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› BESTEK Pure Sine Wave Power Inverter User Manual

BESTEK MRZ5010BU-BL

BESTEK Pure Sine Wave Power Inverter User Manual

Model: MRZ5010BU-BL

1. INTRODUCTION

Thank you for purchasing the BESTEK Pure Sine Wave Power Inverter. This device is designed to convert 12V DC power from your vehicle's battery or cigarette lighter socket into 100V AC power, allowing you to operate household appliances and charge electronic devices on the go. With its pure sine wave output, it provides stable and clean power, similar to that from a standard wall outlet, making it safe for sensitive electronics.

This manual provides important information regarding the safe and efficient operation of your inverter. Please read it thoroughly before use and keep it for future reference.

2. PRODUCT OVERVIEW AND KEY FEATURES

The BESTEK MRZ5010BU-BL inverter is a versatile power solution for your vehicle, offering both AC outlets and USB charging ports. Its robust design and advanced protection features ensure reliable performance.



Figure 2.1: The BESTEK Pure Sine Wave Power Inverter, showing the main unit, cigarette lighter adapter, and battery clamp cables.

パワフルな出力

DC12VからAC100Vに変換して、車で家電を使えます



5V ●
(0~2.4A)

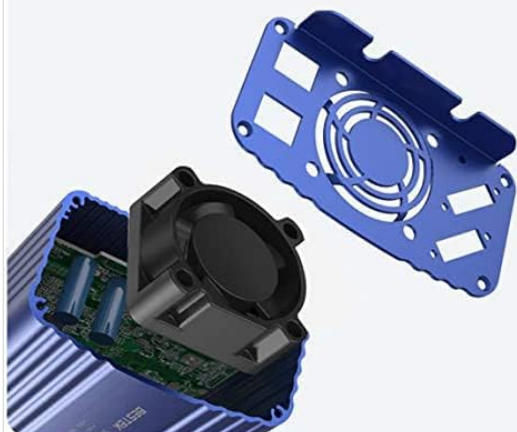
100V ●



【独自技術のスマートファン機能】

安全性を確保すると共に快適性にも優れています。

- 出力が小さい時、ファンの回転速度が低くなり、ノイズを抑制し静かな車内空間を創り出します。
- 出力が大きい時、ファンの回転速度が高くなり、冷却機能が動作して安全性を確保できます。



【利便性を向上させた進化版】

50Hz・60Hz表示機器を問わずにどちらも対応できます



※合計使用効率が150Wを超える機器を使用する場合、付属のバッテリー接続ケーブルをご使用ください。



Figure 2.2: Power output capabilities, illustrating the conversion from 12V DC to 100V AC and 5V USB power.

Key Features:

- **Pure Sine Wave Output:** Provides stable and clean power, ideal for sensitive electronics.
- **500W Continuous Power:** Capable of powering devices up to 500 watts.
- **Multiple Outputs:** Two AC 100V outlets and two USB 5V (total 4.8A) charging ports.
- **Advanced Protection:** Equipped with 6 safety features including output overload, output short circuit, abnormal temperature, input low voltage, input over voltage, and input short circuit protection.

- **Digital Display:** LCD screen shows protection status, power consumption, and input voltage for easy monitoring.
- **Durable Construction:** Aluminum casing ensures robustness and heat dissipation.
- **Emergency Power Supply:** Can serve as a crucial backup power source during outages or disasters.

3. SETUP AND INSTALLATION

Before installation, ensure your vehicle's engine is off and the inverter is turned off. Choose a well-ventilated area for installation, away from direct sunlight, heat sources, and moisture.

Connection Methods:

1. Cigarette Lighter Socket Connection (for devices under 150W):

- Insert the cigarette lighter adapter into your vehicle's 12V cigarette lighter socket.
- Connect the other end of the adapter to the inverter's DC input port.

2. Battery Clamp Connection (for devices over 150W, up to 500W):

- Connect the red battery clamp to the positive (+) terminal of your vehicle's 12V battery.
- Connect the black battery clamp to the negative (-) terminal of your vehicle's 12V battery.
- Ensure the connections are secure and tight.
- Connect the other end of the battery clamp cable to the inverter's DC input port.



お願い

150Wを超える機器を使用する場合、
バッテリー接続クリップを使用
してください。

Figure 3.1: Inverter connected via cigarette lighter socket, demonstrating charging of multiple devices. Note: For devices exceeding 150W, use battery clamps.



Figure 3.2: The included battery connection cable for higher power devices.

Important Safety Note:

- Always ensure proper polarity when connecting to the battery.
- Do not connect the inverter to a 24V battery system. This inverter is designed for 12V vehicle systems only.
- Avoid placing the inverter in areas that obstruct its ventilation fans.

