



## ESM-100

# 51.2V 100AH LIFEPO4 BATTERY EXTERNAL LCD TOUCH SCREEN MANUAL

## Operation and Maintenance



(ESM-100)

### SUPPORT

If you are experiencing technical problems and cannot find a solution in this manual, please contact ECO-WORTHY for further assistance.

Call: +1 866-939-8222 (US&CA)  
+49 6175-6514-999 (DE)  
+44 7553-406-988 (UK)

Web: [www.eco-worthy.com/](http://www.eco-worthy.com/)

E-mail: [essvipssupport@eco-worthy.com.cn](mailto:essvipssupport@eco-worthy.com.cn)





# Quick Guide

## Compatible Batteries:

- 1.48V 100Ah Server Rack Battery V3
- 2.48V 50Ah Server Rack Battery
- 3.48V 100Ah Server Rack Battery V1/V2 (can be monitored via the V3 as the master device, firmware upgrade not necessary)

## How to Connect:

Master Device: V3

Slave Device: Supports V1/V2/V3



Connect the RS485-2 port between the batteries, establish communication between the batteries and set the master and slave addresses, connect the RS232 port between the battery and the screen

**Note: Due to DIP switch address limitations, V1/V2 are recommended for slave devices in address range 2–15.**

## Video Tutorial:

Quick Guide



Firmware Update Guide



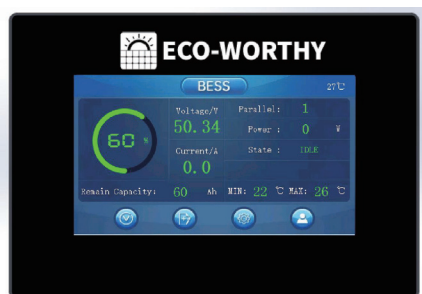
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# I. Introduction

This product is a 4.3-inch touch color display, specifically designed for the 51.2V 100AH server rack battery series energy storage products. It provides intuitive display of battery pack sampling parameters, temperature, protocols, etc., and features simple operation and a user-friendly interface, supporting Chinese, English, and Ukrainian languages. It complies with the ROHS 2.0 standard.

## 1. Product Front and Back View Presentation



### Front



**Back**

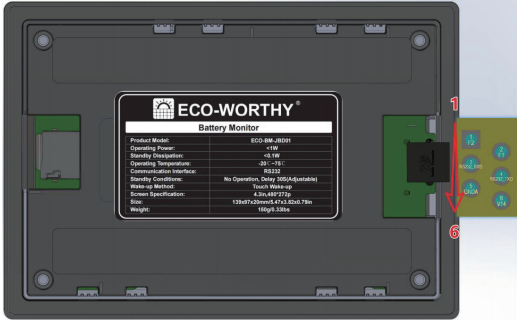
## 2. Product Dimension



### 3. BasicParameters

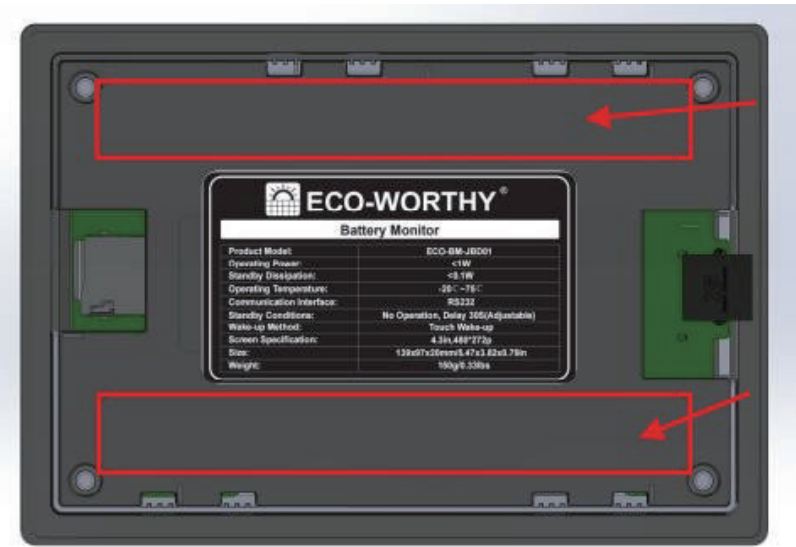
|                         |                                     |
|-------------------------|-------------------------------------|
| Product Model           | ECO-BM-JBD01                        |
| Dimension               | 139.5x97.5x21.3mm ( $\pm 0.6$ mm)   |
| Screen Specification    | 4.3in,480*272p                      |
| LCD Screen Color        | 65K(65536) 5R6G5B                   |
| Backlight Mode          | LED                                 |
| Baud Rate               | 9600                                |
| Touch Screen Type       | Capacitive inductive                |
| Communication Interface | RS232                               |
| Rated Voltage           | 14V                                 |
| Operating Power         | <1W                                 |
| Standby Dissipation     | <0.1W                               |
| Operating Temperature   | -20°C~75°C                          |
| Standby Dissipation     | No Operation, Delay 30S(Adjustable) |
| Wake-up Method          | Touch Wake-up                       |

