

LEICESTERCN LST-US-BC03

User Manual

LEICESTERCN 12V 1100mA Smart Battery Charger/Maintainer

Model: LST-US-BC03

1. INTRODUCTION

This manual provides detailed instructions for the safe and effective operation, maintenance, and troubleshooting of your LEICESTERCN 12V 1100mA Smart Battery Charger/Maintainer. Please read this manual thoroughly before using the product and retain it for future reference.

This device is designed to charge and maintain 12-volt lead-acid batteries (including Flood, Gel, SLA, AGM, VRLA) and 12V Lithium LiFePO4 batteries with BMS. It functions as both a battery charger and a maintainer, offering automatic charging and repair capabilities.

2. SAFETY INFORMATION

WARNING: Read all safety warnings and instructions before using this product. Failure to follow the warnings and instructions may result in electric shock, fire, and/or serious injury.

- **Eye Protection:** Always wear appropriate eye protection when working with batteries.
- **Ventilation:** Ensure adequate ventilation when charging batteries, as they can produce explosive gases.
- **Spark Prevention:** Connect and disconnect the charger leads only when the charger is unplugged from the AC outlet to prevent sparks.
- **Reverse Polarity:** The charger features reverse polarity protection, but always ensure correct connection (positive to positive, negative to negative).
- **Damaged Batteries:** Do not attempt to charge frozen or visibly damaged batteries.
- **Indoor Use:** This charger is designed for indoor use. Avoid exposure to rain or excessive moisture.
- **Children:** Keep out of reach of children. This is not a toy.
- **Professional Use:** If you are unsure about any aspect of operation, consult a qualified professional.

3. PRODUCT OVERVIEW

The LEICESTERCN 12V 1100mA Smart Battery Charger/Maintainer is a compact and intelligent device designed for various 12V battery types. It automatically detects battery status and adjusts charging parameters.



Figure 3.1: Overview of the LEICESTERCN 12V 1100mA Smart Battery Charger and its included accessories, showing two charger units, alligator clips, and ring terminal connectors.

Key Features:

- **2-in-1 Functionality:** Acts as both a battery charger and a maintainer.
- **Battery Compatibility:** Supports 12V lead-acid batteries (Flood, Gel, SLA, AGM, VRLA) and 12V Lithium LiFePO4 batteries with BMS.
- **Automatic Operation:** Microcontroller Unit (MCU) controlled for automatic charging and float mode.
- **Multi-Protection:** Includes protection against reverse polarity, short circuit, over voltage, over current, overload, overheat, and spark proofing.
- **Temperature Compensation:** Integrated thermal sensor adjusts charging based on ambient temperature to prevent over-charging or under-charging.
- **Low-Voltage Repair:** Capable of restoring 12V lead-acid batteries with voltage lower than 8V.
- **Detachable Connectors:** Comes with detachable alligator clips and ring terminal connectors with a 5A fuse.

4. SETUP AND CONNECTION

Follow these steps to properly set up and connect your battery charger:

1. **Prepare the Battery:** Ensure the battery terminals are clean and free of corrosion. If necessary, clean them with a wire brush.
2. **Choose Connectors:** Select either the alligator clips or the ring terminal connectors based on your application.
 - **Alligator Clips:** Ideal for temporary connections.
 - **Ring Terminals:** Suitable for semi-permanent installations, such as on a motorcycle or lawn mower.
3. **Connect to Battery (Charger UNPLUGGED):**
 - Connect the **RED** positive (+) lead to the positive (+) battery terminal.
 - Connect the **BLACK** negative (-) lead to the negative (-) battery terminal.

Note: The charger is spark-proof, but it is best practice to connect to the battery before plugging into AC power.

4. **Plug into AC Outlet:** Once the leads are securely connected to the battery, plug the charger's AC power cord into a standard 100-240V AC electrical outlet.



Figure 4.1: Proper connection of the battery charger to a vehicle battery. Ensure secure connections before plugging into power.

5. OPERATING INSTRUCTIONS

5.1 Automatic Charging Process

The charger will automatically detect the battery type (Lead-Acid or Lithium LiFePO₄) and begin the charging process. The charging status is indicated by the LED lights on the charger unit.

