

Lanlily 25B-D2P3N104

Lanlily User Manual for Allen-Bradley PowerFlex 525 AC Drive (Model: 25B-D2P3N104)

0.75KW, 1Hp Variable Frequency Drive

1. INTRODUCTION

This manual provides essential information for the safe and effective use of the Allen-Bradley PowerFlex 525 AC Drive, Model 25B-D2P3N104. This Variable Frequency Drive (VFD) is designed for industrial applications requiring precise motor control. Please read this manual thoroughly before installation, operation, or maintenance to ensure proper functionality and to prevent personal injury or equipment damage.

For detailed technical specifications, wiring diagrams, and advanced programming, always refer to the official Allen-Bradley PowerFlex 525 documentation.

2. SAFETY INFORMATION

WARNING: This equipment operates at high voltages and can cause severe injury or death. Only qualified personnel should install, operate, or service this drive. Adhere to all local and national electrical codes.

- Disconnect all power sources before working on the drive or connected equipment.
- Wait for the DC bus capacitors to discharge completely before touching any components. Use a voltmeter to confirm zero voltage.
- Ensure proper grounding of the drive and motor.
- Protect against accidental startup.
- Do not operate the drive with covers removed.

3. PRODUCT OVERVIEW

The PowerFlex 525 AC Drive is a compact and versatile VFD, offering a range of features for motor control. Model 25B-D2P3N104 is rated for 0.75KW (1Hp) applications.



Figure 3.1: Front view of the Allen-Bradley PowerFlex 525 AC Drive. This image displays the drive's main body, including the integrated human interface module (HIM) with its LCD display, navigation buttons (Esc, Sel, up, down, left, right), and status LEDs for Ethernet Link and Fault. The lower section features ventilation grilles and the PowerFlex 525 branding. Connection ports for PORT, MOD, NET A, and NET B are visible on the right side.



Figure 3.2: Product label on the Allen-Bradley PowerFlex 525 AC Drive. This label provides critical information such as the catalog number (Cat No. 25B-D2P3N104), series (Series A), power rating (0.75KW/1.0HP), input voltage (3-Phase, 380-480V, 47-63Hz), output voltage (3-Phase, 0-500 Hz), and various current ratings. It also lists certifications (UL, CE, EAC, RCM) and manufacturing details, including the date of manufacture (MFD. IN 2021 ON APR. 24) and country of origin (PRODUCT OF CHINA).

4. SETUP AND INSTALLATION

Proper installation is crucial for the drive's performance and longevity. Always consult the official Allen-Bradley PowerFlex 525 Installation Instructions for detailed steps.

4.1. Mounting

Mount the drive vertically on a flat, stable surface, ensuring adequate clearance for ventilation. Avoid mounting in direct sunlight or areas with excessive vibration, dust, or corrosive gases. Maintain specified clearances above and below the drive for proper airflow.

4.2. Wiring

All wiring must comply with local electrical codes and the drive's specifications. Use appropriate wire gauges for power, motor, and control circuits. Ensure all connections are secure.

- **Power Input:** Connect the incoming AC power supply to the designated input terminals (L1, L2, L3).
- **Motor Output:** Connect the motor leads to the output terminals (T1, T2, T3).
- **Grounding:** Connect the protective earth ground to the designated ground terminal.
- **Control Wiring:** Connect control signals (e.g., start/stop, speed reference, fault contacts) to the control terminals as required by your application.

Refer to the drive's product label (Figure 3.2) for specific voltage and current ratings.

5. OPERATING INSTRUCTIONS

The PowerFlex 525 drive can be operated via its integrated Human Interface Module (HIM), remote I/O, or network communication.

5.1. Basic Operation via HIM

The HIM (Figure 3.1) allows for local control and parameter adjustment.

1. **Power On:** Apply power to the drive. The HIM display will illuminate.
2. **Start/Stop:** Use the **Start** button to initiate motor operation and the **Stop** button to halt it.
3. **Speed Adjustment:** Use the Up/Down arrow buttons to adjust the motor speed (frequency) if configured for local speed control.
4. **Parameter Navigation:** Use the **Sel** (Select) button to enter menus and confirm selections, and the **Esc** (Escape) button to exit menus or cancel operations.

5.2. Initial Power-Up and Configuration

Upon initial power-up, it is recommended to perform a basic configuration:

- Verify motor data parameters (e.g., motor nameplate voltage, current, frequency, RPM).
- Set acceleration and deceleration times.
- Configure control source (HIM, I/O, network) and speed reference source.

Consult the Allen-Bradley PowerFlex 525 Programming Manual for detailed parameter descriptions and configuration procedures.

6. MAINTENANCE

Regular maintenance helps ensure reliable operation and extends the life of the drive.

- **Cleaning:** Keep the drive clean and free of dust and debris. Use compressed air to clear ventilation openings. Do not use liquid cleaners directly on the drive.
- **Fan Inspection:** Periodically check cooling fans for proper operation and cleanliness. Replace if noisy or not functioning correctly.
- **Connection Checks:** Annually, inspect all electrical connections for tightness and signs of corrosion or overheating.
- **Environmental Conditions:** Ensure the operating environment remains within specified temperature and humidity ranges.

7. TROUBLESHOOTING

The drive's HIM display will show fault codes or status messages to indicate operational issues. Refer to the official Allen-Bradley PowerFlex 525 User Manual for a comprehensive list of fault codes and their remedies.

7.1. Common Issues

- **No Display/Power:** Check input power connections and fuses.
- **Motor Not Starting:** Verify start command, speed reference, and ensure no active fault conditions. Check motor wiring.
- **Overcurrent Fault:** May indicate motor overload, short circuit, or incorrect acceleration time. Check motor load and parameters.
- **Overvoltage/Undervoltage Fault:** Check input power supply voltage.

Always disconnect power before investigating any internal components.

8. SPECIFICATIONS

The following specifications apply to the Allen-Bradley PowerFlex 525 AC Drive, Model 25B-D2P3N104:

Parameter	Value
Model Number	25B-D2P3N104
Type	AC Drive (Variable Frequency Drive - VFD)
Power Rating	0.75 KW (1 Hp)
Input Voltage	3-Phase, 380-480V AC, 47-63 Hz
Output Voltage	3-Phase, 0-500 Hz
UPC	738060917920
Manufacturer	Allen-Bradley (Rockwell Automation)

9. WARRANTY AND SUPPORT

This product is offered with a **1-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.

For technical support, warranty claims, or further assistance, please contact your supplier or refer to the official Allen-Bradley support channels. When contacting support, please have your model number (25B-D2P3N104) and purchase details readily available.

