KBMA Hybrid Drive™
A Digital AC Drive with Analog Interface
Rugged Aluminum NEMA 1 / IP 50 Enclosure

Primary Features
Horsepower 1/8 to 1 HP, Jumper Selectable
1Ø Input 115/230 VAC, 50/60 Hz
3Ø Output 230 VAC
200% Starting Torque
Front Panel Power On/Off Switch
Class “A” (CE) RFI Filter*

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
Eliminates secondary enclosure
No holes to drill, no switches to install.
No need to derate drive for high starting torque applications.
Combines Soft Start with Variable Speed
Adjustable Soft Start.

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

*KBMA-240F.

KB Electronics, Inc.
kbelectronics.com • info@kbelectronics.com

Automation and Control

Designed and Assembled in USA

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com
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.

On/Off AC Line Switch
Disconnects the AC line.

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, Current Limit, Slip Comp.

Jumper Selections
AC Line Input Voltage, Horsepower, Auto/Manual Start, 50Hz/60Hz Motor Frequency, 1X/2X Motor RPM, Run/Fault Output Relay.

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

Visit kbelectronics.com
to learn about Build-A-Drive™, KB’s New AC Inverter Program.
Ratings

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

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Part No.</th>
<th>HP (kW)</th>
<th>Amps</th>
<th>Lbs.</th>
<th>kg</th>
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<tbody>
<tr>
<td>KBMA-24D</td>
<td>9533</td>
<td>1, (0.75)</td>
<td>3.6</td>
<td>2.42</td>
<td>1.09</td>
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<td>KBMA-24DF*</td>
<td>9534</td>
<td>1, (0.75)</td>
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</table>

*“F” Suffix for Built-In Class “A” (CE) RFI (EMI) AC Line Filter.

**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:** DC Injection*
- **Operating Temperature Range (°C / °F):** 0 – 40 / 32 – 104
- **Storage Temperature (°C / °F):** -25 – +85 / -13 – +185

*Requires factory programming.

**Dimensions – (Inches/mm)**

![Dimensions Diagram]