



Manuals.plus /

› eSync /

› eSync Professional 500A Battery Monitor (Model RINESY371) User Manual

eSync RINESY371

eSync Professional 500A Battery Monitor

Model: RINESY371

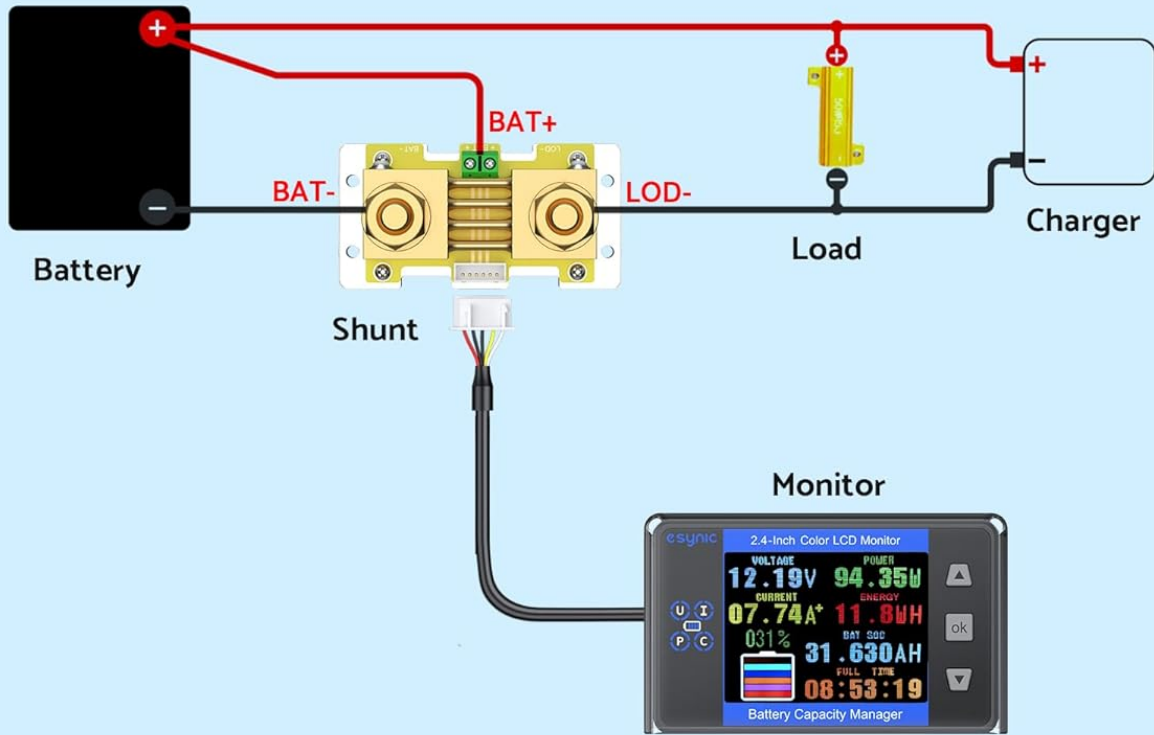
1. INTRODUCTION

The eSync Professional 500A Battery Monitor is designed to provide accurate, real-time monitoring of your battery system's voltage, current, power, remaining capacity, and runtime. This device is suitable for a wide range of applications, including RVs, solar systems, marine setups, and other off-grid power solutions. It supports various battery types such as lead-acid, LiFePO4, and lithium-ion batteries.

2. PACKAGE CONTENTS

Please verify that all items listed below are included in your package:

- 1x Battery Monitor Display Unit
- 1x 500A Shunt
- 1x Shielded Wire (approx. 3 meters / 9.8 feet)
- 1x B+ Wire
- 1x Hand Wrench
- 2x Battery Terminals (Copper Lugs)



NOTICE:

The charging wiring is the same as the discharging wiring—simply replace the load with a charger.

Image 2.1: All components included in the eSynic Professional 500A Battery Monitor package.

