KBRG-255

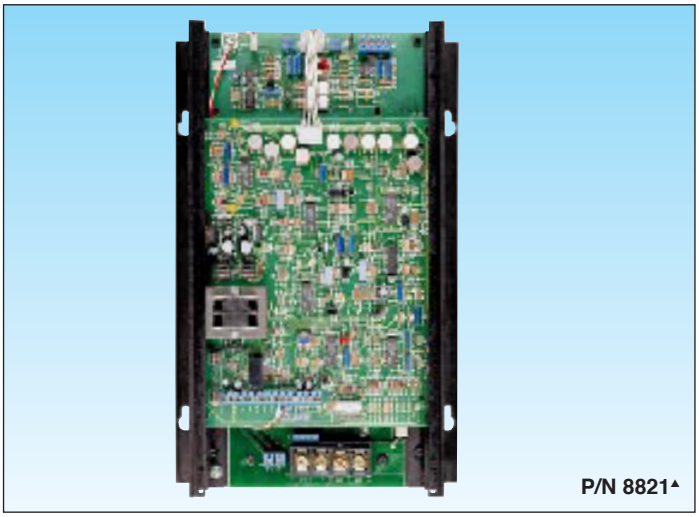
REGENERATIVE DRIVE

FULL WAVE • 4 QUADRANT
For Speed and Torque Control of
PM and Shunt DC Motors

RATED – 5 Hp @ 230 VAC – 50/60 Hz

TYPICAL APPLICATIONS

• Conveyors • Indexers • Packaging Machinery
• Textile Equipment • Positioners • Feeders
• Converting Machinery • Web Control



P/N 8821▲

STANDARD FEATURES

- Enable Circuit
- Two (2) or Three (3) Wire Start/Stop
- Overload Shutdown with Timed CL
- External Relay Contacts
- Function Indicator Lamps: Power On, Current Limit, Forward Enable, Reverse Enable
- Protection: Control Circuit Fusing, MOV Transient Protection, Auto Inhibit®, Rapid Response Current Limit Circuit, Regen Overspeed Protection

JUMPER SELECTABLE FEATURES

- Control Mode: **Speed** (SPD), Torque (TRQ)
- AC Line Voltage (VAC 50/60 Hz): 115, **230**
- DC Armature Voltage (VDC): 90, **180**
- Feedback Type: **Armature**, Tachometer
- Tachometer Voltage Input (VDC): 7, 20/30, **50**
- Timed Current Limit: **TCL**, NTCL
- S/LT Speed Linear Torque
- NLT Non Linear Torque

Bold indicates factory setting.

TRIMPOT ADJUSTMENTS

- Forward Acceleration (FWD ACCEL)
- Reverse Acceleration (REV ACCEL)
- Deadband (DB)
- Offset (OFFSET)
- Maximum Speed (MAX SPD)
- Response (RESP)
- IR Compensation (IR COMP)
- Reverse Current Limit (REV CL)
- Forward Current Limit (FWD CL)
- Timed Current Limit (TCL)

OPTIONAL FEATURES

- Bipolar Signal Isolator, SI-4X (P/N 8801)
- 4-Quad Accel/Decel (P/N 8803)
- Multi-Speed Board (P/N 8814)
- PID Board (P/N 8804)

* CE Compliance Requires KBRF-200A RFI Filter
▲ Shown with optional SI-4X Signal Isolator

DESCRIPTION

The KBRG-255 is a full-wave regenerative drive capable of operating DC PM or Shunt motors in a bidirectional mode. Its 4-quadrant operation provides forward and reverse torque in both speed directions. This allows the control to maintain constant speed with overhauling loads and provides rapid instant reversing and controlled braking. Because of its excellent controllability and response time, the KBRG-255 can replace servos in many applications. The control is factory set for armature feedback, which provides up to 1% load regulation over a motor base speed of 50:1. However, tachometer feedback is also available if superior regulation is required. By resetting mode jumper J7 to the "TRQ" position, the KBRG-255 can be changed from a speed control to a torque control.

The drive contains a variety of "selectable" jumpers and adjustment trimpots to allow custom tailoring for exact requirements. For example: jumper J6, when placed in the "TCL" position, provides adjustable timed current limit from 1 to 15 seconds. This feature will protect the motor and control by shutting the drive down after the preset time has elapsed.

The KBRG-255 can be operated with either a two (2) or three (3) wire start/stop circuit, or can be started from the AC line. A set of dedicated relay contacts are provided which are activated via the start/stop circuit. They can be used to turn on or off corresponding equipment or to sound an alarm if the drive stops.

Another important feature is the array of the LED's, which indicate the mode of operation the drive is in, and also serve as a diagnostic tool. In addition, KB's exclusive Auto Inhibit® circuit provides safe, smooth starting during rapid cycling of the AC line. The Overspeed Protect Circuit prevents failure of the power bridge in extreme overhauling conditions.

