

**POWERTECH**

**MB3939**

# Dual Input DC/DC Battery Charger

with High Current Connectors



## Instruction Manual

## **SAFETY WARNINGS & PRECAUTIONS**

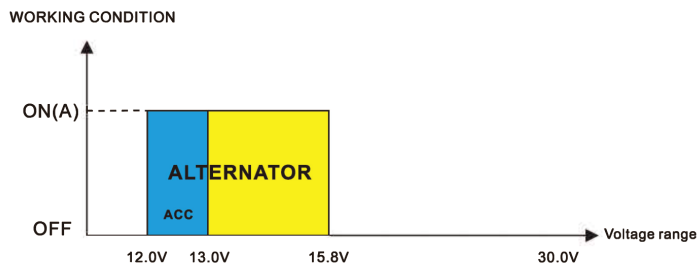
- Do not use the charger in damp, high temperature, or flammable environments.
- Do not open or remove the casing while the charger is in operation.
- During the charging process, do not touch the exposed parts of the charger to avoid electric shock.
- Please use the original power and charging cables of the charger to avoid using damaged or non-standard cables.
- Do not apply a load that exceeds its rated voltage or current to the input or output ports.
- When connecting or disconnecting input/output lines, make sure the charger is turned off and wait for it to cool down before proceeding.
- Regularly check the connection wires and interfaces of the charger to ensure that there is no damage or looseness.
- If the charger experiences abnormal heating, smoking, or odor during use, please immediately turn off the power and stop using it.
- If the charger malfunctions or is abnormal, please stop using it immediately and contact professional after-sales service personnel for repair or replacement.

## **PRODUCT OVERVIEW**

This product is a DC to DC charger that uses an isolated circuit, Equipped with automatic pressure rise and fall function and MPPT function. Equipped with a battery type switching button, Can meet the power supply needs of up to 5 battery types. Adopting a dual input design, one path is for solar charging (default priority), and the other path is for car generator charging. Equipped with ACC delayed start function, the charger will only start working 10 seconds after receiving the engine start signal.

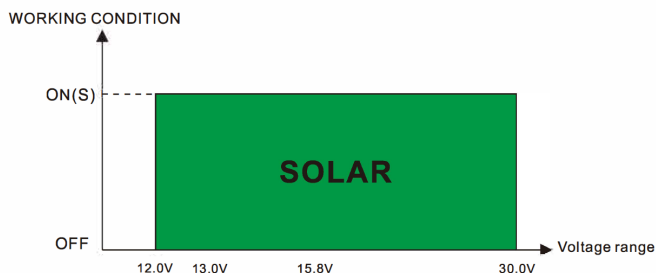
## FEATURES

- The input voltage range of the car generator is 12.0V-15.8V  $\pm$  0.2V. When the input voltage is between 12-13V, a generator trigger signal (i.e. 10-16V) is required for the charger to function properly.



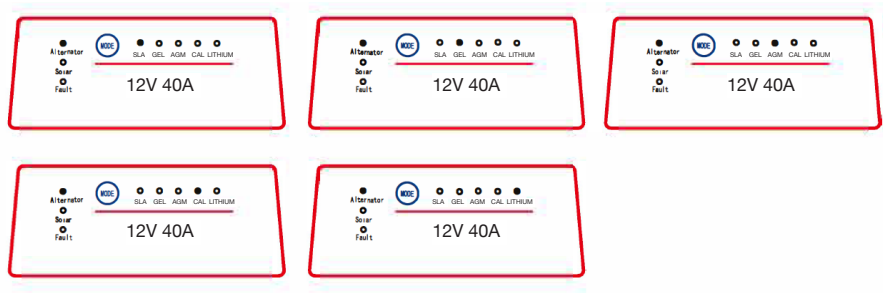
- The solar input voltage range is 12.0V-30.0V  $\pm$  0.2V, and the charger is working normally. When the solar input voltage reaches 11 V, the charger will automatically shut down

**NOTE: When the solar voltage is  $\geq 40V$ , it may damage the charger)**



- When the battery is fully charged (i.e. when the voltage reaches the highest value of the battery and the current drops to 1/10 of the maximum value of the charger), the charger automatically shuts down and starts every 90 seconds.
- Please connect the input and output terminals correctly. The charger requires a voltage of 9V or above at the output terminal (battery) and the correct voltage connection at the input terminal to charge properly. This product does not have an on/off button.

- Short press the MODE key to switch battery types, and the corresponding indicator light will light up.



- Indicator light



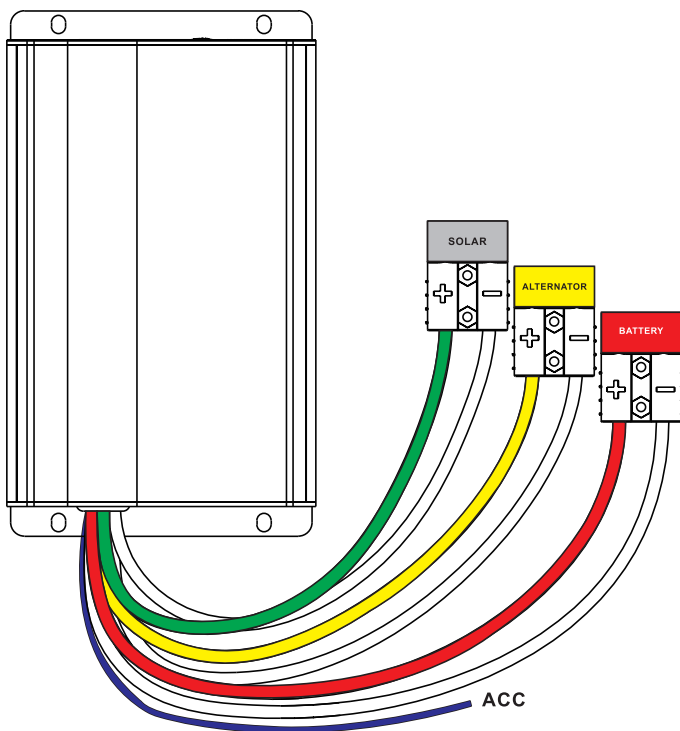
When a battery is connected (the input end is not connected), a corresponding battery indicator light flashes;

