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› [KATBO](#) /

› KATBO KTB-BC2109 2A Battery Charger User Manual

## KATBO KTB-BC2109

# KATBO KTB-BC2109 2A Battery Charger User Manual

Model: KTB-BC2109 | Brand: KATBO

## 1. INTRODUCTION

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The KATBO KTB-BC2109 is an intelligent 2A battery charger and maintainer designed for 6V and 12V lead-acid batteries. It is suitable for various applications including motorcycles, cars, boats, farm vehicles, lawn mowers, and electric vehicles. This device utilizes advanced pulse width modulation (PWM) technology and a special intelligent microcomputer chip to ensure efficient and safe charging. It features multiple protection mechanisms and a multi-stage charging process to optimize battery life and performance.



Image 1.1: The KATBO KTB-BC2109 2A Battery Charger in operation, showing its digital display.

## 2. SAFETY INFORMATION

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Please read and understand all safety instructions before using the charger. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Do not** charge non-rechargeable batteries.
- **Do not** expose the charger to rain or excessive moisture.
- Ensure proper ventilation during charging to prevent overheating.
- **Always** connect the charger to the battery terminals correctly (positive to positive, negative to negative).
- **Disconnect** the AC power before making or breaking connections to the battery.
- **Avoid** sparks or flames near the battery during charging, as batteries can produce explosive gases.
- If the charger or battery shows signs of damage, **do not** use it.
- Keep out of reach of children.

## 3. PRODUCT FEATURES

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- **Fully Automatic Operation:** Microprocessor-controlled multi-stage charging and automatic amperage rate adjustment.
- **Wide Compatibility:** Supports 6V and 12V lead-acid batteries (AGM, GEL, SLA, Flooded/WET, Calcium type) less than 32Ah for charging and 2.0Ah-100Ah for maintenance.
- **Intelligent Digital Display:** Real-time display of charging current, battery voltage, and power. Automatic voltage detection for 6V or 12V batteries.
- **Safety Protections:** Includes overcurrent, overvoltage, overheat, reverse polarity, and low voltage protection.
- **Float-Mode Monitoring:** Automatically maintains optimum battery charge without overcharging.
- **Pulse Repair Function:** Designed to recover low voltage, idle, and old batteries.

## 2-Amp Trickle Charger

Connect it and  
Go to work



Once connected, this katbo battery charger will charge your battery full and maintain. Then you can go and do whatever you want. It's very safe. No guards needed

Image 3.1: The KATBO KTB-BC2109 2A Battery Charger plugged into a wall socket, indicating its 'Connect it and Go to work' ease of use.

# Easy to Use

2-amp Trickle maintenance design  
is easy and quick to use



Image 3.2: Physical dimensions of the charger, highlighting its compact size and cable length.

## 4. PACKAGE CONTENTS

Verify that all items are present in the package:

- KTB-BC2109 2A Battery Charger x 1
- Battery Clamps (Red and Black) x 2
- User Manual x 1

## 5. SPECIFICATIONS

Parameter	Value
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Parameter	Value
Input Voltage	100V-130V
Output Voltage	6V or 12V
Charging Current	2 Amps
Wattage	35 watts
Cable Length	110 cm (43.3 inches)
Product Dimensions	10.5 x 6.5 x 6.5 cm
Item Weight	226 g
Model Number	KTB-BC2109

## 6. SETUP

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

1. **Prepare the Battery:** Ensure the battery terminals are clean and free of corrosion. If necessary, clean them with a wire brush and baking soda solution.
2. **Connect to Battery:**
  - Connect the **red** positive (+) clamp to the positive (+) battery terminal.
  - Connect the **black** negative (-) clamp to the negative (-) battery terminal.
  - Ensure connections are secure.
3. **Connect to Power:** Plug the charger's AC power cord into a standard 100V-130V AC wall outlet.
4. The charger will automatically detect the battery voltage (6V or 12V) and begin the charging process.

# Simple design

Concept of automobile wheel strips  
Thicker wires are safer

Upgrade 2-Amp to retain trickle charging, improve efficiency  
and optimize user experience through visual operation

Clear control interface



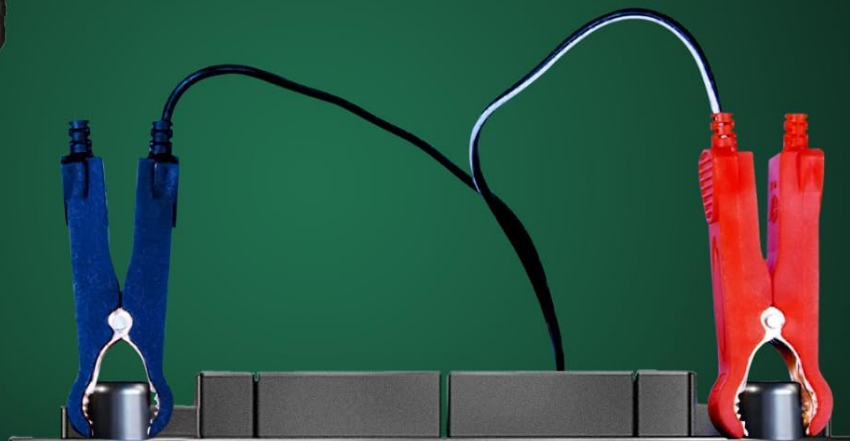
Stable insulation  
Alligator Clips



Image 6.1: Proper connection of the battery charger to a car battery.



