KBAC
Hybrid Drive™
A Digital AC Drive with Analog Interface
Rugged Die-Cast Aluminum NEMA 4X / IP65 Enclosure with Hinged Cover
Washdown and Watertight for Indoor and Outdoor Use

Primary Features
Horsepower 1/8 to 5 HP, Jumper Selectable
115/230/460 VAC - 1ph & 3ph Input
Output 230/460 VAC - 3ph for AC Induction Motors
Starting Torque 200%
Diagnostic LED Status Indicators
FDA Approved Finish*
GFCI Compatible
Allows equipment to operate with Ground Fault Circuit Interruption circuit breakers or outlets.
(Factory programming required.)

Benefits
Saves Time
Easy to Install and Simple to Operate. Does not require commissioning.
Up and running in less than 10 minutes.

Motors Last Longer
Proprietary CL Software
Provides overload protection, prevents motor burnout and eliminates nuisance tripping. UL approved as electronic overload protector for motors.

Energy Saving
Uses only the power the application requires. Replacing constant speed with variable speed will significantly reduce energy costs.

Customization for OEM’s
When an off the shelf drive does not meet your needs, KB will work with you to provide a custom drive solution, Ready to Use, “Out-of-the-Box.”
Customization includes: Pre-calibrating or programming of a stock control, adding a custom label or branding, custom software, PLC functions or designing a new control.

*White cases only.
Additional Features

Sensorless Flux Vector Control
Flux Vector Compensation with Static Auto-Tune provides excellent speed regulation with high torque loads throughout the entire speed range. Auto energy saving at light loads. Smooth motor torque.

Electronic Inrush Current Limit (EICL™) Protection
Eliminates harmful inrush AC line current during power up.

Run/Fault Relay
Can be used to turn equipment on or off, to signal a warning if the drive is put into “Stop” mode, or to signal if a fault has occurred.

Start/Stop Switch
Provides electronic “Start” and “Stop” functions.

Ride-Through
Provides smooth recovery to the previous set speed during a momentary power loss.

Holding Torque at Zero Speed
Resists motor shaft rotation when the drive is in “Stop” mode.

Regeneration Protection
Eliminates tripping due to high bus voltage caused by rapid deceleration of high inertial loads.

Undervoltage and Overvoltage Protection
Shuts down the drive if the AC line input voltage goes above or below the operating range.

Short Circuit Protection
Shuts down the drive if a short circuit occurs at the motor (phase-to-phase).

Trimpot Adjustments
Min. Speed, Max. Speed, Accel, Decel, DC Injection Brake, Current Limit, Boost, Jog, Slip Comp.

Jumper Selections
AC Line Input Voltage, Horsepower, Auto Ride-Through, 50Hz/60Hz Motor Frequency, 1X/2X Motor RPM, Boost Mode, Brake Mode, Run/Fault Output Relay, NO/NC Stop Contact, Constant/Variable Torque Mode, Constant/Variable Torque I²t.

Drive Options

On/Off AC Line Switch
Disconnects the AC line.

Forward-Stop-Reverse Switch
Provides motor reversing and stop functions.

Run-Stop-Jog Switch
Selects speed setting from either the Main Speed Potentiometer or the JOG Trimpot.

Signal Isolator
Provides isolation between a non-isolated signal source and the drive.

Auto/Manual Switch
When used with the Signal Isolator, it selects the remote process signal or the Main Speed Potentiometer.

Class “A” (CE) RFI Filter
Installs inside the drive.

Liquidtight Fittings
Provides a liquid-tight seal for wiring the drive. Kit includes necessary liquidtight fittings.

Visit knelectronics.com to learn about Build-A-Drive™, KB’s New AC Inverter Program and to watch the new KBAC installation demo video.
### Ratings

**115/230 VAC 1-Phase Input • 230 VAC 3-Phase Output**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Part No. 1</th>
<th>Part No. 2</th>
<th>HP, (kW)</th>
<th>Amps</th>
<th>Lbs.</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBAC-24D</td>
<td>9987</td>
<td>9988</td>
<td>1, (0.75)</td>
<td>3.6</td>
<td>5.9</td>
<td>2.7</td>
</tr>
<tr>
<td>KBAC-27D**</td>
<td>9520</td>
<td>9521</td>
<td>2, (1.5)</td>
<td>6.7</td>
<td>10.3</td>
<td>4.7</td>
</tr>
</tbody>
</table>

**230 VAC 1-Phase Input • 230 VAC 3-Phase Output**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Part No. 1</th>
<th>Part No. 2</th>
<th>HP, (kW)</th>
<th>Amps</th>
<th>Lbs.</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBAC-29 (1P)</td>
<td>10001</td>
<td>10002</td>
<td>3, (2.25)</td>
<td>9</td>
<td>10.3</td>
<td>4.7</td>
</tr>
</tbody>
</table>

**230 VAC 1 and 3-Phase Input • 230 VAC 3-Phase Output**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Part No. 1</th>
<th>Part No. 2</th>
<th>HP, (kW)</th>
<th>Amps</th>
<th>Lbs.</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBAC-29***</td>
<td>9528</td>
<td>9529</td>
<td>3, (2.25)</td>
<td>9</td>
<td>10.3</td>
<td>4.7</td>
</tr>
</tbody>
</table>

**460 VAC 3-Phase Input • 460 VAC 3-Phase Output**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Part No. 1</th>
<th>Part No. 2</th>
<th>HP, (kW)</th>
<th>Amps</th>
<th>Lbs.</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBAC-45</td>
<td>9530</td>
<td>9531</td>
<td>3, (2.25)</td>
<td>5.5</td>
<td>10.3</td>
<td>4.7</td>
</tr>
<tr>
<td>KBAC-48</td>
<td>9540</td>
<td>9541</td>
<td>5, (3.75)</td>
<td>8.3</td>
<td>10.3</td>
<td>4.7</td>
</tr>
</tbody>
</table>

**115 VAC Rating:** 1.5 HP (1.13 kW), 5.5 Amps.

*FDA approved (white cases only).*** Rated 2 HP (1.5 kW), 6.7 Amps with 1-Phase Input.

### Specifications

- **Maximum Load (% of Current Overload for 2 Minutes)**: 150
- **Carrier, Switching Frequency (kHz)**: 16, 8
- **Output Frequency Resolution (Hz)**: 0.06
- **Minimum Output Frequency to Motor (Hz)**: 0.3
- **Acceleration Time (Seconds)**: 0.3 – 20
- **Deceleration Time (Seconds)**: 0.3 – 20
- **Speed Range (Ratio)**: 60:1
- **Speed Regulation (30:1 Speed Range, 0 – Full Load) (% Base Speed)**: 2.5
- **Stalled Motor Trip Time (Seconds)**: 6
- **Braking**: Regenerative*
- **Operating Temperature Range (°C / °F)**: 0 – 40 / 32 – 104
- **Storage Temperature (°C / °F)**: -25 – +85 / -13 – +185

*DC Injection Braking – Jumper selectable.