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› YRDZXG 12V to 24V 15A DC Power Converter User Manual

YRDZXG H15-12-24A

YRDZXG 12V to 24V 15A DC Power Converter User Manual

Model: H15-12-24A

Brand: YRDZXG

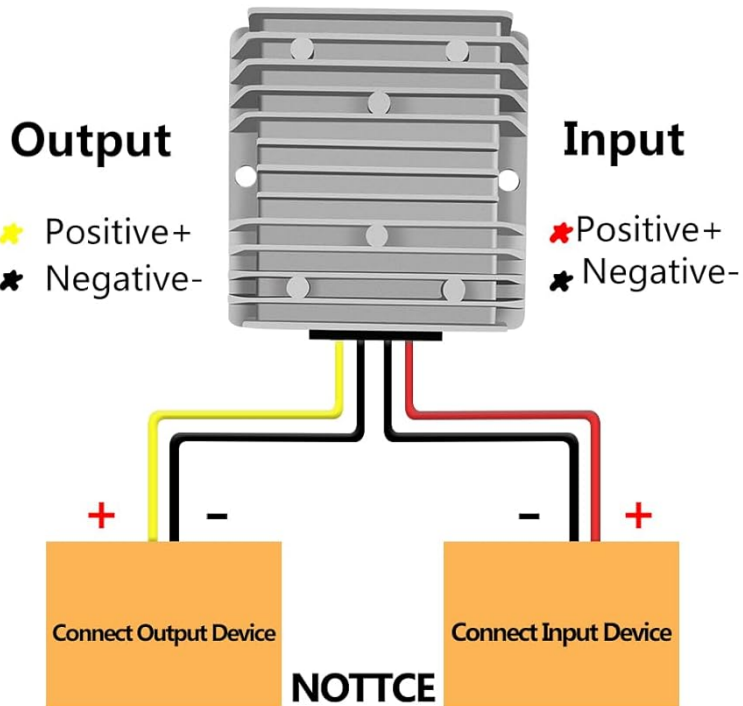
INTRODUCTION

This manual provides essential information for the safe and efficient operation of your YRDZXG 12V to 24V 15A DC Power Converter. This device is designed to step up a 12V DC input voltage to a stable 24V DC output, capable of delivering up to 15 Amperes (360 Watts). Its robust, waterproof design makes it suitable for a wide range of applications, including automotive, marine, and industrial low-power systems.

PRODUCT FEATURES

- **Input Voltage:** 12V DC (Operating range typically 10V-20V).
- **Output Voltage:** 24V DC.
- **Maximum Load:** 15A (360W).
- **High Efficiency:** $\geq 95\%$ conversion efficiency.
- **Robust Protection:** Features IP67 waterproof rating, short circuit protection, overvoltage protection, overload protection, and overheating protection.
- **Durable Construction:** Aluminum shell and silicone sealing design for waterproof, shockproof, moisture-proof, and dustproof performance.
- **Wide Operating Temperature:** Functions reliably from -40°C to 80°C .
- **Versatile Applications:** Ideal for vehicles, safety systems, hospital equipment, telecommunications, LED products, and LED strips.

Multiple intelligent protection



- The input voltage should not exceed the fluctuation range of the converter can withstand
- The converter output power must be greater than output connection device required power
- Positive and negative wires can't be reversed connection