3. SPECIFICATIONS

| Feature | Description |
|------------------------|-----------------------------------|
| Brand | eSynic |
| Model | RINESY371 |
| Power Source | Battery Powered |
| Voltage Range | 8V - 100V |
| Current Range | 0A - 500A |
| Accuracy | ±1% (Voltage/Current) |
| Display | 2.4" Color Backlit LCD |
| Dimensions (L x W x H) | 3.74 x 2.17 x 0.71 inches |
| Power Consumption | 0.3W (Operating) / 0.2W (Standby) |

4. KEY FEATURES

- **High Precision Monitoring:** Tracks voltage (8-100V) and current (0-500A) with ±1% accuracy for reliable battery health assessment.
- **Clear 2.4" Color Backlit LCD Display:** Simultaneously shows real-time voltage, current, power, remaining capacity, runtime, and consumption patterns. The backlight ensures readability in various lighting conditions.
- **Extended Shielded Cables:** Includes a 3-meter (9.8ft) shielded cable to minimize electrical interference, along with a professional crimping tool and mounting hardware for straightforward installation.
- **Smart Low Voltage Alerts:** Features an automatic alert system that activates when battery capacity reaches critical levels, helping to prevent deep discharge and prolonging battery lifespan.
- **Universal Compatibility:** Designed to work with all 12V, 24V, and 48V battery systems, making it suitable for RVs, solar power setups, marine applications, golf carts, electric vehicles, and off-grid power solutions.

5. INSTALLATION GUIDE

Proper installation is crucial for accurate readings and safe operation. Follow these steps carefully:

5.1 Wiring Diagram



Image 5.1: Recommended wiring diagram for the eSonic Battery Monitor. The shunt is installed on the negative side of the battery.

1. **Connect the Shunt:** Install the 500A shunt on the negative side of your battery bank. Ensure all loads and charging sources pass through the shunt for accurate current measurement.
2. **Connect Shunt to Monitor:** Use the provided shielded wire to connect the shunt to the display unit. This cable transmits data from the shunt to the monitor.
3. **Connect B+ Wire:** Connect the B+ wire from the positive terminal of your battery to the designated positive input on the monitor. This provides the voltage reference for the display.
4. **Secure Connections:** Use the included hand wrench and battery terminals (copper lugs) to ensure all connections are tight and secure. Loose connections can lead to inaccurate readings or electrical hazards.
5. **Mount the Display:** The display unit is designed for flush mounting. Create an appropriate cutout in your desired location and snap the display into place. The protective cover can be slid up or down to protect the screen.

Note: The charging wiring is the same as the discharging wiring; simply replace the load with a charger in the diagram for charging scenarios.

5.2 Installation Overview Video

Your browser does not support the video tag.

Video 5.2: An overview of the eSonic Professional 500A Battery Monitor and its components, demonstrating how the main parts connect.

6. OPERATING INSTRUCTIONS

The eSonic Battery Monitor provides a clear interface to view your battery's status and adjust settings.

