

DUQTMBDT TDR-960-24

DUQTMBDT TDR-960-24 Three-Phase Power Supply User Manual

1. INTRODUCTION

This manual provides essential instructions for the safe and efficient installation, operation, and maintenance of the DUQTMBDT TDR-960-24 Three-Phase Power Supply. Please read this manual thoroughly before using the product and retain it for future reference.

2. SAFETY INSTRUCTIONS

- **Electrical Hazard:** This device operates with high voltage. Installation and maintenance should only be performed by qualified personnel.
- **Disconnect Power:** Always disconnect power before installation, wiring, or maintenance to prevent electric shock.
- **Proper Grounding:** Ensure the power supply is properly grounded according to local electrical codes.
- **Ventilation:** Do not obstruct ventilation openings. Ensure adequate airflow around the unit to prevent overheating. The maximum surrounding air temperature for operation is 50°C.
- **Wiring:** Use copper wire only for connections. Ensure all terminal connections are secure with a terminal torque of 7 Lb-in.
- **Environment:** Do not expose the unit to moisture, dust, or corrosive substances.

3. PRODUCT OVERVIEW

The DUQTMBDT TDR-960-24 is a high-efficiency 960W three-phase power supply designed for industrial applications. It provides a stable 24V DC output from a 380-500VAC input.



Figure 1: Front view of the TDR-960-24 power supply. Key features include the input terminals (L1, L2, L3, PE), output terminals (+V, -V), a DC OK indicator, and a +V ADJ potentiometer for output voltage adjustment. The label specifies 380-500VAC Three-Phase input and 24V 40A output.



Figure 2: Angled view of the TDR-960-24, illustrating the robust metal casing with a perforated top for heat dissipation, essential for maintaining the specified operating temperature.

The TDR-960 series includes various models, such as the TDR-960-48, which provides a 48V output. This manual specifically addresses the TDR-960-24 model.



Figure 3: Example of a TDR-960 series variant, the TDR-960-48, which features a 48V 20A output. Note the similar design and terminal layout across the series.

4. SETUP AND INSTALLATION

4.1 Mounting

The TDR-960-24 is designed for DIN rail mounting. Ensure the mounting surface is stable and capable of supporting the unit's weight. Allow sufficient clearance around the unit for proper ventilation.

4.2 Wiring Connections

Before making any connections, ensure the main power supply is OFF.

1. **Input Wiring (AC):** Connect the three-phase AC input to the terminals labeled L1, L2, L3, and the protective earth (ground) to the PE terminal. The input voltage range is 380-500VAC at 50/60Hz. Ensure correct phase sequence if required by your system.
2. **Output Wiring (DC):** Connect your load to the output terminals labeled +V and -V. Observe correct polarity.
3. **Terminal Torque:** Tighten all terminal screws to a torque of 7 Lb-in (approximately 0.8 Nm) to ensure secure

connections and prevent arcing.

4. **Wire Type:** Use only copper wires for all connections.

5. OPERATING INSTRUCTIONS

5.1 Powering On

After completing all wiring and safety checks, switch on the main AC power supply. The unit will power up and begin providing DC output.

5.2 DC OK Indicator

The 'DC OK' LED indicator on the front panel will illuminate when the output voltage is within the specified operating range, indicating normal operation.

5.3 Output Voltage Adjustment (+V ADJ)

The output voltage can be finely adjusted using the '+V ADJ' potentiometer located on the front panel. Use a small screwdriver to carefully turn the potentiometer to achieve the desired output voltage within the specified range (typically 24V ± a small percentage).

6. MAINTENANCE

The TDR-960-24 power supply is designed for reliable operation with minimal maintenance. However, periodic checks are recommended:

- **Cleaning:** Keep the unit clean and free from dust and debris. Use a soft, dry cloth for cleaning. Do not use liquid cleaners.
- **Ventilation:** Ensure that all ventilation openings remain unobstructed.
- **Connections:** Periodically check all wiring connections for tightness. Re-tighten if necessary, observing the specified torque.
- **Visual Inspection:** Inspect the unit for any signs of damage, discoloration, or overheating.

7. TROUBLESHOOTING

If the power supply is not functioning as expected, refer to the following troubleshooting guide:

Problem	Possible Cause	Solution
No DC output / DC OK LED off	No AC input power	Check AC input wiring and circuit breaker.
	Incorrect input voltage	Verify input voltage is within 380-500VAC range.
	Overload or short circuit on output	Disconnect load, check for short circuits, and reduce load if necessary. The unit may have overcurrent protection.
Output voltage unstable or incorrect	'+V ADJ' potentiometer misadjusted	Adjust the '+V ADJ' potentiometer to the desired voltage.

Problem	Possible Cause	Solution
Unit overheating	Loose output connections	Check and tighten output terminal connections.
	Insufficient ventilation	Ensure adequate airflow and clear any obstructions around the unit. Verify ambient temperature is below 50°C.
	Overload condition	Reduce the load connected to the power supply.

8. SPECIFICATIONS

Parameter	Value
Model	TDR-960-24
Input Voltage	380-500VAC Three-Phase
Input Current	2.0A
Frequency	50/60Hz
Output Voltage	24VDC
Output Current	40A
Output Power	960W
Package Dimensions	0.39 x 0.39 x 0.39 inches (Note: This dimension appears to be a placeholder and may not reflect the actual product size.)
Item Weight	1.76 ounces (50 Grams)
Manufacturer	DUQTMBDT
Power Plug Type	No Plug (Hardwired)
Maximum Surrounding Air Temperature	50°C
Terminal Torque	7 Lb-in

9. WARRANTY AND SUPPORT

For warranty information and technical support, please contact your vendor or the manufacturer, DUQTMBDT, directly. Keep your purchase receipt as proof of purchase.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question