KBVF

Hybrid Drive™
A Digital AC Drive with Analog Interface

IP20 Enclosure

Primary Features
Horsepower 1/10 to 5 HP
115/230/460 VAC - 1ph & 3ph Input
Output 230/460 VAC - 3ph
200% Starting Torque
Power and Status Indicators

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.

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.

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.

Drive Options

Drive-Link™ Programming Kit
Allows PC programming.

SIVFR Signal Isolator and Run Fault Relay*
Provides isolation between a non-isolated signal source and the drive.

DIVF Modbus Serial Communication Module
Class “A” or “B” (CE) RFI Filter
Installs on drive.

DBVF Dynamic Brake Module
Provides faster braking.

Multi-Speed Board
Provides up to four independently adjustable preset speeds.

KBRK Remote Digital Keypad
Allows remote operation and programming of drive**.

IOVF Input/Output Multi-Function Module
Adds up to 17 points of additional I/O.

Main Speed Potentiometer
5 kΩ (supplied).

*Standard on 460 VAC models. ** OEM applications only.

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

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

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Part No.</th>
<th>Ratings</th>
<th>Dimensions – Inches, (mm)</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBVF-13</td>
<td>9957</td>
<td>1/2, (0.37)</td>
<td>3.9, (99)</td>
<td>4.3, (109)</td>
</tr>
<tr>
<td>KBVF-14</td>
<td>9977</td>
<td>1, (0.75)</td>
<td>4.0, (102)</td>
<td>4.7, (119)</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>Dimensions – Inches, (mm)</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBVF-23</td>
<td>9958</td>
<td>1/2, (0.37)</td>
<td>3.9, (99)</td>
<td>4.3, (109)</td>
</tr>
<tr>
<td>KBVF-24</td>
<td>9978</td>
<td>1, (0.75)</td>
<td>4.0, (102)</td>
<td>4.7, (119)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
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<th>Model No.</th>
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<th>Ratings</th>
<th>Dimensions – Inches, (mm)</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBVF-21D</td>
<td>9581</td>
<td>1/10, (0.07)</td>
<td>1.0, (25)</td>
<td>3.9, (99)</td>
</tr>
<tr>
<td>KBVF-22D</td>
<td>9572</td>
<td>1/4, (0.18)</td>
<td>1.5, (38)</td>
<td>3.9, (99)</td>
</tr>
<tr>
<td>KBVF-23D</td>
<td>9959</td>
<td>1/2, (0.37)</td>
<td>2.4, (61)</td>
<td>3.9, (99)</td>
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<tr>
<td>KBVF-24D</td>
<td>9979</td>
<td>1, (0.75)</td>
<td>4.0, (102)</td>
<td>4.7, (119)</td>
</tr>
<tr>
<td>KBVF-26D</td>
<td>9496</td>
<td>1 1/2, (3.81)</td>
<td>5.5, (140)</td>
<td>4.7, (119)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Part No.</th>
<th>Ratings</th>
<th>Dimensions – Inches, (mm)</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBVF-23P</td>
<td>9676</td>
<td>1/2, (0.37)</td>
<td>3.9, (99)</td>
<td>4.3, (109)</td>
</tr>
<tr>
<td>KBVF-24P</td>
<td>9677</td>
<td>1, (0.75)</td>
<td>4.0, (102)</td>
<td>4.7, (119)</td>
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<tr>
<td>KBVF-27*</td>
<td>9591</td>
<td>2, (1.5)</td>
<td>6.7, (170)</td>
<td>4.7, (119)</td>
</tr>
<tr>
<td>KBVF-29*</td>
<td>9593</td>
<td>3, (2.25)</td>
<td>9.0, (230)</td>
<td>4.7, (119)</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>Dimensions – Inches, (mm)</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBVF-42</td>
<td>9645</td>
<td>1, (0.75)</td>
<td>4.1, (103)</td>
<td>9.31, (236)</td>
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<tr>
<td>KBVF-45</td>
<td>9590</td>
<td>3, (2.25)</td>
<td>4.6, (119)</td>
<td>8.75, (222)</td>
</tr>
<tr>
<td>KBVF-48</td>
<td>9592</td>
<td>5, (3.75)</td>
<td>8.3, (211)</td>
<td>8.75, (222)</td>
</tr>
</tbody>
</table>

*Rated 2 HP (1.5 kW), 6.7 Amps with 1-Phase Input. **Contains SIVFR signal input isolation and Run/Fault output relay.

### 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 available – requires factory programming.

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Automation and Control

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