Frienda Frienda-Batterie-01

Frienda DC 12V-84V Battery Capacity Voltage Indicator Instruction Manual

Model: Frienda-Batterie-01 | Brand: Frienda

1. Introduction

This manual provides detailed instructions for the installation, setup, and operation of your Frienda DC 12V-84V Battery Capacity Voltage Indicator. This device is designed to accurately monitor the voltage and percentage of various battery types across a wide range of DC systems. Please read this manual thoroughly before use to ensure proper functionality and safety.

Image 1: Frienda Battery Capacity & Voltage Tester. This image displays the meter showing both battery percentage and voltage readings, highlighting its dual functionality.

2. Product Overview

2.1 Key Features

- **Multi-function Display:** Cycles between voltage reading and battery percentage with a single button press.
- **Adjustable Backlight & Sleep Mode:** Easily toggle backlight and set sleep mode for power saving.
- **Battery Type Selection:** Supports Li-ion, Lead-Acid, Ternary Lithium (3-15 series), and AGM batteries for accurate readings.
- **Low Battery Alarm:** Flashing display provides an early warning when battery capacity is critically low, preventing complete discharge.
- **Wide Voltage Compatibility:** Universally compatible with 12V, 24V, 36V, 48V, 60V, 72V, and 84V systems.
- **Durable & User-Friendly Design:** Features a sturdy housing, simple button interface, and a PVC waterproof screen for long-lasting reliability.

2.2 Components

- 1 x Battery Capacity Voltage Indicator
- 1 x Wiring Harness

Image 2: Battery Meter Dimensions. This image shows the physical dimensions of the battery meter: 6.1cm (2.4 inches) length, 3.3cm (1.3 inches) width, and 1.4cm (0.6 inches) depth.

3. Setup & Installation

3.1 Wiring Diagram

The battery meter requires a simple two-wire connection for basic operation. For advanced functionality, a third wire can be connected to a switched power source.

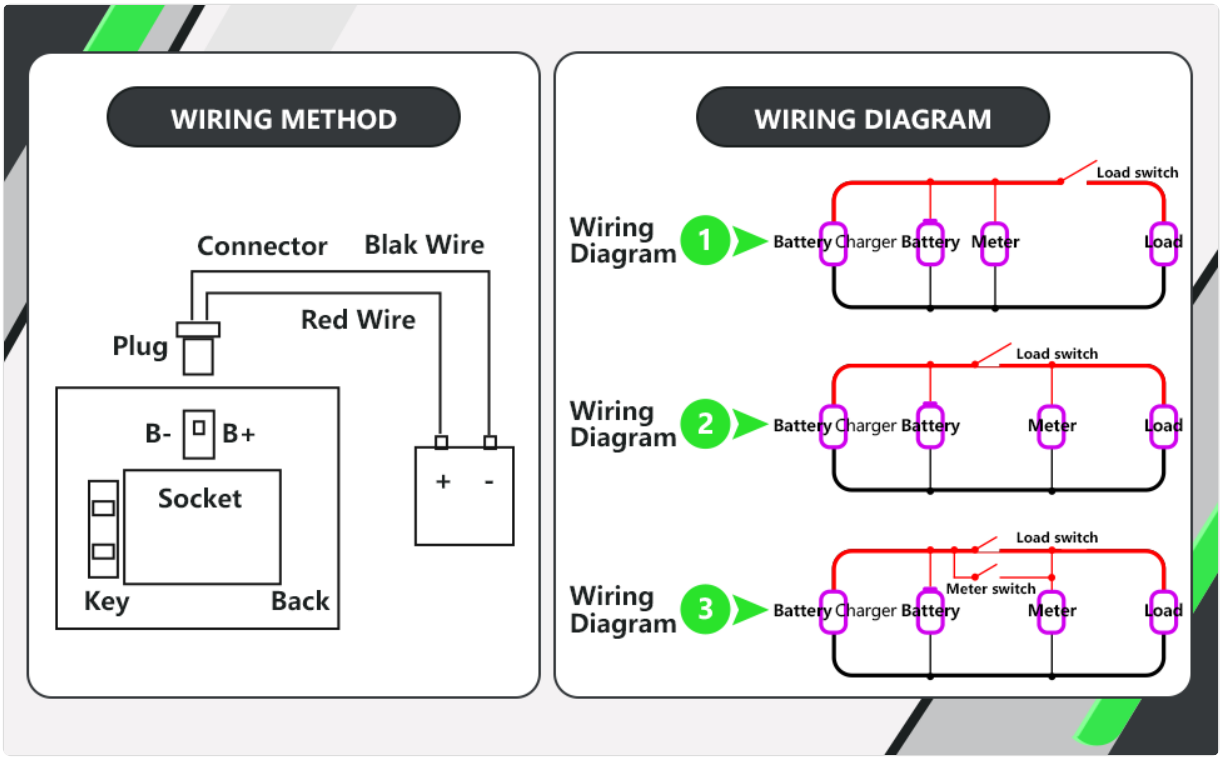

Image 3: Wiring Method and Diagram. This image illustrates three different wiring configurations for the battery meter, showing connections to the battery, charger, meter, and load switch.

