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› KAISAL LiFePO4 Battery Charger 58.4V 18A (Model: QA1250A-58.4V18A) - Instruction Manual

## KAISAL QA1250A-58.4V18A

# KAISAL LiFePO4 Battery Charger 58.4V 18A

Model: QA1250A-58.4V18A

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## PRODUCT OVERVIEW

The KAISAL LiFePO4 Battery Charger (Model: QA1250A-58.4V18A) is designed for efficient and safe charging of 48V (51.2V) lithium iron phosphate batteries. It features advanced 3-stage intelligent charging, robust IP67/IP68 waterproofing, and multiple safety protections, making it suitable for a wide range of applications including golf carts, RVs, trolling motors, and solar energy storage systems.



Image: The KAISAL 48V 18A Lithium Battery Charger, showcasing its compact design, cooling fan, and various features like 48V 18A fast charging, multiple safety protections, 3 charging stages, 0V lithium battery activation, 3-color status indicator, built-in cooling fan, temperature sensor, IP67 waterproof rating, compact aluminum body, shockproof and resistant design, and auto-shutdown function.

## Key Features:

- **Reliable and Wide Application:** CE, FCC, and RoHS certified for safe charging of 48V (51.2V) LiFePO4 batteries in golf carts, RVs, boats, and solar systems.
- **3-Color Indicators & Cooling Fan:** Provides clear charging status at a glance and features a vortex cooling fan for efficient heat dissipation.
- **3-Stage Intelligent Charging & 0V Activation:** Advanced charging technology with pre-charge, constant current, and constant voltage stages, including a 0V lithium battery activation function for deeply discharged batteries.
- **Fast Charging & Multiple Protection:** Delivers 18A fast charging with automatic shutdown after 14 hours and 6 protection functions: overvoltage, overcurrent, overheating, short-circuit, reverse connection, and no-load.
- **Outdoor Waterproofing & Intelligent Temperature Control:** Durable die-cast aluminum body with IP67 waterproof and dustproof rating (IP68 for connector), and a temperature sensor for optimized charging based

on ambient conditions.

- **Extra Long Cable and Universal M8 Terminal:** Includes a 9.8-foot AC input cable and a 5.9-foot DC output cable with an M8 O-ring terminal for flexible and direct battery connection.

## SETUP INSTRUCTIONS

Before connecting the charger, ensure your battery is a 48V (51.2V) LiFePO4 type. Verify that the charger's specifications match your battery requirements.

### 1. Unpacking and Inspection

- Carefully remove the charger and all accessories from the packaging.
- Inspect the charger, cables, and connectors for any signs of damage. Do not use if damaged.

