

## Reli On RB36V40

# Relion RB36V40 36V 40Ah Lithium Deep Cycle Battery User Manual

Model: RB36V40 | Brand: Reli On

## 1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your Relion RB36V40 36V 40Ah Lithium Deep Cycle Battery. The RB36V40 is a robust 36V lithium iron phosphate battery designed for marine environments, offering durability, ease of installation, and extended capacity for prolonged use on the water.

## 2. SAFETY INFORMATION

Always read and understand all safety warnings and instructions before installing or operating the battery. Failure to do so may result in serious injury or property damage.

- **Proposition 65 Warning:** This product may contain materials cautioned by California Proposition 65.
- Ensure proper ventilation during charging and operation.
- Do not short-circuit the battery terminals.
- Use only compatible chargers and equipment specifically designed for LiFePO4 batteries.
- Avoid exposing the battery to extreme temperatures outside the specified operating range.
- Do not disassemble, puncture, or damage the battery.
- Consult an ABYC certified electrical professional for specific application design, especially for complex wiring.

## 3. PRODUCT OVERVIEW

The Relion RB36V40 is a high-performance lithium iron phosphate (LiFePO4) battery engineered for demanding applications, particularly in marine settings. Its design prioritizes ease of use, longevity, and enhanced power delivery, making it suitable for various uses including commercial applications like floor cleaning equipment.



Figure 3.1: Front view of the Relion RB36V40 battery, showcasing its blue casing and terminal posts.



Figure 3.2: Angled view of the Relion RB36V40 battery, highlighting its compact design and robust construction.



Figure 3.3: Top view of the Relion RB36V40 battery, showing the positive and negative terminals clearly labeled.

### Key Features:

- **Parallel Set-Up:** Designed for simpler installation and increased capacity, allowing for max voltage with minimum hassle.
- **Extended Run Times:** Offers enhanced run times compared to series equivalents, providing more time on the water.
- **Marine-Optimized Design:** Features an IP67 waterproof rating, enhanced case, and a new glue channel and screw-latched enclosure to protect against airborne contaminants.
- **Faster Charging:** The parallel setup facilitates quicker and easier charging.
- **Lightweight:** Its low weight helps maintain speed in marine applications.
- **Durable Construction:** Ensures longevity and reliability in demanding environments.

## 4. SETUP AND INSTALLATION

The RB36V40 battery is designed for straightforward installation, particularly in parallel configurations to achieve maximum voltage with minimal complexity. Always consult an ABYC certified electrical professional for specific application design.

