

HTRC P3648

HTRC P3648 36V/48V Smart Battery Charger and Maintainer User Manual

Model: P3648

1. INTRODUCTION

Thank you for choosing the HTRC P3648 Smart Battery Charger and Maintainer. This device is designed to efficiently charge and maintain 36V and 48V batteries, including Lithium, LiFePO4, and Lead-Acid (AGM/GEL/EFB, MF, Flooded, VRLA, SLA, wet) types. Please read this manual thoroughly before operation to ensure safe and optimal performance.

2. SAFETY INFORMATION

Always prioritize safety when working with electrical devices and batteries. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Ensure the charger is connected to a grounded outlet.
- Do not expose the charger to rain or excessive moisture.
- Operate in a well-ventilated area.
- Avoid charging frozen batteries.
- Do not attempt to charge non-rechargeable batteries.
- Keep out of reach of children.
- Disconnect the power supply before making or breaking connections to the battery.
- Wear eye protection and gloves when handling batteries.
- In case of acid contact, flush with water immediately and seek medical attention.

3. PRODUCT OVERVIEW

The HTRC P3648 is an intelligent charger featuring multiple charging modes, temperature compensation, and comprehensive protection mechanisms. It is suitable for a wide range of vehicles and applications.

Key Features:

- Manual selection for 36V or 48V batteries.
- High power output: 36V 18A, 48V 13A.
- Compatible with Lithium, LiFePO4, and Lead-Acid (AGM/GEL/EFB, MF, Flooded, VRLA, SLA, wet) batteries.
- 9-level intelligent charging process.
- Temperature compensation for optimal charging in various climates.
- Protection against overcurrent, overvoltage, short circuit, and reverse connection.
- Large LCD display showing charging status, voltage, current, temperature, and mode.
- Automatic trickle charging and pulse repair function.
- Built-in dual cooling fan.



Figure 1: HTRC P3648 Smart Battery Charger with accessories. The image displays the black charger unit, red and black alligator clips, and a crowfoot plug.



Figure 2: Illustration of the built-in dual cooling fan system, designed to prevent overheating during operation.



Figure 3: Close-up view of the power switch and fuse compartment on the charger unit, highlighting safety features.

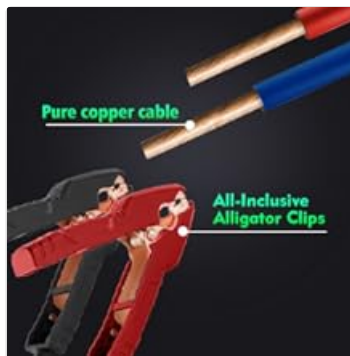


Figure 4: Detail of the pure copper cables and all-inclusive alligator clips, indicating robust construction for efficient power transfer.

4. SETUP

Before connecting the charger, ensure the battery terminals are clean and free of corrosion. Verify the battery voltage (36V or 48V) matches the charger's selected setting.

Connection Steps:

1. **Connect to Power Outlet:** Plug the charger's AC power cord into a standard 100-240V 50/60Hz electrical socket.
2. **Select Voltage:** On the charger, manually select the correct voltage (36V or 48V) to match your battery.
3. **Connect to Battery:** Connect the charger's output cables to the battery terminals. Ensure correct polarity: red clamp to positive (+), black clamp to negative (-). If using a crowfoot plug, connect it to the golf cart's charging port.
4. **Power On:** Turn on the charger using the power switch. The LCD display will illuminate.

