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Magnum Energy RD2824 Inverter/Charger User Manual

Model: RD2824

1. PRODUCT OVERVIEW

The Magnum Energy RD2824 is a new generation modified sine wave inverter/charger designed specifically for renewable energy applications. This robust unit provides reliable power conversion, making it an ideal solution for various off-grid and backup power systems. It functions as both an inverter, converting DC battery power to AC household power, and a charger, replenishing battery banks when AC utility or generator power is available.

Key features include its 2800 Watt continuous output capacity and compatibility with 24V battery systems.



Figure 1: Magnum Energy RD2824 Inverter/Charger. This image displays the Magnum Energy RD2824 Inverter/Charger. The unit is a rectangular, dark gray metal box with the 'MAGNUM ENERGY' logo prominently displayed on the top. The front panel features a power ON/OFF switch, indicator lights for Charging/Inverting, Stack/Accessories, Network, Remote, and Battery Temp Sensor. Various connection terminals, including a large red positive terminal, are visible on the right side. A label on the left side indicates 'Model: RD3924 Inverter/Charger' and includes serial number information and safety warnings.

2. IMPORTANT SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the inverter/charger. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- **WARNING: Risk of Electric Shock.** This unit contains high voltage. Only qualified personnel should perform installation and maintenance. Ensure the inverter is properly grounded. Use only live ground fault circuit breakers with the inverter. Other types may result in electric shock and injury.
- **CAUTION: Fire Hazard.** Do not cover or obstruct the ventilation openings of the inverter. Ensure adequate clearance for proper airflow to prevent overheating and potential fire.
- **WARNING: Multiple Live Circuits.** Be aware that more than one live circuit may be present. Refer to the wiring diagram and the owner's manual for detailed information regarding AC connections and internal wiring.
- **Overload Protection.** This inverter is provided with integral protection against overloads. However, avoid exceeding the unit's rated capacity to ensure optimal performance and longevity.

3. SETUP AND INSTALLATION

Proper installation is critical for the safe and efficient operation of your RD2824 inverter/charger. It is highly recommended that installation be performed by a certified electrician or qualified professional.

3.1 Site Selection

- Install the inverter in a dry, well-ventilated area, away from direct sunlight, heat sources, and flammable materials.
- Ensure the mounting surface is sturdy enough to support the unit's weight (approximately 42 lb / 19.0 kg).
- Maintain adequate clearance around the unit for proper airflow and access for maintenance.

3.2 Electrical Connections

All wiring must comply with local and national electrical codes. Refer to the comprehensive owner's manual for detailed wiring diagrams and specifications.

- **Battery Connection:** Connect the inverter to a 24V DC battery bank. Ensure correct polarity. The input battery voltage range is 18 - 32 VDC.
- **AC Input/Output:** Connect the AC input from your utility grid or generator, and the AC output to your load panel. The inverter provides 120 VAC output.
- **Grounding:** Properly ground the inverter chassis to an earth ground.

4. OPERATING INSTRUCTIONS

Once installed, operating the RD2824 is straightforward. The front panel provides key indicators and controls.

4.1 Power ON/OFF

Locate the Power ON/OFF switch on the front panel. Toggle the switch to turn the inverter/charger on or off. Always ensure all connections are secure before powering on the unit.

4.2 Status Indicators

The front panel features several LED indicators to provide real-time status information:

- **Charging/Inverting:** Indicates whether the unit is currently charging batteries or inverting DC to AC power.
- **Stack/Accessories:** Provides status for stacked units or connected accessories.
- **Network:** Indicates network communication status (if applicable).
- **Remote:** Shows status of a connected remote control panel.
- **Battery Temp Sensor:** Indicates the status of the battery temperature sensor, crucial for accurate battery charging.

4.3 Modes of Operation

- **Inverter Mode:** When AC input is not present, the unit converts DC power from the battery bank into 120 VAC power for your connected loads.
- **Charger Mode:** When a stable AC input (utility or generator) is present, the unit will automatically begin charging the connected battery bank.
- **Transfer Mode:** The inverter/charger seamlessly transfers loads between AC input and inverter output, ensuring continuous power to your appliances during power outages.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Magnum Energy RD2824 inverter/charger.

- **Cleaning:** Periodically clean the exterior of the unit with a dry, soft cloth. Ensure ventilation openings are free from dust and debris. Do not use liquid cleaners.
- **Connection Checks:** Annually inspect all electrical connections (DC and AC) for tightness and corrosion. Loose

connections can lead to overheating and poor performance.

- **Ventilation:** Ensure the area around the inverter remains clear and well-ventilated to prevent overheating.
- **Battery Inspection:** Regularly check the battery bank for proper voltage, electrolyte levels (for flooded batteries), and terminal cleanliness.

6. TROUBLESHOOTING

This section provides basic troubleshooting steps for common issues. For complex problems, contact qualified service personnel.

Problem	Possible Cause	Solution
No AC Output	Inverter is off; Low battery voltage; Overload; AC input not present (if in charger mode)	Ensure inverter is ON; Check battery voltage (must be 18-32 VDC); Reduce load; Verify AC input connection.
Batteries Not Charging	No AC input; Charger settings incorrect; Faulty battery connection; Battery temperature sensor issue	Verify AC input; Consult manual for charger settings; Check battery wiring; Inspect battery temp sensor.
Overload Indication	Connected loads exceed inverter capacity	Disconnect some loads; Ensure total load is within 2800 Watt limit.

7. SPECIFICATIONS

Attribute	Value
Model	RD2824
Continuous Output Power	2800 Watts
Input Battery Voltage Range	18 - 32 VDC
Nominal Input Voltage	24 Volts
Output Voltage	120 VAC
Waveform	Modified Sine Wave
Dimensions (L x W x H)	13.75" x 12.65" x 8.0" (34.9 cm x 32.1 cm x 20.3 cm)
Weight	42 lb (19.0 kg)
Manufacturer	Magnum
ASIN	B008AY9KTU

8. WARRANTY AND SUPPORT

The Magnum Energy RD2824 Inverter/Charger comes with a standard **2-Year Limited Warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.

For technical support, warranty claims, or service inquiries, please contact Magnum Energy customer service. Refer to

the full owner's manual for detailed warranty terms and contact information.



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