

# KBWA

## Hybrid Drive™

### A Digital AC Drive with Analog Interface

KBWA-22D Non-Vented NEMA 1 / IP 50 Enclosure

KBWA-23D Vented NEMA 1 / IP 20 Enclosure

#### Primary Features

Horsepower 1/8 to 1/2 HP\*  
Input 115 and 230 VAC - 1ph  
Output 230 VAC - 3ph  
Starting Torque 200%  
Front Panel Power On/Off Switch

#### GFCI Compatible

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

#### 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.

##### 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.

\*Lower horsepower models available (KBWA-21D, 2P3D, 2P6D).



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## 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.

### Jumper Selections

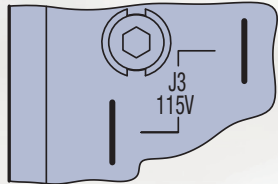
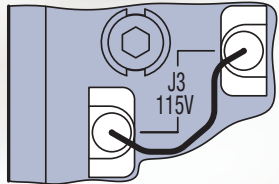
AC Line Input Voltage, 50Hz/60Hz, Motor Frequency, 1X/2X Motor RPM, Automatic/Manual Start Mode, Forward/Reverse Speed Select.

## Drive Option

### Supplied Forward-Stop-Reverse Switch

Provides motor reversing and stop functions.

## Drive Input Voltage Settings

Drive Set for 208/230 Volt AC Line Input (J3 Not Installed) (Factory Setting)	Drive Set for 115 Volt AC Line Input (J3 Installed)
	

Visit [kbelectronics.com](http://kbelectronics.com)

to learn about Build-A-Drive™, KB's New AC Inverter Program.



## Applications

- Actuators • Air Cleaners • Amusement Rides
- Ball Pitching Machines • Blowers • Boat Lifts
- Bowling Alley Lane Cleaners • CNC • Conveyors
- Door and Gate Openers • Drilling • Duct Cleaners
- Dumbwaiters • Elevators and Hoists
- Exercise Equipment • Fabric Processing • Fans
- Feeders • Film Processing • Floor Cleaning
- Food Processing • Garment Cutting
- Grinding and Polishing • Hoppers • Horse Walkers
- HVAC • Indexers • Irrigation • Laminating
- Lift Station Pumps • Machine Tools
- Medical • Milling • Mixers • Oven Conveyors
- Packaging • Paint Blenders, Shakers, and Sprayers
- Paper Handling • Portable Equipment Used with GFCIs
- Pottery Wheels • Printing • Pumps • Range Hoods
- Sandblasting • Saws • Sewing • Stretch Wrap
- Textile • Treadmills • Therapeutic Vibrators
- Washing Machines • Wave Soldering
- Web Processing • Wheelchair Lifts
- Whole House Vacuums and Attic Fans
- Wire Feeders • Wood and Metal Lathes and Cutters
- Winders and Unwinders



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## Ratings

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

Model No.	Enclosure	Part No.	Ratings		Net Weight	
			HP, (kW)	Amps	Lbs.	kg
KBWA-22D	NEMA 1 / IP 50	9926	1/4, (0.19)	1.5 <sup>1</sup>	1.58	0.72
KBWA-23D	NEMA 1 / IP 20	9946	1/2, (0.37)	2.4 <sup>2</sup>	1.58	0.72

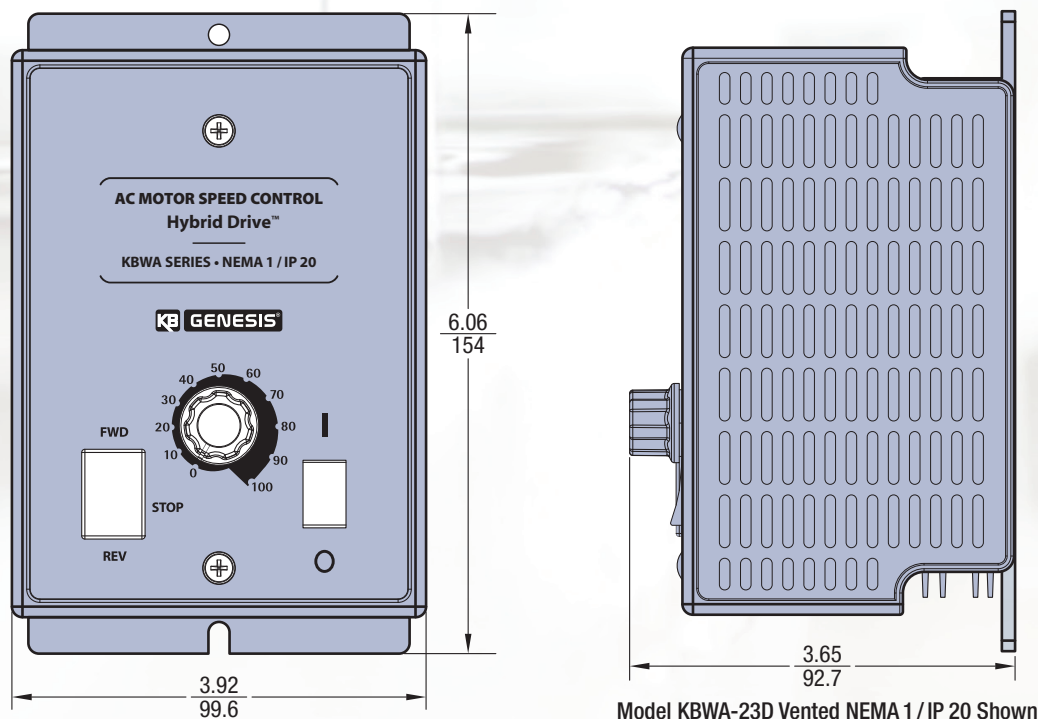
Notes: 1) Rated 1.3 Amps on 115 VAC input. 2) Rated 2.2 Amps on 115 VAC input.

