

## SEPLOS 2A Active Balance

# Seplos 2A Active Balance Board User Manual

Model: SEPLOS 2A Active Balance

## 1. INTRODUCTION

The Seplos 2A Active Balance Board is designed to enhance the performance and longevity of LFP (Lithium Iron Phosphate) and LiFePO<sub>4</sub> lithium energy storage battery packs. It can operate independently or in conjunction with the Seplos BMS 3.0 system. Its primary function is to maintain cell consistency within the battery pack by actively balancing individual cell voltages, ensuring optimal charge and discharge cycles.

This manual provides comprehensive instructions for the setup, operation, maintenance, and troubleshooting of your Seplos 2A Active Balance Board.

## 2. PRODUCT OVERVIEW

The Seplos 2A Active Balance Board is a sophisticated electronic circuit board engineered for precise battery cell balancing. It features multiple balancing circuits, each capable of providing a 2A balance current. The board draws power directly from the battery pack it monitors.



Figure 2.1: Top-down view of the Seplos 2A Active Balance Board, showing its compact design and various electronic components.

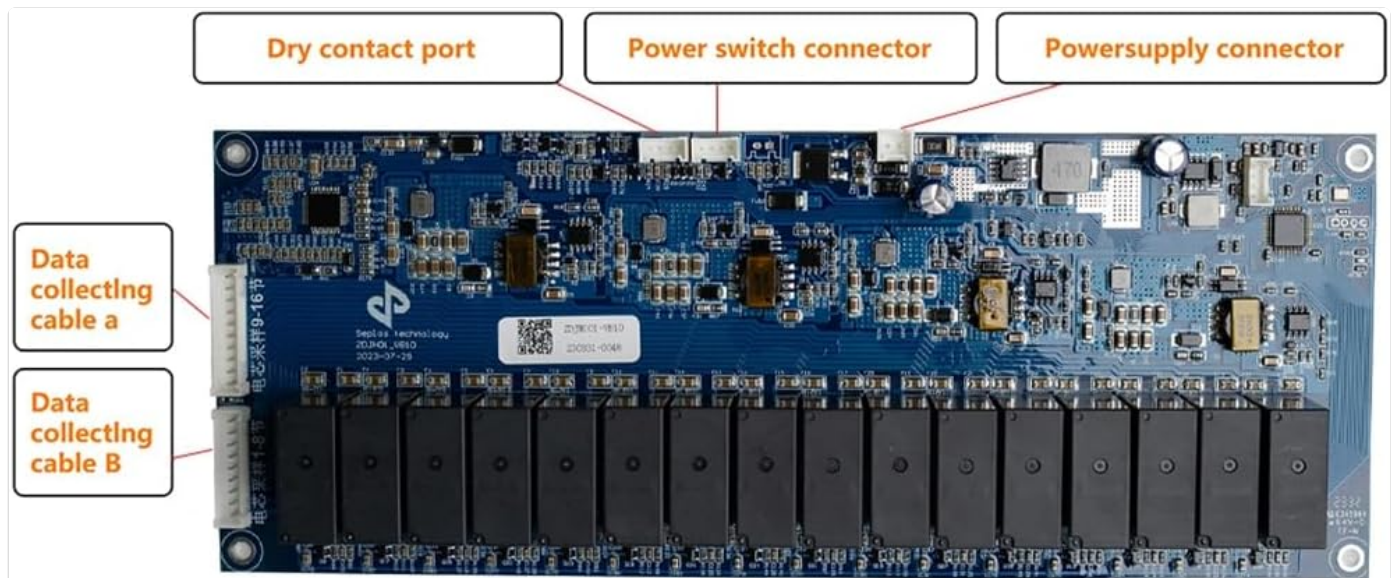


Figure 2.2: Detailed view of the balance board with key connection points labeled, including dry contact port, power switch connector, power supply connector, and data collecting cables A and B.