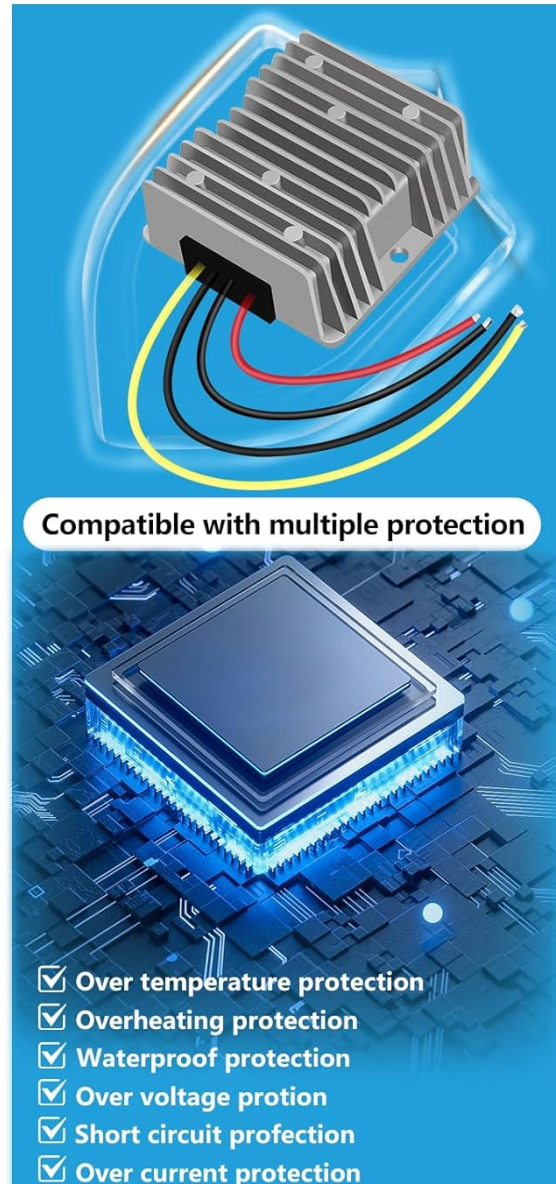


Figure 1: Diagram illustrating the intelligent protection features and basic input/output connections of the converter.

