

1. Overview

The Haisito 12V/24V 20 Amp Car Battery Charger is a fully automatic battery maintainer and trickle charger designed for a wide range of battery types. It features multiple protection mechanisms and adjustable charging currents.



Key Functions:

- Charges and maintains 12V and 24V batteries.
- Supports Lithium, LiFePO4, Lead-Acid (AGM, GEL, Wet, EFB), and other battery chemistries.
- Features a 7-stage automatic charging process.
- Includes trickle charge, maintenance, and pulse repair modes.

2. Specifications

- **Brand:** Haisito

- **Product Dimensions:** 8.66"D x 7.86"W x 3.96"H
- **Item Weight:** 1.5 Pounds
- **Input Voltage:** 110V ~ 240V AC
- **Output Voltage:** 12V / 24V DC
- **Maximum Output Current:** 12V/20A, 24V/10A
- **Supported Battery Capacity:** 2AH - 200 AH (Note: Charge batteries below 15AH with the minimum current setting)
- **Minimum Starting Voltage:** > 2.0 V
- **Operating Temperature Range:** -10°C (14°F) to 40°C (104°F)

3. Features and Controls



3.1 Display and Indicators

The digital display shows real-time information during operation:

- **Voltage/Current:** Displays real-time charging voltage or current.
- **Mode Indicators:** Shows active mode (e.g., Repair, Test, Trickle).
- **Status Messages:** Displays "FUL" when charging is complete, or error codes for low voltage or faults.
- **Temperature Icon:** Indicates when temperature compensation is active.

3.2 Control Buttons

- **Mode/Type Button:** Selects the battery type (e.g., Standard, AGM, Lithium).
- **Current/Voltage Button:** Cycles through the three adjustable current levels for 12V and 24V operation.

3.3 Charging Modes

- **7-Stage Automatic Charging:** Bulk, Absorption, Analysis, Recondition, Float, Trickle, and Maintenance.
- **Repair/Pulse Mode:** Attempts to recover deeply discharged batteries (from 0V, except dead batteries).
- **Trickle/Maintainer Mode:** Provides a low, continuous charge to keep a battery at full capacity.
- **Test Mode:** Automatically engages trickle charging when the battery is nearly full.

3.4 Adjustable Current Levels

You can manually select from three charging current levels:

- **Level 1:** 12V/5A, 24V/3A
- **Level 2:** 12V/10A, 24V/5A
- **Level 3:** 12V/20A, 24V/10A (Maximum)

Note: The system may automatically reduce the current based on battery voltage to protect the battery.

3.5 Protection Features

- Temperature Protection
- Overcharge Protection
- Overvoltage Protection
- Short Circuit Protection
- Overcurrent Protection
- Reverse Polarity Protection
- Electrostatic Spark Protection

3.6 Temperature Detection

A built-in sensor adjusts charging voltage based on ambient temperature:

- **Below 10°C (50°F):** Increases charge voltage.
- **Above 28°C (82°F):** Decreases charge voltage.

4. Use Guide



4.1 Before First Use

1. Inspect the charger, power cord, and battery clamps for any damage.
2. Ensure your work area is dry, well-ventilated, and away from sparks or flames.
3. Verify your battery's voltage (12V or 24V) and type (e.g., Lead-Acid, AGM, Lithium).
4. **For Lithium/LiFePO4 Batteries:** Only charge batteries equipped with a Battery Management System (BMS).

4.2 Connection Procedure

1. **Power Off:** Ensure the charger is unplugged from the AC outlet.
2. **Connect to Battery:**
 - Attach the RED positive (+) clamp to the battery's positive terminal.
 - Attach the BLACK negative (-) clamp to the battery's negative terminal or a clean, unpainted metal part of the chassis (for negative-grounded vehicles).

- Ensure connections are secure and metal-to-metal.

3. **Select Settings:**

- Plug the charger into a 110V-240V AC outlet.
- Use the Mode button to select the correct battery type.
- Use the Current button to select the appropriate charging current for your battery's capacity.

4. **Start Charging:** The charger will automatically begin the charging process. The display will show the progress.

4.3 During Charging

- Monitor the display for voltage, current, and status messages.
- The fan may operate; this is normal for cooling.
- Do not touch the battery clamps while the charger is active.

4.4 Completion and Disconnection

1. When charging is complete, the display will show "FUL".
2. Unplug the charger from the AC outlet.
3. Disconnect the BLACK negative (-) clamp first, then the RED positive (+) clamp from the battery.
4. Store the charger in a cool, dry place.

4.5 Using as a Maintainer

For long-term storage, you can leave the charger connected to a battery. It will automatically switch to and maintain a trickle charge, keeping the battery at full charge without overcharging.

5. Battery Compatibility

This charger is compatible with the following battery types:

- **Lithium (with BMS)**
- **LiFePO4 (with BMS)**
- **Lead-Acid:** Wet/Flooded, AGM (Absorbent Glass Mat), GEL, EFB (Enhanced Flooded Battery), MF (Maintenance-Free), VRLA (Valve-Regulated Lead-Acid), SLA (Sealed Lead-Acid), Calcium.

Typical Applications: Cars, trucks, motorcycles, electric motorcycles, golf carts, lawn mowers, tractors, forklifts, motor boats, and other 12V/24V systems.

6. Troubleshooting

- **Charger won't start / Display is off:**

- Check that the AC power cord is securely plugged in.
- Verify the battery voltage is above 2.0V. The charger may not start if voltage is too low.
- Check battery connections for corrosion and ensure clamps have good contact.

- **Charging current is lower than selected:**

- This is normal. To protect the battery, the system automatically identifies battery voltage and selects the most appropriate current. It will use maximum current when battery voltage is low (e.g., a 12V battery below 11V).

- **Lithium/LiFePO4 battery doesn't seem fully charged:**

- When fully charged, the charger has a callback function, reducing voltage by about 1V-2V, which is normal. It then adds a small, uninterrupted trickle charge.

- **Fan is noisy:**

- Fan operation and wind noise are normal during charging.

- **Display shows an error or "Low Voltage":**

- The battery voltage is too low or the battery cannot hold a charge. The charger's repair mode may attempt to recover it. If the battery is completely dead, recovery may not be possible.

7. Safety Information

- Read all instructions before use.
- This is not a toy. Keep out of reach of children.
- Use only with 12V or 24V lead-acid, AGM, GEL, or Lithium/LiFePO4 (with BMS) batteries.
- Do not use the charger for any purpose other than charging rechargeable batteries.
- Do not expose the charger to rain, snow, or liquids.
- Do not operate in an enclosed area or near flammable materials.
- Wear eye protection when working near batteries.
- Do not connect the charger to a frozen battery.
- Ensure the AC power cord is not damaged and does not present a tripping hazard.

- Disconnect the AC power and battery clamps before performing any maintenance or cleaning.

Warning

This content is compiled from multiple sources and is provided for reference purposes only. It may not be complete or fully applicable to all situations. If you are unable to resolve your issue, please contact the product manufacturer or an authorized service provider for official support.