### Parallel Wiring Diagram (Example: 36V Trolling Motor):

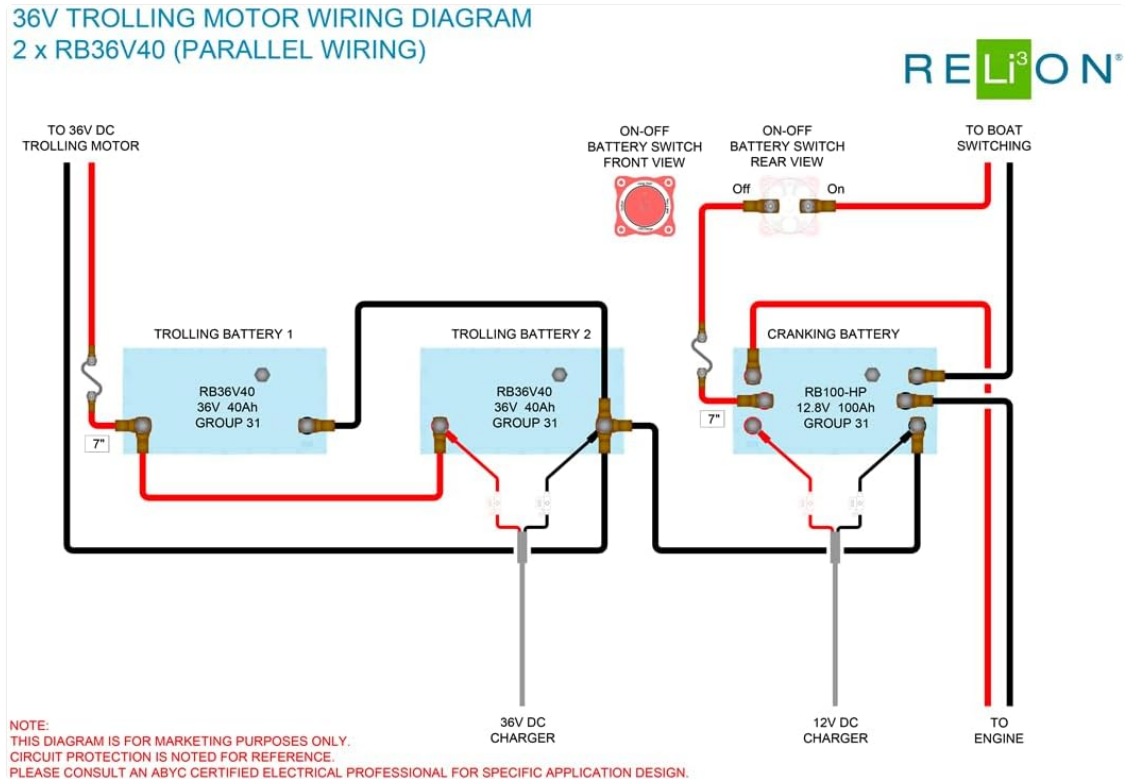


Figure 4.1: Wiring diagram illustrating a parallel setup for two RB36V40 batteries with a 36V DC charger and connections to a 36V DC trolling motor and boat switching. Also shows a cranking battery setup.

**Note:** This diagram is for marketing purposes only. Circuit protection is not referenced. Please consult an ABYC certified electrical professional for specific application design.

### Installation Steps:

- Preparation:** Ensure all components are present and undamaged. Verify the battery's voltage and capacity match your system requirements.
- Mounting:** Securely mount the battery in a well-ventilated area, away from direct heat sources or flammable materials. The battery's small footprint facilitates on-board installation.
- Wiring:** Connect the battery terminals using appropriate gauge cables and connectors. For parallel configurations, ensure all connections are tight and secure to prevent resistance and overheating. Refer to Figure 4.1 for an example wiring diagram.
- Charging:** Before initial use, fully charge the battery using a compatible lithium iron phosphate charger.
- System Integration:** Connect the battery system to your application (e.g., trolling motor, inverter) following the manufacturer's guidelines.

## 5. OPERATING INSTRUCTIONS

The RB36V40 battery is designed for reliable performance in various applications, including marine and commercial uses like floor cleaning settings.

### General Operation:

- **Powering On/Off:** Use an appropriate battery switch or system control to connect or disconnect the battery from the load.
- **Monitoring:** If your system includes a battery monitor, regularly check the battery's state of charge (SOC) and voltage to ensure optimal performance.
- **Discharge Limits:** Avoid discharging the battery below the recommended low voltage disconnect of 30.0 V to preserve battery life. The discharge under-voltage protection is set at 27.6 V.
- **Temperature Range:** Operate the battery within the specified discharge temperature range of -4 to 140 °F (-20 to 60 °C).

### Charging:

- Use a charger specifically designed for LiFePO4 batteries with a 36V nominal output.
- Ensure the charge temperature is within -4 to 113 °F (-20 to 45 °C).
- The parallel setup of the RB36V40 allows for quicker and easier charging.

## 6. MAINTENANCE

The Relion RB36V40 battery is designed for low maintenance, contributing to reduced downtime and operational costs. Regular checks can help ensure its longevity and performance.

- **Terminal Inspection:** Periodically inspect battery terminals and connections for corrosion, looseness, or damage. Clean and tighten as necessary.
- **Casing Integrity:** Check the battery casing for any signs of physical damage, cracks, or swelling. The enhanced case with IP67 waterproof rating provides robust protection.
- **Cleaning:** Keep the battery clean and free of dust and debris. Use a dry cloth for cleaning.
- **Storage:** If storing the battery for an extended period, ensure it is charged to a recommended storage temperature of 23 to 95 °F (-5 to 35 °C). The self-discharge rate is less than 3% per month.