1. Connect the red wire of the wiring harness to the positive (+) terminal of your battery.
2. Connect the black wire of the wiring harness to the negative (-) terminal of your battery.
3. For switched power, connect the third (control) wire to a switched positive source (e.g., ignition switch) to turn the display on/off with the vehicle. If no switch is used, the display will remain on when connected to the battery.
4. Plug the wiring harness into the back of the battery meter.

3.2 DIP Switch Settings for Voltage Selection

The meter features internal DIP switches to configure the correct voltage range for your battery system. This is crucial for accurate readings. The switches are located behind a rubber cover on the back of the unit.

1. Carefully remove the rubber cover on the back of the meter to expose the DIP switches.
2. Refer to the DIP switch definition table below to set the switches according to your battery's voltage. '1' typically means the switch is dialed to the top, and '0' means it's dialed to the bottom.

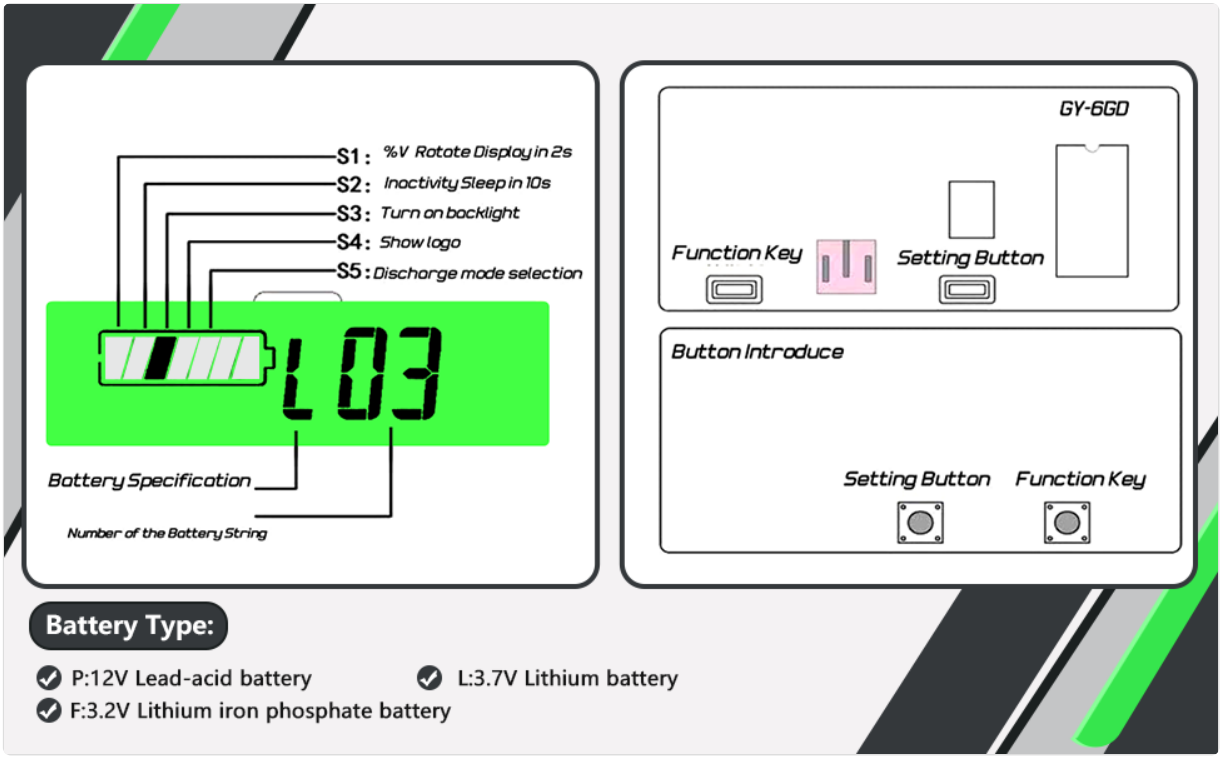

Image 4: DIP Switch Definition Table. This table shows the correct DIP switch settings (1, 2, 3) for various voltage systems (12V, 24V, 36V, 48V, 60V, 72V).

