KBWD

PULSE WIDTH MODULATED (PWM) WHISPER-DRIVE ™

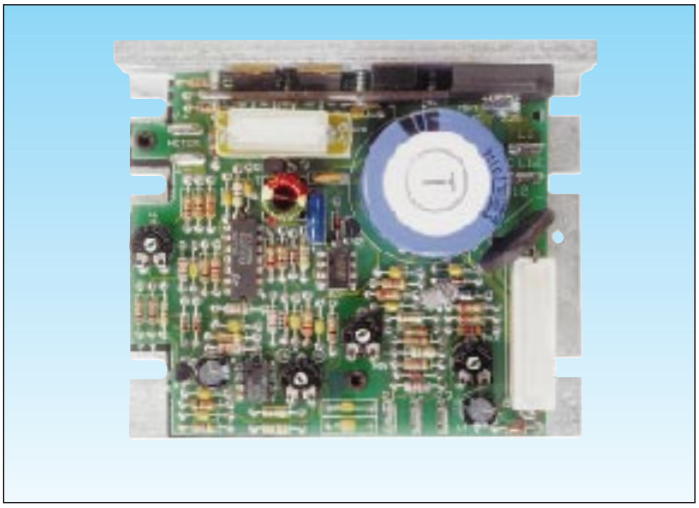
DC Motor Speed Control
MODEL KBWD-13 (P/N 8609)
MODEL KBWD-16 (P/N 8607)

Specifically designed for 130 VDC PM PWM rated motors requiring a 1.0 form factor.

Replaces costly choke and capacitor filtering.

Provides quieter and cooler operation and extended brush life on SCR rated motors.

c UL us CE* PENDING



STANDARD FEATURES

- Plug-in Horsepower Resistor®▲ automatically calibrates IR Comp and Current Limit (CL)
- Short Circuit Protection
- Under Voltage Protection
- Inhibit Circuit

TRIMPOT ADJUSTMENTS

- Minimum Speed (MIN)
- Current Limit (CL)
- IR Compensation (IR)
- Maximum Speed (MAX)

RATINGS

Model #	AC Line Input Voltage (VAC-50/60Hz)	DC Output Voltage (VDC)	Max. DC Output Current (ADC)		Max. Motor Horsepower* (Hp, [KW])
			@100 VDC	@130 VDC	
KBWD-13	115	0 - 130	3.5	3.0	1/3, (0.25)
KBWD-16	115	0 - 130	6.0	5.0	1/2, (0.35)

*Maximum Motor Horsepower is for 90VDC SCR Rated Motors and 130VDC PWM Rated Motors.

PLUG-IN HORSEPOWER RESISTOR® CHART

Motor Armature Current (Amps DC)	Plug-In Horsepower Resistor® (ohms)	90 VDC SCR Rated Motor Horsepower	130 VDC PWM Rated Motor Horsepower
3.3 - 6.0	.1	1/3 -1/2	1/2
2.5	.18	1/4	1/3
1.3 - 2.0	.25	1/8 - 1/6	1/6 -1/4
.7 - 1.0	.51	1/15 - 1/10	1/12 - 1/8
.4 - .6	1.0	1/30 - 1/20	1/20 - 1/15
.1 - .3	2.0	1/50 - 1/100	1/30 - 1/50

▲Notes

(1) For motor current not on chart use next lowest value Plug-in Horsepower Resistor®.
(2) Disregard the Horsepower ranges marked on Plug-in Horsepower Resistor® since they are not correct for PWM controls.
(3) Plug-in Horsepower Resistor® supplied separately.

***** CE Compliance Requires KBRF-200A RFI Filter

DESCRIPTION

The KBWD Pulse Width Modulated (PWM) DC motor speed control provides excellent dynamic response to load variations. The efficient PWM waveform produces an almost pure DC current to the motor (form factor < 1.05) which has several advantages over a conventional SCR control. The PWM significantly lowers audible motor noise and provides longer brush life. It also produces less motor heating which allows a smaller, less costly motor to be used for most applications. Another advantage of PWM is higher output voltage which provides increased output speed. In addition, pulse-by-pulse current sensing provides short circuit protection and prevents control damage due to shorted motors.

A unique feature of the KBWD control is the Plug-in Horsepower Resistor®. It eliminates the need for recalibrating IR Comp and Current Limit when the control is used on various horsepower motors. The control contains armature feedback which provides excellent load regulation.

The control contains quick disconnect terminals as standard. A potentiometer (5K), *isolated* analog signal (0-5 VDC), or PWM microprocessor output can be used to vary the output of the control.

