

SUNAPEX SA-Battery Box Basic

SUNAPEX Smart Battery Box (Basic Model)

Model: SA-Battery Box Basic
Instruction Manual

1. SAFETY INFORMATION

Please read all safety instructions carefully before operating the SUNAPEX Smart Battery Box. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Battery Not Included:** This product is a battery box and does not contain a battery. Ensure you install a compatible battery (Group 24, 27, or 31 AGM or lithium battery) correctly.
- **Electrical Connections:** Always ensure all connections are secure and correctly polarized (positive to positive, negative to negative) before use. Loose connections can cause overheating or damage.
- **Overload Protection:** The unit is equipped with a 16A overload switch. Do not bypass or modify this safety feature. If the switch trips, disconnect devices, allow it to cool, and reduce the load before resetting.
- **Ventilation:** Ensure adequate ventilation around the battery box, especially if using lead-acid batteries which can emit gases during charging.
- **Environmental Conditions:** This battery box is **not waterproof**. Avoid exposure to rain, splashes, or submersion. Use in dry conditions.
- **Children and Pets:** Keep the battery box and its components out of reach of children and pets.
- **Maintenance:** Regularly inspect the box and connections for any signs of damage or wear. Do not use if damaged.

2. PRODUCT OVERVIEW

The SUNAPEX Smart Battery Box (Basic Model) is designed to provide a safe and convenient power solution for various applications, including trolling motors, marine use, RVs, and solar panels. It integrates multiple power ports and safety features into a durable enclosure.

Key Features:

- 16A Overload Switch for circuit protection.
- 12V Cigarette Lighter Socket for standard automotive accessories.
- 2 x USB 5V 2.1A Ports for charging mobile devices.
- High-Current Terminals for direct battery connection and high-power devices.
- Digital Voltmeter for real-time battery status monitoring.
- Integrated Lighting for illumination in low-light conditions.
- Ergonomic Side Handles for easy transport.
- Compatible with Group 24, 27, and 31 AGM or lithium batteries.

Package Contents:

- 1 x SUNAPEX Smart Battery Box (Basic Model)

Product Dimensions:

- **External:** 14 x 12.6 x 8.5 inches (35.5 x 32 x 21.5 cm)
- **Internal:** 13.1 x 8.2 x 7.8 inches (33.3 x 20.8 x 19.8 cm)
- **Item Weight:** 3.39 lbs (1.54 kg)

Upgraded Multi-Functional Battery Box

- 12V Cigarette Lighter Socket
- USB 5V 2.1A Plug
- Electronic Voltage Display
- 16A Overload Switch
- Lighting Switch
- Lighting
- Side Handle
- Side Handle
- Fixed Rope
- High-Current Terminal Connectors

SUNAPEX
PORTABLE SMART
BATTERY BOX

Configuration

- DC 50V / 20A Voltage Digital Display "Y"
- USB Output (5V 2.1A) "Y"
- High-Speed Charging Port, Universal Connector "Y"
- 16A Overload Switch "Y"
- LED Lighting "Y"
- LED Lighting Switch "Y"
- Dual-point Color Control on Both Sides

Notes: Please refer to the manual operation...
Warning: When charging or discharging, please ensure the battery box is placed on a flat surface...
Caution: Do not touch the terminals directly, as it may cause electric shock.



Figure 2.2: Detailed view of the 12V cigarette lighter socket, USB 5V 2.1A ports, high-current terminal connectors, 16A overload protection switch, digital display, and lighting switch.