6.1 Display Interface Description

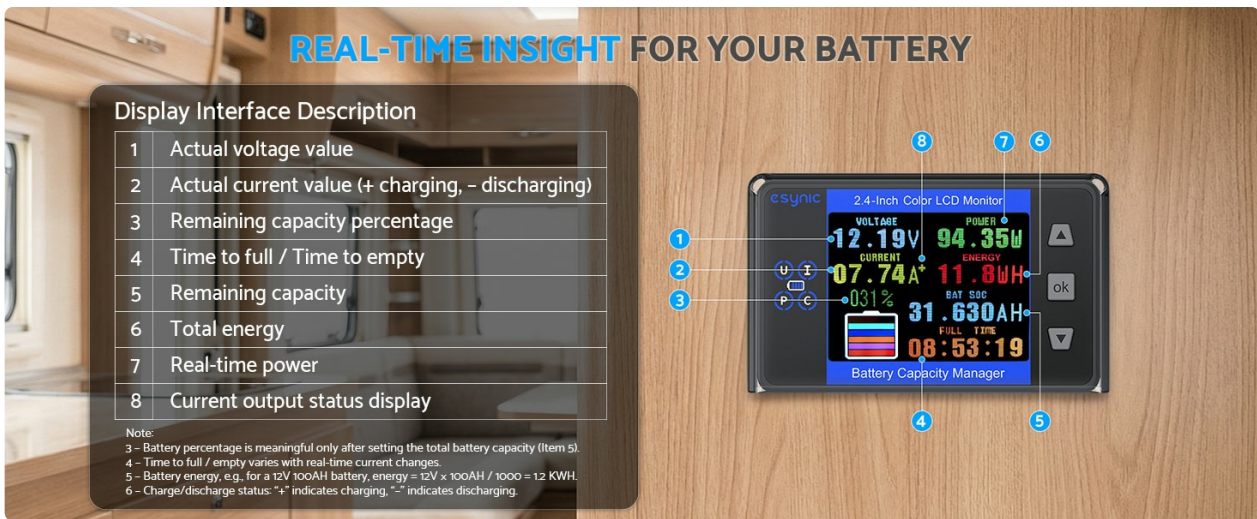


Image 6.1: Detailed description of the eSynic Battery Monitor's display interface and its various parameters.

The 2.4-inch color LCD displays the following parameters:

- **Voltage:** Actual voltage value of the battery.
- **Current:** Actual current value (+ for charging, - for discharging).
- **Remaining Capacity Percentage:** State of Charge (SOC) of the battery.
- **Time to Full / Time to Empty:** Estimated time until the battery is fully charged or discharged.
- **Remaining Capacity:** Actual remaining Amp-hours (AH).
- **Total Energy:** Total energy consumed or charged (kWh).
- **Real-time Power:** Instantaneous power consumption or generation (Watts).
- **Current Output Status:** Indicates charging or discharging status.

6.2 Setting Battery Capacity

For accurate remaining capacity readings, you must set the total battery capacity (Amp-hours) in the monitor's settings. Refer to the included user manual for detailed instructions on navigating the menu and inputting this value.

6.3 Low Voltage Alarm Function

Low Voltage Alarm

Protecting Battery From Over-Discharge,
Extends Battery Life

esynic



***Both the Backlight and Voltage Value Will Flash**

Image 6.3: The eSynic Battery Monitor displaying a low voltage alarm, indicated by flashing backlight and voltage value.

The monitor features a low voltage alarm to protect your battery from over-discharge. When the battery capacity or voltage drops to a user-defined critical level, the backlight and voltage value on the display will flash simultaneously to alert you. This helps extend the lifespan of your batteries.

7. COMPATIBILITY & APPLICATIONS

The eSynic Professional 500A Battery Monitor is designed for broad compatibility and diverse applications:

7.1 Battery Type Compatibility

esynic

Featuring a Sampling Range
of 0-500A and a Voltage
Range of 8-100V

Compatible with various battery types, including lead-acid, LiFePO₄,
and lithium-ion nickel metal hybrid batteries



Lead-acid



LiFePO₄



Lithium-ion nickel
metal hybrid



Image 7.1: The eSynic Battery Monitor is compatible with various battery chemistries, including Lead-acid, LiFePO₄, and Lithium-ion.

This monitor is compatible with various battery types, including:

- Lead-acid batteries
- LiFePO₄ batteries
- Lithium-ion batteries
- Nickel-metal hydride batteries

