DROK 200538FBA

DROK Charge-Discharge Meter User Manual

Model: 200538FBA | Brand: DROK

1. Product Overview

The DROK Charge-Discharge Meter is a versatile 7-in-1 multimeter designed to accurately measure and display various electrical parameters. It is suitable for a wide range of applications, including battery testing, automotive systems, and photovoltaic setups.

Figure 1.1: DROK Charge-Discharge Meter (Display Unit and Hall Sensor)

Key Features:

- **7-in-1 Multimeter:** Measures current (0-100A), voltage (0-90V), power, battery capacity, amp-hour, watt-hour, and time simultaneously.
- **Clear LCD Display:** Features a vibrant color screen for easy readability of all parameters.
- **Bidirectional Ammeter:** Capable of detecting current in both charging and discharging directions without requiring wiring changes.
- **Enhanced Safety:** Includes multiple protection features such as over-voltage, over-current, over-power, over-charged, and time limitation.
- **Memory Function:** AH (Amp-Hour) data is memorized even after power-off.
- **Resettable Data:** Time and AH readings can be reset.
- **Calibration Function:** Allows for precise adjustment of readings.

2. Safety Information

Please read and understand all safety warnings and instructions before installing or operating this device. Failure to do so may result in electric shock, fire, or serious injury.

- Ensure all power sources are disconnected before making any wiring connections.
- Verify correct polarity for all connections to prevent damage to the device or connected equipment.
- Do not exceed the specified voltage (0-90V) or current (0-100A) ratings of the meter.
- This device is designed for DC circuits only. Do not connect to AC power.
- Keep the device away from water, moisture, and extreme temperatures.
- Only qualified personnel should perform installation and maintenance.

3. Package Contents

Carefully unpack the box and ensure all items listed below are present and undamaged:

- DROK Charge-Discharge Meter Display Unit
- Hall Sensor
- 2-meter Shielding Wire (for Hall Sensor connection)
- Power Supply Wire
- Other necessary connecting cables (as pictured)

Figure 3.1: Complete Package Contents

4. Product Components and Display

The meter consists of two main parts: the LCD display unit and the Hall sensor. The display unit features a color screen and three control buttons (Up, OK, Down).

Figure 4.1: Display Unit with Labeled Features

The Hall sensor is used to measure current without direct contact with the main circuit, providing isolation and safety. The current-carrying wire passes through the center of the sensor.

Figure 4.2: Hall Sensor

Display Indicators:

- **Voltage (V):** Displays the current voltage.
- **Current (A):** Shows the current amperage, with an arrow indicating direction (charging/discharging).
- **Power (W):** Indicates the real-time power consumption/generation.
- **Amp-Hour (AH):** Cumulative amp-hours.
- **Watt-Hour (WH):** Cumulative watt-hours.
- **Time:** Elapsed time of operation.
- **Protection Indicators:** OVP (Over-Voltage Protection), OPP (Over-Power Protection), OCP (Over-Current Protection), OFT (Over-Time Protection), OAH (Over-Amp-Hour Protection), LOP (Low-Voltage Protection).

5. Setup and Wiring

Proper wiring is essential for accurate measurement and safe operation. There are several common wiring configurations

depending on your power source and whether you are using an external relay.

