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### Walfront JLS B 4T 4.0GB 5.5PB

# Walfront 4KW 5.5KW Variable Frequency Drive (VFD) Instruction Manual

Model: JLS B 4T 4.0GB 5.5PB

## 1. INTRODUCTION

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This manual provides essential information for the safe and efficient operation of your Walfront 4KW 5.5KW Variable Frequency Drive (VFD). This device is designed to control the speed of motors in various industrial applications, offering precise and reliable performance. Please read this manual thoroughly before installation, operation, or maintenance.



Figure 1: Walfront Variable Frequency Drive (VFD) with visible control panel and warning label.

## 2. SAFETY INFORMATION

### **WARNING: Improper installation or operation may cause injury or electric shock.**

- Always ensure the power supply is disconnected before any installation, wiring, or maintenance procedures.
- Wait at least 10 minutes after disconnecting power until the DC Bus capacitors have fully discharged. Verify with a multimeter before touching any components.
- Strictly follow all safety instructions provided in this manual and any local electrical codes.
- Use proper grounding techniques as specified in the installation section to prevent electric shock.
- Do not connect the main power supply to the output terminals (U, V, W). These terminals are for motor connection only.
- Only qualified personnel should perform installation and maintenance.



Figure 2: Internal view of the VFD showing terminal connections and a prominent warning label regarding electrical safety.

### 3. PRODUCT OVERVIEW

The Walfront VFD is a robust and versatile device designed for precise motor speed control. Key features include:

- **Efficient Cooling:** Equipped with a large heat sink and a low-noise fan for effective heat dissipation.
- **Smart Digital Display:** Provides clear and intuitive monitoring and control.
- **User-Friendly Keyboard:** Features a logical layout for convenient operation.
- **Easy Remote Control:** Detachable design allows for flexible remote operation.
- **Wide Application:** Suitable for various industrial uses such as CNC routers, milling machines, drilling machines, and wing spreaders.



Figure 3: The VFD shown in context with examples of its wide range of industrial applications.

## 4. SETUP AND INSTALLATION

Careful installation is crucial for the proper functioning and longevity of the VFD. Ensure all safety precautions are followed.

### 4.1 Unpacking and Inspection

Upon receiving the product, carefully unpack it and inspect for any signs of damage during transit. Report any damage to your supplier immediately.

### 4.2 Mounting

Mount the VFD in a location that meets the environmental requirements specified in Section 7. Ensure adequate space for ventilation and access to terminals.

### 4.3 Wiring

Connect the input power supply (AC380V, 50/60Hz) to the designated input terminals. Connect the motor to the output terminals U, V, W. Ensure all connections are secure and correctly polarized. Refer to the wiring diagram in the full product manual for detailed instructions.

### 4.4 Grounding

Proper grounding is essential for safety and to minimize electromagnetic interference. Connect the VFD to a reliable earth ground using a dedicated grounding terminal. Ensure the grounding wire is of appropriate gauge and securely fastened.

## 5. OPERATING INSTRUCTIONS

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The VFD features an intuitive control panel for easy operation.

### 5.1 Control Panel Overview

The control panel includes a digital display, function buttons (PRG, FUNC), navigation buttons (up, down, left, right, ENTER), and RUN/STOP buttons.





Figure 4: Detailed view of the VFD's user-friendly control panel.

## 5.2 Basic Operation

1. **Power On:** Ensure all connections are correct and secure, then apply power to the VFD. The digital display will illuminate.
2. **Parameter Setting:** Use the PRG (Program) button to enter the parameter setting mode. Navigate through parameters using the up/down arrows and adjust values using the left/right arrows. Press ENTER to confirm changes.
3. **Start Motor:** Press the **RUN** button to start the motor.
4. **Stop Motor:** Press the **STOP** button to stop the motor.
5. **Frequency Adjustment:** Adjust the output frequency (motor speed) using the designated frequency adjustment controls on the panel or via remote input.

## 5.3 Advanced Functions

The VFD supports several advanced functions:

- **Multi-Speed Control:** Features 16 programmable multi-speed control options.
- **Swing Frequency:** Allows for preset frequency, adjustable center frequency, and state memory with recovery after power outage.
- **PID Control:** Built-in PID controller for process control applications.
- **RS485 Communication:** Standard RS485 communication function with multiple protocol options for

linkage synchronization control.

## 5.4 Remote Control

The detachable design of the control panel facilitates convenient remote control operation. Refer to the full manual for instructions on connecting and configuring remote control interfaces.

## 6. MAINTENANCE

Regular maintenance ensures optimal performance and extends the lifespan of your VFD.

### 6.1 Cooling System

The VFD utilizes a large heat sink and a fan for cooling. Periodically inspect the fan and cooling vents for dust accumulation. Clean as necessary to ensure unobstructed airflow. A clogged cooling system can lead to overheating and reduced performance.



Figure 5: Side view of the VFD highlighting the cooling fan and ventilation grilles.

### 6.2 Environmental Conditions

Ensure the VFD operates within the specified environmental conditions to prevent damage. Avoid exposure to direct sunlight, excessive dust, flammable gases, oil mist, and corrosive substances. Maintain ambient

temperature and humidity within the recommended ranges.

### 6.3 Terminal Connections

Periodically check all terminal connections for tightness. Loose connections can cause intermittent operation or damage.

## 7. SPECIFICATIONS

Detailed technical specifications for the Walfront Variable Frequency Drive:

Parameter	Specification
Item Type	Variable Frequency Drive
Material	Aluminum alloy, PC flame retardant
Model	JLS B 4T 4.0GB 5.5PB
Input Voltage	AC380V 50/60Hz
Output Voltage	AC380V 0-320Hz
Input Current (4.0KW)	10.5A
Input Current (5.5KW)	14.6A
Output Current (4.0KW)	9.0A
Output Current (5.5KW)	13.0A
Adaptive Motor Power	4.0KW / 5.5KW
Surrounding Temperature	-10°C to +40°C (derating for 40°C to 50°C)
Surrounding Humidity	5% to 95% RH, no condensation
Surrounding Environment	Indoor (without direct sunlight, dust, flammable gases, oil mist, stain)
Altitude	Derated for use above 1000 meters (10% derating per 1000m increase)
Grade	IP20
Cooling Method	Air cooled, with fan control
Package Dimensions	10.24 x 8.27 x 5.91 inches
Item Weight	3.34 pounds



Figure 6: Product label showing model number and key electrical specifications.

## 8. TROUBLESHOOTING

This section provides general guidance for common issues. For specific error codes or complex problems, refer to the comprehensive troubleshooting guide in the full product manual.

- **No Power:** Check input power connections, circuit breakers, and fuses. Ensure the VFD is correctly wired.
- **Motor Not Running:** Verify motor connections, check VFD parameters (e.g., frequency setting, run command), and ensure no fault codes are displayed.
- **Overheating:** Inspect cooling fan operation and ensure vents are clear. Check ambient temperature and VFD load.
- **Abnormal Noise:** Check motor and VFD mounting for vibrations. Verify motor parameters and load.

If you encounter persistent issues, contact Walfront customer support or a qualified technician.

## 9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the documentation included with your purchase or contact Walfront customer service directly. Ensure you have your product model number

(JLS B 4T 4.0GB 5.5PB) and purchase details available when seeking support.

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