Reliability of the KBRG-255 is further enhanced with the use of a high speed current limit circuit. MOV transient protection is also included. A 5K remote potentiometer and full operating instructions are supplied

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SPECIFICATIONS

AC Line Input Voltage (VAC ±15%, 50/60 Hz)	230
Arm Voltage Range at 230VAC Line (VDC)	0 – ±180
Field Voltage at 230VAC Line (VAC)	200/100
Max Load Capacity (% for 1 minute)	150
Ambient Temperature Range (°C)	0 – 50(1)
Speed Range (Ratio)	50:1
Arm Feedback Load Regulation (% Base Speed)	±1
Tach Feedback Load Regulation (% Set Speed)	±1
Line Regulation (% Base Speed)	±0.5

FWD and REV Accel Range (Sec.)	0.1 – 15
Dead Band Range (% Base Speed)	0 – ±3
Offset Range (% Base Speed)	0 – ± 5
Max Speed Trimpot Range (% Base Speed)	70 – 110
IR Comp Range at 230VAC Line (VDC)	0 – 30
FWD and REV CL Range (% Range Setting)	0 – 150
Timed CL Range (Sec.)	1 – 15
Voltage Following Input Range (VDC)	0 – ±10
Voltage Following Linearity (% Base Speed)	±0.5

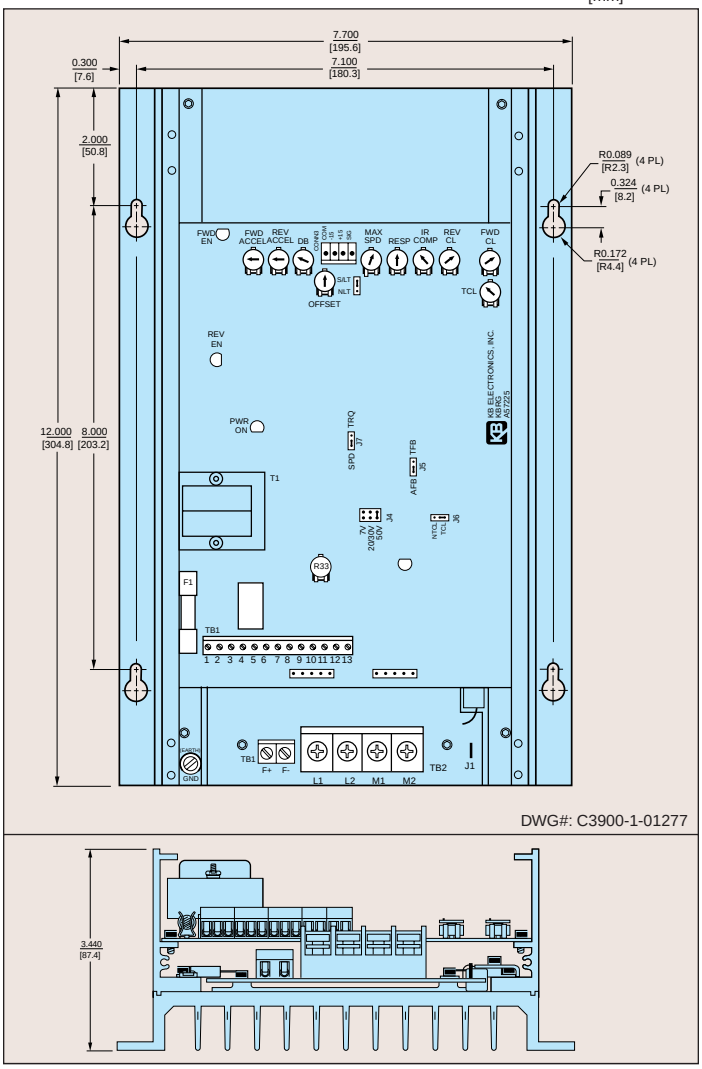
NOTES: (1) Control mounted in vertical position only.

ELECTRICAL RATINGS

Model Number	KB Part Number	AC Line Voltage (VAC) ± 10% 50/60 Hz	Motor Voltage (VDC)	Max. AC Load Current (RMS Amps)	Max. DC Load Current (DC Amps)	Maximum Horsepower Hp, (KW)
KBRG-255	8821	230	0 – 180	38	26	5, (3.75)

MECHANICAL SPECIFICATIONS

INCHES
[mm]



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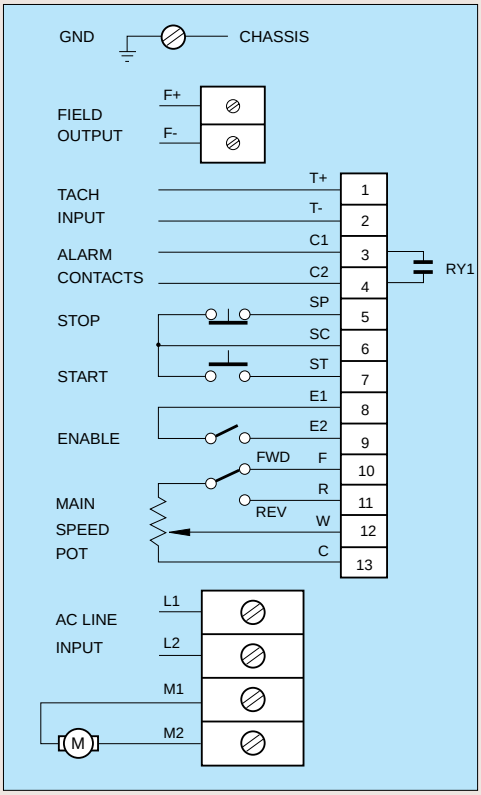
CONNECTION DIAGRAM



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