IP68 WATERPROOF



Waterproof



dustproof



shockproof



Over Current
Protecton

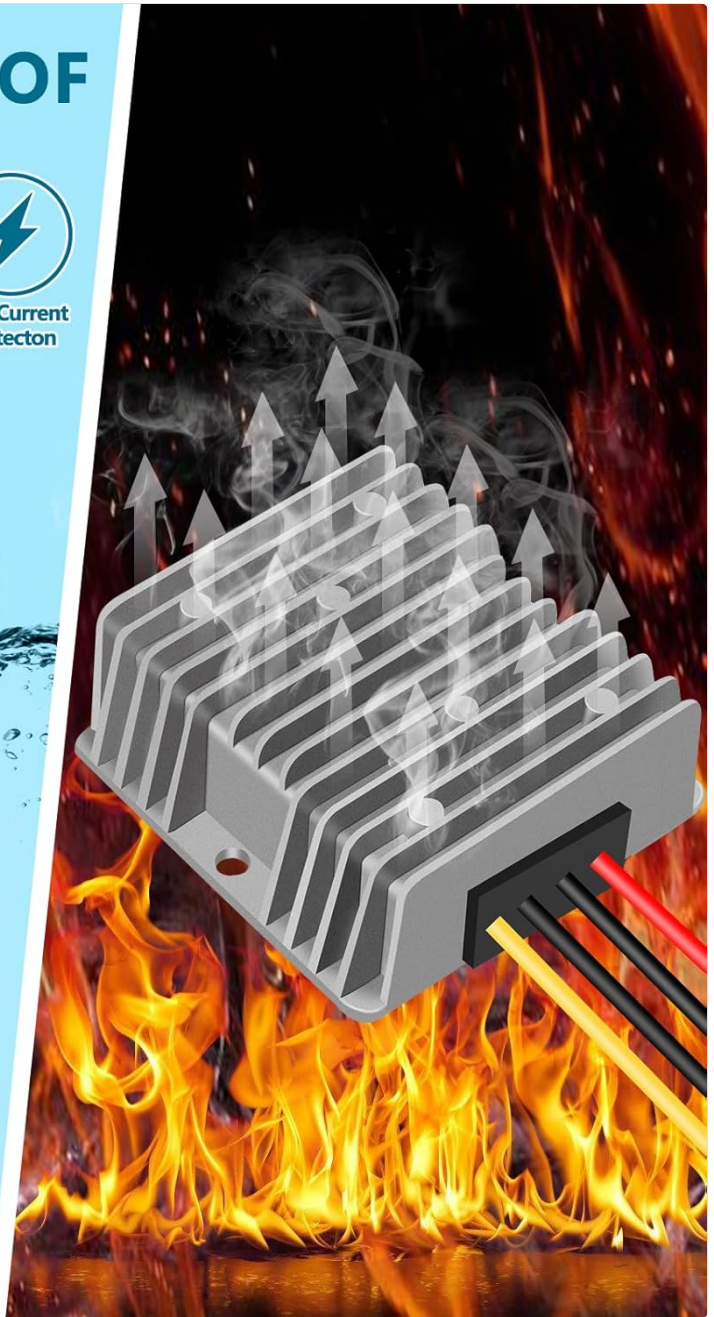
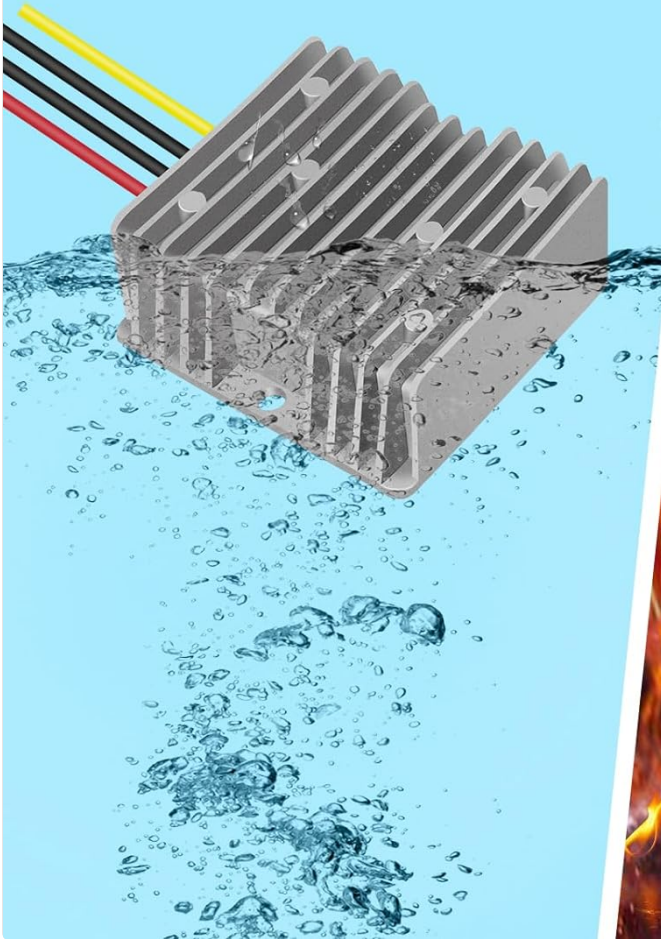


Figure 2: Visual representation of the converter's IP68 waterproof capability and efficient heat dissipation.

IP68 protection rating



Waterproof



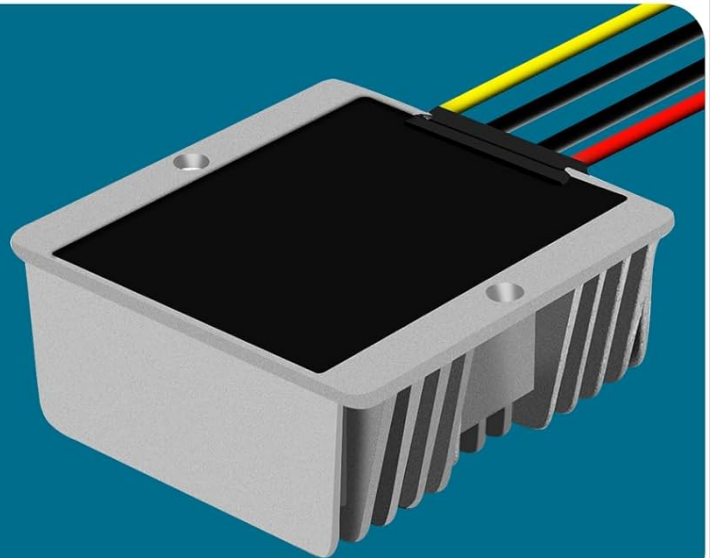
Shock-proof



Moisture-proof



Dust-proof



SturdyaseMore Durable

Slight drop or impact
will not affect the internal
parts.

