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E-FAST ZYX-J50

E-FAST Battery Charger User Manual

Model: ZYX-J50

1. Introduction

This manual provides essential information for the safe and effective use of your E-FAST 10A Lifepo4 Lead Acid Car Battery Charger. This versatile charger is designed for 12V and 24V lead-acid and LiFePO4 batteries, suitable for various vehicles including cars, trucks, motorcycles, and marine applications. Please read this manual thoroughly before operation to ensure proper usage and to prevent damage to the charger or battery.

2. Safety Information

Always read and understand all safety warnings and instructions before using the charger.

- **Do not attempt to jump-start a vehicle with this charger.** It is designed for charging and maintaining batteries, not for jump-starting.
- Ensure proper ventilation during charging to prevent the buildup of explosive gases.
- Avoid contact with battery acid. Wear appropriate personal protective equipment, including eye protection and gloves.
- Keep out of reach of children. The charger includes a child lock feature for enhanced safety.
- Do not expose the charger to rain or wet conditions. This product is for indoor use only.
- Disconnect the AC power from the wall outlet before connecting or disconnecting battery clamps to prevent sparks.
- Do not charge frozen batteries. Allow them to thaw before charging.
- This charger cannot activate a completely dead battery or repair a physically damaged battery.



Figure 2.1: The E-FAST charger features 11 types of charging protections, including short circuit, overcurrent, overvoltage, overheating, reverse polarity, and a child safety lock.

3. Product Overview

3.1 Components

The E-FAST Battery Charger consists of the main charging unit, an AC power cord with a standard plug, and positive (red) and negative (black) battery clamps. The unit features an intuitive LCD display for real-time information.



Figure 3.1: Main components of the E-FAST Battery Charger, including the charger unit, AC plug, and battery clamps.

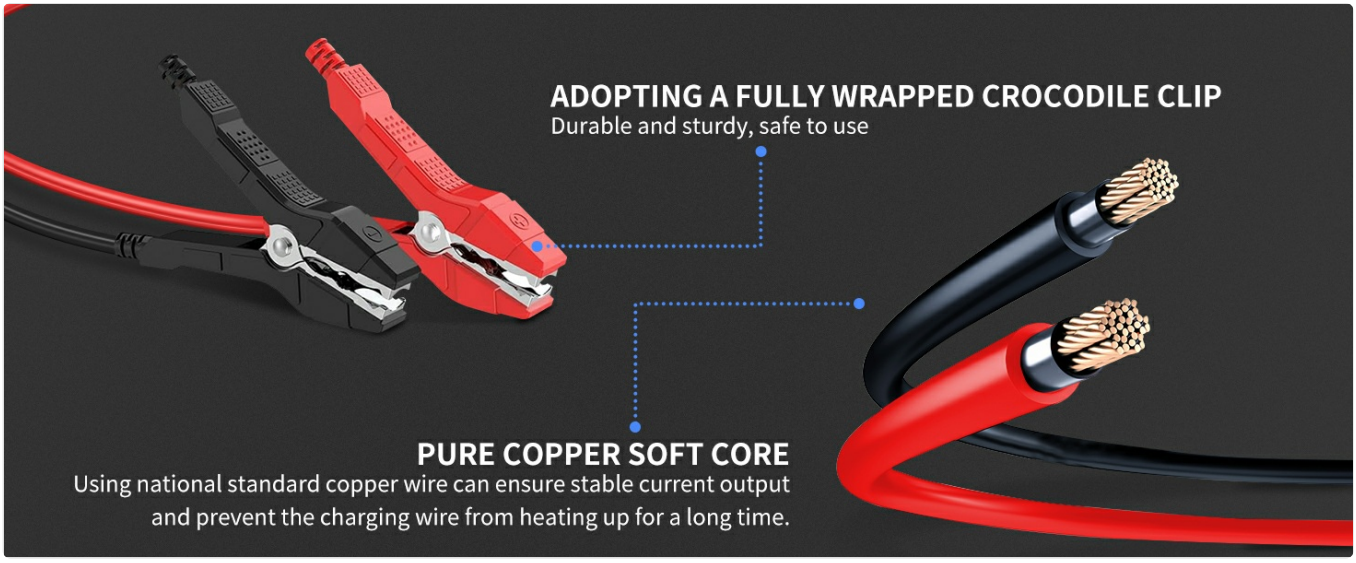

Figure 3.2: The charger features durable, fully wrapped crocodile clips and pure copper soft core wires for stable current output and heat prevention.