### 2. Connecting the DC Output Cable to the Battery

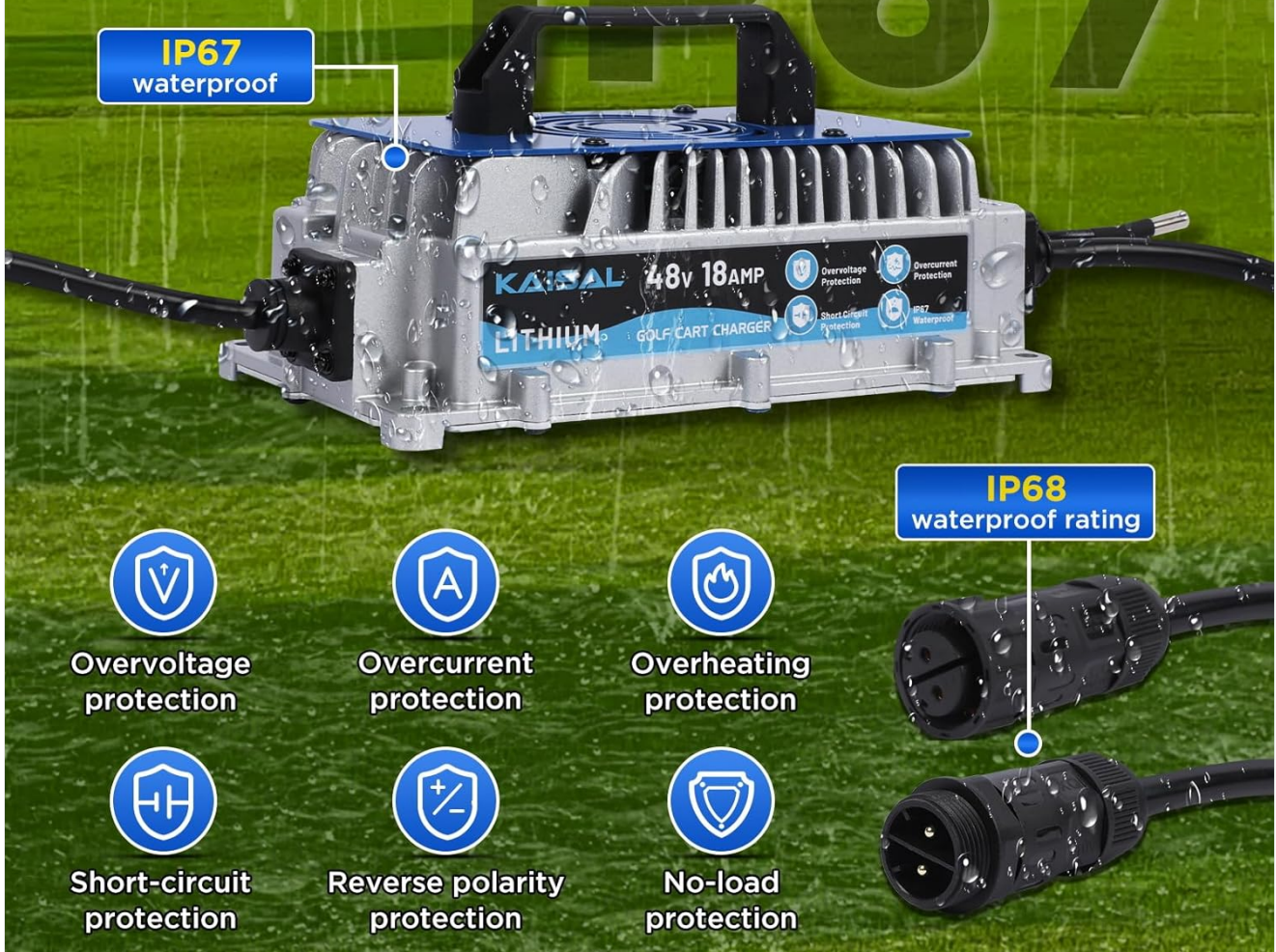
The charger comes with a 5.9-foot DC output cable featuring an M8 O-ring terminal for direct connection to your battery terminals.

1. Identify the positive (+) and negative (-) terminals on your LiFePO4 battery.
2. Connect the red O-ring terminal (marked with '+') to the positive (+) battery terminal.
3. Connect the black O-ring terminal (marked with '-') to the negative (-) battery terminal.
4. Ensure connections are secure and tight.

# MULTIPLE SECURITY PROTECTIONS

# IP67

**IP67**  
waterproof



Overvoltage  
protection

Overcurrent  
protection

Overheating  
protection

Short-circuit  
protection

Reverse polarity  
protection

No-load  
protection

**IP68**  
waterproof rating

Image: The KAISAL LiFePO4 charger showing its M8 O-ring terminals for direct battery connection, along with various safety icons indicating overvoltage, overcurrent, overheating, short-circuit, reverse polarity, and no-load protection. The image also highlights the IP67 waterproof rating for the body and IP68 for the connector.

### 3. Connecting the AC Input Cable to Power

The charger is equipped with a 9.8-foot AC input cable. Connect this cable to a standard 220V AC power outlet.