## Key Features:

- **Active Balancing:** Provides up to 2A balance current per circuit to quickly equalize cell voltages.
- **Compatibility:** Can be used as a standalone unit or integrated with Seplos BMS 3.0 systems.
- **Automatic Operation:** Initiates balancing when cell voltage thresholds are met, often triggered by a compatible BMS.
- **Energy Efficiency:** Draws minimal power directly from the battery pack for operation.

## 3. SETUP AND INSTALLATION

Proper installation is crucial for the safe and effective operation of the Seplos 2A Active Balance Board. Ensure all connections are secure and correct before powering on the system.

### 3.1 Safety Precautions

- Always disconnect the battery pack from any loads or chargers before installation.
- Wear appropriate personal protective equipment (PPE), including insulated gloves and eye protection.
- Ensure the work area is dry and free from conductive materials.
- Verify correct polarity for all connections to prevent damage to the board or battery.

### 3.2 Connection Steps

1. **Prepare the Battery Pack:** Ensure all individual cells in your LiFePO4 battery pack are at a safe voltage level and are properly arranged.
2. **Connect Balance Wires:** Connect the provided balance wires from each cell tap point to the corresponding ports on the active balance board. Refer to Figure 3.1 for a visual guide. Ensure the wires are connected in the correct sequence (e.g., B-, B1, B2, ..., B+).
3. **Connect Power Supply:** Connect the main power supply wires from the battery pack to the designated power supply connector on the balance board.
4. **Integrate with BMS (Optional):** If using with a Seplos BMS 3.0, connect the data collecting cables (A and B) and the dry contact port as per the BMS manual's instructions. This allows the BMS to signal the balance board to begin operation.
5. **Power Switch Connection (Optional):** If desired, connect an external power switch to the power switch connector for

manual control.

6. **Secure the Board:** Mount the balance board securely within your battery enclosure or system, ensuring adequate ventilation and protection from environmental factors.