3.2 Key Features

- **2-in-1 Compatibility:** Charges and maintains all types of 12V and 24V lead-acid batteries (flooded, gel, AGM, SLA) and LiFePO4 batteries, with a battery range of 6-180Ah.
- **Efficient Pulse Repair:** Utilizes high-power, high-frequency, low-frequency pulse technology to help restore lost performance in old or idle batteries by eliminating sulfation.
- **Color Visualization Charging:** The LCD display shows each charging stage with indicator lights of different colors, providing a clear visual representation of the charging process.
- **11 Charging Protections:** Includes reverse polarity, overheating, overcurrent/overvoltage, short circuit protection, and a child lock for enhanced safety.
- **Lightweight and Portable:** Weighing only 1.4 lbs, the charger is easy to carry and store.
- **Automatic Operation:** Automatically stops charging when the battery is full, eliminating the need for constant monitoring.
- **Memory Function:** Retains the last used charging mode after a power outage.
- **Temperature Compensation:** Automatically adjusts charging parameters based on ambient temperature, entering winter mode below 50°F (10°C) and summer mode above 82°F (28°C).



Figure 3.3: The charger offers high-speed quick charging at 12V/10A and 24V/5A, supporting various battery types including AGM, Car, Moto, LiFePO4, and a repair function.



Figure 3.4: The LCD display provides real-time information and features colorful gradient indicator lights for visual charging status.



Figure 3.5: The repair function efficiently addresses issues like long idle time, low voltage, and aging batteries, but cannot jump-start or repair dead batteries.



Figure 3.6: The charger is suitable for a wide range of 12V/24V batteries, including those found in motorcycles, cars, motoboats, trucks, engineering vehicles, lawn mowers, and various lead-acid and LiFePO4 batteries.

4. Setup

Follow these steps to set up your E-FAST Battery Charger:

1. **Connect to Power:** Plug the AC power cord into a standard 100-240V wall outlet. The charger's display will illuminate.
2. **Connect to Battery:**
    - Connect the **red (+) positive clamp** to the positive terminal of the battery.
    - Connect the **black (-) negative clamp** to the negative terminal of the battery.

    Ensure a secure connection. The charger will automatically detect if it's a 12V or 24V battery.

3. **Select Mode:** Press the 'MODE' button on the charger to cycle through the available charging modes (AGM, CAR, MOTO, LiFePO4, REPAIR) until you select the one appropriate for your battery type.



Figure 4.1: Step-by-step connection guide for the E-FAST Battery Charger, showing AC power connection and battery clamp attachment.

5. Operating Instructions

5.1 Charging Process

Once connected and the mode is selected, the charger will automatically begin the charging process. The E-FAST charger utilizes a sophisticated 7-stage automatic charging process to optimize battery health and longevity:

1. **Desulfurization:** High-frequency pulse charge to break down lead sulfate crystals.
2. **Trickle Charging:** Initial low-current charge for deeply discharged batteries.
3. **Constant Current Charging (Bulk):** Charges the battery at a constant maximum current until voltage rises.
4. **Constant Voltage Charging (Absorption):** Charges at a constant voltage, with current gradually decreasing.
5. **Battery Current Detection:** Monitors battery current to determine charge completion.
6. **Compensation Charging:** Provides a small current to ensure full charge.
7. **Floating Charging:** Maintains the battery at a full charge with a low, constant voltage.