1. Plug the AC input cable into a compatible wall socket.
2. Ensure the power outlet is functioning correctly and provides the specified voltage.

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Video: A demonstration of the KAISAL LiFePO4 battery charger, showing its physical features including the handle, cooling fan, temperature sensor, and indicator lights. The video also illustrates the connection process for both the AC input cable and the DC output cable with M8 terminals, highlighting the secure, waterproof connection mechanism.

## OPERATING INSTRUCTIONS

Once the charger is properly connected to both the battery and the AC power source, it will automatically begin the charging process.

### 1. 3-Stage Intelligent Charging Process

The charger utilizes an advanced 3-stage charging algorithm to optimize battery life and performance:

- **T1: Pre-Charge Stage (0V Lithium Battery Activation):** If the battery is deeply discharged (near 0V) or has been unused for a long time, the charger will enter a low-current constant current mode to activate and repair the battery. This helps to restore and extend battery life.
- **T2: Constant Current Charging Stage:** The battery is charged with a constant 18A current until it reaches a certain voltage level.
- **T3: Constant Voltage Charging Stage:** As the battery approaches full charge, the charging current gradually decreases while maintaining a constant voltage. This prevents overcharging and ensures battery health.



Image: A graph showing the three stages of intelligent charging (T1, T2, T3) with voltage and current curves over time. T1 represents the pre-charge stage, T2 the constant current stage, and T3 the constant voltage stage. A LiFePO<sub>4</sub> 51.2V battery is shown connected to the charger.

## 2. Charging Status Indicators

The charger is equipped with a 3-color indicator light to provide real-time charging status:

- **Red & Green Light Flashing Alternately:** 0V Charging / Wake-up mode (T1 stage).
- **Red Light Flashing:** Charging 0%-19%.
- **Red Slow Flash:** Charging 20%-79%.
- **Yellow Slow Flash:** Charging 80%-99%.
- **Green Slow Flash:** Charged  $\approx$ 100%.
- **Green Light Always On:** Charged = 100%.