Specialized in Battery Charging  
& Maintenance  
Focus on safe charging  
& Protect the Batteries



### 4-stage charging Program

#### INITIALIZATION

Check charging battery connection and charge level

#### BULK CHARGE

Charging with constant current

#### ABSORPTION MODE

Slowly reduce the current to slow down the charging speed until it is fully charged

#### FLOAT/MAINTENANCE MODE

Keeps battery charged without overcharging

Image 6.2: Overview of the charger's 4-stage charging program.

## 7. OPERATING INSTRUCTIONS

The KATBO KTB-BC2109 charger is designed for fully automatic operation. Once connected, it will automatically detect the battery type and voltage, then initiate the appropriate charging cycle.

### 7.1 Automatic Voltage Detection

The charger automatically detects whether the connected battery is 6V or 12V. The digital display will show the detected voltage.

### 7.2 Charging Process

The charger employs a multi-stage charging program:

- **Initialization:** Checks battery connection and current charge level.

- **Bulk Charge:** Charges with constant current until the battery reaches approximately 80% capacity.
- **Absorption Mode:** Slowly reduces the current to prevent overcharging and fully charge the battery.
- **Float/Maintenance Mode:** Once fully charged, the charger switches to a maintenance mode, providing a small current to keep the battery at optimal charge without overcharging.

The digital display will show the charging status, including voltage and current. When the battery is fully charged, the charger will indicate completion and enter maintenance mode.

# Batteries COMPATIBILITIES

12V / 6V  
2000mA

Lead-Acid | AGM | GEL

Less than 32AH  
Costs &  
MANAGEMENT





32AH or more  
MANAGEMENT



Automatic voltage detection 6V or 12V



Image 7.1: The charger's display showing voltage and battery type detection.

## 8. BATTERY COMPATIBILITY

The KATBO KTB-BC2109 is compatible with a wide range of 6V and 12V lead-acid batteries, including:

- AGM (Absorbed Glass Mat)
- GEL
- SLA (Sealed Lead-Acid)
- Flooded (WET)
- Calcium type deep cycle automotive or marine batteries

It is suitable for charging batteries less than 32Ah and for maintaining batteries between 2.0Ah and 100Ah.

## Pulse Repair Strong Charge Activation

When the battery is too long and cannot be charged normally due to too low voltage, you can press and hold the mode key first, and then connect the clip to the battery. When P04 is displayed, connect it to the power supply to start the forced charging mode. After 15 minutes, power off and connect it again for normal charging

**Low Voltage**  
Make the battery voltage reach the normal level above 12V

**Lay aside**  
the battery is idle for a long time, it can effectively repair the battery capacity

**Old battery**  
For the old battery, effectively reduce the vulcanization, so that the battery to a better state

Model: KTB-BC2109

Under voltage charging is activated by strong charging, and pulse high and low voltage and current impact are adopted to effectively restore battery capacity and storage capacity.

Image 8.1: Visual representation of the charger's broad compatibility with different battery types and vehicles.

## 9. MAINTENANCE AND REPAIR

### 9.1 Pulse Repair Function

The charger features a 'Pulse Repair Strong Charge Activation' function designed to address batteries that are too low in voltage to be charged normally, or those that have been idle for a long time, or old batteries suffering from vulcanization.

To activate this function:

1. Ensure the battery is connected to the charger.
2. If the display shows 'P04' (indicating low voltage), press and hold the 'MODE' key.

3. The charger will enter a forced charging mode.
4. After approximately 15 minutes, power off the charger and then reconnect it to start normal charging. This process helps to restore battery capacity and storage efficiency.



Image 9.1: The charger's display indicating the 'P04' error and the pulse repair function.

## 9.2 General Maintenance

- Keep the charger clean and dry.
- Store the charger in a cool, dry place when not in use.
- Inspect cables and clamps for damage before each use.

## 10. TROUBLESHOOTING

If you encounter issues with your KATBO KTB-BC2109 charger, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Charger not turning on/no display	No AC power; faulty outlet; damaged charger.	Check AC power connection and outlet. Try a different outlet. If still no power, contact support.
Battery not charging	Incorrect battery connection; battery too deeply discharged; battery fault.	Verify positive and negative connections. Use pulse repair function for deeply discharged batteries. If battery is faulty, it may need replacement.
Error code displayed (e.g., 'P04')	Battery voltage too low for normal charge.	Activate the pulse repair function as described in Section 9.1.
Charger gets hot during operation	Normal operation; poor ventilation; excessive load.	Some heat is normal. Ensure adequate ventilation around the charger. If it becomes excessively hot, disconnect and contact support.

## 11. WARRANTY AND SUPPORT

### 11.1 Warranty Information

The KATBO KTB-BC2109 Battery Charger comes with a **one-year warranty**. This warranty covers product quality issues. For any warranty claims or product quality concerns, please contact our customer service team.

### 11.2 Customer Support

For technical assistance, troubleshooting, or any questions regarding your KATBO battery charger, please contact our professional customer service team. Contact details can typically be found on the product packaging or the retailer's website where the product was purchased.