PYLONTECH

# Rechargeable Li-ion Battery

# RV12100 User Manual

**Information Version: 1.0**

20RVSV0801

This manual introduces RV12100 from Pylontech. Please read this manual before you to install the battery and follow the instruction carefully during the installation process. Any confusion, please contact Pylontech immediately for advice and clarification.

# Table of Contents

# 1. Introduction

## 1.1 Product Features

The lithium iron phosphate battery adopts the modular series design, through the reliable BMS system and high-performance equalization technology, the whole system has the characteristics of flexible configuration and high reliability.

- Voltage platform: 12V;
- High C rate: the output power reaches sustained 1C;
- High safety: lithium iron phosphate battery is safe and reliable
- High reliability: interactive cooperative guarantee mechanism is adopted to improve system reliability;
- Minimalist design: bolt design of positive and negative terminals with strong adaptability
- Battery status information display, SOC display;
- Ultra-long cycle life: 4000 cycles

## 1.2 Product Appearance

### 1.3 Scope & Purpose of Applications

This battery is mainly used for RV, Caravan and similar recreational vehicle usage.

It is designed to replace traditional lead acid battery types

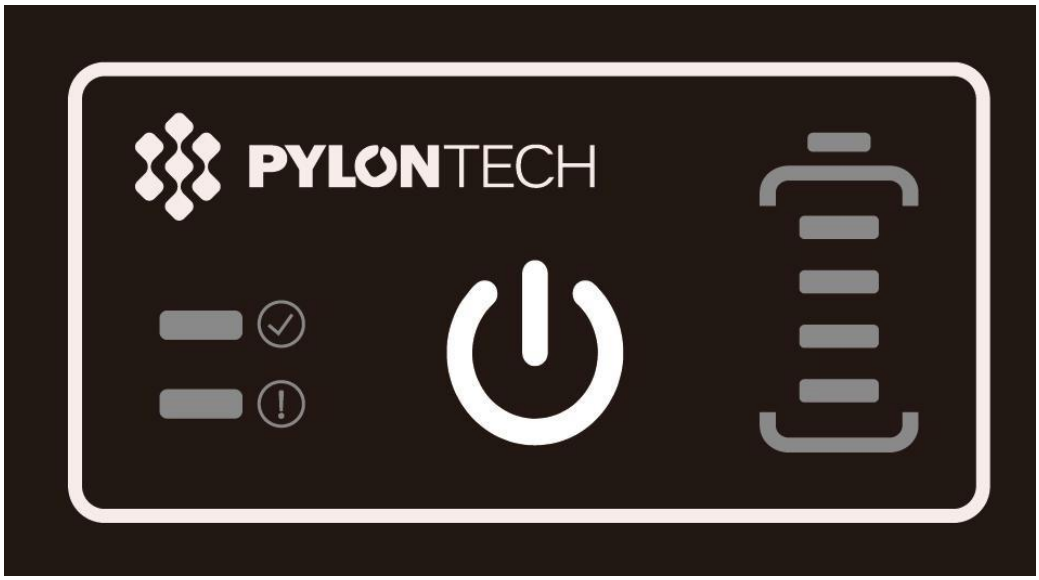
12V battery applications also include Electric vehicles & marine use

## 2. Product Parameters

### 2.1 Battery Module Technical parameters

| No. | Item | Value |
|---|---|---|
| **1** | Nominal capacity | 100 Ah |
| **2** | Nominal voltage | 12.8Vdc |
| **3** | Voltage range | 10 ~14.8 Vdc |
| **4** | Recommend charge voltage | 10 ~14.4 Vdc |
| **5** | Continuous charging current | 50A |
| **6** | Continuous discharging current | 100A |
| **7** | Working temperature | -20℃～50℃ |
| **8** | Humidity | 5～95% |
| **9** | Cooling | Natural cooling |
| **10** | Dimension | 300mm x 173mm x 220mm |
| **11** | Weight | ≤15kg |
| **12** | IP rate | IP20 |
| **13** | Communication | Optional |
| **14** | Parallel Connection | Support |

## 2.2 Panel Definitions




**Battery switch:**

Press the Power Button for 1 second, the LEDs indicating health will light up and 1 second later the battery output will be active.