## 7. TROUBLESHOOTING

This section addresses common issues you might encounter with your RB36V40 battery. For problems not listed here, contact customer support.

| Problem                | Possible Cause  | Solution  |
|------------------------|---|---|
| Battery not charging   | Charger not connected, faulty charger, or temperature outside charging range. | Ensure charger is properly connected. Verify charger functionality. Check ambient temperature is within -4 to 113 °F (-20 to 45 °C).                  |
| Low power output       | Battery not fully charged, loose connections, or excessive load.              | Fully charge the battery. Inspect and tighten all connections. Reduce load if exceeding maximum continuous discharge current (50 A).                  |
| Battery not turning on | Battery is in low voltage disconnect mode or internal protection activated.   | Charge the battery to reactivate (reconnect voltage 30.0 V). If protection is activated due to short circuit, remove load and allow battery to reset. |

| Problem                 | Possible Cause                  | Solution   |
|-------------------------|---------------------------------|--|
| Unusual odors or sounds | Internal damage or malfunction. | Immediately disconnect the battery from all loads and chargers. Do not attempt to use or repair. Contact customer support. |

## 8. SPECIFICATIONS

Detailed technical specifications for the Relion RB36V40 Lithium Deep Cycle Battery.

| Parameter                              | Value                       |
|--|-----------------------------|
| Model                                  | RB36V40                     |
| Nominal Voltage                        | 38.4 V                      |
| Nominal Capacity                       | 40 Ah                       |
| Capacity @ 25 A                        | 96 min                      |
| Resistance                             | ≤50 mΩ @ 50% SOC            |
| Efficiency                             | 99%                         |
| Self Discharge                         | <3% per Month               |
| Series Connections                     | No. 36V system only.        |
| Parallel Connections                   | Unlimited                   |
| Maximum Continuous Discharge Current   | 50 A                        |
| Peak Discharge Current                 | 175 A (7.5 s ±2.5 s)        |
| Discharge Over-Current Protection      | 200A +/- 35A (100 +/- 50ms) |
| Recommended Low Voltage Disconnect     | 30.0 V                      |
| Discharge Under-Voltage Protection     | 27.6 V (2.3 ±0.01 vpc)      |
| Reconnect Voltage                      | 30.0 V (2.5 ±0.08 vpc)      |
| Short Circuit Protection Response Time | 200-800 μs                  |
| Discharge Temperature                  | -4 to 140 °F (-20 to 60 °C) |
| Charge Temperature                     | -4 to 113 °F (-20 to 45 °C) |
| Recommended Storage Temperature        | 23 to 95 °F (-5 to 35 °C)   |
| Item Weight                            | 30.9 pounds                 |
| Product Dimensions (L x W x H)         | 13 x 6.8 x 8.4 inches       |

| Parameter    | Value          |
|--------------|----------------|
| Manufacturer | Relion Battery |
| UPC          | 850044617623   |



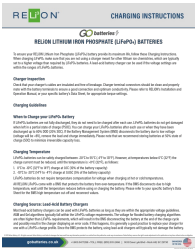
## 9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official Reli On website or contact their customer service directly. The product has an EU Spare Part Availability Duration of 5 Years for spare parts.

**Online Resources:** [www.relionbattery.com](http://www.relionbattery.com)

For specific inquiries or assistance with troubleshooting, it is recommended to contact Reli On customer support through their official channels.

### Related Documents

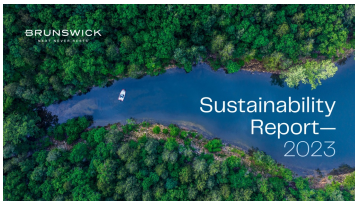
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|  | <p><a href="#">RELION Standard Products User Manual: Care, Installation, and Operation Guide</a></p> <p>Comprehensive user manual for RELiON Lithium Iron Phosphate (LiFePO4) batteries. Covers safety, installation, storage, charging, discharging, BMS operation, and warranty registration for various RELiON models.</p>  |
|  | <p><a href="#">RELION Portable Battery Analyzer IT27-20 User Manual</a></p> <p>Comprehensive user manual for the RELION Portable Battery Analyzer (Model IT27-20). Covers technical specifications, product structure, operation, battery installation, charging, software updates, setup, storage, and safety precautions.</p>  |
|  | <p><a href="#">RELiON Lithium Iron Phosphate (LiFePO4) Battery Charging Instructions</a></p> <p>Comprehensive guide to charging RELiON Lithium Iron Phosphate (LiFePO4) batteries, covering charger inspection, charging guidelines, temperature considerations, charge profiles (1-stage and 2-stage), parallel and series system charging, and operational parameters for various system voltages.</p> |



[RELiON Legacy Series User Manual - Battery Care and Installation Guide](#)

Official user manual for RELiON Legacy Series Lithium Iron Phosphate (LiFePO4) batteries. Provides essential information on safe handling, installation, operation, storage, charging procedures, BMS functions, and warranty registration.

Documents - Reli On – RB36V40



[\[pdf\] Sustainability Report](#)

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