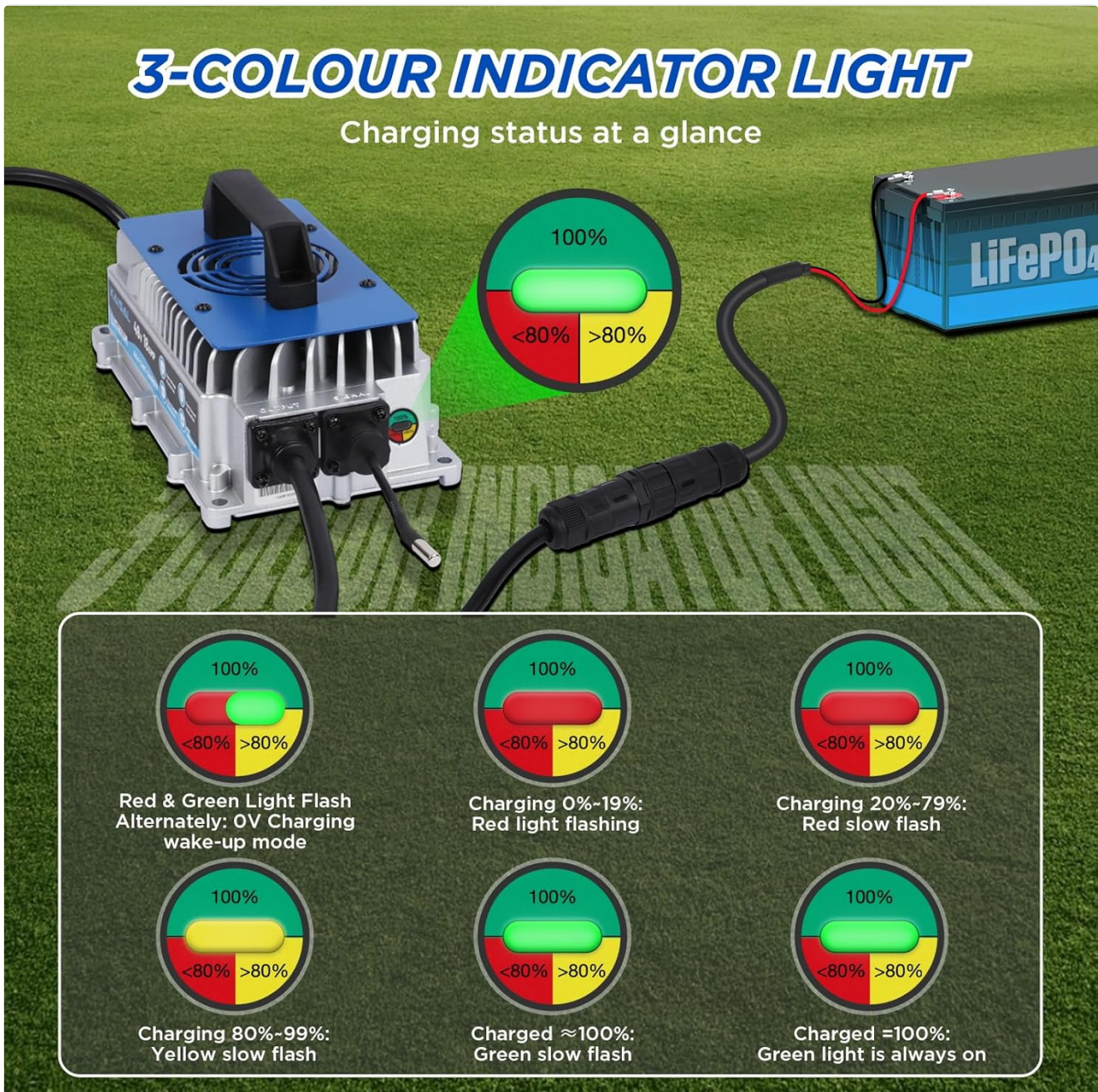


Image: A visual guide to the 3-color indicator light, showing different light patterns (red, yellow, green, and flashing combinations) corresponding to various battery charging percentages and modes, including 0V wake-up mode and full charge.

## 3. Charging Time

The charging time varies depending on the battery capacity. The 18A fast charging capability ensures efficient power delivery.

# FAST CHARGING

for 48V(51.2V) Series LiFePO4 Batteries

Battery Capacity(Ah)	Charging Time(H)		
	48V		
	10A	15A	18A
30(Ah)	3(H)	2(H)	1.7(H)
50(Ah)	5(H)	3.3(H)	2.8(H)
100(Ah)	10(H)	6.6(H)	5.6(H)
200(Ah)	20(H)	13.2(H)	11.1(H)

## TEMPERATURE SENSOR

Temperature sensor can sense ambient temperature and automatically adjust the charging voltage to to achieve the best charging effect and protect the health of the battery.



Image: A table showing estimated charging times for 48V (51.2V) LiFePO4 batteries of various capacities (30Ah, 50Ah, 100Ah, 200Ah) when charged at 10A, 15A, and 18A. For example, a 100Ah battery takes approximately 5.6 hours at 18A.

## MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your KAISAL LiFePO4 battery charger.

### 1. Cleaning

- Disconnect the charger from both the AC power and the battery before cleaning.
- Wipe the exterior of the charger with a soft, dry cloth.
- Do not use harsh chemicals or abrasive cleaners.
- Ensure the cooling fan vents are free from dust and debris to maintain efficient heat dissipation.



Image: A close-up view of the high-efficiency cooling fan integrated into the KAISAL charger, designed to dissipate heat effectively during operation.