Press the Power Button for 3 seconds to turn off the battery. Turning the battery back on is locked out for 3 seconds.

**Self-check lamp status：**

When the initial self-check is completed, all lights will be turn on for a while and then return to the normal display state.

Please refer to the table below for normal display state:

| State | Soc | Status | | SOC | | | | Remark |
|---|---|---|---|---|---|---|---|---|
| | | ●★ Run | ●★ ALM | SOC4 | SOC3 | SOC2 | SOC1 | |
| **Turn off** | | | | | | | | All off |
| **Idle** | 0% 25% | ● | | | | | ● | All SOC Light is solid |
| | 26%-50% | | | | | ● | ● | |
| | 51%-75% | | | | ● | ● | ● | |
| | 76%-100% | | | ● | ● | ● | ● | |
| **Charge** | 0%-25% | ● | | | | | ★ | The SOC top one is flashing, others are solid |
| | 26%-50% | | | | | ★ | ● | |
| | 51%-75% | | | | ★ | ● | ● | |
| | 76%-100% | | | ★ | ● | ● | ● | |
| **discharge** | 100%-76% | ★ | | ● | ● | ● | ● | The Run light is flashing |
| | 75%-51% | | | | ● | ● | ● | |
| | 50%-26% | | | | | ● | ● | |
| | 25%-0% | | | | | | ● | |
| **Alarm** | Alarm | | ★ | According to SOC state | | | | Automatically eliminated when value back to normal level |
| **Protect** | Protect | ● | | | | | | Battery shutdown until value back to normal level |

Indicator light description:

●: Green light solid

★: Green light flashing (2S flashing)

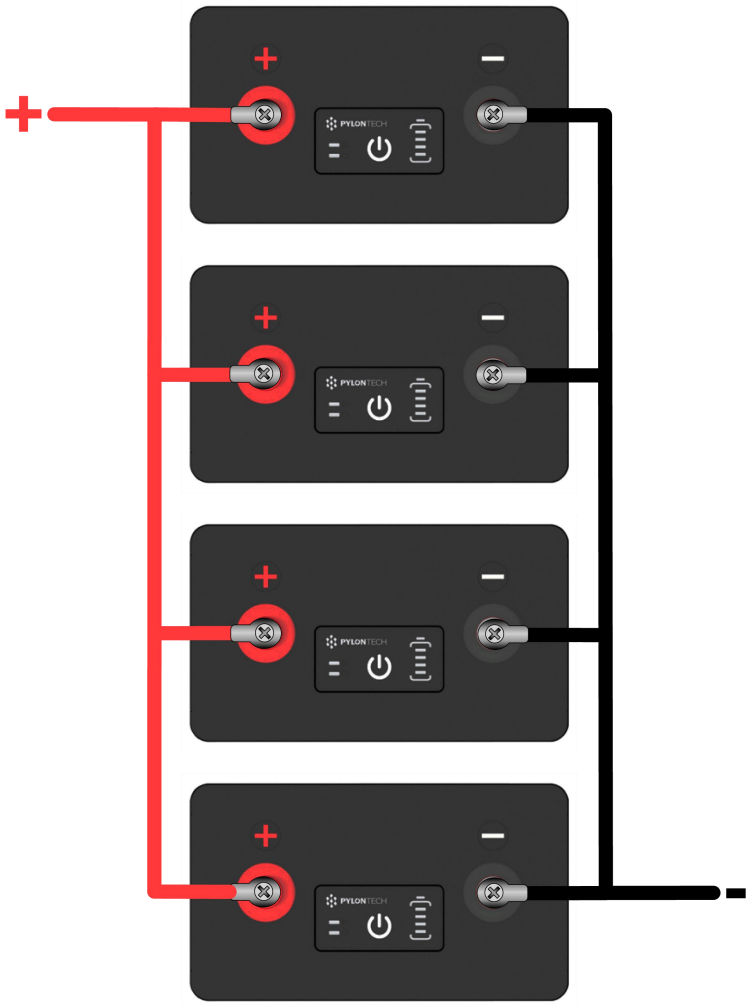
●: Red light solid

★: Red light flashing (2S flashing)

### 2.3 System Wiring

#### 2.3.1. Parallel Connection:

Before wiring the battery model, make sure all batteries are turned off. Follow the steps shown below for wiring, with all positive poles together and all negative poles together. Then press any battery's Power button and the other batteries will turn on automatically.

