12095 N.W. 39th Street • Coral Springs, Florida 33065 • (954) 346-4900 • Fax (954) 346-3377
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"The Right Control for Your Application"

DATA SHEET D-183

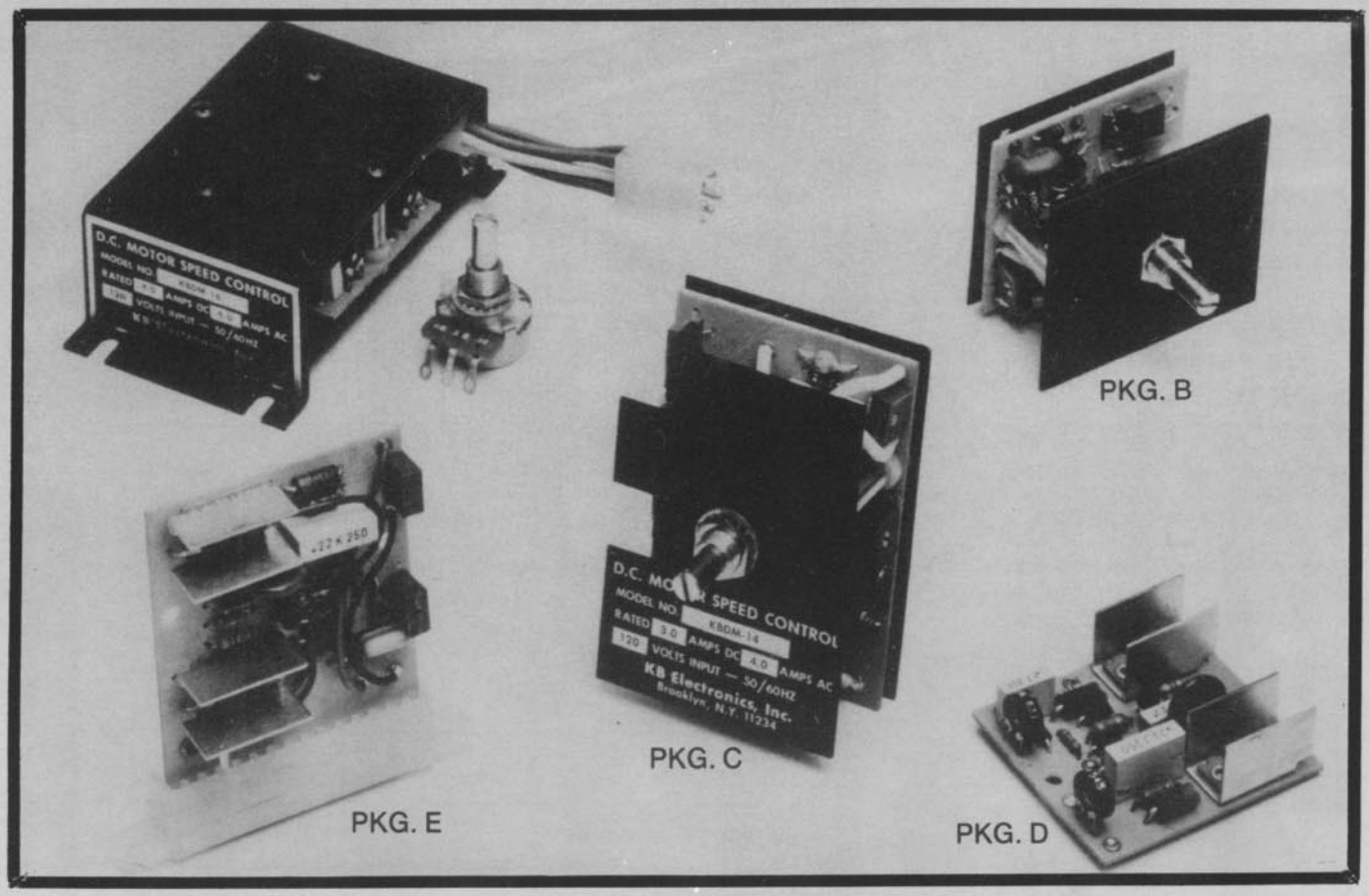
KBDM Series Solid State D.C. Motor Speed Controls

— New Expanded Line —

Designed for Speed Control of Shunt Wound, PM and AC/DC Motors

Typical Applications

• Conveyors • Film Drives • Wire Feeders • Welders • • Positioners • Dampners • Laboratory Equipment • Processors • • Folders • Potters Wheels • Medical Equipment • Pumps • • Gem Grinders • Automated Machinery • Printers •



• Designed and priced for OEM users • High Reliability • UL Recognized • • Operates from 50/60 Hz AC Power •

The KBDM Series of Solid State full wave D.C. Motor Controls are designed for applications where good speed regulation is required. The series offers many of the more desirable features found on higher priced controllers. Many standard packages, ratings and features are offered which will facilitate their design into the end product. Specifically created for the OEM market, the KBDM Series is competitively priced and offers excellent reliability.

The controls are fabricated with the latest and most reliable state-of-the-art components including MOV transient protection. Dual SCRs in conjunction with an IC gate trigger circuit, provides smooth cogless control over a broad speed range. Counter EMF feedback is used to provide good speed regulation over wide variations of load and line voltage.

All models are supplied with a 1 meg potentiometer along with mounting hardware. The controls are standard with minimum and maximum speed trimmers. The KBDM series is designed to provide linear motor speed as a function of dial setting. Other dial functions are available, if required.

MODELS WITH AVAILABLE PACKAGE TYPES

Remote Pot

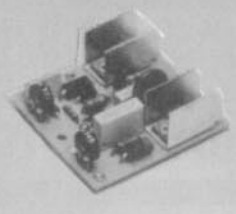
PKG. A

Built-in Pot

PKG. B

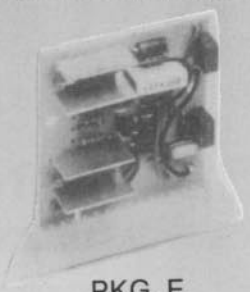
Built-in Pot

PKG. C



Remote Pot

PKG. D



Edge Conn./Remote Pot

PKG. E

MODEL NO.	ELECTRICAL RATINGS - ALL MODELS					AVAILABLE PACKAGES FOR MODELS				
	Input Voltage (V.A.C. 50/60 Hz)	Maximum AC Load Current (RMS Amps)	Maximum DC Load Current (AV. Amps)	Maximum Surge Current (RMS Amps)	Max. Rated HP	Package Type				
						A	B	C	D	E
KBDM-11	**120**	**1.0**	**.75**	**6.0**	**1/15**	✓	✓	✓	✓	✓
KBDM-14	**120**	**4.0**	**3.0**	**15.0**	**1/4**	✓	✓	X	✓	✓
KBDM-16	**120**	**6.0**	**4.0**	**22.0**	**1/3**	✓	X	✓	X	X
KBDM-21	**240**	**1.0**	**.75**	**6.0**	**1/8**	✓	✓	✓	✓	✓
KBDM-24	**240**	**4.0**	**3.0**	**15.0**	**1/2**	✓	✓	X	✓	✓
KBDM-26	**240**	**6.0**	**4.0**	**22.0**	**3/4**	✓	X	✓	X	X

Notes: Model selection — Field leads can be omitted for PM motors — Add "PM" to Model No. (Ex. KBDM-14PM). Leads — Standard leads are 8" long; Red — Armature ⊕, Black — Armature & field ⊖, Yellow — Field ⊕, Blue — AC line. Q-D Terminals and Molex Connectors available on all leads — other colors and lengths are also available.

FEATURES

Standard Features - all models

- Min. and Max. Speed Adjustment
- MOV Transient Protection
- Line Voltage Compensation
- Full Wave Output with Feedback

Optional Features - all models

- Cermet Trimpots
- Step-Down Output
- Built-in On/Off Line Switch

Available Features - by package type

FEATURE	Package Type				
	A	B	C	D	E
RFI Filter	✓	X	✓	✓	X
Edge Connector	X	✓	X	X	✓
Built-in Fuse	✓	X	✓	X	X
1/4" QD Terminals	✓	✓	✓	✓	X
Molex Connector	✓	✓	✓	✓	X
Built-in Potentiometer	X	✓	✓	X	X
Remote Potentiometer	✓	X	X	✓	✓

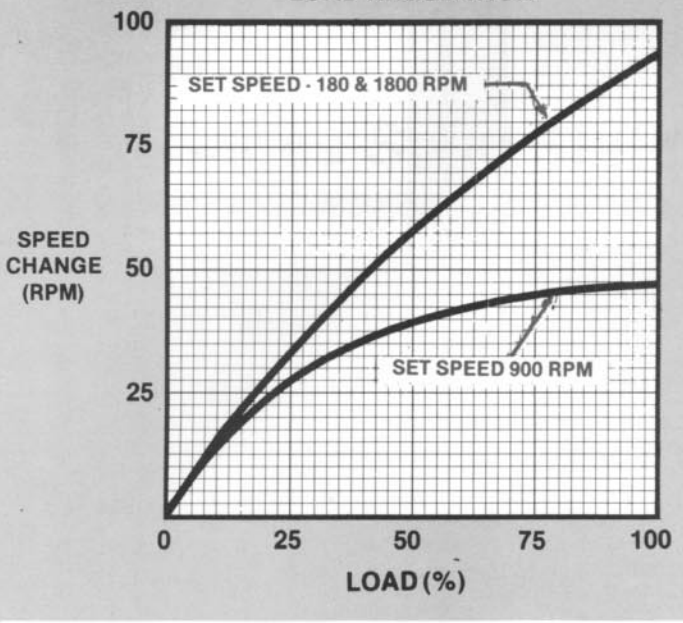
CONTROL SELECTION

1. Select control model by rating required for specific application. Example: For a 1/4 HP 90V PM motor choose a KBDM-14 with "PM" suffix.
2. Then select the package type. Selection should be made according to features required. Example: You may want package "C" because it offers a 6.0 Amp rating, contains a built-in potentiometer and is available with an RFI filter.