## 2. Environmental Protection

The charger is designed for outdoor use with its IP67 waterproof and dustproof body, and IP68 waterproof connector. However, avoid prolonged submersion or exposure to extreme conditions beyond its rated capabilities.



Image: An illustration demonstrating the IP67 waterproof rating of the charger, showing it being splashed with water, indicating its resistance to water and dust ingress.

## 3. Temperature Control

The integrated temperature sensor intelligently adjusts the charging voltage based on ambient temperature, ensuring optimal charging and battery protection. Ensure the charger is placed in a well-ventilated area to assist with temperature regulation.



Image: An image highlighting the extreme storage temperature range of the charger, from -40°C to +90°C, indicating its robust design for various environmental conditions.

## TROUBLESHOOTING

The KAISAL charger is equipped with multiple safety features to protect both the charger and the battery. If you encounter an issue, refer to the following common scenarios:

### 1. Charger Not Activating / No Indicator Light

- **Check AC Power:** Ensure the AC input cable is securely plugged into a live 220V outlet.
- **Check DC Connection:** Verify that the M8 O-ring terminals are correctly and securely connected to the battery's positive and negative terminals.
- **Battery Voltage:** If the battery is extremely low (below 0V), the charger's 0V activation function should initiate. If not, ensure the battery is not completely dead or damaged beyond recovery.

### 2. Charging Stops Prematurely or Does Not Reach 100%

- **Over-14-Hour Shutdown:** The charger has an automatic shutdown feature if it operates continuously for more than 14 hours to prevent damage. If this occurs, disconnect and reconnect the charger.
- **Overheating Protection:** If the charger becomes too hot, it may temporarily stop charging. Ensure adequate ventilation around the charger. The cooling fan should be operating.
- **Battery Issues:** The battery itself might be faulty or have reached its end of life.

### 3. Indicator Light Shows Error (e.g., unusual flashing pattern)

The charger incorporates 6 protection functions:

- **Overvoltage Protection:** Prevents charging at excessively high voltages.
- **Overcurrent Protection:** Limits the charging current to prevent damage.
- **Overheating Protection:** Shuts down if internal temperature exceeds safe limits.
- **Short-Circuit Protection:** Automatically cuts off power in case of a short circuit.
- **Reverse Connection Protection:** Prevents damage if battery polarity is reversed.
- **No-Load Protection:** Ensures safety when the charger is powered on but not connected to a battery.

If an error occurs, disconnect the charger, check all connections, and ensure the battery is compatible and in good condition. Reconnect to attempt charging again.

## TECHNICAL SPECIFICATIONS

Feature	Detail
Brand	KAISAL
Model Number	QA1250A-58.4V18A
Manufacturer	Hefei Power Forever Electronic Technology Co., Ltd
Output Voltage	48 Volts (58.4V for LiFePO4)
Input Voltage	220 Volts (AC)
Current Rating	18 A
Charging Time	Approx. 5.6 hours (for 100Ah battery at 18A)
Product Dimensions (L x W x H)	30P x 20l x 13H centimeters
Color	Blue
Compliant Specifications	CE, FCC, RoHS
Waterproof Rating (Body)	IP67
Waterproof Rating (Connector)	IP68
Connector Type	M8 O-ring terminal
AC Input Cable Length	9.8 feet
DC Output Cable Length	5.9 feet
Country of Origin	China

## WARRANTY & SUPPORT

### Warranty Information

This KAISAL LiFePO4 Battery Charger comes with a **2-year warranty** from the date of purchase. This warranty covers manufacturing defects and malfunctions under normal use. It does not cover damage caused by misuse, accidents, unauthorized modifications, or improper installation.

Please retain your proof of purchase for warranty claims.

## **Customer Support**

For technical assistance, troubleshooting, or warranty inquiries, please contact KAISAL customer support through the retailer where the product was purchased or visit the official KAISAL website for contact details.

When contacting support, please have your product model number (QA1250A-58.4V18A) and purchase date available.