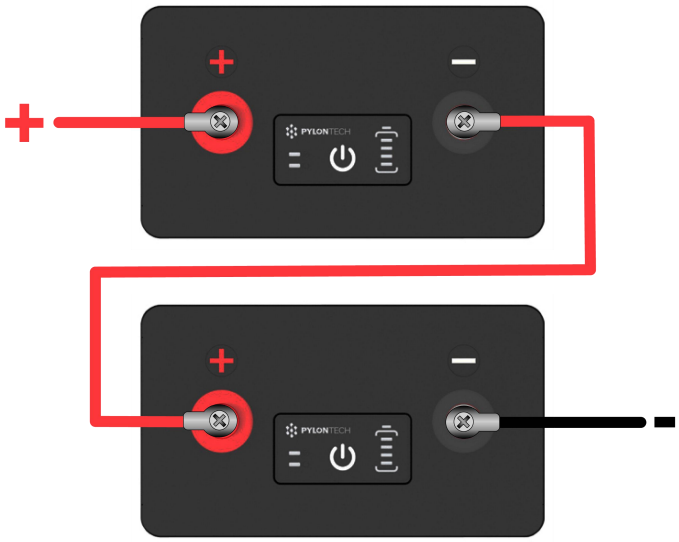


Please Note:

1. The number of Parallel connections is limited to 8 pieces
2. Ensure that the voltage difference between the batteries should not exceed 0.2V before connection. If batteries do exceed 0.2V difference then all batteries will require a full charge so they are an equal voltage.
3. Each set of the battery external cables should have the same wire diameter and length. This keeps the current flow of each battery consistent during operation.
4. When 2~8 batteries are connected in parallel, the charge-discharge current shall not exceed 0.5C of the total bank capacity.

### 2.3.2. Series Connection:

Before wiring the battery model, make sure all batteries are turned off. Follow the steps shown below for wiring. Then press any battery's Power button one by one.




Please Note:

1. The maximum number of series connections is limited to 2 pcs - 24V.
2. Each battery should have the same capacity and the same voltage. Otherwise it will affect subsequent use
3. Ensure that the voltage difference between the batteries should not exceed 0.2V before connection. If batteries do exceed 0.2V difference then all batteries will require a full charge so they are an equal voltage.
4. Connect all batteries in parallel (considering point 3 above) for 12-24 hours so that batteries are equalized before connecting in series
5. If one battery goes into protective mode, the whole system will shut down

# 3. Installation Environment

Battery operating environment requirements are as follows:

Working temperature: 0℃ - 50℃
Humidity: 5% - 95%
Altitude: ＜4000m
The site environment: Away from heat, no corrosive gas, no explosive gas, no damaging gas, no damaging insulation Conductive dust

# 4. Transportation & Storage

### 4.1 Product Transportation requirements

Prevent violent vibration, impact or extrusion,

Do not expose to sun or rain,

In the process of loading and unloading, the battery should be handled gently to prevent throwing, rolling and weight.

### 4.2 Product Storage requirements

Batteries should be stored in clean, dry and ventilated rooms where the ambient temperature is -20℃ ~ 60℃ and the relative humidity is no more than 85%.

Battery should avoid contact with corrosive substances, should be far away from the source of fire and heat.

Battery storage SOC: 40% ~ 50%.

Long-term storage: before storage, the SOC should be more than 80%, and the battery should be periodically recharged every six months to the 80% SOC.

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