regularly. If you need to store the device for a long time, please charge it to at least 60% every time before storing it.
- Recharge the device as soon as possible after it has been fully discharged.
- If the device does not work properly, please contact your distributor or the nearest service center within 24 hours. DO NOT disassemble the battery for repair or maintenance by yourself. Pylontech shall not assume any responsibility for problems caused by unauthorized repair or maintenance.
- Do not charge the device which is hot, deformed, or leaking.
- It is recommended to check the connection between power cords and screws regularly to ensure that there is no loosening, breakage or corrosion at the connection points.
- It is recommended to regularly check if the battery storage environment is normal.

Cleaning

- Please use a soft and dry cloth to clean the exterior surfaces.

Disposal

- Dispose of used batteries according to the laws or the regulations of the nation or the region.

Specifications

Electrical Specification	
Nominal Voltage	12.8 VDC
Nominal Capacity	100 Ah
Resistance	< 10 mΩ
Self Discharge	≤3% per month
Maximum Modules in Parallel or Series	4S4P
Cycle Life (25°C)	> 4500 (80% DOD, 0.5 C, 25 °C)
Design Life	≥ 10 years
Short Circuit Current Duration	< 1 kA/100 us
Discharge Specification	
Max. Continuous Discharging Current	50 A
Peak Discharging Current	200 A @30 s
Under-voltage Disconnect	10.8 V
Reconnect Voltage	12 V
Charge Specification	
Recommended Charging Current	50 A
Max. Continuous Charging Current	100 A
Recommended Charging Voltage	14 V ~ 14.8 V
Over-voltage Disconnect	14.6 V
Reconnect Voltage	13.5 V
Temperature & Humidity Specification	
Discharging Temperature	-4 °F ~ 158 °F (-20 °C ~ 70 °C)
Charging Temperature	32 °F ~ 158 °F (0 °C ~ 70 °C)
Storage Temperature	-4 °F ~ 140 °F (-20 °C ~ 60 °C)
Working Temperature	-4 °F ~ 122 °F (-20 °C ~ 50 °C)
Relative Humidity	5% ~ 95%
Mechanical Specification	
Dimensions (L*W*H)	325 mm × 173.5 mm × 238 mm (12.8 in × 6.83 in × 9.37 in)

