

LVYUAN BC-250 PRO

LVYUAN 25A Automatic Pulse Battery Charger User Manual

Model: BC-250 PRO

1. INTRODUCTION

This manual provides essential instructions for the safe and effective use of your LVYUAN 25A Automatic Pulse Battery Charger. This device is designed to charge and maintain 12V/24V lead-acid batteries (including open, sealed, and AGM types) and 12V LiFePO4 lithium batteries, with capacities ranging from 15Ah to 250Ah. It features automatic smart charging, battery diagnosis, rapid charging, 0V battery activation, pulse repair mode, and 4-stage charging.



Image 1: LVYUAN 25A Automatic Pulse Battery Charger.

2. SAFETY INFORMATION

Always prioritize safety when operating electrical equipment. Read and understand all safety warnings before use.

- **Ventilation:** Ensure adequate ventilation when charging lead-acid batteries to prevent accumulation of explosive gases.
- **Eye Protection:** Always wear eye protection when working with batteries.
- **Avoid Sparks:** Do not smoke or allow sparks or flames near the battery or charger.
- **Connection Order:** Connect the charger to the battery terminals before plugging it into the AC power outlet. Disconnect in reverse order.
- **Damaged Cables:** Do not operate the charger with damaged cables or clamps.
- **Water Exposure:** Avoid exposing the charger to rain or excessive moisture.
- **Children and Pets:** Keep the charger and battery out of reach of children and pets.
- **24V LiFePO4 Batteries:** This charger is **not** compatible with 24V LiFePO4 lithium batteries. Attempting to charge them may cause damage.



Image 2: The charger features five protection functions: overcurrent, overheat, short polarity, and overcharge protection.

3. PRODUCT FEATURES

- **Automatic Smart Charging:** Automatically detects battery type and condition, adjusting charging parameters.
- **Battery Diagnosis:** Assesses battery health before and during charging.
- **Rapid Charging:** Efficiently charges batteries.
- **0V Battery Activation:** Can attempt to revive deeply discharged batteries.
- **Pulse Repair Mode:** Uses pulse current to remove sulfation crystals, extending battery life. (Not for LiFePO4 batteries).
- **4-Stage Charging:** Pre-charge, Constant Current, Constant Voltage, and Float Charge stages for optimal battery care.
- **Float Charging:** Maintains a full charge state, automatically resuming charging if voltage drops.
- **Wide Compatibility:** Supports 12V/24V lead-acid (open, sealed, AGM) and 12V LiFePO4 lithium batteries.
- **Capacity Range:** Charges batteries from 15Ah to 250Ah.
- **Multiple Protections:** Includes overcurrent, overheat, short circuit, reverse polarity, and overcharge protection.



Image 3: This charger is compatible with both lead-acid and lithium batteries.

4. SETUP INSTRUCTIONS

Follow these steps to set up your battery charger:

1. **Connect to AC Power:** Plug the charger's power cord into a standard AC 100V-120V outlet.
2. **Connect to Battery:** Attach the red positive (+) clamp to the positive terminal of the battery and the black negative (-) clamp to the negative terminal. The charger will automatically detect the battery voltage (12V or 24V).
3. **Select Battery Type:** Use the 'Battery Type' button on the charger to select the correct battery chemistry (Lead-Acid or LiFePO4).
4. **Start Charging:** Press the 'START/STOP' button to begin the charging process. The charger will automatically select the appropriate charging current (5A, 10A, or 25A for 12V; 5A, 10A, or 12A for 24V) based on battery capacity and condition.