- **0-50% Light ON:** Indicates the battery is charging and is currently between 0% and 50% capacity.
- **50-100% Light ON:** Indicates the battery is charging and is currently between 50% and 100% capacity.
- **100% Light ON (Solid):** Indicates the battery is fully charged. The charger will automatically switch to float

mode to maintain the battery.

- **Fault Light ON:** Indicates an error (e.g., reverse polarity, short circuit, abnormal battery). Disconnect the charger and check connections/battery condition.

FULLY AUTOMATIC WORRY-FREE BATTERY CHARGING

AUTO DETECTION

Automatic sulfation and acid stratification detection.

ZERO OVERCHARGE

Leave plugged in 24/7 without worries

IMPROVED PERFORMANCE

Provides stronger engine starts and extended battery life.



Figure 5.1: The charger's automatic detection and charging capabilities ensure worry-free battery maintenance.

5.2 Low-Voltage Repair Mode (for 12V Lead-Acid Batteries Only)

This mode is designed to attempt to restore 12V lead-acid batteries that have discharged below 8V.

1. Connect the charger to the low-voltage 12V lead-acid battery as described in Section 4.

2. Plug the charger into the AC outlet.
3. Press and hold the **MODE** button for 3 seconds. The 0-50% and 50-100% lights will both turn ON, indicating the repair process has started.
4. The repair process is complete when the lights indicate a higher charge percentage or the 100% light turns solid.

Important: If the battery voltage is lower than 4V, it is generally recommended to replace the battery as it may be beyond repair.



Figure 5.2: Activating the low-voltage repair mode for deeply discharged lead-acid batteries.

5.3 Disconnecting the Charger

To disconnect the charger from the battery:

1. Unplug the charger from the AC electrical outlet first.
2. Disconnect the negative (-) lead (black) from the battery terminal.
3. Disconnect the positive (+) lead (red) from the battery terminal.

6. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your LEICESTERCN battery charger.

- **Cleaning:** Wipe the charger casing with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Storage:** Store the charger in a cool, dry place when not in use. Keep the cables neatly coiled to prevent damage.
- **Cable Inspection:** Periodically inspect the AC cord and battery leads for any signs of damage, cuts, or fraying. Do not use the charger if any cables are damaged.
- **Fuse Replacement:** The detachable connectors include a 5A fuse. If the charger stops working, check and replace the fuse if blown. Ensure to use a fuse of the correct rating.

7. TROUBLESHOOTING

If you encounter issues with your charger, refer to the table below for common problems and solutions.

Problem	Possible Cause	Solution
Charger not turning on / No lights	No AC power; Blown fuse in DC cable; Faulty AC outlet.	Check AC power connection; Test AC outlet with another device; Inspect and replace 5A fuse if blown.
Fault light is ON	Reverse polarity connection; Short circuit; Abnormal battery condition.	Disconnect charger, verify correct positive/negative connections; Check for short circuits in cables or battery; Test battery condition.
Battery not charging	Poor connection to battery terminals; Battery is severely discharged (below 4V); Battery is faulty.	Ensure clean and secure connections; For lead-acid, try low-voltage repair mode (if >4V); Replace battery if it cannot hold a charge.
Charger gets warm during operation	Normal operation during charging.	This is normal. Ensure adequate ventilation around the charger. If it becomes excessively hot, disconnect and contact support.

8. SPECIFICATIONS

Feature	Detail
Model Number	LST-US-BC03
Input Voltage	100-240V AC

Feature	Detail
Output Voltage	12 Volts DC
Output Current	1100mA (1.1 Amp)
Battery Types Supported	12V Lead-Acid (Flood, Gel, SLA, AGM, VRLA), 12V Lithium LiFePO4 (with BMS)
Product Dimensions	3.2 x 1.7 x 1.3 inches (8.1 x 4.3 x 3.3 cm)
Item Weight	1.12 pounds (0.51 kg)
AC Power Cord Length	6 feet (1.8 meters)
DC Output Cable Length	2 feet (0.6 meters)
Safety Certifications	FCC

9. WARRANTY AND SUPPORT

LEICESTERCN offers a 3-Year quality assurance and 12-Month refund policy for this product. For any questions, concerns, or technical support, please contact LEICESTERCN customer service.

Contact Information: Refer to the contact details provided with your product packaging or visit the official LEICESTERCN website for support.

Note: Warranty terms and conditions may vary. Please retain your proof of purchase for warranty claims.

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Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question