Designed and Assembled in USA

KBAC

Hybrid Drive™
A Digital AC Drive with Analog Interface

Primary Features
Horsepower 1/8 to 5 HP, Jumper Selectable
1Ø & 3Ø Input 115/230/460 VAC, 50/60 Hz
3Ø Output 230/460 VAC
200% Starting Torque
Diagnostic LED Status Indicators
FDA Approved Finish*

Benefits
Saves Time
Easy to Install and Simple to Operate
Does not require programming or 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.

Economical to Use: Indoors or Out
Eliminates secondary enclosure
No holes to drill, no switches to install.
No need to derate drive for high starting torque applications.

Adjustable Soft Start with Variable Speed

Customization for OEM's
When an off the shelf drive does not meet your needs, we 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.

GFCl Software, with factory programming, allows the equipment to operate with Ground Fault Circuit Interruption circuit breakers or outlets.

*White case 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 kbelectronics.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.</th>
<th>Ratings</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBAC-24D</td>
<td>9987 9988</td>
<td>1, (0.75)</td>
<td>3.6, 5.9</td>
</tr>
<tr>
<td>KBAC-27D</td>
<td>9520 9521</td>
<td>2, (1.5)</td>
<td>6.7, 10.3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Part No.</th>
<th>Ratings</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBAC-29 (1P)</td>
<td>10001 10002</td>
<td>3, (2.25)</td>
<td>9.0, 10.3</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.</th>
<th>Ratings</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBAC-29**</td>
<td>9528 9529</td>
<td>3, (2.25)</td>
<td>9.0, 10.3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Part No.</th>
<th>Ratings</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBAC-45</td>
<td>9530 9531</td>
<td>3, (2.25)</td>
<td>4.6, 10.3</td>
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<tr>
<td>KBAC-48</td>
<td>9540 9541</td>
<td>5, (3.75)</td>
<td>8.3, 10.3</td>
</tr>
</tbody>
</table>

*FDA approved (white case only). ** Rated 2 HP, 6.7 Amps w/ 1-Phase Input.

### Specifications

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

*Jumper selectable.