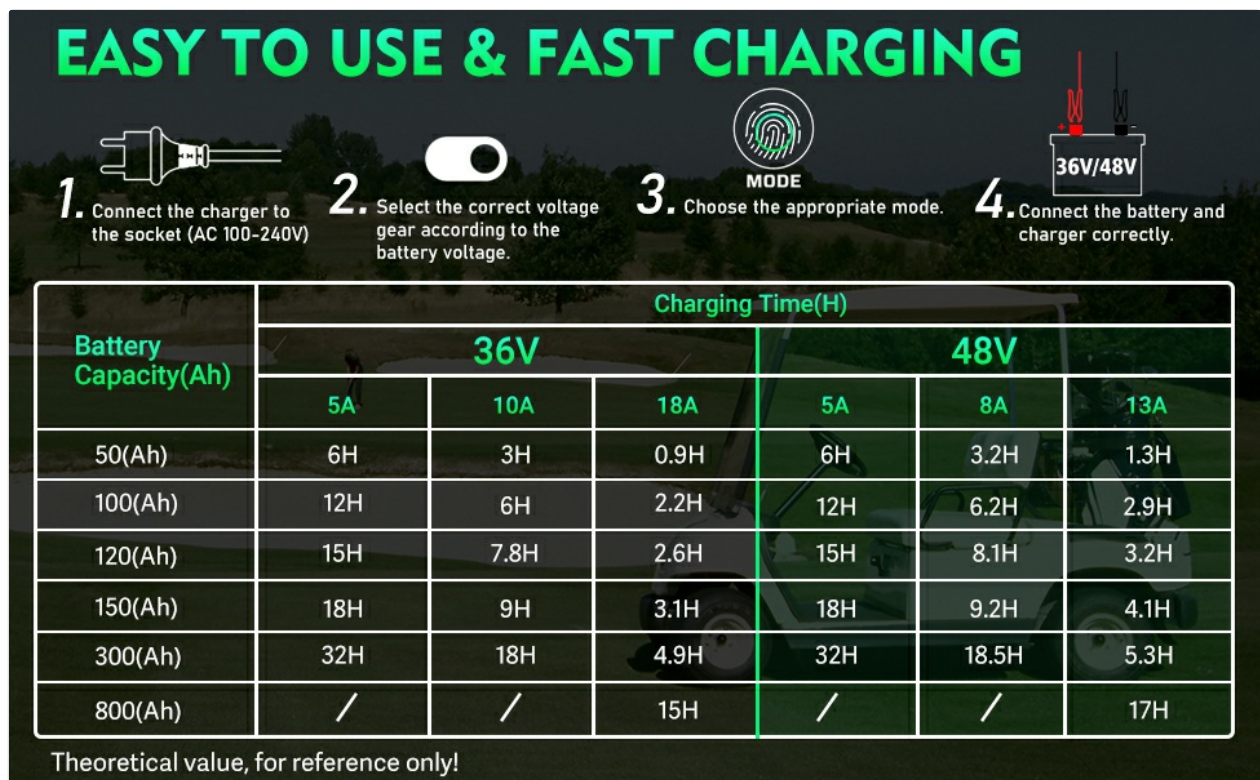


Figure 5: Visual guide for connecting the charger, selecting voltage, and choosing the appropriate mode. Includes a reference table for theoretical charging times based on battery capacity and selected current.

5. OPERATING INSTRUCTIONS

The HTRC P3648 charger features an intelligent charging process and multiple selectable modes.

Charging Process:

- Initial Check:** After connecting and powering on, the charger will perform an initial battery check.
- Mode Selection:** Use the 'MODE' button to cycle through available charging current options (e.g., 5A, 10A, 18A for 36V; 5A, 8A, 13A for 48V) and the 'REPAIR' mode. Select the appropriate current based on your battery's capacity and manufacturer recommendations.
- Automatic Charging:** The charger will automatically begin the 9-stage charging process. The LCD display will show real-time charging voltage, current, internal temperature, and charging percentage.
- Temperature Compensation:** The charger automatically adjusts charging parameters based on ambient temperature (summer/winter mode) to prevent over- or under-charging.
- Completion:** Once fully charged, the charger automatically switches to trickle charging mode to maintain the battery without overcharging.

4 MODES SELECTABLE

3 current levels are optional, one key to select the mode, automatically complete the charging process.



Figure 6: The charger's LCD display indicating the four selectable modes: 5A/5A, 10A/8A, 18A/13A, and REPAIR, allowing users to choose the appropriate charging current or repair function.

9-STAGE SMART CHARGING PROCESS

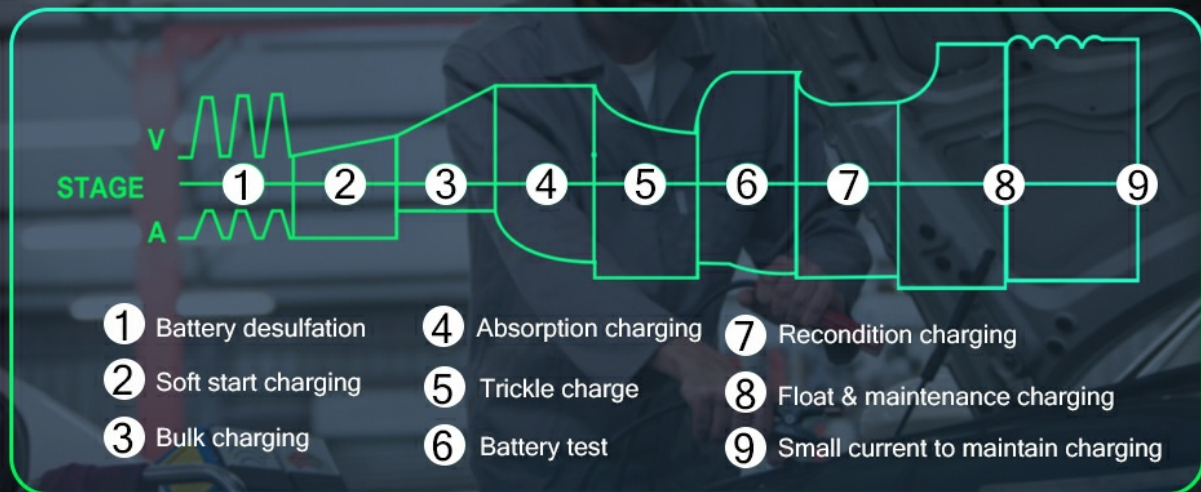


Figure 7: A detailed diagram illustrating the 9-stage smart charging process, including battery desulfation, soft start, bulk charging, absorption, trickle charge, battery test, recondition, float & maintenance, and small current maintenance.