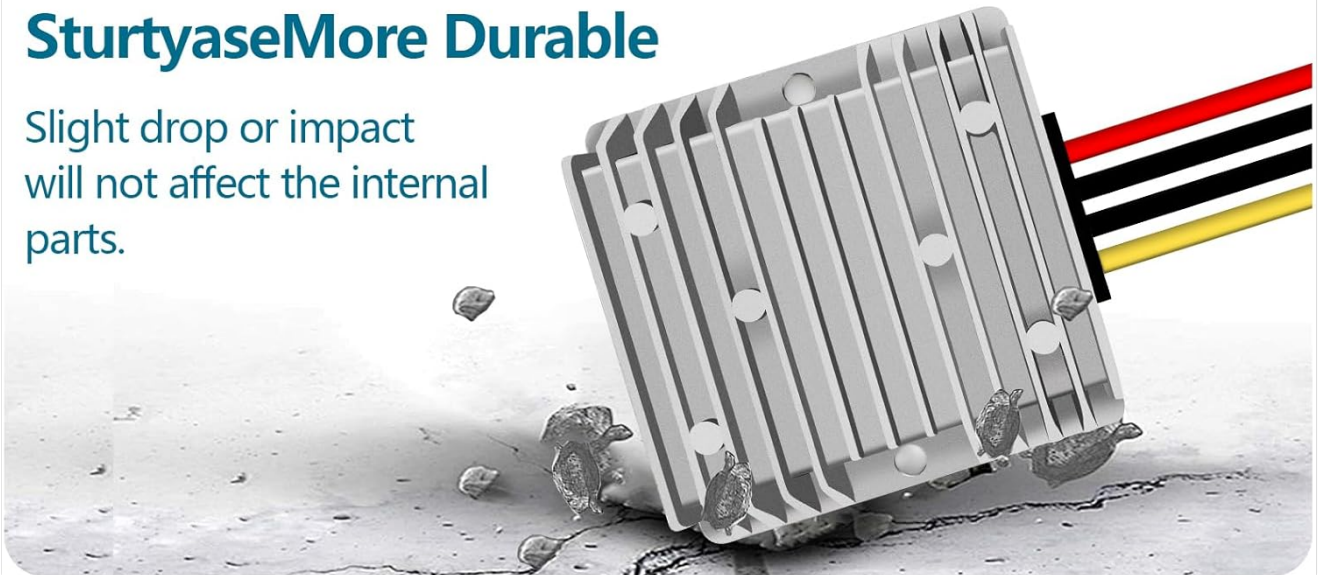


Figure 3: Overview of the converter's IP68 protection features and its robust, durable construction designed to withstand minor impacts.

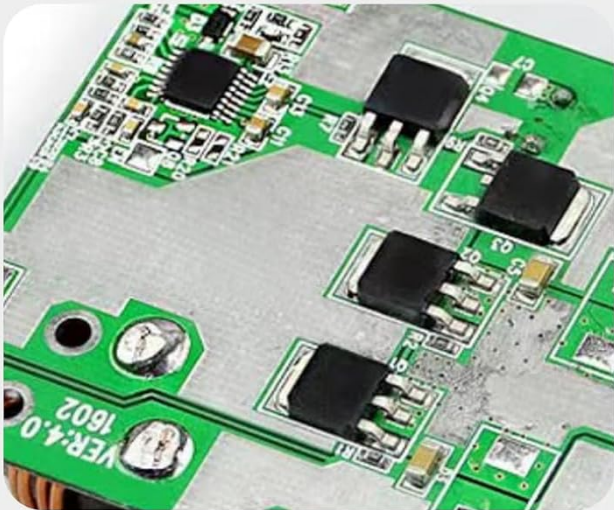
SMART SAFETY TECHNOLOGY

Safe system provide multiprotectionfor you and your device.