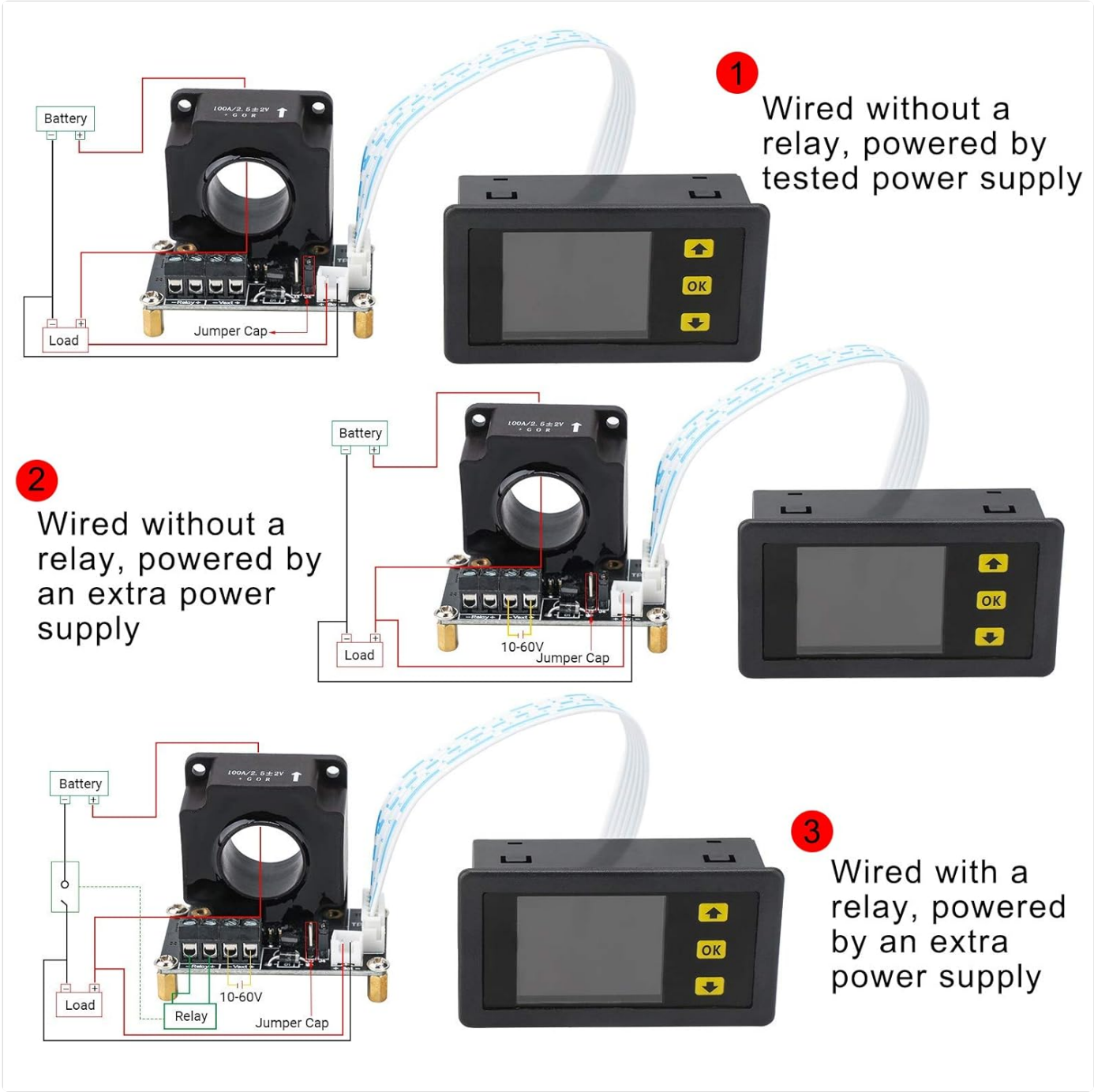

Figure 5.1: Wiring Diagrams

Wiring Configurations:

1. **Configuration 1: Wired without a relay, powered by the tested power supply.**
    - Connect the main power supply (battery) to the Hall sensor.
    - Pass the current-carrying wire through the Hall sensor.
    - Connect the display unit's power input directly to the tested power supply.
    - Connect the load to the circuit after the Hall sensor.
2. **Configuration 2: Wired without a relay, powered by an extra power supply.**
    - Connect the main power supply (battery) to the Hall sensor.
    - Pass the current-carrying wire through the Hall sensor.
    - Connect the display unit's power input to a separate, auxiliary power supply (10-60V).

- Connect the load to the circuit after the Hall sensor.

3. **Configuration 3: Wired with a relay, powered by an extra power supply.**
   Note: This multimeter does NOT contain a built-in relay. An external relay must be purchased separately if this functionality is desired.
   - Connect the main power supply (battery) to the Hall sensor.
   - Pass the current-carrying wire through the Hall sensor.
   - Connect the display unit's power input to a separate, auxiliary power supply (10-60V).
   - Integrate an external relay into the circuit to control the load. The meter can be connected to the relay to enable/disable output based on set parameters.

Always double-check your wiring against the provided diagrams before applying power.

6. Operating Instructions

This section details how to operate your DROK Charge-Discharge Meter, including basic navigation and advanced functions like calibration.

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Video 6.1: Basic Operation of the DROK Charge-Discharge Monitor. This video demonstrates how to navigate the display and interact with the device's settings.