高品質なアフターサービスを提供する



1年間メーカー保証



保証期間中に無償交換



迅速に問題を解決できる

電話やメールなどの手段で専門の
担当者が対応するサポートです。

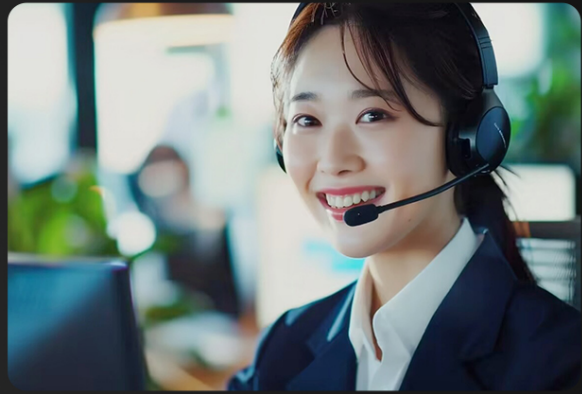


Image 4: Simple 4-step process for connecting and starting the charger.

5. OPERATING INSTRUCTIONS

5.1. Automatic Charging Process (4-Stage Smart Charging)

The charger employs a 4-stage smart charging process to optimize battery health and longevity:

1. **Stage 1: Pre-charge (10.5V):** Initial low-current charge for deeply discharged batteries.
2. **Stage 2: Constant Voltage Charge:** Charges the battery at a constant voltage until it reaches approximately 50% capacity.
3. **Stage 3: Constant Current Charge:** Charges the battery at a constant current until it reaches approximately 75% capacity.
4. **Stage 4: Float Charge:** Maintains the battery at full charge, preventing overcharging and self-discharge.