4. Pin Definition

| R232                                                                              | No. | Pin       |
|-----------------------------------------------------------------------------------|-----|-----------|
|  | 1   | NC        |
|                                                                                   | 2   | NC        |
|                                                                                   | 3   | RS232_RXD |
|                                                                                   | 4   | RS232_TXD |
|                                                                                   | 5   | GND       |
|                                                                                   | 6   | VCC       |

5. Magnetic Strip Attachment Area

This area is designated for attaching the magnetic strip. Please place the magnetic strip securely and align it properly to ensure optimal stability.



## II. Interface Features Overview

### 1. Main Page

The main interface primarily displays statistical information of the battery system, such as average SoC, highest and lowest cell voltages, average battery voltage, and total system current, remaining capacity, operating power, charging and discharging Mos status, and other data.



### 2. Language Switching

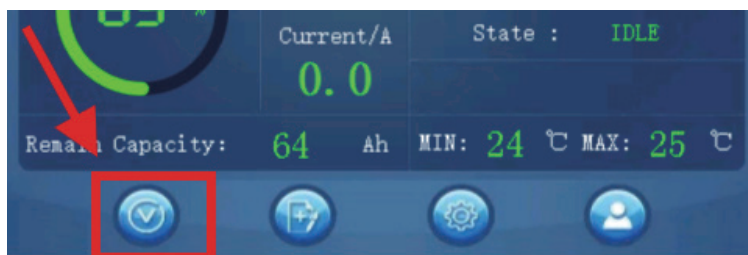
On the Home page, tap the Settings button (as shown in the figure) to enter the Settings interface. In this interface, you can switch the language, change the temperature unit, view the firmware version of the connected battery and the ESM itself.





### 3. View Pack Information

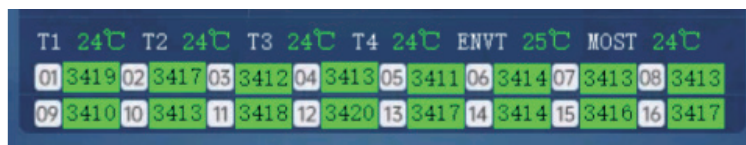
To view battery pack information on the display, click the bottom-left button (as shown in the figure) on the main page to enter the battery-pack selection page and select the corresponding battery pack to view (Note: Green indicates the slave unit is online, white indicates it is offline, and only online slave units can be selected for viewing.)



Upon entering the slave unit page, as shown in the following figure: "PACK #01" indicates this is the first battery pack. Charge MOS: The green indicator light is on, indicating charging. Discharge MOS: The green indicator light is on, indicating discharging. T1 to T4 represent the temperatures of four temperature sensors at different locations within the battery pack. "ENV: 26°C" indicates the ambient temperature. "MOST: 24°C" indicates the temperature of the hottest battery module at 24°C. The last two lines are the cell temperatures, in millivolts.