Figure 4: Examples of diverse applications where the converter's smart safety technology provides reliable power, including automotive, drone, display, and security systems.

PRODUCT



SMT Patch

SMT Process - Resistor Capacitor MOS

Tube are SMD original

- ✓ High integration
- ✓ High reliability
- ✓ High stability

DETAILS



Resin/Silicone Potting

- ✓ Better thermal conductivity
- ✓ Resin casting
- ✓ Completely sealed

Figure 5: Detailed view of the internal SMT (Surface Mount Technology) components and the protective resin/silicone potting, contributing to high integration, reliability, and stability.

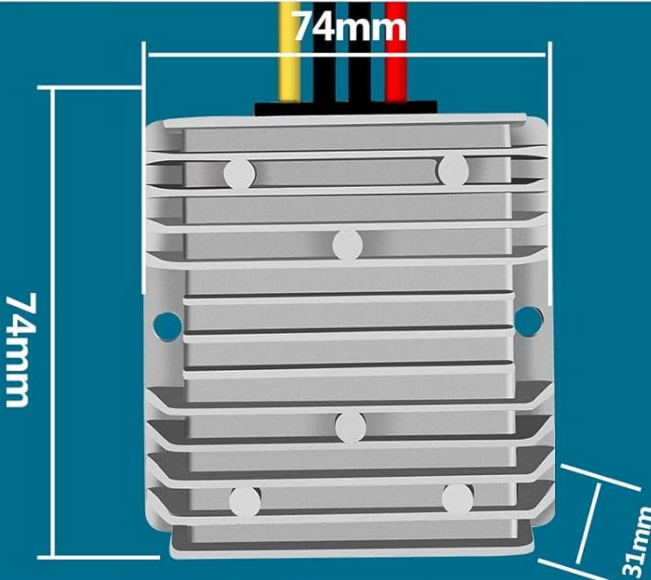
SPECIFICATIONS

Attribute	Value
Product Dimensions (L x W x H)	2.91 x 1.26 x 2.91 inches (74 x 31 x 74 mm)
Item Weight	10.8 ounces (0.31 Kilograms)
Input Voltage	12 Volts DC (10V-20V)
Output Voltage	24 Volts DC
Output Current (Max)	15A

Attribute	Value
Output Power (Max)	360W
Efficiency	≥ 95%
Ripple	200mVp
Voltage Accuracy	±1.5%
Load Regulation Rate	±0.2%
Linear Adjustment Rate	±0.2%
Waterproofing Rating	IP68
Working Temperature	-40°C to 80°C
Installation Line Length	16.5 cm

YRDZXG converter

Weight:300G
L*W*H:74*74*31mm



Efficiency: 95%

Ripple:200mVp

Inputvoltage: 12V(10V-20V)

Output voltage: 24V DC

Output currentMax: 15A 360W

Noload current:0.01A

Voltage accuracy: +1.5%

Load regulation rate: +0.2%

Linear adjustment rate: +0.2%

Waterproofrating:IP68

Workingtemperature:-40-85°C

Installation line length: 16.5cm

1. Please install the correct wiring and confirm that the positive and negative poles of the input and output are correct before powering on and working.
2. The battery power at the input end is sufficient to ensure that the power converter has sufficient power output.

Figure 6: Detailed dimensions and electrical specifications of the YRDZXG DC Power Converter.