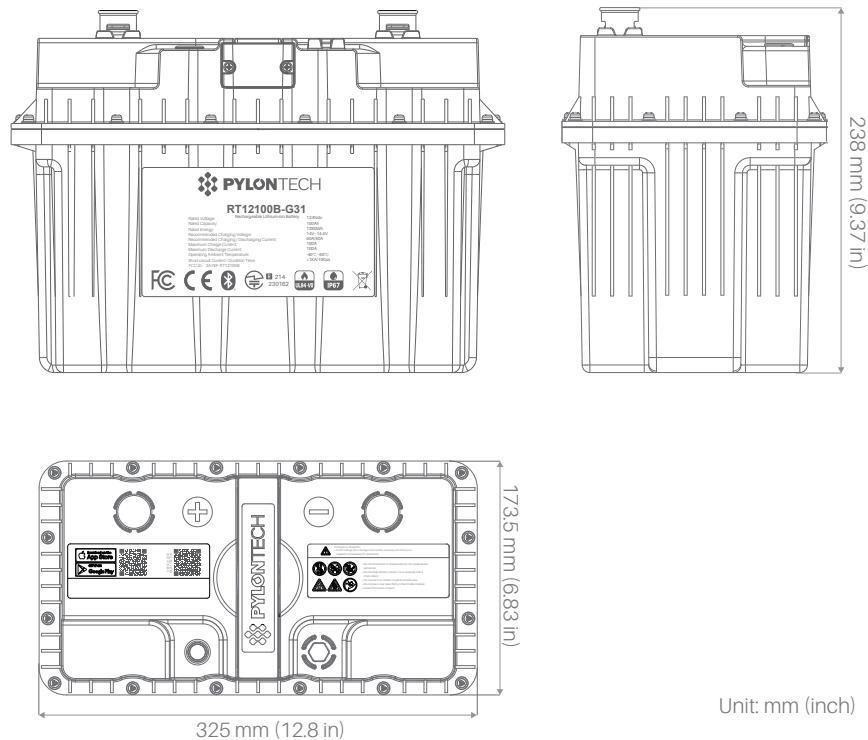
Specifications

Weight	Approx.12 kg (26.46 lbs)
Terminal Type	M8 × 14
Terminal Torque	9 ± 1 Nm
Case Material	PC
Enclosure Protection	IP67
Cell Type-chemistry	LiFePO ₄

Other	
Certifications	UN38.3, TELEC, FCC, CE, Bluetooth SIG, ROHS
Communication	BLE 5.0
Max. Altitude	4000 m
APP	Support

* Product performance is based on testing in a controlled environment. Your results may vary due to several external and environmental factors.

Dimension



Unit: mm (inch)

Introduction

RT12100B-G31 is a lithium iron phosphate battery module. With a standard BCI group size, it is designed to replace deep-cycle lead-acid batteries. The battery is perfect for recreational vehicles (RV), marine (boats), trucks, cabins, and other off-grid deep-cycle applications.

The product has the following advantages.

- **High Reliability**
The built-in advanced BMS manages charging and discharging status, helps in balancing the individual cells, and ensures intelligent automatic protection against over-voltage, under-voltage, over-current, high temperature, low temperature and short circuit.
- **High Energy Density**
With the high energy density lithium cells, our battery is half the weight of the lead acid battery of equivalent energy, and 70% the size of the regular lithium battery of equivalent energy. It's easier to carry, faster to charge, and more convenient to use.
- **Real-time Monitoring via APP**
The built-in Bluetooth module allows real-time monitoring via mobile devices.
- **Long Cycle Life**
More than 4,500 cycles at a depth of discharge of 80%.
- **Low Self-discharge Loss**
The battery can be stored for more than 6 months if it has been disconnected from other devices.
- **Flexible Connection in Parallel and Series**
Supports both parallel connection and series connection.

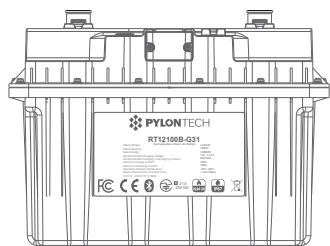


PylontechAuto App



APP Quick Guide

Packing List

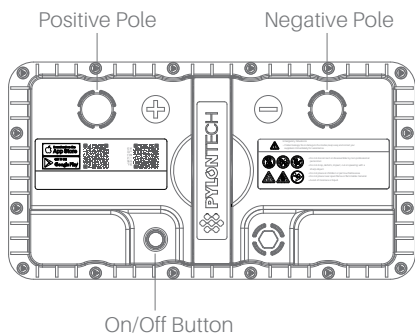


Battery

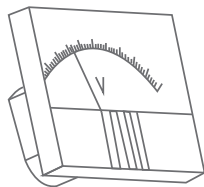


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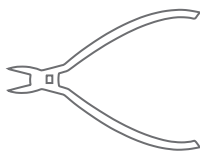
Interface



Tools



Voltmeter



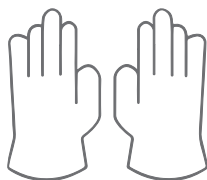
Wire Cutter



Screwdriver



Safety Goggles



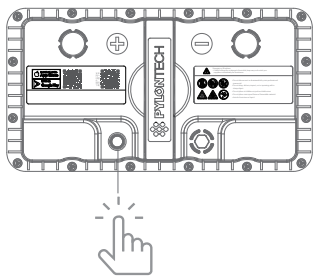
Insulating Gloves

Indicator

Status	Meaning
Light up for 0.5 s every other 1.5 s	Working Mode
Light up for 1 s every other 1 s	Networking Mode
Light Off	Sleep/Power Off/System Error

Activation

Before first use, press the on/off button to activate the device.