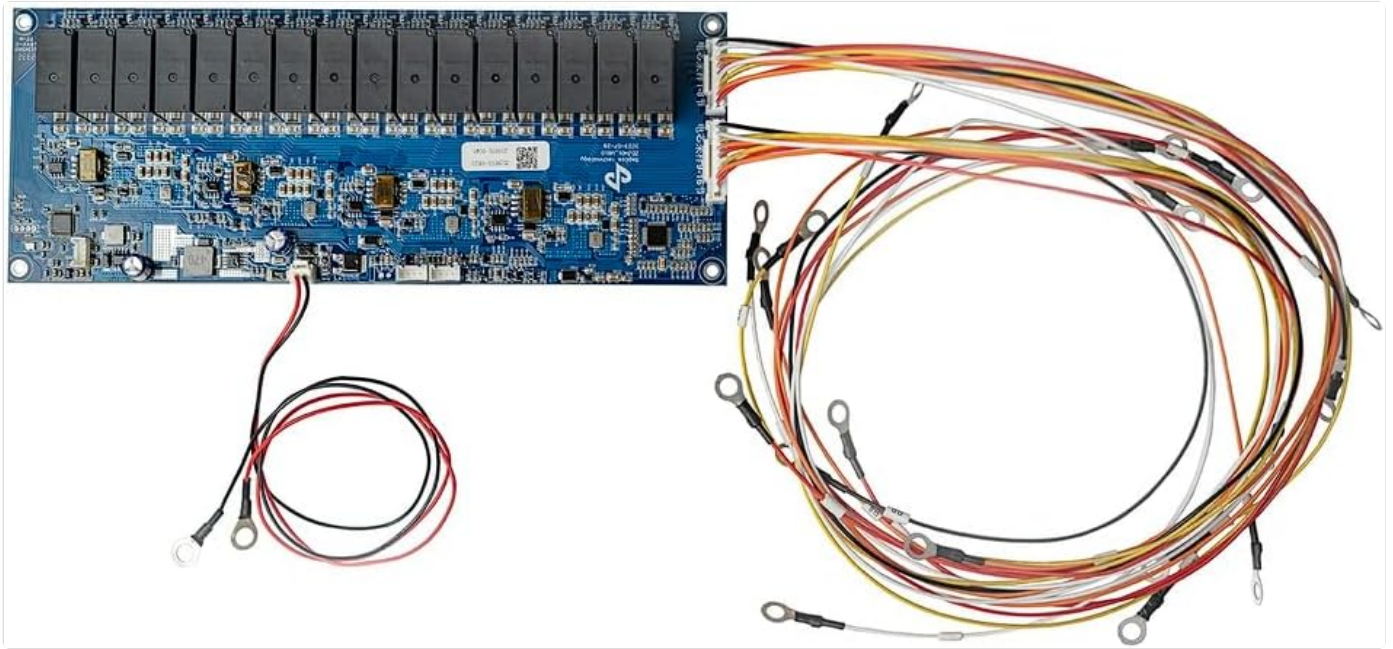


Figure 3.1: The Seplos 2A Active Balance Board shown with its accompanying connection wires, illustrating the numerous cell tap points.

## 4. OPERATING INSTRUCTIONS

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The Seplos 2A Active Balance Board operates largely automatically once properly installed and connected. Its primary function is to equalize the voltage of individual cells within a battery pack.

### 4.1 Automatic Balancing

When connected to a battery pack, the balance board continuously monitors the voltage of each cell. If a voltage difference between cells exceeds a predefined threshold, the active balancing process will automatically initiate. The board will draw energy from higher-voltage cells and transfer it to lower-voltage cells until all cells are within an acceptable voltage range.

If integrated with a Seplos BMS 3.0, the BMS will send a signal to the balance board when balancing is required, optimizing the balancing process based on the overall battery management strategy.



