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› [MHLRUUL](#) /

› MHLRUUL KG140F Bluetooth Battery Monitor User Manual

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Model: KG140F

1. INTRODUCTION

The MHLRUUL KG140F is a high-precision Bluetooth battery monitor designed to measure voltage, current, power, charge/discharge capacity, energy, temperature, and remaining battery life. It is suitable for various battery types and applications, providing real-time data and historical records via its display and a dedicated mobile application.

UNIVERSAL FOR A VARIETY OF BATTERIES



Image: The KG140F monitor display illustrating its versatility across different battery chemistries and applications such as electric vehicles, RVs, and stationary power systems.

2. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the device.

- Ensure all connections are correct and secure before powering on the device to prevent damage to the monitor or battery system.
- Do not exceed the specified voltage and current ratings (DC 0-120V, 0-400A) to avoid electrical hazards and equipment failure.
- Keep the device away from water, moisture, and extreme temperatures to prevent malfunction or damage.
- Installation should be performed by individuals familiar with electrical systems and safety procedures.
- Always disconnect power from the battery system before making or changing any wiring connections.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- KG140F Display Unit
- Voltage/Current Measuring Module (Shunt)
- Temperature Sensor
- RS485 Communication Cable
- Power Supply Cable
- User Manual (this document)

DC 0-120V 0-400A



Image: An overview of the components included with the KG140F battery monitor: the display, the shunt, a temperature sensor, and necessary wiring harnesses.

4. PRODUCT OVERVIEW

The KG140F system consists of a display unit and a separate voltage/current measuring module (shunt). The display unit provides a clear interface for monitoring parameters, while the shunt handles the high current measurements.

4.1. Display Unit

The display unit features a digital screen showing real-time data, control buttons for settings, and a Bluetooth module for app connectivity. It allows users to view various battery parameters at a glance.

4.2. Measuring Module (Shunt)

The shunt is a critical component for accurate current measurement. The KG140F model typically includes a 400A shunt. It is essential to ensure the correct shunt rating is used for your specific battery system to obtain accurate readings.



Image: Detailed views of the KG140F display unit and its associated measuring module, highlighting their physical design and connection points.



Image: Various shunt options (100A, 400A, 600A) alongside the KG140F display and module, demonstrating different current measurement capacities.

5. SETUP AND INSTALLATION

Follow these steps for proper installation of the KG140F battery monitor. Incorrect wiring can lead to damage or inaccurate readings.

5.1. Wiring Diagram

The measuring module (shunt) must be installed in the negative line of the battery circuit. Connect the battery's negative terminal to the **BAT-** side of the shunt and the load's negative terminal to the **LOAD-** side of the shunt. The positive voltage input for the display unit can be taken directly from the battery's positive terminal.

Connect the temperature sensor to the designated port on the measuring module. Connect the RS485 communication cable between the display unit and the measuring module. Ensure all connections are firm and insulated.

5.2. Mounting

Mount the display unit in a convenient location where it can be easily viewed and accessed. The measuring module should be mounted securely in a dry, well-ventilated area, close to the battery, to ensure accurate temperature readings and prevent overheating.

6. OPERATING INSTRUCTIONS

6.1. Initial Power-On

Once all electrical connections are secure and verified, apply power to the battery system. The display unit will power on automatically and begin showing real-time battery parameters.

6.2. Display Interface

The display shows various parameters such as voltage (V), current (A), power (W), ampere-hours (Ah), watt-hours (Wh), remaining capacity (%), and temperature (°C/°F). The layout is designed for quick and easy interpretation of battery status.



Image: The KG140F display screen, illustrating the comprehensive range of parameters it can accurately detect and show, including

6.3. Button Functions

- **SET:** Press to enter the settings menu or confirm a selection within a menu.
- **UP/DOWN Arrows:** Use to navigate through menu options or adjust numerical values.
- **OK:** Confirm selection, save settings, or exit a menu.
- **Power Button:** (If applicable) Press and hold to turn the display unit on or off.

6.4. Bluetooth Connectivity

Download the official MHLRUUL app from your device's app store (e.g., Google Play Store or Apple App Store). Enable Bluetooth on your mobile device and pair with the KG140F. The app provides advanced monitoring, data logging, and remote control features, enhancing the user experience.

6.5. Parameter Settings

Access the settings menu on the display unit or via the mobile app to configure various parameters. These include setting the total battery capacity, configuring over-voltage/under-voltage alarms, over-current alarms, and selecting temperature units (°C or °F). Refer to the in-app guide for detailed explanations of each setting.

7. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your battery monitor.

- Keep the display unit and measuring module clean and free from dust and debris. Use a soft, dry cloth for cleaning; avoid abrasive cleaners.
- Regularly check all wiring connections for tightness and signs of corrosion. Loose connections can lead to inaccurate readings or system instability.
- Ensure the operating environment is within the specified temperature range (0-40°C). Extreme temperatures can affect performance and lifespan.
- Avoid exposing the device to direct sunlight for prolonged periods, as this can cause overheating and display degradation.

8. TROUBLESHOOTING

This section addresses common issues you might encounter with the KG140F battery monitor.

Problem	Possible Cause	Solution
Display not powering on	No power supply to the display unit; incorrect wiring; faulty power cable.	Check power connections to the display; verify wiring against the diagram; test power cables for continuity.
Inaccurate current readings	Shunt incorrectly wired (e.g., not in the negative line); shunt rating mismatch; loose connections to the shunt.	Ensure the shunt is correctly installed in the negative line; confirm the shunt matches the expected current range; tighten all shunt connections.
Bluetooth connection issues	Bluetooth is off on the mobile device; MHLRUUL app not installed or updated; excessive distance or interference.	Enable Bluetooth on your phone; install or update the MHLRUUL app; move closer to the monitor to reduce interference.

Problem	Possible Cause	Solution
Display shows "0.00A" when current is flowing	Shunt not connected to the display unit via RS485 cable; RS485 cable faulty or incorrectly connected.	Verify the RS485 communication cable connection between the display and the shunt; check the cable for damage.

9. SPECIFICATIONS

Technical specifications for the MHLRUUL KG140F Battery Monitor:

Parameter	Value
Model	KG140F
Voltage Measurement Range	DC 0-120V
Current Measurement Range	0-400A (with included shunt)
Operating Temperature	0°C to 40°C (32°F to 104°F)
Display Type	Digital display
Connectivity	Bluetooth, RS485
Item Weight (Display Unit)	1.76 ounces
Manufacturer	MHLRUUL

10. WARRANTY AND SUPPORT

For detailed warranty information and technical support, please refer to the manufacturer's official website or contact your point of purchase. It is recommended to keep your purchase receipt as proof of purchase for any warranty claims.

Manufacturer: MHLRUUL

Model Number: KG140F

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