SPECIFICATIONS

Output Voltage Range (VDC)	0 – 130
Speed Range (ratio)	50:1
Operating Frequency (K Hz)	>16
Form Factor (RMS/Avg Amps)	<1.05
Ambient Operating Range Temp.(°C)	0 – 45
Load Regulation (% base speed)	1*
Acceleration Range (secs.) (Fixed .2, 2.5, 7, 10)	2.5
Min Speed Trimpot Range (VDC)	0 – 40
Max Speed Trimpot Range (VDC)	80 – 130
CL Range (% Range Setting)	0 – 200
IR Comp Range (VDC)	0 – 25
AC Line Voltage Regulation (% base speed)	0.5
Analog Input Voltage (voltage following) (VDC)	0 – 5
Speed Potentiometer – 1/4 Watt (ohms)	5K

* Based on motor having linear IR Comp characteristics.

PENTA KB POWER ™

A Complete Line of Motor Drives

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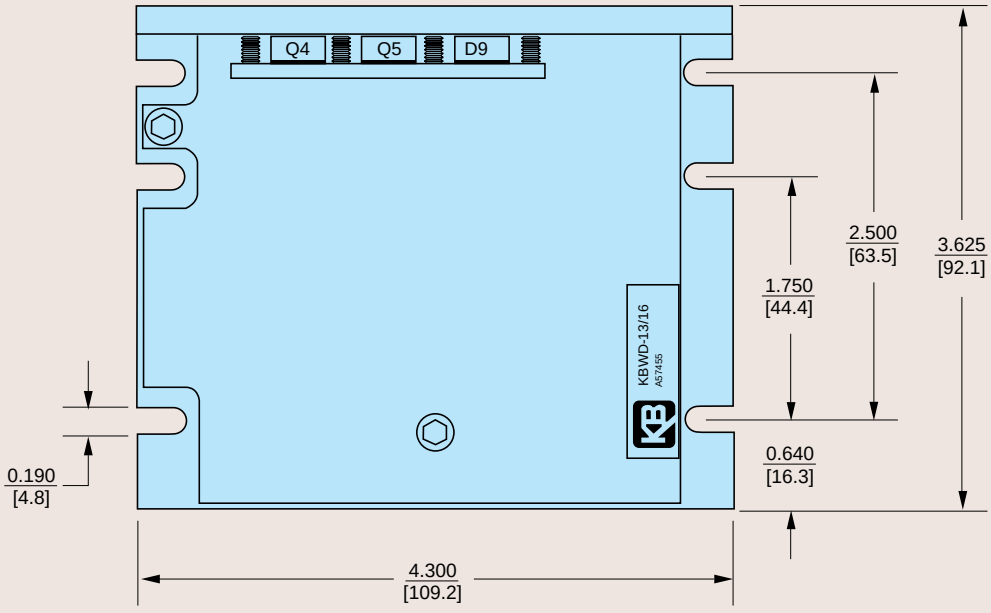
MECHANICAL SPECIFICATIONS

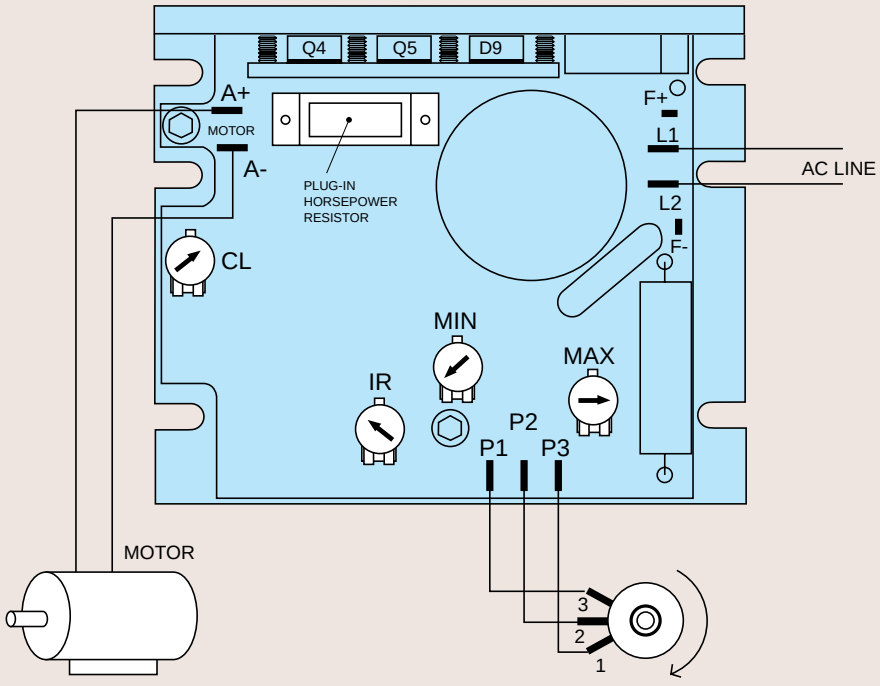
INCHES
[mm]



MAXIMUM HEIGHT IS 2.510 [63.75]

DWG#: B4500-1-00763

CONNECTION DIAGRAM



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KB ELECTRONICS, INC.
12095 NW 39th Street, Coral Springs, FL 33065-2516
(954) 346-4900 • FAX (954) 346-3377
Outside Florida Call TOLL FREE (800) 221-6570
www.kbelectronics.com