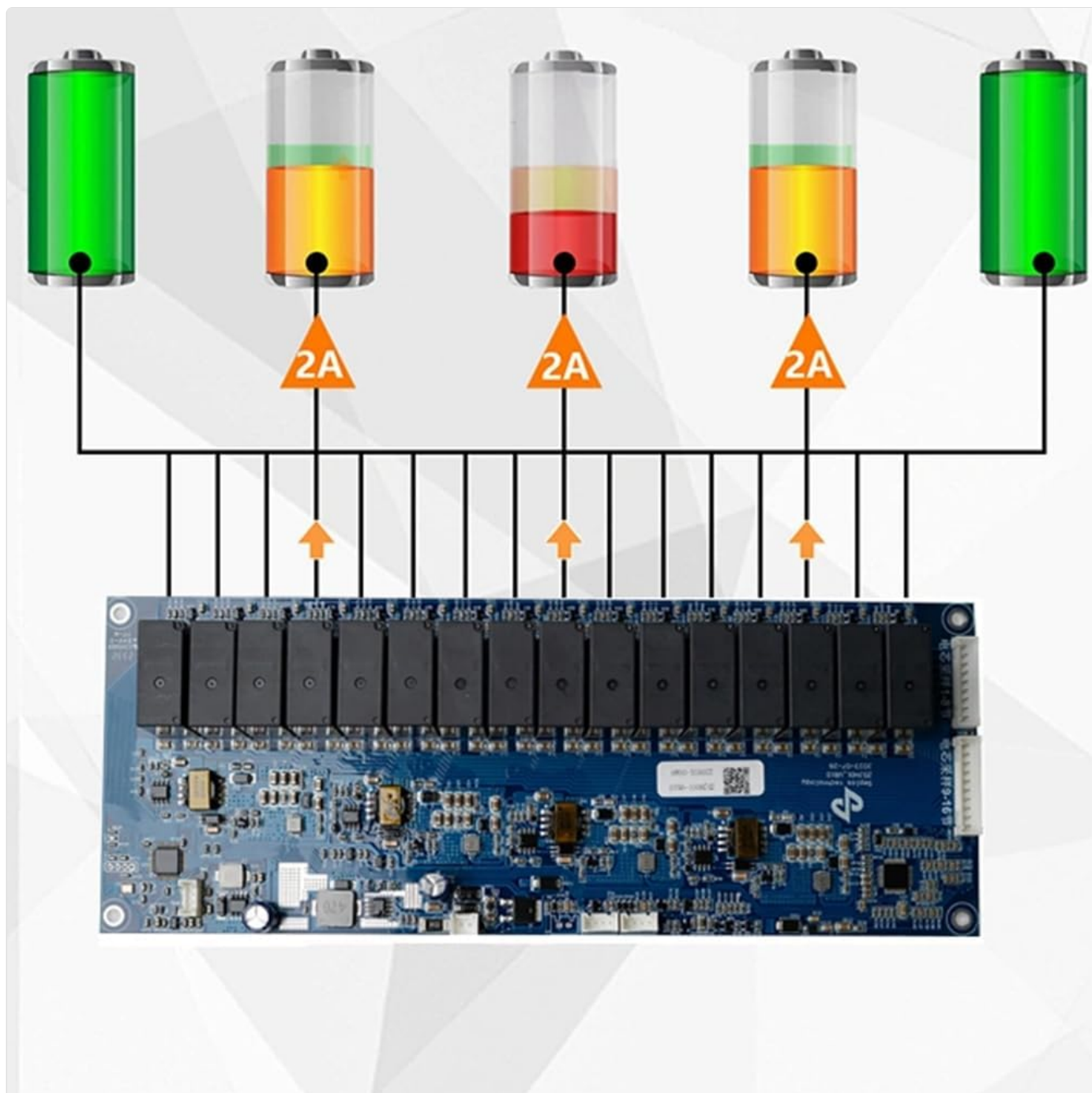


Figure 4.1: Conceptual diagram showing how the active balance board equalizes cell voltages by transferring energy from higher voltage cells to lower voltage cells.

## 4.2 Indicators (if applicable)

Some versions of the board may include LED indicators to show balancing status or power. Refer to the specific product documentation for your board model for details on indicator behavior.

## 5. MAINTENANCE

The Seplos 2A Active Balance Board is designed for minimal maintenance. However, periodic checks can help ensure its long-term reliability.

- **Visual Inspection:** Periodically inspect the board for any signs of physical damage, loose connections, or corrosion.
- **Cleanliness:** Keep the board free from dust, dirt, and moisture. Use a soft, dry brush or compressed air to gently clean the surface if necessary. Do not use liquid cleaners.
- **Ventilation:** Ensure the board is installed in an area with adequate airflow to prevent overheating, especially during active

balancing.

- **Connection Integrity:** Verify that all wire connections remain secure and have not loosened over time due to vibration or temperature changes.

## 6. TROUBLESHOOTING

If you encounter issues with your Seplos 2A Active Balance Board, refer to the following common troubleshooting steps:

| Problem  | Possible Cause  | Solution  |
|--|---|---|
| Board not active / No balancing                            | Incorrect wiring or loose connections.<br>Cell voltage difference is below balancing threshold.<br>BMS not signaling the balance board (if integrated).<br>Board malfunction. | Check all balance wire and power connections for correctness and security.<br><br>Monitor cell voltages; balancing only occurs when necessary.<br><br>Verify BMS settings and connections. Consult BMS manual.<br><br>Contact customer support if all other steps fail. |
| Overheating of the board                                   | Insufficient ventilation.<br>Prolonged high current balancing due to severely unbalanced cells.   | Ensure adequate airflow around the board.<br><br>Pre-balance cells manually if they are severely out of balance before connecting the board.  |
| Inaccurate cell voltage readings (if monitored externally) | Poor contact at cell tap points.<br>Damaged balance wires.  | Inspect and re-secure all cell tap connections.<br><br>Check balance wires for cuts or damage; replace if necessary.  |

If the problem persists after attempting these solutions, please contact Seplos customer support for further assistance.