7.2 Suitable Applications

Widely Application

esynic

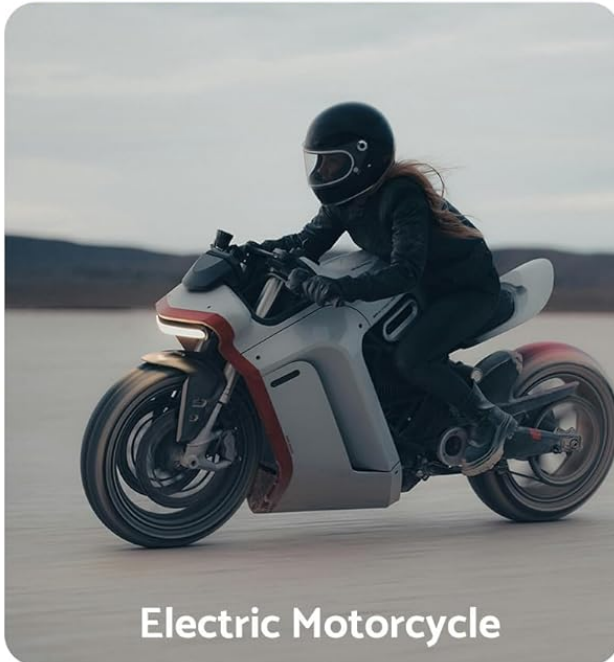
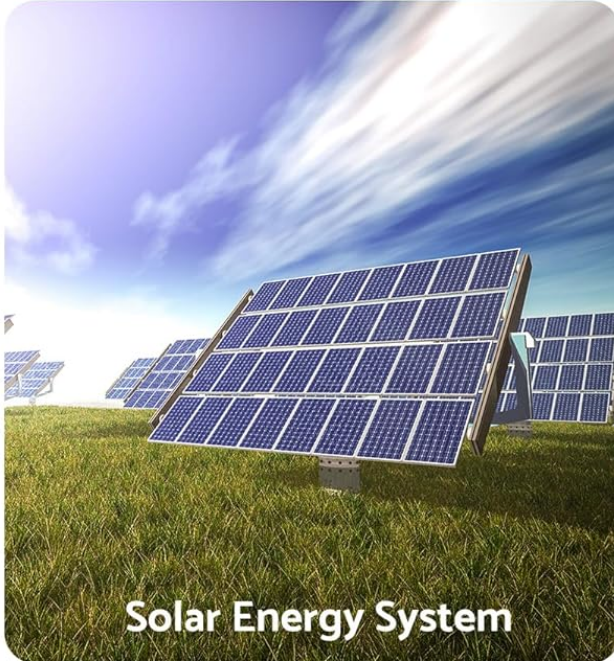


Image 7.2: Examples of applications where the eSynic Battery Monitor can be used, such as solar energy systems, motorhomes/RVs, electric motorcycles, and golf carts.

The monitor is ideal for:

- RV/Trailer Solar Systems
- Marine Battery Banks
- Golf Carts & Electric Vehicles
- Off-grid Power Setups
- Home Energy Systems

8. MAINTENANCE

To ensure the longevity and accurate performance of your eSynic Battery Monitor, follow these maintenance guidelines:

- **Keep Clean:** Regularly wipe the display screen with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
- **Check Connections:** Periodically inspect all wiring connections to the shunt and monitor for tightness and corrosion. Secure any loose connections.
- **Protect from Elements:** While the display has a sliding cover, ensure the unit is installed in a location protected from direct moisture, extreme temperatures, and excessive dust.
- **Software Updates:** Check the official eSynic website for any available firmware updates that may improve performance or add features.

9. TROUBLESHOOTING

If you encounter issues with your eSynic Battery Monitor, refer to the following common troubleshooting tips:

- **Inaccurate Readings:**
 - Ensure the shunt is correctly installed on the negative side of the battery bank, with all loads and charging sources passing through it.
 - Verify that the total battery capacity (AH) is correctly set in the monitor's settings.
 - Check all wiring connections for tightness and proper contact.
- **Display Not Turning On:**
 - Confirm that the B+ wire is securely connected to the positive terminal of the battery and the monitor.
 - Check for any blown fuses in the B+ line (if applicable).
 - Ensure the battery voltage is within the operating range (8V-100V).
- **Vague Instructions / Setup Difficulty:**
 - Carefully re-read the provided user manual, paying close attention to the parameter setting tutorials.
 - Online resources or video tutorials from eSynic may offer additional visual guidance.
- **Interference with Readings:**
 - Ensure the shielded cable connecting the shunt to the monitor is properly installed and not damaged.
 - Keep the shielded cable away from high-current wires or sources of electromagnetic interference.

10. WARRANTY AND SUPPORT

eSynic products are designed for reliability and performance. For warranty information, technical support, or service inquiries, please refer to the contact details provided in your product packaging or visit the official eSynic website. Please have your model number (RINESY371) and purchase information ready when contacting support.

