SOHO Instruments NI PS-16

SOHO Instruments NI PS-16 1-Phase Industrial Power Supply User Manual

Model: NI PS-16

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the SOHO Instruments NI PS-16 1-Phase Industrial Power Supply. The NI PS-16 is designed to deliver a stable 24VDC to 28VDC output with up to 10A of current, suitable for various industrial applications requiring reliable power.

2. Safety Information

Read all safety instructions before installing or operating the device. Failure to follow these instructions may result in injury or damage to the product.

- **Installation:** Installation must be performed by qualified personnel only.
- **Power Disconnection:** Always disconnect power before making any connections or performing maintenance.
- **Environment:** Do not operate the power supply in hazardous areas or environments with excessive moisture or extreme temperatures outside the specified range.
- **Ventilation:** Ensure adequate ventilation around the unit to prevent overheating.
- **Grounding:** Ensure proper grounding of the unit as per local electrical codes.

3. Product Overview

3.1 Key Features

- Delivers a reliable 240W of power with output ranging from 24VDC to 28VDC and a current capacity of up to 10A.
- Operates in extreme conditions with a wide temperature range from -25 °C to +60 °C.
- Designed for easy DIN rail mounting for secure and efficient installation.
- Simplifies field wiring with toolless spring-clamp terminals.

- Offers a 20% power reserve to handle fluctuating loads, with continuous use under ambient temperatures up to 45 °C.

3.2 What's in the Box

- NI PS-16 Industrial Power Supply

4. Setup and Installation

The NI PS-16 is designed for straightforward installation in industrial environments.

4.1 Mounting

The power supply features integrated DIN rail mounting for quick and secure attachment to standard DIN rails (TS35/7.5 or TS35/15). Ensure the rail is securely fastened and capable of supporting the unit's weight.

Figure 1: Side view illustrating the DIN rail mounting mechanism.

4.2 Wiring Connections

The NI PS-16 utilizes toolless spring-clamp terminals for both AC input and DC output connections. Ensure all connections are firm and correctly polarized.

Figure 2: Front view displaying the AC input (N, L, Ground) and DC output (+, -) terminals.

4.2.1 AC Input Connection

- Connect the AC Line (L), Neutral (N), and Ground ( ) wires to the corresponding terminals at the bottom of the unit.
- The unit supports AC 100-120V and 200-240V input and auto-selects the voltage.

4.2.2 DC Output Connection

- Connect the positive (+) and negative (-) DC load wires to the corresponding terminals at the top of the unit.
- Ensure correct polarity to prevent damage to connected devices.

5. Operation

Once properly installed and wired, the NI PS-16 operates automatically upon receiving AC input power.

5.1 Output Voltage Adjustment

The output voltage can be adjusted within the 24VDC to 28VDC range using the small potentiometer located near the DC OK indicator on the front panel. Use a small screwdriver for adjustment.

5.2 DC OK Indicator

A 'DC OK' LED indicator on the front panel illuminates when the output voltage is within the specified operating range, confirming proper power delivery.

5.3 Power Reserve

The power supply includes a 20% power reserve feature, allowing it to handle temporary peak loads beyond its nominal rating, especially useful in dynamic industrial applications. This reserve is available for continuous use at ambient temperatures up to 45 °C.

6. Maintenance

The NI PS-16 is designed for minimal maintenance. Regular inspections are recommended to ensure optimal performance and safety.

- **Cleaning:** Keep the unit free from dust and debris. Use a soft, dry cloth for cleaning. Do not use liquid cleaners.
- **Connections:** Periodically check all wiring connections for tightness and signs of wear or corrosion.
- **Ventilation:** Ensure that ventilation openings are not obstructed.

7. Troubleshooting

If the power supply is not functioning as expected, consider the following common issues:

- **No Output Power / DC OK LED Off:**
  - Verify AC input power is present and correctly connected.
  - Check input fuse (if accessible and replaceable).
  - Ensure output connections are not short-circuited.
- **Intermittent Output:**
  - Check for loose wiring connections.
  - Ensure the load does not exceed the power supply's capacity, especially during peak demands.
  - Verify ambient temperature is within the specified operating range.
- **Overheating:**
  - Ensure proper ventilation and clearance around the unit.
  - Reduce the load if it consistently operates near its maximum capacity in high ambient temperatures.

For issues not resolved by these steps, contact technical support.

8. Specifications

Detailed technical specifications for the NI PS-16 power supply.

Figure 3: Product label with detailed specifications.

Parameter	Value
Model	NI PS-16
Input Voltage	AC 100-120V / 200-240V (±10%), 50-60Hz, Auto-Select
Output Voltage	DC 24-28V
Output Current	10A (up to 45 °C ambient)
Output Power	240W
Operating Temperature	-25 °C to +60 °C
Mounting	DIN Rail
Terminals	Toolless Spring-Clamp
Manufacturer	National Instruments

Parameter	Value
Date First Available	February 17, 2025

9. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact SOHO Instruments directly through their official website or customer service channels. Ensure you have your product model number (NI PS-16) and purchase details available when seeking support.