## 7. SPECIFICATIONS






| Feature                  | Detail  |
|--------------------------|---|
| Product Name             | Seplos 2A Active Balance Board                |
| Model Number             | SEPLOS 2A Active Balance                      |
| Compatible Battery Types | LFP, LiFePO4 Lithium Energy Storage Batteries |
| Balance Current          | Up to 2A per circuit                          |
| Compatibility            | Standalone or with Seplos BMS 3.0             |
| Material                 | Alloy Steel (Board components)                |
| Item Weight              | 0.75 Kilograms                                |

## 8. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact the manufacturer directly. Keep your proof of purchase for warranty claims.

Manufacturer: seplos

### Related Documents - SEPLOS 2A Active Balance

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|--|---|
| <div style="text-align: center;">  </div> <div style="margin-top: 10px;"> <p><b>SEPLOSMART 16S 100A<br/>BATTERY LFP MANAGEMENT SYSTEM<br/>USER MANUAL</b></p> </div> <div style="font-size: small; margin-top: 100px;">       Chengdu Jikong Technology Co., Ltd.     </div>  | <h3 style="color: blue;"><a href="#">SEPLOS SMART 16S 100A BMS USER MANUAL</a></h3> <p>User manual for the SEPLOS SMART 16S 100A Battery Management System (BMS), detailing its features, electrical specifications, parameter settings, working modes, LED indicators, function introductions, wiring, communication interfaces, and safety precautions for LFP battery packs.</p>   |
| <div style="text-align: center;">  </div> <div style="margin-top: 10px;"> <p><b>JK-B2A25S-RP Active Balance Relay BMS</b></p> </div> <div style="font-size: x-small; margin-top: 100px;">       Chengdu Jikong Technology Co., Ltd.     </div>  | <h3 style="color: blue;"><a href="#">JK-B2A25S-RP Active Balance Relay BMS: Operation and Maintenance Instructions</a></h3> <p>Comprehensive operation and maintenance guide for the JK-B2A25S-RP Active Balance Relay BMS by Chengdu Jikong Technology Co., Ltd. Learn about its features, installation, usage, and troubleshooting for large capacity lithium battery packs.</p>  |
| <div style="text-align: center;">  </div> <div style="margin-top: 10px;"> <p><b>JIKONG JK-B2A24S-30P Lithium Battery Active Balancing Protection Board</b></p> </div> <div style="font-size: x-small; margin-top: 100px;">       Chengdu Jikong Technology Co., Ltd.     </div>   | <h3 style="color: blue;"><a href="#">JIKONG JK-B2A24S-30P Lithium Battery Active Balancing Protection Board Manual</a></h3> <p>Comprehensive maintenance and user manual for the JIKONG JK-B2A24S-30P Lithium Battery Active Balancing Protection Board. Details product overview, functional characteristics, selection guides, detailed function descriptions, main parameters, interface definitions, installation methods, and APP operation instructions. Supports various lithium battery chemistries and configurations.</p> |
| <div style="text-align: center;">  </div> <div style="margin-top: 10px;"> <p><b>JK-BD4A24S-4P Lithium Battery Active Balancing Protection Board</b></p> </div> <div style="font-size: x-small; margin-top: 100px;">       Chengdu Jikong Technology Co., Ltd.     </div>  | <h3 style="color: blue;"><a href="#">JK-BD4A24S-4P Lithium Battery Active Balancing Protection Board User Manual</a></h3> <p>Detailed user and maintenance manual for the JK-BD4A24S-4P Lithium Battery Active Balancing Protection Board by Chengdu Jikong Technology Co., LTD. Covers product overview, features, selection guide, functions, parameters, interface definition, installation, and APP operation.</p>  |