4. OPERATION

Once the inverter is properly connected to your vehicle's power source:

1. Turn on the inverter using the power switch located on the unit. The LCD screen will illuminate, displaying current status.
2. Plug your AC-powered devices into the 100V AC outlets or your USB-powered devices into the USB ports.
3. Monitor the LCD screen for information on power consumption and input voltage.
4. When finished, turn off the inverter before disconnecting any devices or the power source.

Smart Fan Function:

The inverter features a smart cooling fan that adjusts its speed based on the internal temperature and load. At low loads, the fan operates at a lower speed to minimize noise. When the load increases or the temperature rises, the fan speed increases to ensure efficient cooling and protect the unit.



Figure 4.1: Illustration of the smart fan mechanism within the inverter, designed for optimal cooling and noise reduction.

5. SAFETY FEATURES

Your BESTEK inverter is equipped with six comprehensive protection functions to ensure the safety of both the inverter and your connected devices:

- **Output Overload Protection:** Automatically cuts power if the connected load exceeds the inverter's capacity.
- **Output Short Circuit Protection:** Prevents damage in case of a short circuit at the output.
- **Abnormal Temperature Protection:** Shuts down the unit if internal temperature exceeds safe limits (approx. 65°C).
- **Input Low Voltage Protection:** Protects your vehicle's battery by shutting off if input voltage drops too low.
- **Input Over Voltage Protection:** Prevents damage from excessively high input voltage.
- **Input Short Circuit Protection:** Safeguards against short circuits at the input.

