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› HTRC 25A 12V/24V Car Battery Charger User Manual

## HTRC P25

# HTRC 25A 12V/24V Car Battery Charger User Manual

Model: P25

Brand: HTRC

## 1. INTRODUCTION

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This user manual provides detailed instructions for the safe and efficient operation of your HTRC 25A 12V/24V Car Battery Charger. Please read this manual thoroughly before first use and keep it for future reference. This intelligent charger is designed for various battery types, offering advanced charging and maintenance features.

## 2. PRODUCT OVERVIEW

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The HTRC P25 is a versatile 12V/24V battery charger, maintainer, and desulfator. It features a 9-level automatic charging process and is compatible with LiFePo4, Lithium, and Lead-acid batteries (AGM, Calcium, GEL, MF, EFB, SLA, VRLA, WET). Its intelligent design ensures optimal charging and extends battery life.



Figure 2.1: HTRC P25 Smart Charger showing its main unit, display, and connected alligator clips.

### 3. PACKAGE CONTENTS

Upon opening the package, please verify that all items listed below are present and in good condition:

- 1 x HTRC 25A 12V/24V Car Battery Charger
- 1 x Reinforced Alligator Clips with protective cover
- 1 x 3m Pure Copper Power Cable (soft core)
- 1 x User Manual

# What you get



Figure 3.1: All components included in the HTRC P25 Smart Charger package.

## 4. SETUP AND CONNECTION

### 4.1 Safety Precautions

- Ensure the charger is disconnected from the AC power outlet before making or breaking connections to the battery.
- Always connect the red (+) clamp to the positive battery terminal and the black (-) clamp to the negative battery terminal.
- Do not charge a frozen battery.
- Ensure adequate ventilation during charging.
- Keep away from open flames or sparks.

### 4.2 Connecting the Charger

1. Connect the red (+) alligator clamp to the positive (+) terminal of the battery.
2. Connect the black (-) alligator clamp to the negative (-) terminal of the battery.
3. Plug the power cable into a suitable AC power outlet (100-240V AC).

4. The charger will automatically detect the battery type and voltage (12V or 24V).



Figure 4.1: Proper connection of the HTRC P25 charger to a battery, highlighting its multi-battery compatibility.

## 5. OPERATING INSTRUCTIONS

### 5.1 Charging Modes

The charger features four selectable charging modes, which can be cycled using the "MODE" button. The charger automatically detects the battery type and voltage, but you can select the desired current output or repair function.

- **LOW Mode:** 12V-2A/24V-2A (for smaller batteries or maintenance charging)
- **MEDIUM Mode:** 12V-15A/24V-6A (standard charging)
- **HIGH Mode:** 12V-25A/24V-13A (fast charging for larger batteries)
- **REPAIR Mode:** Suitable for repairing and activating old and weak lead-acid batteries only.

# Switch Between 4 Modes with One Key

Low Charge, Medium Charge, High Charge and Repair Mode



Figure 5.1: Switching between the four charging modes using the single "MODE" button.

## 5.2 LCD Display Information

The LCD screen provides real-time information about the charging process:

- Battery voltage
- Charging current
- Charging temperature
- Battery full indicator
- Charging stage indicators (Winter, Summer, Repair, Float)
- Battery percentage (100%, 80%, 60%, 40%, 20%)

## 5.3 9-Stage Smart Charging Process

The charger employs an advanced 9-stage charging process to optimize battery power precisely and gently, ensuring maximum battery life and performance.

1. **Battery Desulfation:** Breaks down lead sulfate crystals that build up on discharged batteries.
2. **Soft Start Charging:** Gently introduces current to the battery.
3. **Bulk Charging:** Charges the battery to approximately 80% capacity.
4. **Absorption Charging:** Charges the battery to 100% capacity at a decreasing current.
5. **Trickle Charge:** Maintains the battery at full charge.
6. **Battery Test:** Checks battery health.
7. **Recondition Charging:** Restores battery capacity.
8. **Float & Maintenance Charging:** Keeps the battery fully charged without overcharging.
9. **Small Current to Maintain Charging:** Ensures long-term maintenance.



Figure 5.2: Detailed diagram of the 9-stage smart charging process.

## 5.4 Intelligent Repair Function

The intelligent repair function is designed to activate and repair weak or idle lead-acid batteries, significantly extending their lifespan. This function is only suitable for lead-acid batteries.

# Intelligent Repair

Activate and repair weak and idle batteries, extend battery life.(Applies to Lead-Acid batteries only)



Figure 5.3: The intelligent repair function in action, revitalizing a lead-acid battery.

## 6. MAINTENANCE

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

- **Cleaning:** Disconnect the charger from power and battery. Wipe the 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. Ensure cables are neatly coiled and not kinked.
- **Cable Inspection:** Regularly inspect the power cable and alligator clips for any signs of damage, fraying, or corrosion. Replace if necessary.

## 7. TROUBLESHOOTING

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

| Problem                              | Possible Cause                                                                                 | Solution                                                                                                                                                         |
|--------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Charger does not turn on.            | No power from outlet; loose connection; faulty power cable.                                    | Check power outlet; ensure all connections are secure; inspect power cable for damage.                                                                           |
| Charger not charging.                | Incorrect battery connection (reverse polarity); battery too deeply discharged; battery fault. | Verify correct polarity (+ to + and - to -); try Repair mode for lead-acid batteries; consult a professional for battery testing.                                |
| Display shows error code/protection. | Short circuit, reverse polarity, over-voltage, under-voltage, over-current, over-temperature.  | Disconnect charger, identify and resolve the issue (e.g., correct connections, allow to cool down), then reconnect. The charger has multiple safety protections. |
| Repair mode not working.             | Battery is not a lead-acid type; battery is beyond repair.                                     | Repair mode is only for lead-acid batteries. Some batteries may be too damaged to be repaired.                                                                   |

## 8. SPECIFICATIONS

| Feature                  | Specification                                                                    |
|--------------------------|----------------------------------------------------------------------------------|
| Brand                    | HTRC                                                                             |
| Model Number             | P25                                                                              |
| Input Voltage            | 12 Volts (AC)                                                                    |
| Output Voltage           | 24 Volts (DC)                                                                    |
| Current Rating           | 25 A                                                                             |
| Dimensions (L x W x H)   | 15.5 x 8.5 x 5 cm (6.1 x 3.35 x 1.97 inches)                                     |
| Item Weight              | 929 Grams                                                                        |
| Color                    | Black                                                                            |
| Compliance               | CE                                                                               |
| Compatible Battery Types | 12V/24V LiFePo4, Lithium, Lead-acid (AGM, Calcium, GEL, MF, EFB, SLA, VRLA, WET) |

## 9. SUPPORT

For any questions or further assistance regarding your HTRC 25A 12V/24V Car Battery Charger, please do not hesitate to contact HTRC customer support. We are committed to providing advanced battery chargers and comprehensive after-sales service. *Contact information is typically found on the product packaging or the official brand website.*

### ASK A QUESTION ABOUT THIS MANUAL

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#### 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.

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