| <div style="text-align: center;">  </div>   | <h3 style="color: blue;"><a href="#">JK Smart Active Balance BMS User Manual and Specifications</a></h3> <p>This document provides a comprehensive user manual and technical specifications for the JK Smart Active Balance BMS, covering installation, operation, troubleshooting, and product details for various models.</p>   |
| <div style="font-size: x-small;"> <p>Download the QR code from the QR code on the back of the device to get the latest version of the user manual.</p> <p>The user manual is available in English, Chinese, and Russian.</p> <p>The user manual is available in PDF format.</p> <p>The user manual is available in the following languages:</p> <ul style="list-style-type: none"> <li>English</li> <li>Chinese</li> <li>Russian</li> </ul> <p>The user manual is available in the following formats:</p> <ul style="list-style-type: none"> <li>PDF</li> <li>HTML</li> <li>EPUB</li> </ul> <p>The user manual is available in the following locations:</p> <ul style="list-style-type: none"> <li>Product website</li> <li>Product packaging</li> <li>Product documentation</li> </ul> <p>The user manual is available in the following versions:</p> <ul style="list-style-type: none"> <li>V1.0</li> <li>V1.1</li> <li>V1.2</li> </ul> <p>The user manual is available in the following editions:</p> <ul style="list-style-type: none"> <li>Standard Edition</li> <li>Advanced Edition</li> <li>Professional Edition</li> </ul> <p>The user manual is available in the following series:</p> <ul style="list-style-type: none"> <li>Series A</li> <li>Series B</li> <li>Series C</li> </ul> <p>The user manual is available in the following models:</p> <ul style="list-style-type: none"> <li>Model A</li> <li>Model B</li> <li>Model C</li> </ul> <p>The user manual is available in the following parts:</p> <ul style="list-style-type: none"> <li>Part A</li> <li>Part B</li> <li>Part C</li> </ul> <p>The user manual is available in the following components:</p> <ul style="list-style-type: none"> <li>Component A</li> <li>Component B</li> <li>Component C</li> </ul> <p>The user manual is available in the following modules:</p> <ul style="list-style-type: none"> <li>Module A</li> <li>Module B</li> <li>Module C</li> </ul> <p>The user manual is available in the following functions:</p> <ul style="list-style-type: none"> <li>Function A</li> <li>Function B</li> <li>Function C</li> </ul> <p>The user manual is available in the following features:</p> <ul style="list-style-type: none"> <li>Feature A</li> <li>Feature B</li> <li>Feature C</li> </ul> <p>The user manual is available in the following specifications:</p> <ul style="list-style-type: none"> <li>Specification A</li> <li>Specification B</li> <li>Specification C</li> </ul> <p>The user manual is available in the following standards:</p> <ul style="list-style-type: none"> <li>Standard A</li> <li>Standard B</li> <li>Standard C</li> </ul> <p>The user manual is available in the following compliance:</p> <ul style="list-style-type: none"> <li>Compliance A</li> <li>Compliance B</li> <li>Compliance C</li> </ul> <p>The user manual is available in the following certification:</p> <ul style="list-style-type: none"> <li>Certification A</li> <li>Certification B</li> <li>Certification C</li> </ul> <p>The user manual is available in the following approval:</p> <ul style="list-style-type: none"> <li>Approval A</li> <li>Approval B</li> <li>Approval C</li> </ul> <p>The user manual is available in the following signature:</p> <ul style="list-style-type: none"> <li>Signature A</li> <li>Signature B</li> <li>Signature C</li> </ul> <p>The user manual is available in the following date:</p> <ul style="list-style-type: none"> <li>Date A</li> <li>Date B</li> <li>Date C</li> </ul> <p>The user manual is available in the following time:</p> <ul style="list-style-type: none"> <li>Time A</li> <li>Time B</li> <li>Time C</li> </ul> <p>The user manual is available in the following location:</p> <ul style="list-style-type: none"> <li>Location A</li> <li>Location B</li> <li>Location C</li> </ul> <p>The user manual is available in the following address:</p> <ul style="list-style-type: none"> <li>Address A</li> <li>Address B</li> <li>Address C</li> </ul> <p>The user manual is available in the following contact:</p> <ul style="list-style-type: none"> <li>Contact A</li> <li>Contact B</li> <li>Contact C</li> </ul> <p>The user manual is available in the following information:</p> <ul style="list-style-type: none"> <li>Information A</li> <li>Information B</li> <li>Information C</li> </ul> <p>The user manual is available in the following data:</p> <ul style="list-style-type: none"> <li>Data A</li> <li>Data B</li> <li>Data C</li> </ul> <p>The user manual is available in the following results:</p> <ul style="list-style-type: none"> <li>Results A</li> <li>Results B</li> <li>Results C</li> </ul> <p>The user manual is available in the following status:</p> <ul style="list-style-type: none"> <li>Status A</li> <li>Status B</li> <li>Status C</li> </ul> <p>The user manual is available in the following position:</p> <ul style="list-style-type: none"> <li>Position A</li> <li>Position B</li> <li>Position C</li> </ul> <p>The user manual is available in the following direction:</p> <ul style="list-style-type: none"> <li>Direction A</li> <li>Direction B</li> <li>Direction C</li> </ul> <p>The user manual is available in the following movement:</p> <ul style="list-style-type: none"> <li>Movement A</li> <li>Movement B</li> <li>Movement C</li> </ul> <p>The user manual is available in the following action:</p> <ul style="list-style-type: none"> <li>Action A</li> <li>Action B</li> <li>Action C</li> </ul> <p>The user manual is available in the following behavior:</p> <ul style="list-style-type: none"> <li>Behavior A</li> <li>Behavior B</li> <li>Behavior C</li> </ul> <p>The user manual is available in the following reaction:</p> <ul style="list-style-type: none"> <li>Reaction A</li> <li>Reaction B</li> <li>Reaction C</li> </ul> <p>The user manual is available in the following response:</p> <ul style="list-style-type: none"> <li>Response A</li> <li>Response B</li> <li>Response C</li> </ul> <p>The user manual is available in the following output:</p> <ul style="list-style-type: none"> <li>Output A</li> <li>Output B</li> <li>Output C</li> </ul> <p>The user manual is available in the following effect:</p> <ul style="list-style-type: none"> <li>Effect A</li> <li>Effect B</li> <li>Effect C</li> </ul> <p>The user manual is available in the following consequence:</p> <ul style="list-style-type: none"> <li>Consequence A</li> <li>Consequence B</li> <li>Consequence C</li> </ul> <p>The user manual is available in the following result:</p> <ul style="list-style-type: none"> <li>Result A</li> <li>Result B</li> <li>Result C</li> </ul> <p>The user manual is available in the following final outcome:</p> <ul style="list-style-type: none"> <li>Final Outcome A</li> <li>Final Outcome B</li> <li>Final Outcome C</li> </ul> </div> | <h3 style="color: blue;"><a href="#">JK SMART ACTIVE BMS Product Specifications and Features</a></h3> <p>Comprehensive details on JK SMART ACTIVE BMS products, including technical specifications for various models, security protections, operational modes, and connection diagrams. Features include active balancing, heating function support, and mobile app connectivity.</p>  |



[\[pdf\]](#) Specifications  
WPS 1662597242 Seplos V3 0 2A Active Balancer Board Specification SEPLOS Balance 1 v  
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Dongguan Seplos Technology Co., Ltd SEPLOS 2A Active Balance Board  
Specification CONTENT www.seplos.com 1. Application  
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Specification .....  
lang:en score:39 filesize: 1.08 M page\_count: 10 document date: 2023-09-14