六つの保護回路機能で安心

ご使用機器とお車を保護します

出力オーバー保護

接続した機器が本製品の最大出力を超えた場合、ACコンセントへの出力をカットします。

出力ショート保護

ショートした機器が接続された場合、ACコンセントへの出力をカットします。

入力ショート保護

ショートした場合、内蔵のヒューズが切れて動作しません。

異常温度保護

製品内部の温度が約65°Cを超えると、ACコンセントへの出力をカットします。

入力電圧低下保護

異常な低圧が入力された場合、ACコンセントへの出力をカットします。

入力過電圧保護

異常な高圧が入力された場合、ACコンセントから出力しません。

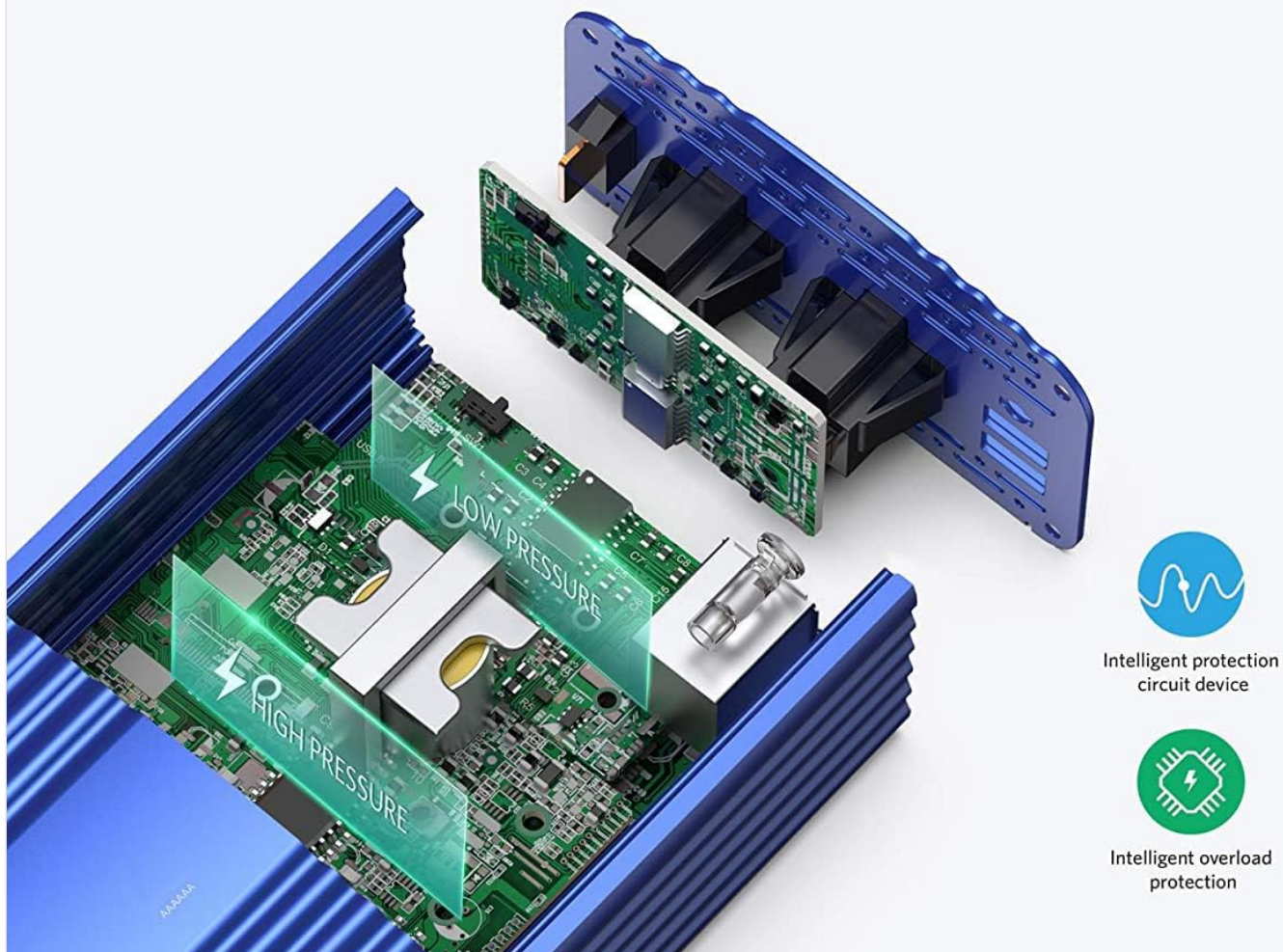


Figure 5.1: Visual representation of the inverter's internal protection circuits, highlighting its safety mechanisms.

6. USE CASES

The BESTEK Pure Sine Wave Power Inverter is an ideal companion for various situations, providing reliable power wherever you need it.

Common Applications:

- **Road Trips & Camping:** Power laptops, portable coolers, and other small appliances for a comfortable journey.
- **Outdoor Activities:** Charge cameras, drones, and audio equipment during outdoor adventures.
- **Emergency Preparedness:** A vital tool for providing emergency power during blackouts or natural disasters, allowing you to power essential devices.
- **Mobile Office:** Keep your laptop and other office equipment charged while working remotely from your vehicle.

ドライブ旅行に最適

大切な電子機器の電池切れの心配がない
ドライブを楽しめます



Figure 6.1: Examples of the inverter's versatility in different environments and with various electronic devices.

最高の停電対策用品

災害時などの停電の時も大変重宝します



純正弦波500W

MRZ5010BU

- カーバッテリー等の蓄電池から交流AC100V電源と直流DC5V電源が取れます。
- 雷や台風、地震などによる故障停電を防ぐために欠かせない製品です。



超小型150W
MR11510AU



純正弦波300W
MRZ3010HU



大容量1000W
MR110010

Figure 6.2: The inverter's utility as an emergency power supply during unforeseen events like power outages or natural disasters.

7. SPECIFICATIONS

Feature	Specification
Model Number	MRZ5010BU-BL
Input Voltage	DC 12V
AC Output Voltage	AC 100V

Feature	Specification
Rated Power	500W
USB Output	DC 5V, 0-2.4A (Total 4.8A)
Output Waveform	Pure Sine Wave
Protection Functions	Output Overload, Output Short Circuit, Abnormal Temperature, Input Low Voltage, Input Over Voltage, Input Short Circuit
Dimensions	28.4 x 16.6 x 11.2 cm
Weight	990 g

8. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Inverter not turning on	Loose connection, low battery voltage, blown fuse in vehicle or inverter	Check all connections. Ensure vehicle battery is charged. Check and replace fuses if necessary.
No AC output	Overload protection activated, short circuit, abnormal temperature	Reduce load. Check for short circuits in connected devices. Allow inverter to cool down.
Fan running loudly	High load, high internal temperature	This is normal operation. Ensure adequate ventilation around the inverter.
LCD display shows error code	Specific protection activated (e.g., low voltage, over voltage)	Refer to the specific error code on the display and consult the relevant protection section (Section 5) for resolution.

If the problem persists after attempting these solutions, please contact BESTEK customer support.

9. MAINTENANCE

To ensure the longevity and optimal performance of your inverter, follow these maintenance guidelines:

- Keep the inverter clean and free from dust and debris. Use a soft, dry cloth for cleaning.
- Ensure ventilation openings are not blocked. Periodically check for any obstructions.
- Store the inverter in a cool, dry place when not in use.
- Avoid exposing the inverter to extreme temperatures or direct sunlight for prolonged periods.

10. WARRANTY AND SUPPORT

BESTEK is a Japanese corporation committed to providing high-quality products and excellent customer service. In the unlikely event of any quality issues with your inverter, please contact our customer support team. We are dedicated to resolving any concerns with utmost sincerity.

For support, please visit the official BESTEK website or contact the retailer where you purchased the product. Please

have your model number (MRZ5010BU-BL) and purchase details ready when contacting support.

Note: Warranty terms and conditions may vary. Please refer to your purchase documentation for specific warranty details.

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