



# User Manual

## E-BOX 12100

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Rechargeable Li-ion Battery



Information Version: 1.0

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This manual introduces E-BOX12100 from Pytes.

Please read this manual before installing the battery and follow the instruction carefully during the installation process. Any confusion, please contact Pytes immediately for advice and clarification.

# 1 Product introduction

## 1.1 Key features

PYTES E-BOX 12100 is high current carrying lithium iron phosphate (LFP) battery pack specially designed for the safe, reliable and long term operation in various high current applications. It has high energy density, robust design and long life. The pack has an inbuilt heating system and a BMS for centralized monitoring and protection against unexpected situation.monitoring and protection against unexpected situation.

### 1 High reliability, high energy density and high temperature cycling performance

Long lifespan and high performance lithium iron phosphate (LFP) cells are adopted in the battery module, which effectively ensures safety and cycle life over 4000 cycles.

### 2 High-performance power management module (BMS)

The BMS provides protection against over discharge, overcharge, overcurrent, short circuit, reverse connection and high or low temperature to ensure the safety in use.

### 3 Supports CAN and RS485 communication

Equipped with waterproof ports (M12) for RS485 and CAN communication.

### 4 Excellent discharge rate performance.

Capable of continuous discharge at 100A to meet high power output.

## 1.2 Suitable For

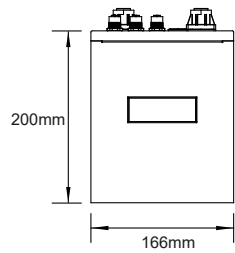
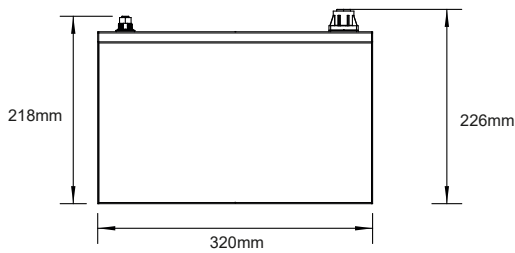
PYTES E-BOX 12100 is suitable for diverse applications requiring high discharge current and least supervised operations. A few of the applications of the battery pack are:

- Van life and Van building
- Solar Energy Storage
- Overland and Truck Builds
- RV Camper Trailers
- Off Grid Electrical Systems
- Marine Applications
- Construction and Work Trucks
- Recreational Vehicles
- Off-Grid Homes

# 2 Product parameters

## 2.1 Technical parameters

| NO. | Item                         | Value                                 |
|-----|------------------------------|---------------------------------------|
| 1   | Nominal Capacity             | 100Ah                                 |
| 2   | Nominal Voltage              | 12.8V                                 |
| 3   | Voltage Range                | 10.8V ~ 14.4V                         |
| 4   | Continuous Charge Current    | DC 50A                                |
| 5   | Continuous Discharge Current | DC 100A                               |
| 6   | Operation Temperature        | -10°C~55°C / 14°F~131°F               |
| 7   | Humidity                     | 5~95%RH                               |
| 8   | Cooling                      | Natural Cooling                       |
| 9   | Dimensions                   | 320mm*166mm*200mm<br>12.6*6.5*7.9inch |
| 10  | Weight                       | 15.2kg / 33.6lb                       |
| 11  | Communication                | RS485,CAN                             |
| 12  | Connection                   | Up to 2S8P                            |
| 13  | Reverse Connection Function  | Supported                             |
| 14  | Certification                | UN38.3, CE, IEC62619                  |



2.2 Panel definition

To wake up the battery from the dormant status, press and hold the SW button for 0.5S, then release it, the red light is on. 1.5S after the red light goes out, the green light comes on and keeps flickering, indicating that the battery has been awakened. To shut down the battery, press and hold the SW button for 1S, then release it, the light goes out and the battery goes into hibernation.

Indicator light description:

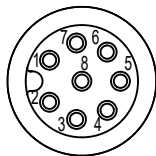
|                | Idle       | Charge | Discharge  | Alarm | Protect |
|----------------|------------|--------|------------|-------|---------|
| RUN<br>(GREEN) | Slow flash | Solid  | Fast flash |       |         |
| Alm<br>(RED)   |            |        |            | Flash | Solid   |

Slow flash:light 0.5S, dark 1.5S.      Fast flash:light 0.5S, dark 0.5S.      Solid:always light.

