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Etrogo ET-168

Etrogo 12V 24V Intelligent Pulse Maintainer Battery Charger

MODEL: ET-168



Introduction

This manual provides essential information for the safe and effective operation of your Etrogo ET-168 12V 24V Intelligent Pulse Maintainer Battery Charger. This device is designed for charging and maintaining 12V or 24V dry batteries, water batteries, lead-acid batteries, and maintenance-free batteries. It features automatic voltage recognition, a 5-stage charging process, and multiple protection mechanisms. **This charger is not suitable for lithium batteries.**

Suitable for Lead Acid Battery of Capacity 3ah -200ah, NO Lithium Battery



Image: The Etrogo ET-168 charger shown alongside various vehicles (cars, motorcycles, trucks, construction equipment), illustrating its wide application for lead-acid batteries.

Safety Information

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

- **Battery Type:** This charger is exclusively for 12V or 24V lead-acid batteries (dry, water,

maintenance-free). **DO NOT attempt to charge lithium batteries.**

- **Ventilation:** Ensure adequate ventilation during charging. Batteries can produce explosive gases.
- **Eye Protection:** Always wear eye protection when working with batteries.
- **Connections:** Connect the charger to the battery terminals correctly (red to positive, black to negative) before plugging into a power outlet. Disconnect in reverse order.
- **Damaged Equipment:** Do not operate the charger if it has been dropped, damaged, or exposed to moisture.
- **Children:** Keep the charger and batteries out of reach of children.



Image: The Etrogo ET-168 charger displaying icons representing its multi-protection features, including short circuit, reverse connection, overcurrent, overheating, low voltage, and overvoltage protection.

Product Overview

Components

- Etrogo ET-168 Charger Unit
- Integrated AC Power Cord (US 2-pin plug)
- Integrated DC Output Cables with Battery Clamps (Red for Positive, Black for Negative)

Controls and Indicators

- **LED Display:** Shows charging percentage and status.
 - **Charge Mode Switch (AUTO/MOTOR):** Selects charging mode based on battery capacity.
 - **Charging Indicator:** Red light indicates charging is active.
 - **24V Indicator:** Green light illuminates when charging a 24V battery.
 - **12V Indicator:** Green light illuminates when charging a 12V battery.
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Setup

1. **Unpacking:** Carefully remove the charger from its packaging and inspect for any damage.
 2. **Connecting to Battery:**
 - Ensure the charger is unplugged from the AC power outlet.
 - 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 connections are secure.
 3. **Connecting to Power:** Plug the charger's AC power cord into a standard 120V AC wall outlet.
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Operating Instructions

Automatic 12V/24V Recognition

Upon connecting to a battery and power, the intelligent chip built into the charger will automatically identify whether it is a 12V or 24V battery. The corresponding 12V or 24V indicator light will illuminate.

12V/24V Battery AUTO-Recognition:

