

KBAC SERIES

ADJUSTABLE FREQUENCY DRIVES
FOR 3-PHASE AC MOTORS
NEMA-4X / IP-65

Washdown and Watertight for Indoor and Outdoor use

Models KBAC-24D, 27D, 29, 45, 48

Rated for 208-230 and 400/460 Volt 50 & 60 Hz

3-Phase AC Induction Motors from Subfractional thru 5 HP

Operates from 115, 208/230, and 400/460 Volt 50/60 Hz AC Line

TYPICAL APPLICATIONS



- Conveyors • Feeders • HVAC • Pumps
- Portable Equipment used with GFCIs¹



STANDARD FEATURES

- **Industrial Duty Die-Cast Aluminum Case with Hinged Cover:** Available in dark gray finish or FDA approved white finish.
- **Simple to Operate:** Does not require programming. Uses trimpots and jumpers, which are factory set for most applications.
- **Motor HP Selection Jumper:** Allows the drive to be used on a wide range of motor horsepower without recalibration.
- **Diagnostic LEDs:** Power on (POWER) and drive status (STATUS).
- **Run/Fault Relay Output Contacts:** Can be used to turn on or off equipment or to signal a warning if the drive is put into the Stop Mode or a fault has occurred.
- **Start/Stop Switch:** Provides electronic start and stop functions.
- **Barrier Terminal Block:** Facilitates wiring of motor, AC line, and Run/Fault Relay Output Contacts.
- **Jumper Selection of Drive Output Frequency:** Increases the motor speed up to two times the rated RPM.
- **Ride-Through:** Provides smooth recovery to the previous set speed during a momentary power loss (of less than 2 seconds).
- **Holding Torque at Zero Speed:** Resists motor shaft rotation when the drive is in Stop Mode.
- **GFCI Operation.**¹

PERFORMANCE FEATURES

- **Power Start™:** Provides more than 200% starting torque which ensures startup of high frictional loads.
- **Slip Compensation with Static Auto-Tune and Boost:** Provides excellent load regulation over a wide speed range.
- **Speed Range:** 60:1

PROTECTION FEATURES

- **Motor Overload (I²t) with RMS Current Limit:** Provides motor overload protection which prevents motor burnout and eliminates nuisance trips.²
- **Electronic Inrush Current Limit (EICL™):** Eliminates harmful inrush AC line current during startup.
- **Short Circuit:** Shuts down the drive if a short circuit occurs at the motor (phase-to-phase).
- **Regeneration:** Eliminates tripping due to high bus voltage caused by rapid deceleration of high inertial loads.
- **Undervoltage and Overvoltage:** Shuts down the drive if the AC line input voltage goes above or below the operating range.
- **MOV Input Transient Suppression.**
- **Microcontroller Self Monitoring and Auto-Reboot.**

TRIMPOT ADJUSTMENTS

- **Minimum Speed (MIN)**
- **Maximum Speed (MAX)**
- **Acceleration (ACC)**
- **Deceleration (DECEL)³**
- **Slip Compensation (COMP)**
- **Current Limit (CL)**
- **Boost (BOOST)**
- **Jog (JOG)**

DESCRIPTION

The KBAC Adjustable Frequency Drives are variable speed controls housed in a rugged NEMA-4X / IP-65 washdown and watertight die-cast aluminum enclosure. They are designed to operate 208 – 230 and 400/460 Volt 50 & 60 Hz 3-phase AC induction motors from subfractional thru 5 HP. The sine wave coded Pulse Width Modulated (PWM) output operates at a carrier frequency of 16 kHz, which provides high motor efficiency and low noise. Adjustable Linear Acceleration and Deceleration make the drive suitable for soft-start applications.

Due to its user-friendly design, the KBAC is easy to install and operate. Tailoring to specific applications is accomplished with selectable jumpers and trimpots, which eliminate the computer-like programming required on other drives. However, for most applications no adjustments are necessary. For more advanced programming, PC based Drive-Link™ software is available.

Main features include adjustable RMS Current Limit and I²t Motor Overload Protection.² In addition, Adjustable Slip Compensation with Static Auto-Tune and Boost provides high torque and excellent load regulation over a wide speed range. Power Start™ delivers over 200% motor torque to ensure startup of high frictional loads. Electronic Inrush Current Limit (EICL™) eliminates harmful AC line inrush current. A Run/Fault Relay is provided, which can be used to turn on or off equipment or to signal a warning if the drive is put into the Stop Mode or if a fault has occurred. The drive is suitable for machine or variable torque (HVAC) applications. Also, a jumper is provided for selection of Regenerative or DC Injection Braking.

Standard front panel features include diagnostic LEDs for “Power On” and “Drive Status”, a Start/Stop Switch, and a Main Speed Potentiometer. Other features include a Barrier Terminal Block to facilitate wiring of the AC line and motor, adjustable trimpots (MIN, MAX, ACCEL, DECEL, COMP, CL, JOG, BOOST), customer selectable jumpers (Line Voltage (dual voltage models only), Motor Horsepower, Automatic Ride-Through / Manual Start, Motor Frequency, Frequency Multiplier, Fixed/Adjustable Boost, Regenerative/Injection Braking, “Run” or “Fault” Output Relay Operation, NO/NC Stop Contact, Constant/Variable Torque, I²t Overload Selection).

Optional accessories include: Forward-Stop-Reverse Switch, On/Off AC Line Switch, Run-Stop-Jog Switch, Signal Isolator, Auto/Manual Switch, Class “A” AC Line Filter, Multi-Speed Board, Programming Kit, Modbus Communication Module, and Liquidtight Fittings. A connector is provided for easy installation of accessories.

Custom software: All models can be factory programmed for applications which require special timing, PLC functions, and GFCI operation – Contact our Sales Department.

* Requires CE approved RFI Filter. See AC Line Filters, in Optional Accessories.

Notes: 1. Requires optional software. 2. UL approved as an electronic overload protector for motors.

3. When the drive is set for DC Injection Braking, the DECEL Trimpot is used to adjust the braking intensity and time.



Automation and Control