## Specifications

Maximum Load (% of Current Overload for 2 Minutes)	150
Switching Frequency (kHz)	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 – requires factory programming.

## Dimensions – (Inches/mm)

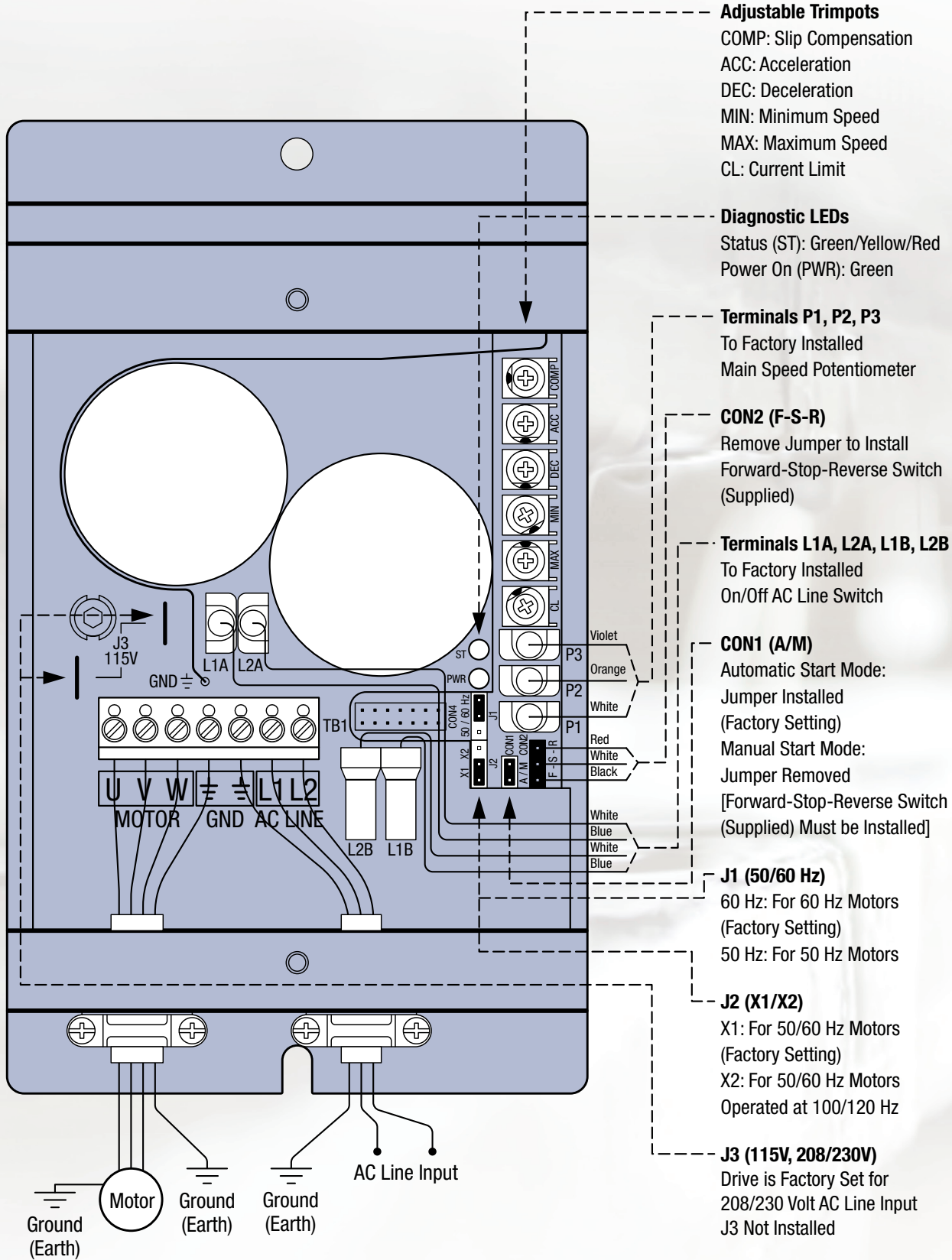


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# Control Layout



Represented by: