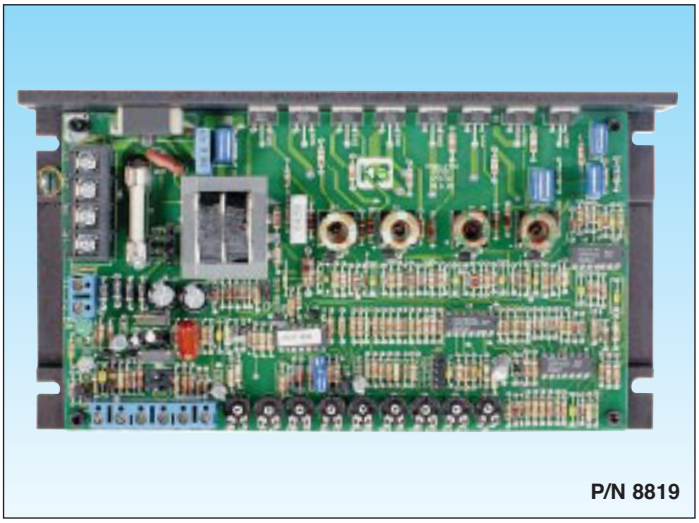
KBRG-212D

REGENERATIVE DRIVE

FULL WAVE • 4 QUADRANT
Variable Speed SCR and Torque Control of
PM and Shunt Motors

ONE MODEL COVERS:
1/10 – 3/4 Hp (90 VDC) @ 115 VAC – 50/60 Hz
1/5 – 1½ Hp (180 VDC) @ 230 VAC – 50/60 Hz

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



P/N 8819

STANDARD FEATURES

- **Jumper Selectable Features**
  Operation Mode: Speed, Torque
  AC Line Voltage (VAC– 50/60 Hz): 115, 230
  DC Armature Voltage (VDC): 90,180
  Tach Voltage (VDC): 7,50
  DC Current Output (ADC): 1.7, 2.5, 3.3, 5.0, 7.5
  Analog Input Voltage (VDC): 0 – 10, 0 – 15
  Enable: Coast to Stop, Regenerate to Stop
- **Trimpot Adjustments**
  Response (RESP) • Forward Current Limit (FWD CL)
  Reverse Current Limit (REV CL) • IR Compensation (IR COMP)
  Maximum Speed (MAX SPD) • Forward Acceleration (FWD ACC)
  Reverse Acceleration (REV ACC) • Dead Band (DB)
- **LED'S**
  Power On (PWR ON) • Overload (OL)

OPTIONAL FEATURES

- **4 Quad Accel/Decel (P/N 8803)** – Provides independent settings of forward accel, forward decel, reverse accel and reverse decel.
- **Bipolar Signal Isolator (P/N 8801)** – Allows a non-isolated signal source to be connected directly to drive input.
- **PID Module (P/N 8804)** – Increases dynamic response of drive for accurate web or tension control.
- **Multi Speed Board (P/N 8814)** – Provides discrete preset speeds which can be controlled from a PLC.

ELECTRICAL RATINGS

Model	Input Voltage (VAC)	Max. AC Current (RMS)	Output Voltage (VDC)	Max. DC Output Current (ADC)	Max. Horsepower (Hp, KW)
KBRG-212D	115	12	0 – ±90	7.5	3/4, .5
	230	12	0 – ±90	7.5	3/4, .5
	230	12	0 – ±180	7.5	1½, 1

* CE Compliance Requires KBRF-200A RFI Filter

DESCRIPTION

The KBRG-212D 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-212D 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. Tachometer feedback is also provided for superior load regulation if required. A simple jumper setting converts the KBRG-212D to a torque control. In this mode, motor torque rather than motor speed is controlled.

An important feature of the drive is the factory-calibrated, built-in, selectable, motor current jumper. It eliminates the need to recalibrate IR Comp and Current Limit for most applications.

The control contains an Enable function which can be used to start and stop the motor electronically via a contact closure. Through a jumper selection, the motor can be set to rapidly regenerate to a "stop" or to "coast to stop."

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-212D is further enhanced with the use of a high speed current limit circuit along with armature fusing and MOV transient protection. LED'S, which can be used for diagnostics, are provided for power on and motor overload. A rugged extruded aluminum heatsink provides enhanced heat transfer which provides a higher control rating while maintaining cooler running SCR's.

Several accessories are available for the KBRG-212D, which enhance its adaptability to many applications. They include: Bipolar signal isolator, 4-quadrant accel/decel board, PID compensator and multi speed module.

A 5K remote potentiometer and full operating instructions are supplied.

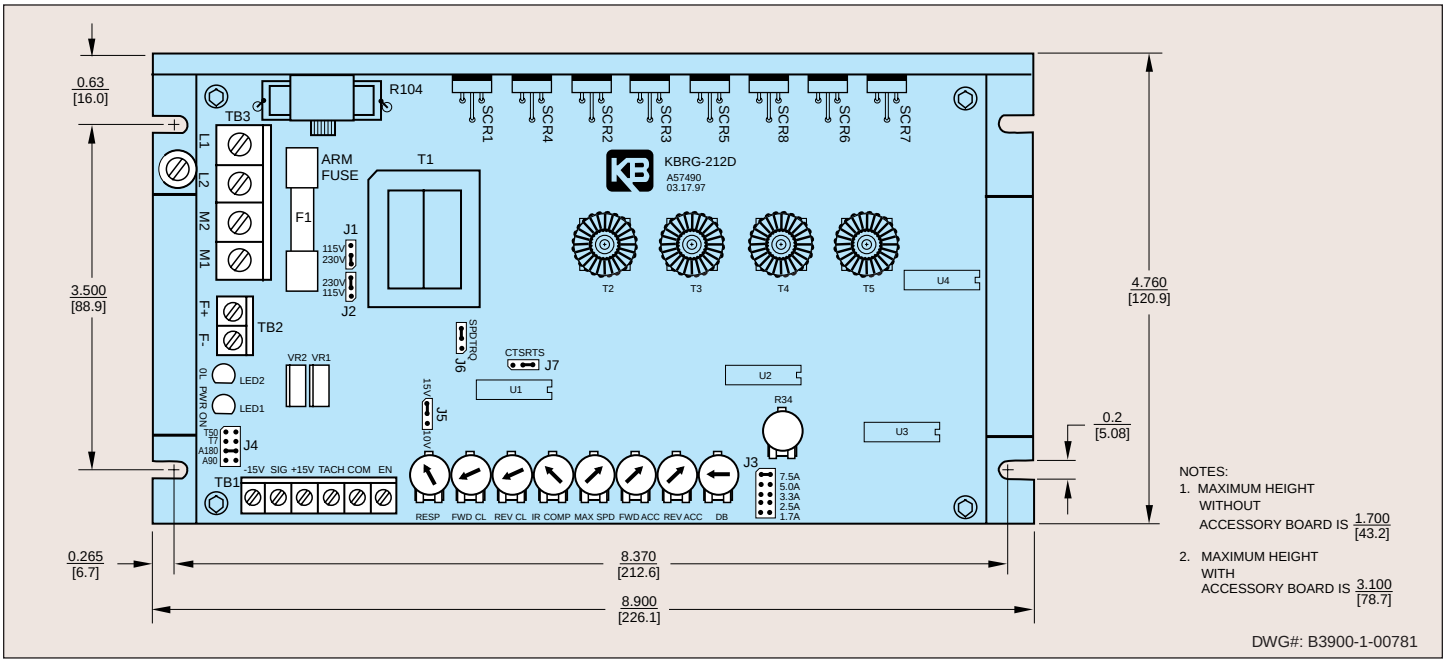
Spec Tech Industrial 203 Vest Ave. Valley Park, MO 63088 Phone: 888 SPECTECH
Email: sales@spectechind.com www.spectechind.com

SPECIFICATIONS

AC Line Input Voltage (VAC ±10% 50/60 Hz)	115 or 230
AC Line Frequency (Hz)	50/60
Armature Voltage Range 115VAC Line (VDC)	0 – ±90
Armature Voltage Range 230VAC Line (VDC)	0 – ±90, 0 –±180
Field Voltage at 115VAC Line (VDC)	100/50
Field Voltage at 230VAC Line (VDC)	200/100
Max Load Capacity (% for 2 Minutes)	150
Ambient Temperature Range (°C)	0 – 50
Speed Range (Ratio)	50:1
Armature Feedback Load Regulation (% Base Speed)	±1
Tachometer Feedback Load Regulation (% Set Speed)	±1
AC Line Regulation (% Base Speed)	±0.5
Current Ranges (Amps DC)	1.7, 2.5, 3.3, 5.0, 7.5
FWD and REV Accel Range (Sec.)	0.1 – 15
Dead Band Range (% Base Speed)	0 – ±5
Maximum Speed Trimpot Range (% Base Speed)	55 – 110
IR Comp Range at 115VAC Line (VDC)	0 – 20
IR Comp Range at 230VAC Line (VDC)	0 – 40
FWD and REV CL Range (% Range Setting)	0 – 150
Voltage Following Input Range (VDC)	0 – 10, 0 – 15
Voltage Following Linearity (% Base Speed)	±0.5

MECHANICAL SPECIFICATIONS

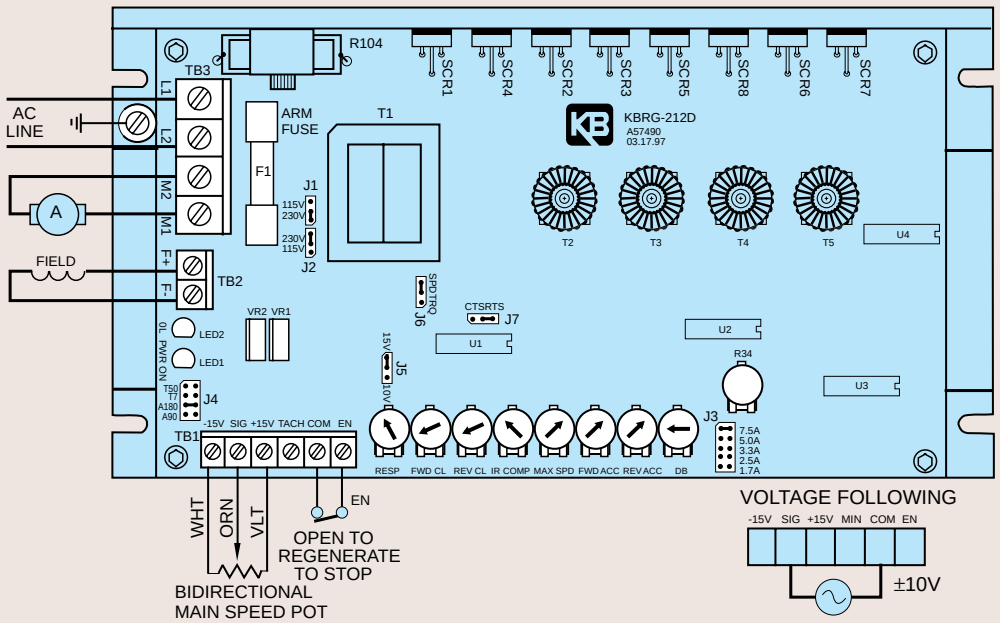
INCHES
[mm]



NOTES:
1. MAXIMUM HEIGHT WITHOUT ACCESSORY BOARD IS 1.700 [43.2]
2. MAXIMUM HEIGHT WITH ACCESSORY BOARD IS 3.100 [78.7]

DWG#: B3900-1-00781

CONNECTION DIAGRAM



DWG#: B3900-2-00754

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