Smart Battery Box Diameter

Weight: 3.39 lbs / 1536g

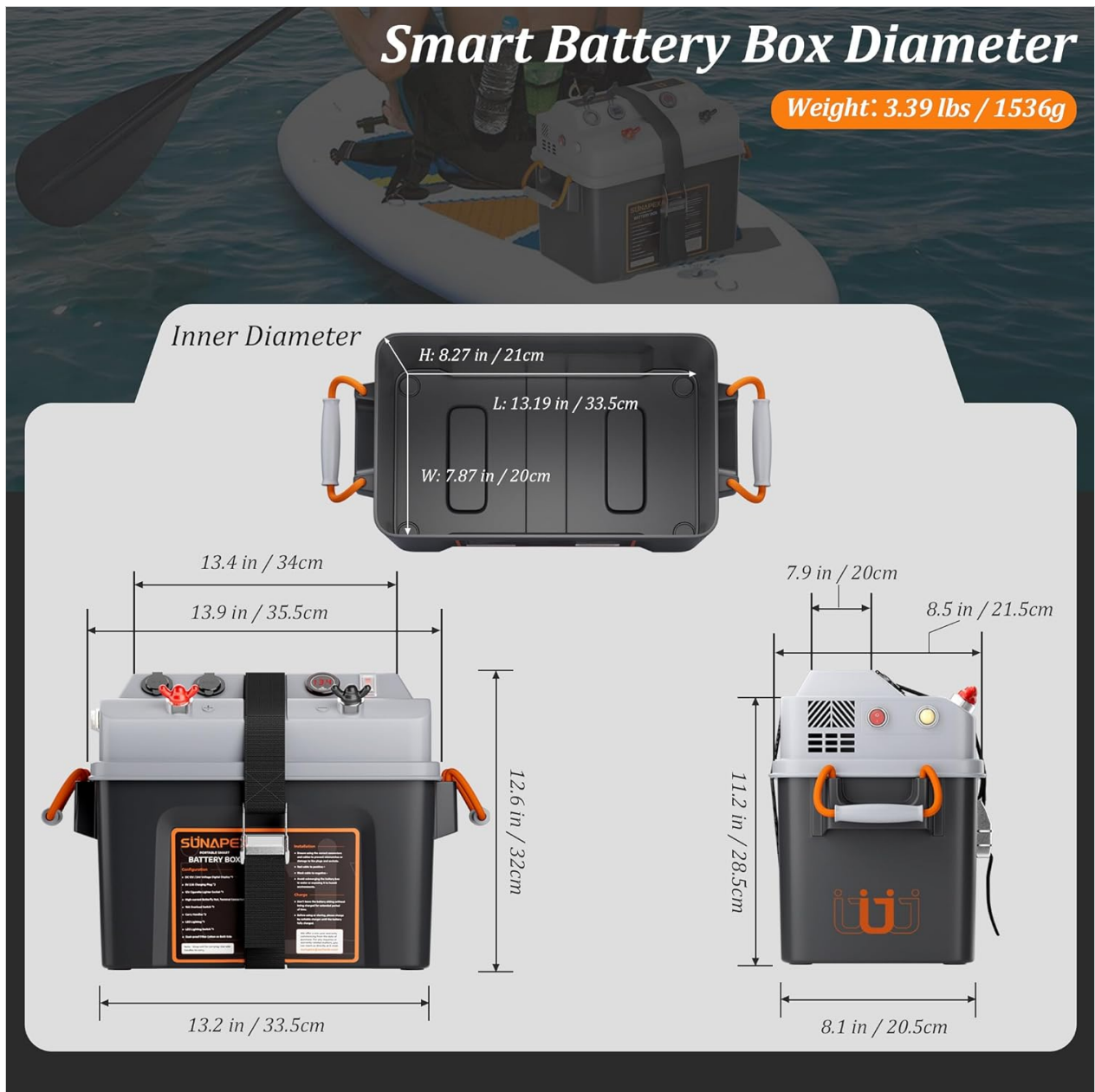


Figure 2.3: Diagram illustrating the external and internal dimensions of the SUNAPEX Smart Battery Box.

3. SETUP

3.1 Battery Installation

1. **Select a Compatible Battery:** Choose a Group 24, 27, or 31 AGM or lithium battery. Ensure the battery's physical dimensions fit within the internal dimensions of the battery box (13.1 x 8.2 x 7.8 inches).
2. **Open the Battery Box:** Unlatch and remove the top cover of the SUNAPEX Smart Battery Box.
3. **Place the Battery:** Carefully place your chosen battery inside the box. Ensure it sits securely and does not shift excessively.
4. **Connect Battery Terminals:** Connect the pre-installed red cable from the battery box to the positive (+) terminal of your battery. Connect the pre-installed black cable to the negative (-) terminal of your battery. Ensure connections are tight and secure.
5. **Close the Box:** Replace the top cover and secure the latches. Use the provided fixing strap to further secure the lid and battery in place.

3.2 12V/24V System Configuration

The SUNAPEX Smart Battery Box supports both 12V and 24V systems, allowing for single or dual battery configurations.

- **Single 12V Battery:** Connect one 12V battery as described above. The output will be 12V.
- **Single 24V Battery:** Connect one 24V battery. The output will be 24V.
- **Two 12V Batteries (Series for 24V):** To achieve 24V, connect two 12V batteries in series. Connect the positive terminal of the first battery to the negative terminal of the second battery using a short jumper cable (not included). Then, connect the battery box's red cable to the positive terminal of the second battery and the black cable to the negative terminal of the first battery.
- **Two 12V Batteries (Parallel for 12V, increased capacity):** To increase 12V capacity, connect two 12V batteries in parallel. Connect the positive terminals of both batteries together, and the negative terminals of both batteries together. Then, connect the battery box's red cable to the combined positive terminals and the black cable to the combined negative terminals.



Figure 3.1: Diagrams illustrating how to connect a single 12V battery, a single 24V battery, and two 12V batteries in series or parallel to achieve 12V or 24V output.

4. OPERATION

4.1 Powering On/Off

The main power for the accessory ports (cigarette lighter, USB) is controlled by the 16A overload switch. Flip the switch to the 'ON' position to activate the ports. Flip it to 'OFF' when not in use to conserve battery power.

