BESTEK MRZ3013HU-BK-UK

BESTEK 300W Pure Sine Wave Power Inverter User Manual

Model: MRZ3013HU-BK-UK

1. Introduction

Thank you for choosing the BESTEK 300W Pure Sine Wave Power Inverter. This device converts 12V DC power from your vehicle's battery into 220V-240V AC household power, allowing you to operate various electronic devices on the go. It also features dual USB ports for charging mobile devices.

Unlike modified sine wave inverters, this pure sine wave inverter produces a smooth, consistent, and fluid waveform. This ensures that connected devices operate more smoothly, cooler, and quieter, without the risk of damage from the sharp on/off fluctuations associated with modified sine waves. It is ideal for sensitive electronics such as laptops, medical equipment, and audio systems.

2. Package Contents

- 1 x BESTEK 300W Pure Sine Wave Power Inverter
- 1 x User Manual

3. Product Features

- **Pure Sine Wave Output:** Provides stable and clean power, suitable for sensitive electronics.
- **High Power Output:** Delivers 300W continuous DC to AC power, with a maximum of 360W and 700W peak power.
- **Dual Smart USB Ports:** Two USB charging ports (DC 5V, 4.8A Max, 2.4A per port) automatically detect and deliver the fastest charging speed for your mobile devices.
- **Compact and Lightweight Design:** Space-saving design, easily fits in various vehicle compartments.
- **Multi-Protection System:** Built-in 40A fuse and comprehensive protection against short-circuits, low voltage, overloads, over-voltage, and over-temperature.
- **Efficient Cooling:** Features a built-in cooling fan for effective heat dissipation, ensuring stable operation.

Figure 3.1: The BESTEK 300W Pure Sine Wave Power Inverter can power a wide range of electronic devices, including personal computers, cameras, PSPs, tablets, and smartphones, thanks to its pure sine wave output.

Figure 3.2: The inverter incorporates multiple safety protections, such as over-load, short-circuit, low-voltage, over-temperature, and over-voltage protection, ensuring safe operation for both the device and connected electronics.

Figure 3.3: The inverter features a built-in cooling fan and a multi-way heat dissipation design to maintain optimal operating temperature and prevent overheating during use.

4. Safety Instructions and Precautions

Please read and understand all safety instructions before operating the inverter to prevent injury or damage to the device and connected equipment.

- **Vehicle Compatibility:** This inverter is designed for **DC 12V** vehicles ONLY. Do not use with DC 24V systems or in aircraft.
- **Power Consumption:** If the total rated input of all connected AC devices exceeds 150W, it is recommended to connect the inverter directly to your vehicle's battery using battery clamps (not included). Most 12V vehicle accessory ports are rated and fused for a maximum of 150W. Exceeding this limit can damage your vehicle's electrical system.
- **High-Power Appliances:** This inverter is not designed for high-power electrical appliances such as hair dryers, electric heaters, curling irons, microwaves, or coffee makers. Refer to the specifications for maximum wattage.
- **Vehicle Engine Off:** Do not leave the inverter in the ON position when your vehicle's engine is off. This can drain your vehicle's battery.
- **Ventilation:** Ensure adequate ventilation around the inverter during operation. Do not block the cooling fan or vents.
- **Environment:** Avoid exposing the inverter to water, rain, moisture, direct sunlight, or extreme temperatures. Operate in a dry, well-ventilated area.

- **Modifications:** Do not attempt to open or modify the inverter. There are no user-serviceable parts inside.

5. Setup and Connection

Before connecting, ensure the inverter's AC switch is in the OFF position and your vehicle's engine is running.

Figure 5.1: Overview of the inverter's components, including the cigarette lighter plug, power cord, USB ports, AC power switch, and cooling fan/outlet.

Figure 5.2: The inverter is designed for convenient placement within a vehicle, connecting to the cigarette lighter socket for power.