Basic Navigation:

- Use the **Up** and **Down** arrow buttons to navigate through different display modes or menu options.
- Press the **OK** button to confirm a selection or switch between display screens (e.g., toggling the battery display).
- To clear accumulated data (AH, WH, Time), navigate to the relevant display and perform a long press on the **OK** button, or follow specific reset procedures outlined in the menu.
- The LCD screen can be automatically or manually switched off to save power.

Calibration Function:

The meter features a calibration function to ensure accurate readings. Follow these steps to enter calibration mode and adjust parameters:

1. **Enter Calibration Mode:** While the device is powered off, press and hold the **OK** button. While holding **OK**, switch the power to the device ON. Release the **OK** button as soon as the display illuminates.
2. **Navigation in Calibration Mode:** In calibration mode, press the **OK** button to move from one menu item to the next. Use the **Up** and **Down** arrow keys to adjust the values of the selected parameter.
3. **Zero Current Calibration:** Before calibrating current readings, ensure no current is flowing through the sensor (all loads are off). Press **OK** until the "0.0 A" option is selected, then press the **Down** arrow once to zero out the current reading.
4. **Charging Current Calibration (+A):** To calibrate current when charging, ensure current is flowing in the charging direction (from source to battery). Select the "+A" option and adjust using the arrow keys.
5. **Discharging Current Calibration (-A):** To calibrate current when discharging, ensure current is flowing in the discharging direction (from battery to load). Select the "-A" option and adjust using the arrow keys.
6. **Save Settings:** After completing all calibrations, navigate to the "Save" option using the **OK** button. It is crucial to select "Save" before exiting, otherwise your adjustments will not be retained.
7. **Exit Calibration Mode:** Simply switch the power to the unit OFF, then ON again.

7. Maintenance

To ensure the longevity and optimal performance of your DROK Charge-Discharge Meter, follow these simple maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the display and housing. Do not use abrasive cleaners or solvents, as they may damage the plastic or screen.
- **Storage:** When not in use for extended periods, store the meter in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Connections:** Periodically check all wiring connections to ensure they are secure and free from corrosion.
- **Avoid Impact:** Protect the device from drops or impacts, which can damage internal components or the display.

8. Troubleshooting

If you encounter issues with your DROK Charge-Discharge Meter, refer to the following common problems and their solutions:

- **Problem: Display does not turn on.**
  Solution: Check all power connections. Ensure the power supply voltage is within the specified range (0-90V for the main circuit, or 10-60V for auxiliary power if used). Verify that the power supply itself is functioning correctly.
- **Problem: Readings are inaccurate or inconsistent.**
  Solution: Perform a calibration as described in Section 6. Ensure the current-carrying wire passes correctly through the Hall sensor. Verify that the wiring configuration matches your setup and that all connections are secure. External electromagnetic interference can also affect readings; try relocating the meter if possible.
- **Problem: Current direction (charging/discharging) is incorrect or not displayed.**
  Solution: Ensure the Hall sensor is oriented correctly with respect to the current flow. The sensor typically has an arrow indicating the positive current direction. If the arrow is reversed relative to your expected positive flow, the displayed direction will be opposite. Re-orient the sensor or mentally adjust for the displayed direction.
- **Problem: Data (AH, WH, Time) is not resetting.**
  Solution: Refer to Section 6 for instructions on how to reset accumulated data. Ensure you are performing the correct button press (e.g., long press on OK) for the specific data you wish to reset.

9. Specifications

Measurement Type	Multimeter (Voltage, Current, Power, Capacity, Energy, Time)
Voltage Range	0-90V DC
Current Range	0-100A DC
Display	LCD Color Display
Power Source	Battery Powered (or external DC supply)
Item Model Number	200538FBA
Manufacturer	DROK
Package Dimensions	5.12 x 3.7 x 3.35 inches
Item Weight	10.55 ounces

10. Warranty and Support

DROK products are designed for reliability and performance. We stand behind our products with dedicated customer support.

- **Warranty:** Each product purchased from DROK is covered by a one-year service period. In the event of any quality issues, a brand new replacement may be provided.
- **Customer Support:** For technical assistance, troubleshooting, or warranty claims, please contact DROK customer service through the official channels provided at the point of purchase or on the DROK brand website.
- **Online Resources:** Additional resources, including FAQs and updated documentation, may be available on the DROK official website or product page.

For further information, you may visit the DROK Store on Amazon.