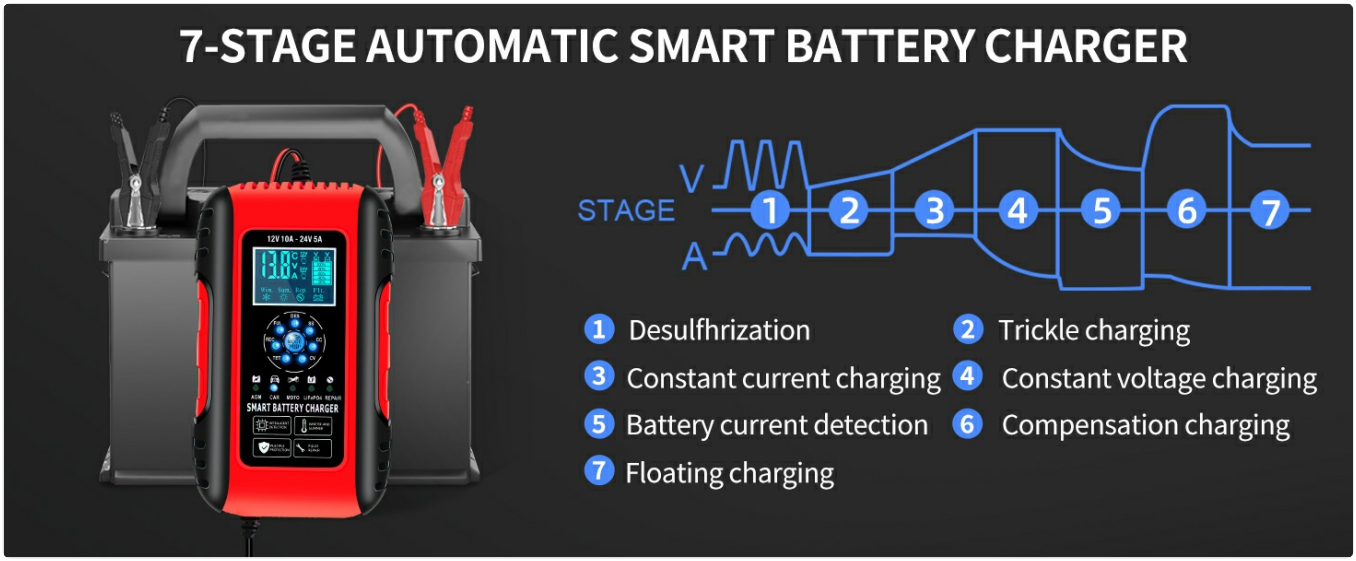

Figure 5.1: The 7-stage automatic charging process ensures optimal battery charging and maintenance.

5.2 Display Interpretation

The LCD display provides real-time feedback on the charging status:

- **Voltage (V):** Shows the current battery voltage.
- **Current (A):** Displays the charging current.
- **Temperature (°C):** Indicates the ambient temperature, influencing automatic winter/summer mode activation.
- **Battery Full Indicator:** Shows when the battery has reached full charge (displaying "FUL").
- **Error Indicator:** Alerts to potential issues during charging.
- **Charging Progress Bar:** Visually represents the battery's charge level (20%, 40%, 60%, 80%, 100%).



Figure 5.2: The LCD display provides comprehensive real-time data, including voltage, current, temperature, and charging status, along with a visual battery level indicator.

6. Maintenance

Proper maintenance ensures the longevity and optimal performance of your E-FAST Battery Charger:

- **Cleaning:** Keep the charger clean and dry. Wipe the casing with a soft, damp cloth. Do not use harsh chemicals or abrasive cleaners.
- **Storage:** Store the charger in a cool, dry place when not in use. Ensure the cables are neatly coiled and not kinked.
- **Inspection:** Before each use, inspect the AC power cord, battery cables, and clamps for any signs of damage, fraying, or corrosion. Do not use the charger if any components are damaged.
- **Ventilation:** Ensure the charger's ventilation openings are clear of dust and debris to prevent overheating.

7. Troubleshooting

If you encounter issues with your E-FAST Battery Charger, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Charger does not turn on.	No power from outlet; loose connection.	Ensure the AC power cord is securely plugged into a live wall outlet. Try a different outlet.
Battery not charging.	Incorrect battery connection; wrong mode selected; battery is severely damaged/dead.	Check that the positive and negative clamps are correctly and securely connected to the battery terminals. Press the 'MODE' button to select the appropriate battery type. Note that the charger cannot activate a completely dead battery.
Error message on display.	Internal fault; short circuit; reverse polarity.	Disconnect the charger from both the battery and power outlet. Reconnect carefully, ensuring correct polarity. If the error persists, contact customer support.
Charger gets warm during use.	Normal operation; poor ventilation.	It is normal for the charger to get warm during operation. Ensure adequate ventilation around the unit. If it becomes excessively hot or emits smoke/odor, disconnect immediately.

8. Specifications

Specification	Value
Model Number	ZYX-J50
Input Voltage	100-240V AC
Output Voltage	12V / 24V DC (Automatic Detection)
Max Output Current	10A (12V) / 5A (24V)
Battery Capacity Range	6-180Ah
Compatible Battery Types	Lead-Acid (Flooded, Gel, AGM, SLA), LiFePO4
Product Dimensions	5.3 x 9 x 3 inches
Item Weight	1.4 pounds
Color	Red

Specification	Value
Manufacturer	E-FAST
Country of Origin	China

9. Warranty and Support

For warranty information, technical support, or service inquiries regarding your E-FAST Battery Charger, please refer to the documentation included with your product at the time of purchase. You may also visit the official E-FAST website for the most up-to-date information and contact details for customer service.
Please retain your proof of purchase for any warranty claims.

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