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## KB ELECTRONICS KBAC-29

# KB Electronics KBAC-29 Variable Frequency Drive User Manual

Model: KBAC-29 (Part Number 9529)

## 1. INTRODUCTION

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This manual provides essential information for the safe and effective installation, operation, and maintenance of the KB Electronics KBAC-29 Variable Frequency Drive (VFD). The KBAC-29 is designed to control the speed of AC induction motors, offering precise control and energy efficiency. Please read this manual thoroughly before attempting to install or operate the unit.

## 2. SAFETY INFORMATION

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### **WARNING: Risk of Electric Shock and Injury!**

- Installation and maintenance should only be performed by qualified personnel familiar with electrical wiring and safety procedures.
- Always disconnect all power sources to the VFD and the motor before performing any installation, wiring, or maintenance. Wait for capacitors to discharge completely.
- Ensure proper grounding of the VFD and motor according to local and national electrical codes.
- Do not operate the VFD with damaged wiring or if the enclosure is open or compromised.
- Protect the unit from moisture, dust, and corrosive environments unless specifically rated for such conditions. The KBAC-29 features a NEMA 4X / IP 65 enclosure for enhanced protection.
- Wear appropriate personal protective equipment (PPE) when working with electrical equipment.

## 3. PRODUCT OVERVIEW

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The KBAC-29 is a robust AC motor speed control unit designed for demanding industrial applications. Its front panel provides intuitive controls for speed adjustment, direction, and operational modes.



**Figure 1:** Front Panel of the KBAC-29 AC Motor Speed Control. The image displays the front panel of the KBAC-29 AC Motor Speed Control. Key features include a large speed control dial (0-100%), Power and Status indicator LEDs, Forward/Reverse/Auto/Manual selector switches, a Start/Stop button, and a main Power switch. The unit is housed in a NEMA 4X / IP 65 enclosure, indicating its suitability for harsh environments.

### Front Panel Controls:

- **Speed Control Dial:** Adjusts motor speed from 0% to 100%.
- **Power LED:** Indicates when the unit is receiving power.
- **Status LED:** Provides operational status feedback.
- **Forward/Reverse/Auto/Manual Switches:** Selects motor direction and operational mode.
- **Start/Stop Button:** Initiates or halts motor operation.
- **Main Power Switch:** Toggles the primary power to the unit.

## 4. SETUP AND INSTALLATION

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### 4.1 Mounting

- Mount the VFD vertically on a flat, stable surface to ensure proper heat dissipation.
- Allow adequate clearance around the unit for ventilation and access to wiring terminals. Refer to the technical specifications for recommended clearances.
- Use appropriate fasteners to secure the unit through the mounting holes provided.

### 4.2 Wiring

All wiring must comply with local and national electrical codes. Consult a qualified electrician for installation.

- **Input Power:** Connect the incoming AC power supply to the designated input terminals. The KBAC-29 supports 110-120V (1-Phase) or 200-240V (1-Phase or 3-Phase) input. Ensure the correct voltage is applied.
- **Motor Connections:** Connect the motor leads to the VFD's motor output terminals. Ensure proper phase rotation if applicable.
- **Grounding:** Establish a solid earth ground connection to the VFD's ground terminal.
- **Control Wiring (Optional):** If external control signals (e.g., remote start/stop, speed reference) are used, connect them to the appropriate control terminals as detailed in the full product manual.

## 5. OPERATING INSTRUCTIONS

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### 5.1 Powering On

1. Ensure all wiring connections are secure and correct.
2. Turn the main Power switch on the VFD to the 'I' (ON) position. The Power LED should illuminate.
3. Observe the Status LED for any error indications.

### 5.2 Speed Control

Rotate the large Speed Control Dial on the front panel to adjust the motor's output speed. The dial is marked from 0 to 100, representing the percentage of maximum output frequency.

### 5.3 Direction and Mode Selection

Use the selector switches to choose the desired operational mode and motor direction:

- **FORWARD:** Motor rotates in the forward direction.
- **REVERSE:** Motor rotates in the reverse direction.
- **AUTO:** Enables external control signals for automatic operation.
- **MANUAL:** Enables control directly from the VFD's front panel.

### 5.4 Start/Stop Function

Press the 'START' button to begin motor operation. Press the 'STOP' button to halt motor operation. Ensure the desired speed and direction are set before starting.

## 6. MAINTENANCE

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Regular maintenance ensures optimal performance and longevity of your KBAC-29 VFD.

- **Cleaning:** Periodically clean the exterior of the VFD with a soft, dry cloth. Do not use solvents or abrasive cleaners. Ensure ventilation openings are free from dust and debris.
- **Inspection:** Regularly inspect all wiring connections for tightness and signs of wear or damage. Check for any unusual noises or odors during operation.
- **Environment:** Ensure the operating environment remains within the specified temperature and humidity ranges. Protect the unit from direct sunlight and excessive vibration.
- **Fan Check (if applicable):** If the unit includes a cooling fan, ensure it operates freely and is not obstructed.

## 7. TROUBLESHOOTING

This section provides solutions to common operational issues. For problems not listed here, contact technical support.

Problem	Possible Cause	Solution
VFD does not power on.	No input power; Main power switch off; Blown fuse/breaker.	Check power supply; Ensure main switch is ON; Check and reset circuit breaker or replace fuse.
Motor does not start.	STOP button engaged; Incorrect mode selected (e.g., AUTO without external signal); Motor wiring issue.	Press START; Select MANUAL mode or verify external control signal; Check motor wiring connections.
Motor runs at incorrect speed.	Speed control dial setting; External speed reference issue.	Adjust speed control dial; Verify external speed reference signal if in AUTO mode.
Status LED indicates fault.	Overload, overvoltage, undervoltage, or other internal fault.	Refer to the full product manual for specific fault codes; Disconnect power, wait, then reapply; Check motor load.

## 8. TECHNICAL SPECIFICATIONS

Key specifications for the KBAC-29 Variable Frequency Drive:

Feature	Specification
Model Number	KBAC-29
Part Number	9529
Horsepower (HP)	2-3 HP
Input Phase	1-Phase or 3-Phase
Input Voltage	110-120V; 200-240V
Enclosure Rating	NEMA 4X / IP 65

Feature	Specification
Dimensions (Package)	12.2 x 9.84 x 8.66 inches
Item Weight	12 pounds
Manufacturer	KB Electronics

## 9. WARRANTY INFORMATION

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KB Electronics products are covered by a manufacturer's warranty against defects in materials and workmanship. The specific terms and duration of the warranty may vary. Please refer to the warranty card included with your product or visit the official KB Electronics website for detailed warranty information and registration procedures.

## 10. SUPPORT AND CONTACT

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For technical assistance, troubleshooting beyond this manual, or inquiries regarding parts and service, please contact KB Electronics customer support. Have your model number (KBAC-29) and serial number ready when contacting support.

**KB Electronics Official Website:** [www.kbelectronics.com](http://www.kbelectronics.com)