identify based on the battery voltage in real time

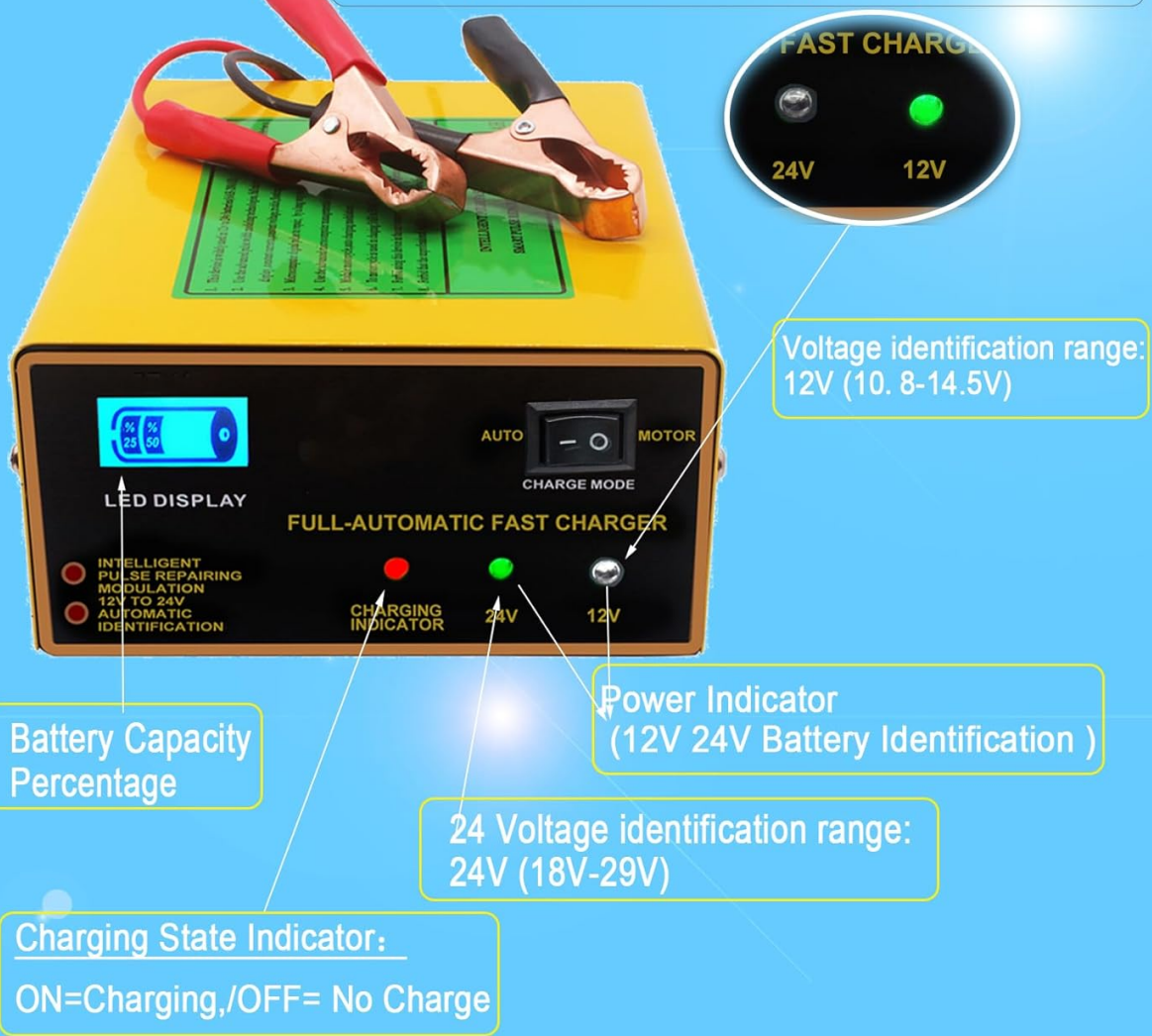


Image: The Etrogo ET-168 charger's front panel highlighting the automatic 12V/24V identification feature, with indicators for 12V (10.8-14.5V) and 24V (18V-29V) voltage identification ranges.

Selecting Charging Mode

Use the 'CHARGE MODE' switch to select the appropriate mode for your battery:

- **AUTO Mode:** Suitable for batteries with capacities from 20AH to 200AH (e.g., car batteries).
- **MOTOR Mode:** Suitable for batteries with capacities from 6AH to 20AH (e.g., motorcycle batteries).

Two Charging Mode

ONE Button operate

One Switch change between two mode,
differant capacity battery choose suitable mode,
charging without damage to battery



Image: The Etrogo ET-168 charger with a hand pointing to the 'CHARGE MODE' switch, illustrating the 'AUTO' mode for 20-200AH batteries and 'MOTOR' mode for 3-20AH batteries.