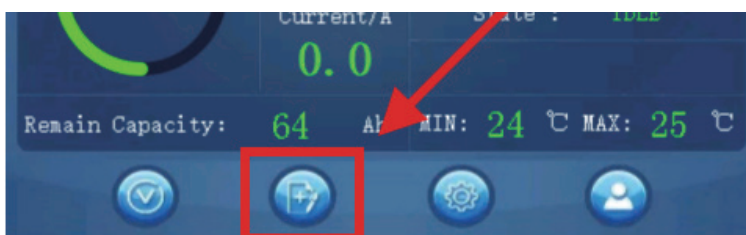


When the cells are balancing, the indicator lights up green. The figure below shows the effect.



#### 4. View Communication Protocol

To view the communication protocol of the battery pack on the display, click the protocol button on the main page to switch to the battery communication protocol interface.



Click the “Read” button on the battery communication protocol interface to retrieve the currently used protocol.



### III. Inverter-Related Settings

To modify the protocol and parameters, you need to log in to the system first. The steps are as follows:

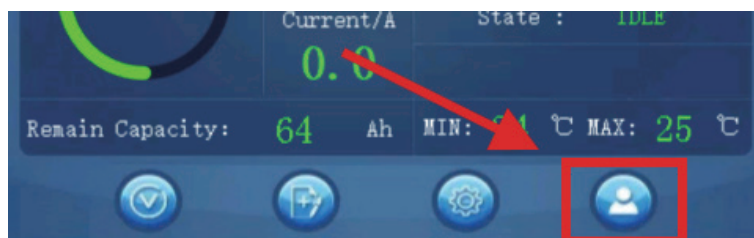
Click the user button at the bottom right to enter the user login interface, enter the login password "111111", and after successful login, return to the main interface and click the protocol button.

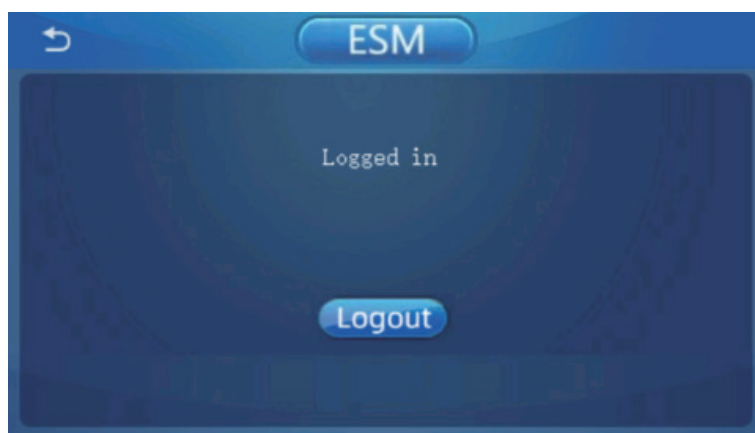
If you are an experienced solar energy DIY enthusiast, you can try “666888” to unlock more functions.



#### Warning

Modifying BMS parameters with the LCD touch screen requires authorisation from ECO-WORTHY. Otherwise, it will be considered an illegal modification and will result in the loss of warranty eligibility.





Enter the protocol and parameter settings interface, where you can change the protocol and corresponding parameters according to your needs.



## IV. Technical Support

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### 1) Customer service email:



**E-mail:** [essvipssupport@eco-worthy.com.cn](mailto:essvipssupport@eco-worthy.com.cn)

### 2) Company address: USA/Germany



**Address(US):** 4411 East State Hwy D Suite C Springfield, Missouri 65809



**Address(DE):** ECO-Worthy Europe GmbH Otto-Hahn-Str. 20 61381 Friedrichsdorf - Köppern Germany

### 3) Customer service telephone numbers:

**Tel(DE):** +49 6175 6514 999

**Tel(US):** +1 866-939-8222

**Tel(UK):** +44 7553 406988

#### **Note:**

Customer Service Hours:

**US:** Mon-Fri 8:3AM - 6:00 PM(CST)

**UK:** Mon-Fri 9 AM - 5 PM(GMT)

**DE:** Mon-Fri 9 AM - 5 PM(CET)

### 4) Official website address:



**Web:** <https://www.eco-worthy.com/>

### 5) Official social media:



**Facebook:** <https://www.facebook.com/ecoworthy.store/>



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