2.3 System wiring

2.3.1 Communication port definition

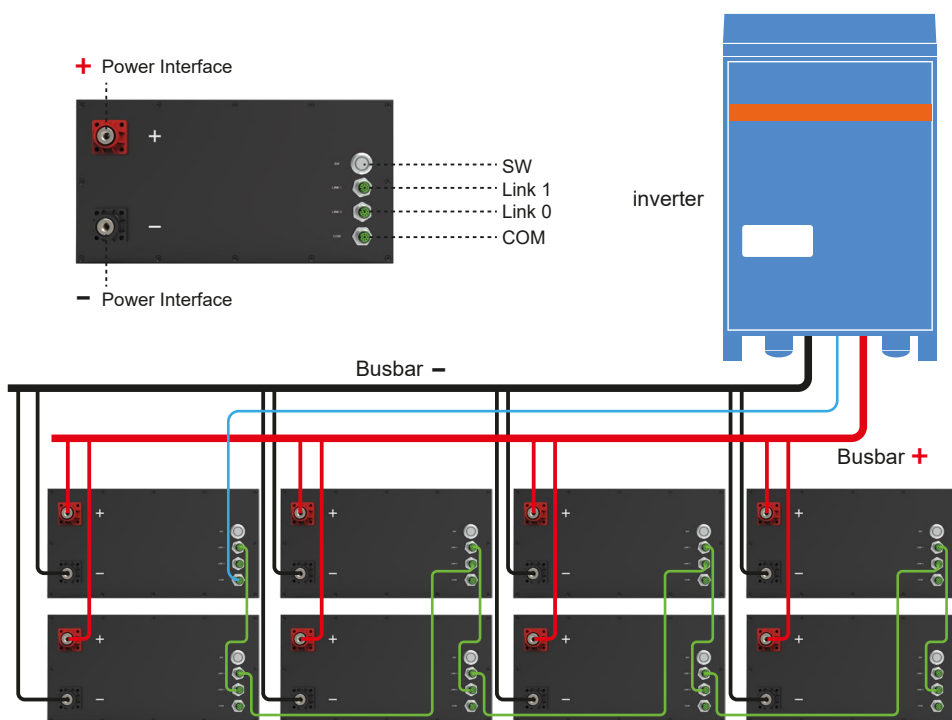
COM



| pin | wire color |         |                |
|-----|------------|---------|----------------|
| 1   | Orange     | GNDS    | Bluetooth only |
| 2   | Black      | GNDS    | Bluetooth only |
| 3   | Green      | NC      | Bluetooth only |
| 4   | Red        | CAN -H  |                |
| 5   | Blue       | CAN -L  |                |
| 6   | Yellow     | 12VS    | Bluetooth only |
| 7   | Purple     | RS485-A |                |
| 8   | Brown      | RS485-B |                |

### 2.3.2 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. The “LINK 1” of the first battery is connected to the “LINK 0” of the second battery, and so on. After the “LINK” lines are connected, the “LINK 0” of the first battery and the “LINK 1” of the last battery are suspended. Press the power button of the first battery, and the other batteries will turn on automatically in turn.



Notice:

- 1.The number of parallel connections is limited to 8 pcs.
- 2.The diameter and length of the cables should be the same, and the contact surface of the terminals should be clean.
- 3.Three or more batteries are recommended in parallel when using a 3KW inverter, and five or more batteries are recommended in parallel when using a 5KW inverter.

### 3 Operation environment

Battery operating environment requirements are as follows:

Working temperature:  $-10^{\circ}\text{C}$ - $55^{\circ}\text{C}$

Humidity: 0%-95%RH

Altitude:  $<4000\text{m}$

The site environment: away from heat or flammable material, away from corrosive gas or liquid, avoid electricity induced dust.

### 4 Transportation and storage requirements

#### 4.1 Product transportation requirements

Battery in the process of transportation should prevent violent vibration, impact or extrusion, avoid direct sunlight and rainfall.

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  $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$  and the relative humidity is no more than 95%RH.

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 recharged every six months. The charging amount should exceed 80% of the capacity.



**Shanghai PYTES Energy Co., Ltd.**

[www.pytesgroup.com](http://www.pytesgroup.com)

NO.3492,Jinqian Road, Fengxian District, Shanghai,China

The right of interpretation belongs to Pytes Energy