SETUP AND INSTALLATION

Proper installation is crucial for the safe and effective operation of the converter. Please follow these guidelines carefully:

1. Wiring Connection:

- Identify the input and output wires. Typically, the input wires are for 12V DC, and the output wires are for 24V DC.
- Connect the **Red wire** to the **Positive (+)** terminal of your 12V DC power source (e.g., battery).
- Connect the **Black wire** to the **Negative (-)** terminal of your 12V DC power source.
- Connect the **Yellow wire** to the **Positive (+)** terminal of your 24V DC load device.
- Connect the **Black wire** (from the output side) to the **Negative (-)** terminal of your 24V DC load device.
- **Important:** *Ensure that the positive and negative poles of both the input and output connections are correct. Reversing polarity can damage the converter and connected devices.*

2. **Power Source Adequacy:** Ensure that the 12V DC power source (e.g., battery) has sufficient capacity and current output to meet the demands of the converter and the connected 24V load. An insufficient input power source may lead to unstable output or damage.
3. **Mounting:** Mount the converter in a location that allows for adequate air circulation, even though it has good heat dissipation properties. While waterproof, avoid prolonged submersion unless necessary for the application.
4. **Cable Management:** Secure all wiring to prevent accidental disconnections, short circuits, or damage from vibration.

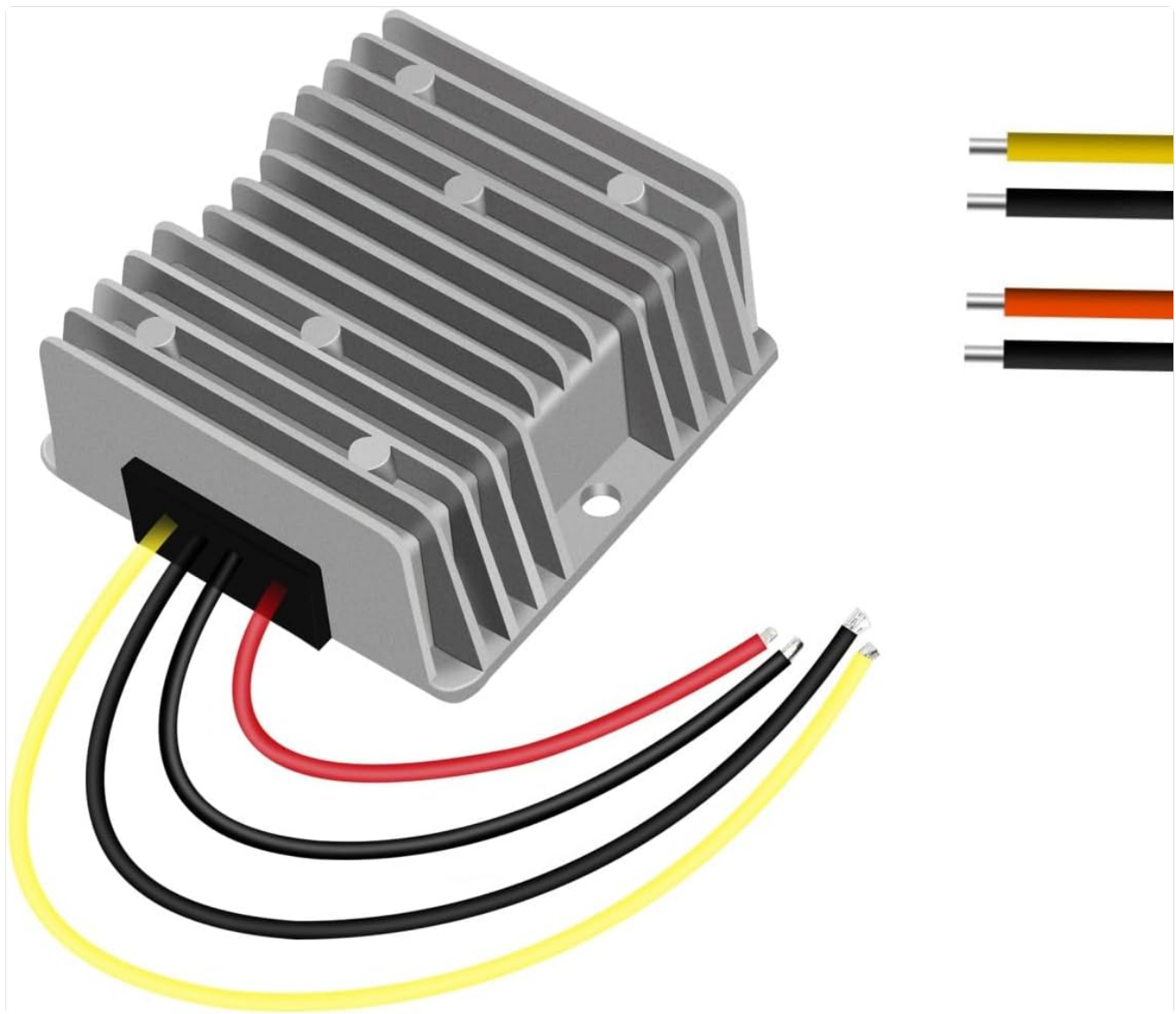


Figure 7: Wiring diagram for the DC Power Converter. Note the color coding for input and output connections.

OPERATION

Once properly installed, the YRDZXG DC Power Converter operates automatically. It will convert the 12V DC input to a stable 24V DC output for your connected devices. The converter is designed for continuous operation within its specified temperature and load limits.

- **Power On:** After connecting all wires correctly, apply 12V DC power to the input terminals. The converter will immediately begin regulating the voltage to 24V DC at the output.
- **Load Management:** Ensure that the total current draw of your 24V devices does not exceed the converter's maximum output of 15A (360W). Overloading the converter can trigger its internal protection mechanisms or lead to damage.
- **Monitoring:** While the converter has built-in protections, it is good practice to periodically check the temperature of the unit during operation, especially under heavy loads, to ensure it remains within its operating temperature range.

MAINTENANCE

The YRDZXG DC Power Converter is designed for minimal maintenance due to its sealed and robust construction. However, following these simple steps can help ensure its longevity:

- **Regular Inspection:** Periodically inspect the converter and its wiring for any signs of physical damage, corrosion, or loose connections.
- **Cleanliness:** Keep the exterior of the converter clean and free from dust, dirt, or debris, especially around the heat sink fins, to ensure optimal heat dissipation. Use a dry, soft cloth for cleaning.
- **Environmental Conditions:** While the unit is waterproof and designed for harsh environments, prolonged exposure to extreme conditions beyond its specified limits should be avoided.
- **No User-Serviceable Parts:** Do not attempt to open or repair the converter. Doing so will void the warranty and may lead to electric shock or damage to the unit.

TROUBLESHOOTING

If you encounter issues with your YRDZXG DC Power Converter, refer to the following troubleshooting guide:

Problem	Possible Cause	Solution
No output voltage / Converter not working	◦ Incorrect wiring (reversed polarity, loose connections). ◦ No input power or insufficient input voltage. ◦ Overload protection activated. ◦ Short circuit at the output. ◦ Overheating protection activated.	◦ Verify all wiring connections are correct and secure, paying close attention to polarity. ◦ Check the 12V input power source. Ensure it is providing stable voltage and sufficient current. ◦ Reduce the load connected to the 24V output. ◦ Inspect output wiring for any short circuits. ◦ Allow the converter to cool down if it has been operating under heavy load in a high-temperature environment.
Output voltage is unstable or lower than 24V	◦ Input voltage is too low or unstable. ◦ Output load exceeds converter capacity.	◦ Ensure the 12V input voltage is stable and within the specified range (10V-20V). ◦ Reduce the load on the 24V output to stay within the 15A / 360W limit.

Problem	Possible Cause	Solution
Converter feels excessively hot	◦ Operating under heavy load for extended periods. ◦ Insufficient ventilation around the unit. ◦ Ambient temperature is too high.	◦ Ensure the load does not exceed the rated capacity. ◦ Relocate the converter to an area with better airflow. ◦ Ensure the operating environment temperature is within -40°C to 80°C.

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

WARRANTY AND SUPPORT

All YRDZXG converters come with a **1-year replacement warranty** from the date of purchase. This warranty covers manufacturing defects and ensures your satisfaction with the product.

For technical assistance, troubleshooting beyond this manual, or warranty claims, please contact YRDZXG customer service. We are committed to providing 100% satisfaction.

Please have your product model number (H15-12-24A) and purchase information ready when contacting support.