

SINSED NDR-240-12

SINSED NDR-240W Switching Power Supply User Manual

Models: NDR-240-12, NDR-240-24

Brand: SINSED

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the SINSED NDR-240W Switching Power Supply. This industrial-grade power supply is designed for DIN rail mounting and provides a stable DC output from an AC input. Please read this manual thoroughly before installation and operation to ensure proper use and to prevent damage or injury.

2. PRODUCT OVERVIEW

The SINSED NDR-240W series is an ultra-thin, single-output switching power supply designed for various electrical equipment applications. It features a robust design suitable for industrial environments and offers models with 12V or 24V DC output. Key features include:

- 240W output power
- Available in 12V (20A) and 24V (10A) output variants
- Ultra-thin design for space-saving DIN rail mounting
- Wide AC input voltage range (90-264V AC)
- Overload and overvoltage protection
- High efficiency for reduced energy consumption



Figure 2.1: Front view of the SENSED NDR-240W Switching Power Supply, showing input/output terminals and adjustment knob.

3. SPECIFICATIONS

Parameter	NDR-240-12	NDR-240-24
Output Voltage / Current	12V, 0-20A	24V, 0-10A
Voltage Accuracy	±1%	±1%
Ripple & Noise	150mVp-p	150mVp-p
Efficiency	0.87	0.88

Parameter	NDR-240-12	NDR-240-24
AC Input Voltage Range	90-264V AC / 127-373V DC	
Overload Protection	105%-130% constant current mode, automatic recovery	
Overvoltage Protection	Turns off output voltage, recovers after restarting	
Output Frequency	47-63 Hz	
Operating Temperature	-20°C to +50°C, 20%-90% RH (non-condensing)	
Dimensions (L×W×H)	60 × 113.5 × 125.2 mm	
Net Weight	0.9 kg	

4. SAFETY INSTRUCTIONS

WARNING: Risk of electric shock. Improper installation or operation can lead to serious injury or death. Always follow these safety guidelines:

- Disconnect all power before installation, wiring, or maintenance.
- Installation and servicing should only be performed by qualified personnel.
- Ensure proper grounding of the power supply and connected equipment.
- Do not operate the unit in environments exceeding its specified temperature and humidity limits.
- Ensure adequate ventilation around the unit to prevent overheating.
- Use copper wires only, rated for a minimum of 75°C.
- Do not open the power supply casing; there are no user-serviceable parts inside.

5. SETUP AND INSTALLATION

5.1 Mounting

The NDR-240W power supply is designed for DIN rail mounting. Ensure the DIN rail is securely fastened and capable of supporting the weight of the power supply and any other mounted components. Mount the unit vertically to optimize cooling.

5.2 Wiring Connections

Refer to the terminal block labels for correct wiring. Ensure all connections are tight and secure to prevent loose contacts, which can cause overheating or intermittent operation. The recommended terminal torque is 6.5 Lb-in.



Figure 5.1: Close-up of the input and output terminal blocks, showing labels for AC input (N, L, Ground) and DC output (+V, -V).

- **Input Terminals:** Connect the AC mains supply to the 'N' (Neutral), 'L' (Line), and Ground (Earth) terminals.
- **Output Terminals:** Connect your load to the '+V' and '-V' terminals. Observe correct polarity.
- **Voltage Adjustment:** The '+VADJ' potentiometer allows for fine adjustment of the output voltage within a small range.

Important: Use appropriate wire gauges for the current draw to prevent overheating of wires.

6. OPERATING INSTRUCTIONS

6.1 Powering On

After ensuring all connections are secure and correct, apply AC power to the input terminals. The 'DC OK' LED indicator on the front panel should illuminate, indicating that the output voltage is within the specified range.

6.2 Output Voltage Adjustment

If minor adjustments to the output voltage are required, use a small screwdriver to carefully turn the '+VADJ' potentiometer. Do not exceed the specified adjustment range to avoid damaging the power supply or connected equipment. Monitor the output voltage with a multimeter during adjustment.

7. MAINTENANCE

The SINSED NDR-240W power supply is designed for reliable operation with minimal maintenance. However, periodic checks can help ensure longevity and performance.

- **Cleaning:** Keep the ventilation openings clear of dust and debris. Use a soft, dry brush or compressed air to clean the exterior. Do not use liquid cleaners.
- **Connection Checks:** Periodically inspect all wiring connections for tightness and signs of corrosion or damage.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature and humidity ranges. Avoid exposure to excessive moisture or corrosive substances.

Always disconnect power before performing any maintenance.

8. TROUBLESHOOTING

If the power supply is not functioning as expected, refer to the following common issues and solutions:

Problem	Possible Cause	Solution
No output voltage / 'DC OK' LED off	No AC input power	Check AC input connections and power source.
	Input fuse blown	Replace fuse (if accessible and user-serviceable, otherwise contact support).
	Overload protection activated	Reduce load or check for short circuits in the load. The unit should recover automatically.

Problem	Possible Cause	Solution
Output voltage too high or too low	'+VADJ' potentiometer incorrectly set	Adjust '+VADJ' potentiometer carefully.
	Oversvoltage protection activated	Disconnect and reconnect AC input power to reset. If issue persists, contact support.
Unit overheating	Insufficient ventilation	Ensure adequate airflow around the unit. Clear any obstructions from vents.
	Ambient temperature too high	Relocate the unit to a cooler environment or improve cooling in the existing setup.

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

9. WARRANTY AND SUPPORT

SINSED products are manufactured to high-quality standards. For warranty information and technical support, please refer to the documentation provided with your purchase or visit the official SINSED website. When contacting support, please have your product model (NDR-240-12 or NDR-240-24) and purchase details available.