Installation

1. Pre-installation check.

- Cut off the power before wiring, installing or removing the battery.
- To prevent electric shock, please remove watches, bracelets, rings and other conductive items (if any) and wear insulated gloves and protective goggles before installation.

2. Place the battery in the designated area.

The area where the battery is installed needs to be kept dry and stable, away from water and fire sources, and the temperature and humidity of the area shall be suitable for battery use.

3. Fix the battery modules tight.

If the battery is placed on a moving object (eg. car), make sure the battery is securely mounted.

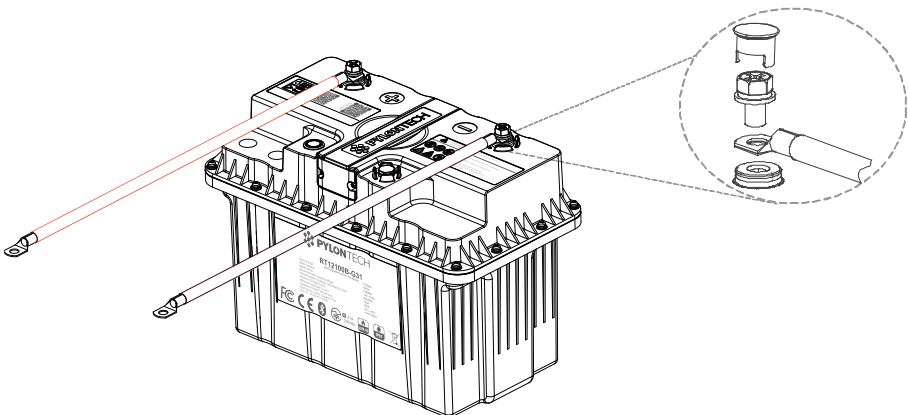
4. Connect the cables.



Note

When installing the battery, the tiny sparks generated during the connection do not harm humans or damage the device.

Single Battery



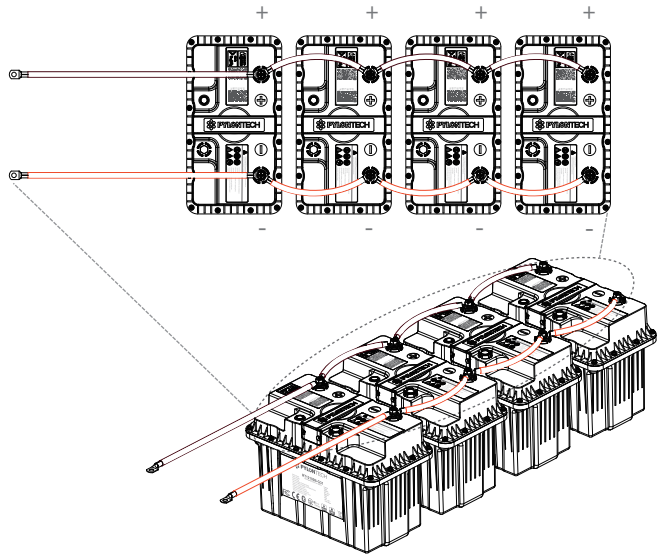
Multiple Batteries



Note

- Before use, check if the voltage difference between the batteries is less than 0.1 VDC before using them in series connection, or 0.5 VDC in parallel connection. If not, connect the batteries in parallel, and float charge them for 24 hours after a full charge. Otherwise, over-current protection may be triggered due to the large voltage difference.
- Do not mix batteries of different brands, types, models or life spans.
- In order to prolong the life span of the batteries, please make sure the length, diameter and internal resistance of the power cables are the same when using multiple batteries.

① Connecting the Batteries in Parallel



Connection Steps:

1. Connect the Positive Terminals of the batteries in sequence.
2. Connect the Negative Terminals of the batteries in sequence.
3. Finally, connect the Positive Terminal of the first battery and the Negative Terminal of the last battery to the system.



Note

If you do not need to read the battery system information via APP, you can connect the batteries in parallel as much as you want.