Repair Function:

The pulse repair function helps restore lost battery performance by detecting and addressing sulfate and acid layers. This mode is suitable for older or deeply discharged batteries, but it cannot activate a completely depleted battery (minimum starting voltage: 26V).

CHARGE DEEPLY DISCHARGED BATTERIES



OURS:

Automatically Detects Battery Voltage (down to 2V) to Charge the Battery.



OTHERS:

Requires Manually Using "Forced Mode" to Charge a Dead Battery.



Poor Starting Power



Long Idle Time



Old Battery

Figure 8: Comparison showing the HTRC charger's capability to automatically detect and charge batteries down to 2V, contrasting with other chargers that may require manual 'forced mode' for deeply discharged batteries. Examples of applications include vehicles with poor starting power, long idle times, or old batteries.



Figure 9: Illustration of the temperature compensation feature, which adjusts charging to avoid over-charging in hot weather (104°F/40°C) and under-charging in cold weather (14°F/-10°C), ensuring suitability for most climates.

6. MAINTENANCE

Charger Care:

- Clean the charger casing with a soft, dry cloth. Do not use solvents or abrasive cleaners.
- Ensure ventilation openings are clear of dust and debris.
- Store the charger in a cool, dry place when not in use.
- Regularly inspect cables and connectors for damage. Replace if necessary.

Battery Maintenance:

- Keep battery terminals clean.
- For flooded lead-acid batteries, check electrolyte levels periodically and top up with distilled water if needed (after charging).
- Avoid fully discharging batteries, as this can shorten their lifespan.

7. TROUBLESHOOTING

If you encounter issues with your HTRC P3648 charger, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Charger does not turn on.	No power from outlet; power switch off; internal fuse blown.	Check power outlet; ensure power switch is ON; check and replace fuse if necessary.
Charger displays 'Error' or does not charge.	Incorrect voltage selected; reverse polarity connection; battery too low (below 26V); faulty battery.	Verify correct voltage setting; check battery connections for correct polarity; battery may be too deeply discharged for activation; test battery with a different device.
Slow charging.	Low current mode selected; large battery capacity.	Select a higher charging current if appropriate for your battery; refer to charging time table in Section 4.
Charger gets hot.	Normal operation; blocked ventilation.	Some heat is normal during charging. Ensure ventilation openings are not blocked. The built-in fan should manage temperature.

8. SPECIFICATIONS

- **Input Voltage:** 100-240V AC, 50/60Hz
- **Max Output Voltage/Current:**
 - 36V: 5A, 10A, 18A
 - 48V: 5A, 8A, 13A
- **Minimum Starting Voltage:** 26V
- **Compatible Battery Types:** Lithium, LiFePO4, Lead-Acid (AGM/GEL/EFB, MF, Flooded, VRLA, SLA, wet)
- **Product Dimensions:** 9.06 x 4.84 x 2.56 inches (23 x 12.3 x 6.5 cm)
- **Item Weight:** 4.33 pounds (1.97 kg)
- **Color:** Black

9. WARRANTY AND SUPPORT

HTRC offers permanent after-sale service for this product. For any questions or support needs, please contact HTRC customer service through the retailer where the product was purchased or refer to the official HTRC website for contact information.

 <p>HTRC P3648 AKKULATURI</p>	<p>HTRC P3648 Akkulaturi: Käyttö- ja asennusohjekirja Engifar Oy</p> <p>Kattava käyttö- ja asennusohjekirja HTRC P3648 älykkäälle akkulaturille. Sisältää turvallisuusohjeet, tekniset tiedot, ominaisuudet, latausvaiheet ja lisäohjeita 36V ja 48V lyijyhappo-, AGM-, geeli- ja LiFePO4-akuille.</p>
	<p>HTRC Smart Battery Charger 12V/24V - 7-Stage Automatic Charging for Lithium, Lead-Acid, LiFePO4</p> <p>Comprehensive instruction manual for the HTRC 7-Stage Automatic Smart Battery Charger (12V/24V). Learn about features, safety, charging modes, and specifications for Lithium, Lead-Acid, LiFePO4, AGM, GEL, and more.</p>
	



[HTRC RC Charger Compliance Certificates: CE, FCC, RoHS](#)

Comprehensive compliance certificates for HTRC RC Chargers, including models HT206AC/DC DUO, HT400AC/DC, H800AC/DC QUAD, H6AC, and others. Certifications cover LVD, EMC, FCC Part 15, and RoHS directives, issued by BST Technology Co., Ltd.



