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)
- Trim pots: 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/T orque Range
  (% Full Load) .......................................................... 0 – 200
- ACCEL/DECEL Time Range (Secs.) .......................... .2 – 10
- MIN Speed Trim pot Range
  (% Full Speed) .................................................... 0 – 30*
- MAX Speed Trim pot 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
arching 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.

**Based on a brake time of one (1) second. For increased operations per minute and longer brake time contact factory.

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.
**FEATURES & FUNCTIONS**

1. Barrier Terminal Block
2. AC Line Fuse Included
3. Trim pots: MIN, MAX, CL, IR
4. Trim pots: ACCEL, DECEL
5. Trim pot: 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)

**ELECTRICAL RATINGS**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>KB Part Number</th>
<th>AC Line Voltage (VAC) ±15% (50/60 Hz)</th>
<th>Motor Voltage (VDC)</th>
<th>Rating Without Auxiliary Heatsink</th>
<th>Rating With Auxiliary Heatsink</th>
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<tr>
<td>KBPB-125</td>
<td>8900</td>
<td>115</td>
<td>0 - 90</td>
<td>12.0</td>
<td>0.75, (0.6)</td>
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<td>KBPB-225</td>
<td>8901</td>
<td>230</td>
<td>0 - 180</td>
<td>12.0</td>
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**MECHANICAL SPECIFICATIONS**

**PLUG-IN HORSEPOWER RESISTOR® CHART**

<table>
<thead>
<tr>
<th>Motor Horsepower Range</th>
<th>Armature Voltage 90 – 130 VDC</th>
<th>Armature Voltage 180 VDC</th>
<th>Plug-in-Horsepower Resistor® Resistance Value (ohms)</th>
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<td>1/100 – 1/50</td>
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<td>1/15 – 1/10</td>
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* Must be used with Auxiliary Heat Sink.