4.2 Using the 12V Cigarette Lighter Socket

Insert any standard 12V automotive accessory or adapter into the cigarette lighter socket. This port is suitable for devices requiring 12V power, such as air pumps, portable refrigerators, or inverters (ensure total current draw does not exceed 16A).

4.3 Using the USB 5V 2.1A Ports

Connect your USB-powered devices (smartphones, tablets, mobile power supplies) to the two 5V 2.1A USB ports for charging. These ports provide a standard charging rate.

4.4 Monitoring Battery Status with the Digital Voltmeter

The integrated digital voltmeter displays the real-time voltage of the connected battery. This allows you to monitor the battery's charge level and manage power consumption effectively. For 12V systems, a healthy battery typically reads above 12.0V. For 24V systems, above 24.0V.

4.5 Using the Integrated Lighting

The battery box features a built-in light on the left side. Press the dedicated lighting switch to turn the light on or off. This provides convenient illumination for nighttime use or in low-light environments.

4.6 High-Current Terminal Connectors

The red and black high-current terminals on the top of the box provide direct access to the battery for high-power applications, such as connecting a trolling motor or a high-wattage inverter. These terminals support up to 50A. Ensure proper polarity when connecting devices.

Portable Design



Portable



Figure 4.1: The portable design of the battery box, highlighting the side handles and the fixing strap for securing the lid and battery.



Figure 4.2: Examples of the SUNAPEX Smart Battery Box being used in marine, RV, solar panel, and camping scenarios.

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Video 4.1: An official overview of the SUNAPEX All-In-One Smart Battery Box, demonstrating its features and applications.

5. MAINTENANCE

Proper maintenance ensures the longevity and safe operation of your SUNAPEX Smart Battery Box.

- **Cleaning:** Wipe the exterior of the battery box with a damp cloth. Do not use harsh chemicals or abrasive cleaners. Ensure no moisture enters the ports or internal components.
- **Connection Checks:** Periodically inspect all electrical connections, including battery terminals and port connections, to ensure they are tight and free from corrosion.
- **Storage:** When not in use, store the battery box in a cool, dry place away from direct sunlight and extreme temperatures. If storing for extended periods, ensure the battery is fully charged and disconnect any loads.
- **Ventilation:** Keep the side vents clear of obstructions to allow for proper heat dissipation.
- **Damage Inspection:** Regularly check the plastic casing for cracks or damage. Discontinue use if

significant damage is found.

6. TROUBLESHOOTING

If you encounter issues with your SUNAPEX Smart Battery Box, refer to the following common troubleshooting steps:

- **No Power from Ports:**
 - Ensure the 16A overload switch is in the 'ON' position.
 - Check the digital voltmeter to confirm the battery has sufficient charge.
 - Verify that the battery is correctly connected inside the box.
 - If the overload switch has tripped (popped out), disconnect the device causing the overload, wait a few minutes, and then push the switch back in to reset.
- **Digital Voltmeter Not Displaying:**
 - Ensure the battery is properly connected and has some charge.
 - Check for any loose internal wiring connections to the voltmeter.
- **Lighting Not Working:**
 - Ensure the lighting switch is pressed.
 - Check battery charge level.
- **Overload Switch Trips Frequently:**
 - The connected device is drawing more than 16A. Use a lower-power device or connect high-current devices directly to the main battery terminals (rated for 50A) if appropriate for your application.
 - Inspect the device for faults that might cause excessive current draw.

If problems persist after following these steps, contact SUNAPEX customer support for further assistance.

7. SPECIFICATIONS

Feature	Specification
Brand	SUNAPEX
Model Number	SA-Battery Box Basic
External Dimensions (L x W x H)	14 x 12.6 x 8.5 inches (35.5 x 32 x 21.5 cm)
Internal Dimensions (L x W x H)	13.1 x 8.2 x 7.8 inches (33.3 x 20.8 x 19.8 cm)
Item Weight	3.39 lbs (1.54 kg)
Material	Plastic
Color	Gray and Black
Battery Compatibility	Group 24, 27, 31 AGM or Lithium batteries

System Voltage	12V/24V
Overload Protection	16A Switch
USB Ports	2 x USB 5V 2.1A
Cigarette Lighter Socket	12V
High-Current Terminals	Max 50A Input & Output
Included Components	Smart Battery Box

8. WARRANTY & SUPPORT

8.1 Manufacturer Warranty

The SUNAPEX Smart Battery Box (Basic Model) comes with a **1 Year Manufacturer Warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by misuse, accident, unauthorized modification, or improper installation.

8.2 Customer Support

For technical assistance, warranty claims, or any questions regarding your SUNAPEX Smart Battery Box, please contact SUNAPEX customer support through the retailer where the product was purchased or visit the official SUNAPEX website for contact information.