Charging Process (5-Stage)

The charger employs an intelligent 5-stage charging process to optimize battery health and charging efficiency:

1. **No-load Mode:** Initial check of battery status.
2. **Constant Current Mode:** Charges the battery at a constant maximum current until voltage rises.
3. **Constant Voltage Mode:** Charges at a constant voltage, with current gradually decreasing.
4. **Floating Charge Mode:** Maintains the battery at a full charge, preventing overcharging.
5. **Turbulence Mode:** Pulse charging to desulfate and recover slightly sulfated batteries.

5 Stage Charging process



Image: A diagram illustrating the five stages of the charging process: No-load Mode, Constant Current Mode, Constant Voltage Mode, Floating Charge Mode, and Turbulence Mode.

Monitoring Charging Status

The LED bar screen displays the charging percentage in real-time. The red 'CHARGING INDICATOR' light will be ON during charging.

Automatic Stop Function

The charger will automatically stop charging when the battery is fully charged (100% displayed on the LED screen). The input working current will become zero, and the charger will enter a maintenance mode to prevent overcharging. The red 'CHARGING INDICATOR' light will turn OFF.

Stop Charging Automatically when Fully Charged

1-LED Bar screen show percentage

2-Charging Indicator Light on

Charging

&

1-LED Bar screen show 100%

2.Charging Indicator OFF

Fully Charged

Image: Two states of the Etrogo ET-168 charger are shown: 'Charging' with the LED bar screen showing percentage and the charging indicator light ON, and 'Fully Charged' with the LED bar screen showing 100% and the charging indicator light OFF.

Maintenance

- **Cleaning:** Disconnect the charger from power and battery. Wipe the exterior with a dry, soft cloth. Do not use harsh chemicals or abrasives.
- **Storage:** Store the charger in a cool, dry place when not in use. Keep cables neatly coiled.
- **Cable Inspection:** Regularly inspect the power cord and battery cables for any signs of damage, fraying, or loose connections. Replace if damaged.

Troubleshooting

If you encounter issues, refer to the following common problems and solutions:

- **Charger Not Turning On:**
 - Check if the AC power cord is securely plugged into a working outlet.

- Ensure battery clamps are correctly and securely connected to the battery terminals.
- **Battery Not Charging / Charging Indicator Off:**
 - Verify battery connections are correct and tight.
 - Confirm the battery type is compatible (12V/24V lead-acid, not lithium).
 - The charger may have entered maintenance mode if the battery is already full.
- **Error Indicators / Unusual Behavior:**
 - The charger has built-in multi-protections (overheating, short-circuit, reverse-connection, overcurrent, overvoltage, low voltage). If an issue is detected, the charger may stop operation or display an error.
 - Disconnect the charger, inspect connections, and allow it to cool if overheating is suspected.
 - If problems persist, contact customer support.

Specifications

Feature	Specification
Model Number	ET-168
Input Voltage	120V AC (Standard US)
Output Voltage	12V / 24V DC (Automatic Recognition)
Max Power	250W
Max Current	10A
Battery Capacity (AUTO Mode)	20AH - 200AH
Battery Capacity (MOTOR Mode)	6AH - 20AH
Compatible Battery Types	Lead-acid (dry, water, maintenance-free)
Product Dimensions	7 x 4.97 x 3 inches (17 x 13 x 7 cm)
Item Weight	1.56 pounds (708g)
Color	Yellow
Manufacturer	Bolaimei

12V/24V Battery AUTO-Recognition:

identify based on the battery voltage in real time



Image: The Etrogo ET-168 charger shown with its physical dimensions (17cm length, 13cm width, 7cm height) and weight (708g), along with cable lengths (130cm AC, 50cm DC).

Warranty and Support

The Etrogo ET-168 Battery Charger comes with a **12-month guarantee** from the date of purchase.

For any issues, questions, or support needs, please contact the seller directly through your purchase platform. Provide your order number and a detailed description of the problem for prompt assistance.