5.1. Connecting via Cigarette Lighter Socket (Up to 150W)

1. Ensure the inverter's AC switch is in the**OFF** position.
2. Insert the cigarette lighter plug firmly into your vehicle's 12V accessory socket.
3. Place the inverter on a stable, flat surface, ensuring proper ventilation.

5.2. Connecting Directly to Battery (Above 150W)

For loads exceeding 150W, direct battery connection is required. This method typically uses battery clamps (not included with this model) to connect directly to the vehicle's 12V battery terminals.

1. Ensure the inverter's AC switch is in the**OFF** position.
2. Connect the **RED** battery clamp to the positive (+) terminal of the vehicle battery.
3. Connect the **BLACK** battery clamp to the negative (-) terminal of the vehicle battery.
4. Connect the other end of the battery clamp cables to the inverter's DC input terminals (if applicable for your clamp set).
5. Place the inverter on a stable, flat surface, ensuring proper ventilation.

Note: *Always ensure correct polarity when connecting directly to the battery. Incorrect connection can*

damage the inverter and vehicle.

6. Operating Instructions

6.1. Powering On/Off

1. After connecting the inverter to your vehicle's power source, switch the AC switch on the inverter to the **ON** position.
2. The indicator light will illuminate, typically **GREEN** for normal operation.
3. To turn off the inverter, switch the AC switch to the **OFF** position.

6.2. Using AC Outlets

1. Plug your AC-powered device (ensure its wattage is within the inverter's capacity) into one of the AC outlets on the inverter.
2. Turn on your device.

6.3. Using USB Charging Ports

1. Connect your mobile device's USB charging cable to one of the inverter's USB ports.
2. The inverter's smart charging technology will automatically detect your device and deliver the optimal charging current up to 2.4A per port.

Figure 6.1: The power/fault indicator light provides visual feedback on the inverter's status: no light (no power), green light (normal operation), and red light (under protection).

7. Specifications

Model Number	MRZ3013HU-BK-UK
Rated Power	300W
Maximum Power	360W
Peak Power	700W
Input Voltage	DC 12V
Output Voltage	AC 220V ~ 240V
USB Output	DC 5V, 4.2A (4.8A Max, Auto 0~2.4A*2)
AC Outlets	2
Over Voltage Shutdown	DC 15V-16V

Low Voltage Shutdown	DC 10V-11V

Figure 7.1: The inverter's compact design makes it highly portable and easy to store, comparable in size to a modern smartphone.

8. Troubleshooting

If the inverter is not functioning correctly, refer to the following troubleshooting guide:

Problem	Indicator Light	Possible Cause	Solution
No Power Output	No Light	Inverter is OFF, poor connection, vehicle battery low/dead, vehicle accessory socket fuse blown.	◦ Ensure AC switch is ON. ◦ Check if the cigarette lighter plug is fully inserted. ◦ Start vehicle engine to charge battery. ◦ Check and replace vehicle accessory socket fuse if necessary.

Problem	Indicator Light	Possible Cause	Solution
Inverter Shuts Down / No Output	Red Light	Overload, short-circuit, low input voltage, over-voltage, over-temperature.	◦ Disconnect all devices. ◦ Reduce the total wattage of connected devices. ◦ Check for short circuits in connected devices or cables. ◦ Ensure vehicle battery voltage is within 10V-11V (low voltage shutdown) and 15V-16V (over voltage shutdown). ◦ Allow inverter to cool down if it's hot. ◦ Restart the inverter by switching it OFF then ON.
USB Ports Not Charging	No Light / Green Light	Inverter is OFF, device not compatible, faulty USB cable.	◦ Ensure inverter is ON. ◦ Try a different USB cable or device.

9. Maintenance

- Keep the inverter clean and free from dust and debris. Use a dry cloth for cleaning.
- Ensure the cooling fan and vents are not obstructed to allow for proper airflow.
- Store the inverter in a cool, dry place when not in use.
- Regularly check the power cord and plug for any signs of damage.

10. Customer Support

For further assistance or inquiries, please contact BESTEK customer support. Refer to the product packaging or BESTEK's official website for contact information.