DIP Switch Definition Table

Serial Number	Voltage	Switch 3	Switch 2	Switch 1
1	12V	1	1	1
2	24V	0	1	1
3	36V	1	0	1
4	48V	0	0	1
5	60V	1	1	0
6	72V	1	0	0

3. Once the DIP switches are set, replace the rubber cover to protect them from moisture and debris.

3.3 Programming Mode (Advanced Settings)

The meter offers advanced settings accessible via programming mode. This allows for customization of battery type, display behavior, and alarm thresholds.

1. **Enter Programming Mode:** Disconnect the meter from power. Press and hold the 'Setting' button (gear icon) while reconnecting power. The display will show '1--'.
2. **Submenu 1: Battery Type Selection:** Use the 'Setting' button to cycle through battery types (P for Lead-Acid, L for Ternary Lithium, F for Lithium Iron Phosphate). Use the 'Function' button (refresh icon) to confirm your selection.
3. **Submenu 2: Delay Time (Sleep Mode):** Set the delay time (in seconds) before the display enters sleep mode. Use 'Setting' to adjust, 'Function' to confirm.
4. **Submenu 3: Minimum/Maximum Voltage:** Set the minimum and maximum voltage thresholds. Use 'Setting' to adjust, 'Function' to confirm.
5. **Submenu 4: Buzzer State & Alarm Voltage:** Enable/disable the buzzer and set the low voltage alarm threshold. Use 'Setting' to adjust, 'Function' to confirm.
6. **Submenu 5: Recalibrate Voltage:** For fine-tuning voltage accuracy. Use 'Setting' to adjust, 'Function' to confirm.
7. **Exit Programming Mode:** Disconnect power from the meter to save all settings.

Video 1: DROK 10-100V Digital Battery Monitor Operation. This video demonstrates how to enter and navigate the programming mode to set various parameters like battery type, delay time, and alarm voltage.

4. Operation

4.1 Button Functions

Image 5: Setting Key and Function Key. This image highlights the two main buttons on the meter: the 'Setting Key' (gear icon) and the 'Function Key' (refresh icon).

- **Setting Key (Gear Icon):** Short press to cycle between voltage display, battery percentage, turn on/off backlight, and enter battery type selection during programming.
- **Function Key (Refresh Icon):** Short press to switch between capacity and voltage display. Long press to turn the meter off.

4.2 Display Modes

The meter can display battery information in two primary modes:

- **Voltage Display:** Shows the current battery voltage in volts (V).
- **Percentage Display:** Shows the remaining battery capacity as a percentage (%).

4.3 Low Battery Alarm

When the battery capacity drops below the set low voltage alarm threshold, the display will flash to alert the user. This

feature helps prevent over-discharge and protects battery life.

Video 2: DC Golf Cart Battery Meter with Alarm, Front Setting. This video demonstrates the meter's display, button functions, and the low battery alarm feature.

5. Maintenance

- Keep the meter clean and free from dust and debris. Use a soft, dry cloth for cleaning.
- Regularly check all wiring connections to ensure they are secure and free from corrosion.
- Avoid exposing the device to extreme temperatures or direct sunlight for prolonged periods.
- Ensure the rubber cover for the DIP switches is properly sealed to maintain its waterproof integrity.

6. Troubleshooting

Common Troubleshooting Steps

Problem	Possible Cause	Solution
No display/No power	Loose or incorrect wiring; No power to the device.	Check all wiring connections. Ensure positive and negative terminals are correctly connected. Verify power source.
Incorrect voltage/percentage reading	Incorrect DIP switch settings; Incorrect battery type selected in programming mode.	Verify DIP switch settings match your battery voltage (refer to Section 3.2). Re-enter programming mode to confirm correct battery type selection.
Alarm constantly active or not working	Alarm threshold set too low/high; Buzzer disabled.	Enter programming mode (Submenu 4) to adjust the alarm voltage threshold and enable/disable the buzzer.
Display is dim or flickering	Low battery voltage; Faulty connection.	Check battery charge level. Ensure all connections are secure.

7. Specifications

- **Model Number:** Frienda-Batterie-01
- **Product Dimensions:** 5.71 x 4.53 x 0.63 inches
- **Item Weight:** 0.71 ounces (20 Grams)
- **Brand:** Frienda
- **Power Source:** Battery Powered
- **Style:** Voltage Tester
- **Color:** Green (Display)
- **Date First Available:** May 17, 2021

8. Warranty and Support

For warranty information or technical support, please refer to the product packaging or contact Frienda customer service directly. Keep your purchase receipt for any warranty claims.