

# KBPB™

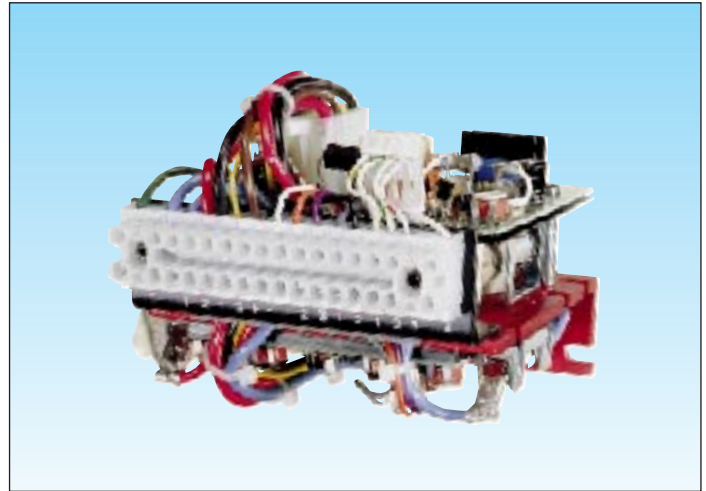
## “CYCLER”

Variable Speed — Run Brake Cycling  
“Instant” Anti-Plug Reversing  
for PM and Shunt DC Motors thru 3 Hp

Patented Overload and Reversing Circuit

### TYPICAL APPLICATIONS

- Back Gauges • Door Openers • Feeders
- Indexers • Robotics • Tapping Machines
- Pumps • Screen Presses • Conveyors



### STANDARD FEATURES

- Plug-in Horsepower Resistor®
- Built-in AC Line Fuse (included), Armature Fuse (distributor supplied)
- Trimpots: MIN, MAX, IR, CL, ACCEL, DECEL and Aux. Speed
- Auto Inhibit®, Inhibit™ and Enable
- MOV Transient Protection
- CL LED Indicator
- Voltage Following
- Tachometer or Armature Feedback

### SPECIFICATIONS

Speed Range (Ratio) .....	50:1
Load Regulation (0 – Full Load, 50:1 Speed Range) (% Base Speed) .....	1*
Line Voltage Regulation (At Full Load, ± 15% Line Variation) (% Base Speed) ..	1/2*
Control Linearity (% Speed vs. Dial Rotation) .....	2
CL/Torque Range (% Full Load) .....	0 – 200
ACCEL/DECEL Time Range (Secs.) .....	.2 – 10
MIN Speed Trimpot Range (% Full Speed) .....	0 – 30*
MAX Speed Trimpot Range (% Full Speed) .....	50 – 110*
Maximum Allowable Ambient Temperature (At Full Rating °C/°F) .....	40/105
Maximum Number of Starts/Stops or Reversals (Operations/Minutes) .....	10**

\* Performance is for 90V PM motors on 115 VAC and 180V PM motors on 230 VAC.  
\*\*Based on a brake time of one (1) second. For increased operations per minute and longer brake time contact factory.

\* CE Compliance Requires KBRF-200A RFI Filter

### DESCRIPTION

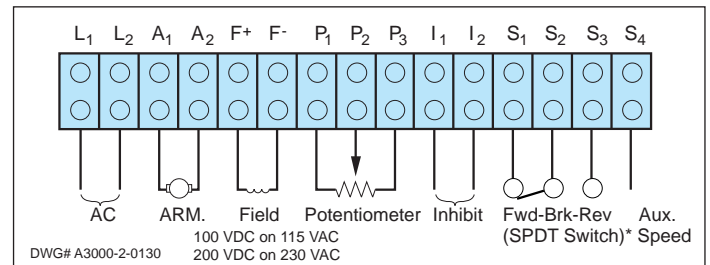
The KBPB™ “cycler” control is designed to provide anti-plug “instant” reversing, solid state dynamic braking and rapid cycling. It combines all of the features of the KBMM™ speed control with the features of the KB APRM®\*. Contact arcing is eliminated since the APRM® allows armature switching to take place only when current levels are near zero. The KBPB contains a built-in barrier terminal block and its compact size makes the control ideal for installation where space is at a premium.

All models are equipped with KB’s exclusive 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 basic ratings of the controls are enhanced with the addition of KB’s Auxiliary Heat Sink. The controls also contain Inhibit™, which allows for electronic switching of the armature voltage, and Auto Inhibit®, which provides rapid, safe switching of the AC line.

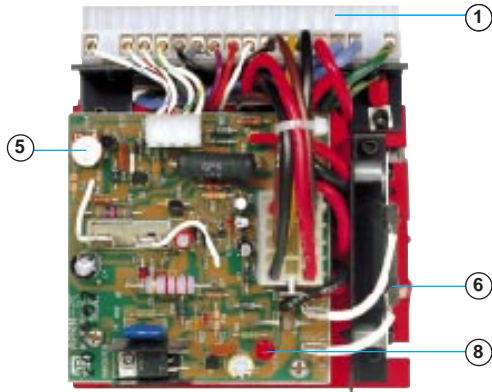
The controls can be used to drive all PM and Shunt Wound DC motors from 0-full speed by three separate methods: a 5K remote speed pot, an auxiliary speed pot (S4 terminal), or voltage following. If the control is to be operated in a voltage following mode, an *isolated* analog signal (0-9VDC) is applied to the input terminals P2 (+) and F (-). Adjustment trimpots are provided for MIN, MAX, IR COMP, CL, ACCEL and DECEL.