維持充電でバッテリー長持ち。
常に良好なバッテリー状態を持っています。

4段階パルス充電

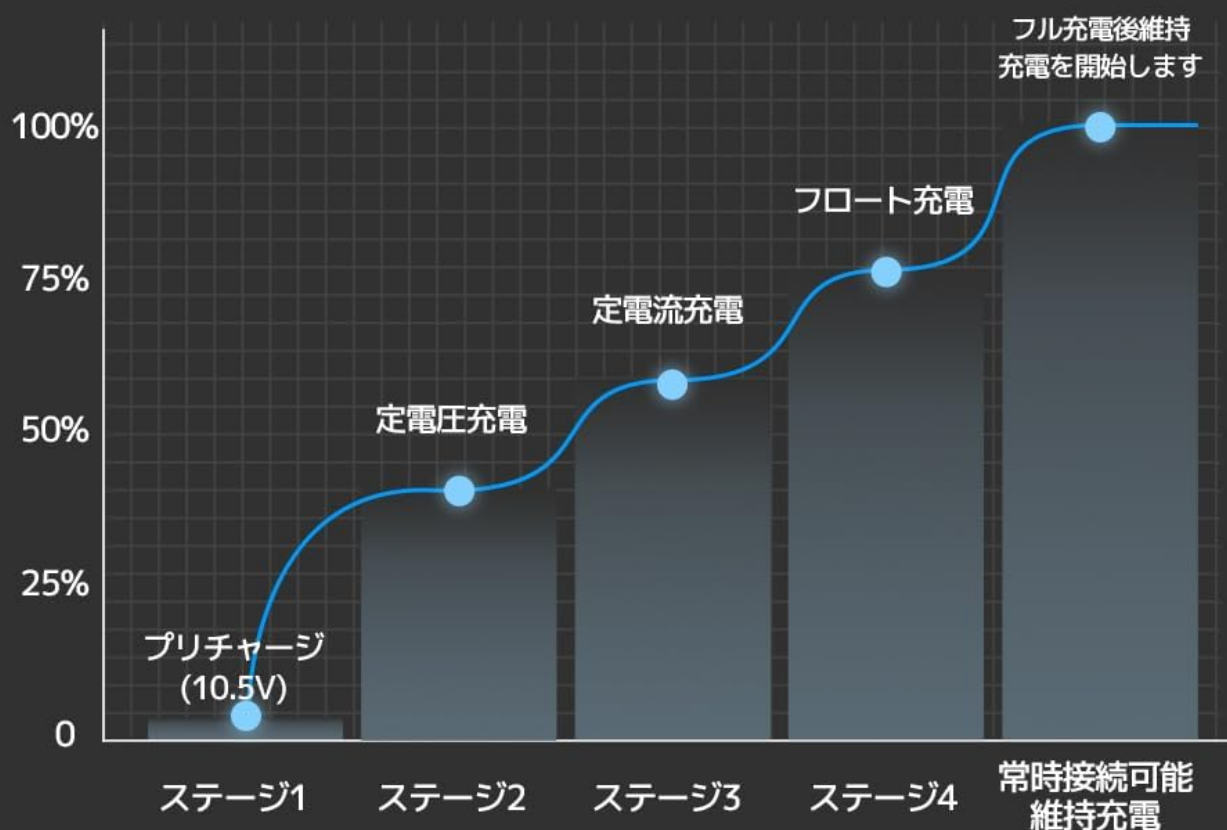


Image 5: Illustration of the 4-stage pulse charging process, showing pre-charge, constant voltage, constant current, and float charge stages.

5.2. Pulse Repair Mode

This mode is designed to desulfate lead-acid batteries by applying high-frequency pulse currents, which can help restore battery capacity and extend its lifespan. To activate, select the 'Repair Mode' option. **Note: Pulse Repair Mode is not suitable for LiFePO4 batteries.**

4ステップで簡単充電



Image 6: Explanation of pulse charging, which helps maintain good battery condition. Physically deteriorated batteries cannot be repaired.

5.3. Float Charging

Once the battery is fully charged, the charger automatically switches to float charge mode. This mode maintains the battery at an optimal voltage, compensating for self-discharge and ensuring the battery remains fully charged without overcharging. If the battery voltage drops below a certain threshold, the charger will automatically resume a charging cycle.

充電器が一つだけでいい

革新的な技術、1つの充電器でリン酸鉄リチウムと鉛バッテリーに対応可能

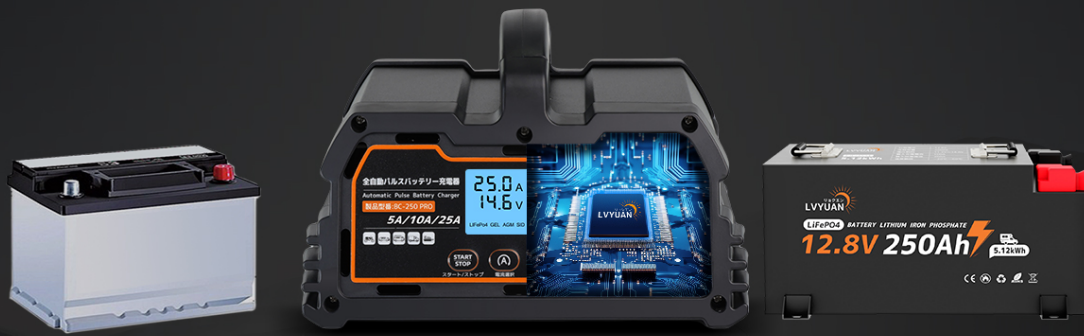


Image 7: Float charging maintains full charge for 12V lead-acid, 24V lead-acid, and 12V LiFePO4 batteries.

6. MAINTENANCE

To ensure optimal performance and longevity of your charger and batteries:

- **Clean Terminals:** Regularly inspect and clean battery terminals to ensure good electrical contact.
- **Store Properly:** Store the charger in a dry, cool place when not in use.
- **Cable Inspection:** Periodically check power cords and charging cables for any signs of damage.
- **Battery Health:** For lead-acid batteries, consider using the Pulse Repair Mode periodically to prevent sulfation.

7. TROUBLESHOOTING

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

- **Charger Not Turning On:**
 - Check if the power cord is securely plugged into the AC outlet.
 - Ensure the AC outlet is functional.
- **Battery Not Charging:**
 - Verify that the positive and negative clamps are correctly connected to the battery terminals.
 - Confirm that the correct battery type is selected on the charger.
 - The battery might be severely damaged or beyond repair.
- **Error Message Displayed:**
 - Refer to the charger's display for specific error codes. Common errors include reverse polarity (check connections), short circuit (inspect cables and battery), or overheat (allow charger to cool down).
- **Pulse Repair Mode Not Working for LiFePO4:**
 - This is normal. Pulse Repair Mode is exclusively for lead-acid batteries.