When there is no battery connected at the output end and there is power connected at the input end, the corresponding battery indicator light and input indicator light will flash simultaneously;

When both the input and output terminals are powered on, the battery indicator light remains on, and the corresponding input indicator light is also on.flash simultaneously;

- High Current Connector
  - The red line connects to the positive pole of the battery, and the black line connects to the negative pole of the battery;
  - The yellow wire connects to the positive pole of the car generator, while the black wire connects to the negative pole of the car generator;
  - The green line connects to the positive pole of the solar energy, while the black line connects to the negative pole of the solar energy;
  - The blue line connects to the trigger line (ACC line) of the car generator, which is 10-16V.

**NOTE: The black wire is a common negative wire.**



## OPERATION INSTRUCTIONS

### Preparation before use

- Please ensure that the charger is in a power off state before installing and connecting it.
- Please install the charger in a well ventilated, dry, and away from heat sources.

### Connect input power

- Please connect the solar charging cable (green and black) of the charger to the solar panel.
- Please connect the car generator charging wire (yellow black) and generator trigger wire (blue) of the charger to the car generator.
- Please ensure that the input voltage and polarity are correct to avoid damaging the charger.

### Connecting output devices

- Please connect the output line (red and black) of the charger to the battery that needs to be powered.
- Before connecting the battery, please ensure that the voltage and current requirements of the battery are within the output range of the charger.
- Please check if all connections are firm and reliable, and there are no short circuits or open circuits.

### Turn on the charger

- Connect the battery to the charger, and the charger will automatically activate the charging function.
- Choose a charging gear that is suitable for the type of battery being connected.
- During the charging process, observe the status of the indicator light to confirm whether the charger is working properly.
- When the battery is fully charged, the charger automatically stops charging.

### Monitoring and adjustment

- According to the needs of different types of batteries, the output voltage of the charger can be adjusted (select with the MODE key).
- Pay attention to monitoring the temperature and output status of the charger to ensure it operates within a safe range.
- Pay attention to timely troubleshooting of short circuits to ensure safe operation of the charger.

## BATTERY MAINTENANCE AND MANAGEMENT

- Regularly check the battery level to ensure that the battery is in good condition.
- Follow the battery manufacturer's guidelines for charging and maintenance.
- Avoid prolonged overcharging or discharging of the battery to avoid damaging its performance.
- When storing batteries, please ensure that the environment is dry, cool, and away from heat sources.

## TROUBLESHOOTING

ISSUE	SOLUTION
Charger unable to start	<ul style="list-style-type: none"><li>• Check if the input power supply is connected correctly, and if the voltage and polarity are correct.</li><li>• Check if the switch of the charger is turned on.</li><li>• Check if the fuse of the charger is damaged.</li></ul>
Unstable output voltage or abnormal current	<ul style="list-style-type: none"><li>• Check if the load of the output device or system is within the output range of the charger.</li><li>• Check if the output circuit is connected correctly and if there is any damage or short circuit.</li><li>• Check if the charger is overheating and reduce the load or increase heat dissipation.</li></ul>
Charger overheating	<ul style="list-style-type: none"><li>• Reduce the load on the charger or increase heat dissipation.</li><li>• Check if the vent of the charger is blocked and maintain good ventilation.</li></ul>

## SPECIFICATIONS

Input voltage

- Solar charging: 12.0V-30.0V $\pm$ 0.2V
- Car generator charging: 12.0V-15.8V $\pm$ 0.2V

Output voltage

- GEL: 14.2V $\pm$ 0.2V
- CAL: 15.2V $\pm$ 0.2V
- STD: 14.4V $\pm$ 0.2V
- AGM: 14.8V $\pm$ 0.2V
- LiFePo4: 14.6V $\pm$ 0.2V

Output current: 40A $\pm$ 0.5A

Working Temperature: 0-45°C

Relative Humidity: 45%-75% RH

Dimensions: 235 x 163 x 75mm

Weight: 2.15kg

## WARRANTY INFORMATION

Our product is guaranteed to be free from manufacturing defects for a period of 12 Months. If your product becomes defective during this period, Electus Distribution will repair, replace, or refund where a product is faulty; or not fit for intended purpose. This warranty will not cover modified product; misuse or abuse of the product contrary to user instructions or packaging label; change of mind and normal wear and tear.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and failure does not amount to a major failure.

To claim warranty, please contact the place of purchase. You will need to show receipt or other proof of purchase. Additional information may be required to process your claim.

Any expenses relating to the return of your product to the store will normally have to be paid by you.

The benefits to the customer given by this warranty are in addition to other rights and remedies of the Australian Consumer Law in relation to the goods or services to which this warranty relates.

This warranty is provided by:

Electus Distribution

Address 46 Eastern Creek Drive, Eastern Creek NSW 2766

Ph. 1300 738 555