\* Patented.

### CONNECTION DIAGRAM



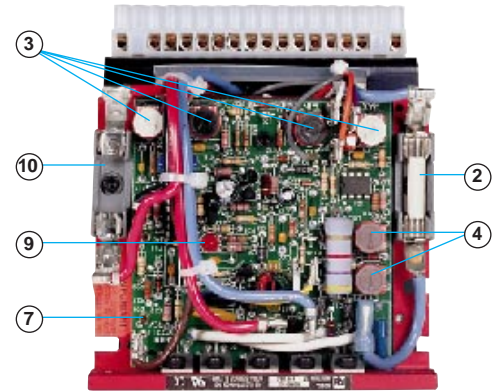
**Note:** Only 10 mA of current is switched. Any switch or relay may be used except a solid state type or a relay with capacitors or R-C networks (snubbers) across its contacts.



TOP VIEW  
(APRM™)

## FEATURES & FUNCTIONS

- (1) Barrier Terminal Block
- (2) AC Line Fuse Included
- (3) Trimpots: MIN, MAX, CL, IR
- (4) Trimpots: ACCEL, DECEL
- (5) Trimpot: Aux. Speed
- (6) Dynamic Brake Resistor
- (7) Plug-in Horsepower Resistor®
- (8) "Brake" LED
- (9) CL LED Indicator
- (10) Armature Fuse (Customer supplied)
- (11) Tach Feedback (not shown)



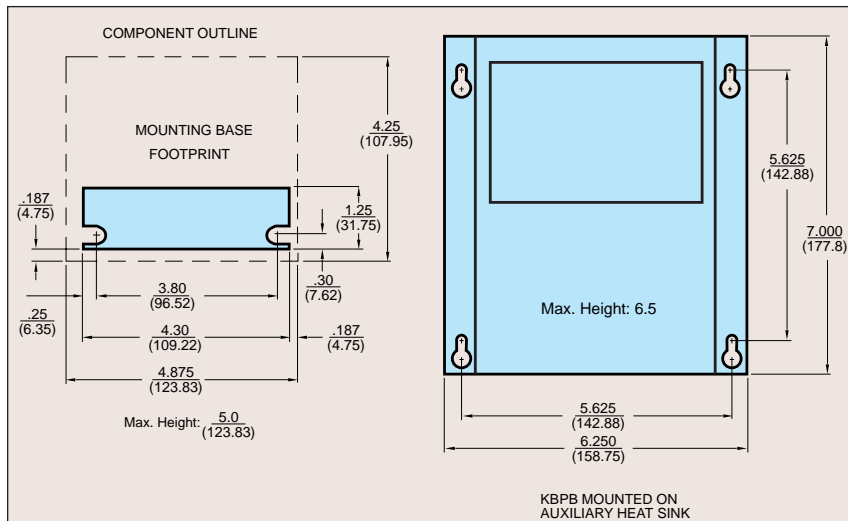
BOTTOM VIEW  
(Speed Control Module)

## ELECTRICAL RATINGS

Model Number	KB Part Number	AC Line Voltage (VAC) ±15% (50/60 Hz)	Motor Voltage (VDC)	Rating Without Auxiliary Heatsink			Rating With Auxiliary Heatsink		
				Max AC Load Current (RMS Amps)	Max DC Load Current (Avg. Amps)	Maximum Horsepower [Hp, (KW)]	Max AC Load Current (RMS Amps)	Max DC Load Current (Avg. Amps)	Maximum Horsepower [Hp, (KW)]
KBPB-125	8900	115	0 - 90	12.0	8.0	0.75, (0.6)	24.0	16.0	1.5, (1.1)
KBPB-225	8901	230	0 - 180	12.0	8.0	1.5, (1.1)	24.0	16.0	3, (2.3)

## MECHANICAL SPECIFICATIONS

INCHES  
[mm]



## PLUG-IN HORSEPOWER RESISTOR® CHART

Motor Horsepower Range		Plug-in-Horsepower Resistor® Resistance Value (ohms)
Armature Voltage 90 - 130 VDC	Armature Voltage 180 VDC	
1/100 - 1/50	1/50 - 1/25	1.0
1/50 - 1/30	1/25 - 1/15	.51
1/30 - 1/20	1/15 - 1/10	.35
1/20 - 1/12	1/10 - 1/6	.25
1/12 - 1/8	1/6 - 1/4	.18
1/8 - 1/5	1/4 - 1/3	.1
1/4	1/2	.05
1/3	3/4	.035
1/2	1	.025
3/4	1½	.015
1*	2*	.01
1½*	3*	.006

\* Must be used with Auxiliary Heat Sink.

## REMOTE POTENTIOMETER



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