8. SPECIFICATIONS

Feature	Specification
Brand	LVYUAN
Model Number	BC-250 PRO
Product Dimensions (D x W x H)	15 x 20 x 25 cm
Input Voltage	AC 100V-120V
Output Voltage	DC 12V / DC 24V
Rated Current	25A
12V Output Current Options	5A, 10A, 25A
24V Output Current Options	5A, 10A, 12A
Maximum Output Power	300W
Compatible Battery Types	12V/24V Lead-Acid (Open, Sealed, AGM), 12V LiFePO4 Lithium Battery
Compatible Battery Capacity	15Ah - 250Ah
Charging Method	Automatic Charging / Pulse Charging
Operating Temperature	-20°C to 45°C
Safety Standard	PSE
Country of Origin	China

LVYUAN 鉛 / リチウム電池両用自動パルス充電器

製品モデル :	BC-200 PRO	BC-250 PRO
バッテリー電圧 :	12V/24V 鉛バッテリー、 12V (LiFePO 4) リチウムバッテリー	
適合バッテリー容量 :	15AH-200AH	15AH-250AH
入力電圧 / 周波数 :	AC100V~120V / 50/60Hz 自動認識	
12V 出力電流 :	12V:5A/10A/20A	12V:5A/10A/25A
24V 出力電流 :	24V:5A/10A	24V:5A/10A/12A
最大出力 :	250W	300W
充電方法 :	自動充電 / パルス充電	
動作温度 :	-20℃-45℃	
対応バッテリーの種類 :	12V/24V 鉛バッテリー (WET/MF/EFB/GEL/AGM)、 12V LiFePO 4 リン酸鉄リチウムバッテリー	

Image 8: Detailed specifications for LVYUAN BC-200 PRO and BC-250 PRO models.

9. WARRANTY AND SUPPORT

Your LVYUAN Automatic Pulse Battery Charger comes with a **1-year manufacturer warranty**. During the warranty period, free replacements are provided for eligible issues.

For any questions, technical assistance, or warranty claims, please contact LVYUAN customer support. Our specialists are available to resolve your issues promptly via phone or email.

- **Warranty Period:** 1 Year from the date of purchase.
- **Support Channels:** Phone and Email.
- **Service:** Free replacement during warranty, quick problem resolution.

4段階スマート充電

直接急速充電モードに入ると、バッテリーが損傷します。
耐用年数に影響を与え、
安全上の問題を引き起こす可能性があります。

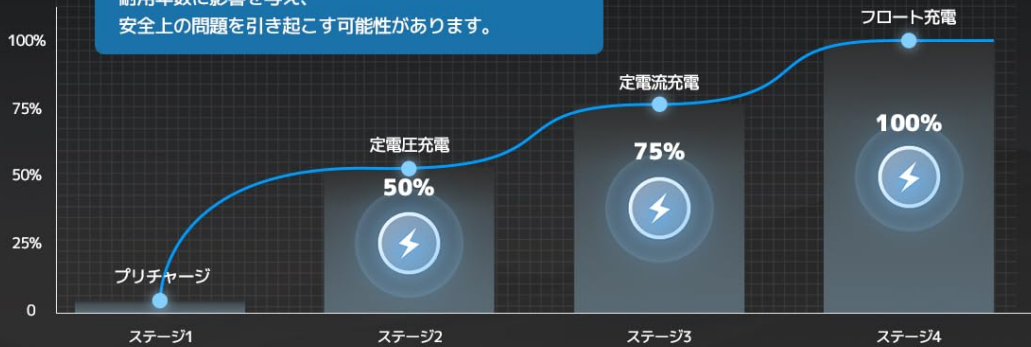


Image 9: LVYUAN provides high-quality after-sales service with dedicated support staff.

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ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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.

Submit question