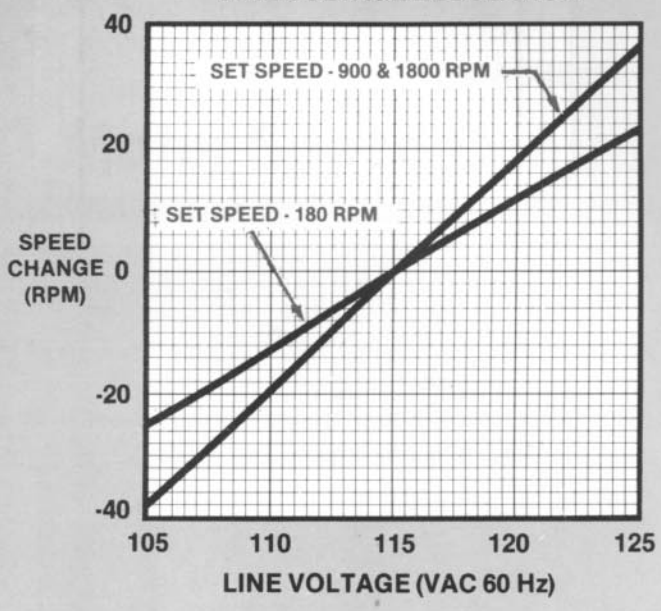
PERFORMANCE (typical data - ¼ HP PM 90V motor)

CHANGE IN MOTOR SET SPEED DUE TO LOAD AND LINE VOLTAGE VARIATION

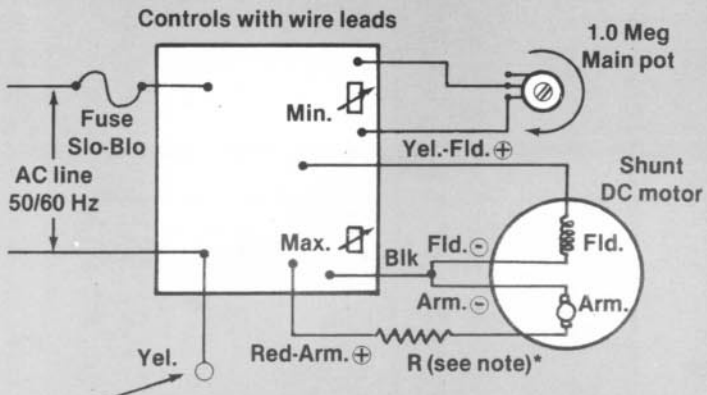
LOAD REGULATION



LINE VOLTAGE REGULATION



CONNECTION DIAGRAMS

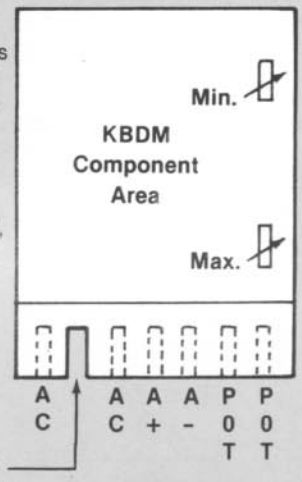


Half voltage field ⊕ - used on 100V shunt motors with 50 volt fields and 100V shunt motors operated with 240 volt step-down controls
Note: F ⊕ not used on PM motors

P-C Edge Connector

Mating Connectors
Molex #09-02-2152
Molex #09-02-1151

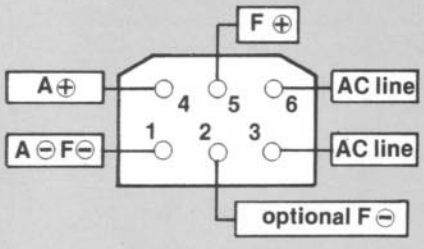
Package E available on Models KBDM-11, 14 & 24 PM Models only



Contacts are tin plated - located on opposite side of components

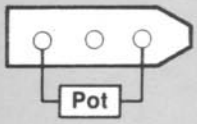
Molex Connectors - available on all controls with wire leads (mating view shown)

6 PIN PLUG



Molex #03-09-2062

3 PIN PLUG for remote Potentiometer



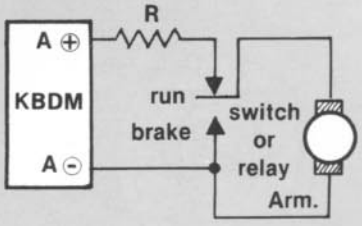
Molex #03-09-2032

Male pins for above - Molex #02-02-2116
Mating receptacle assemblies are available-contact factory for information.

*A surge resistor should be used on motors having excessive surge current. Armature switching circuits such as dynamic braking or reversing also require surge resistors. Resistor should be installed between control and switch (or relay). See chart for proper resistor size.

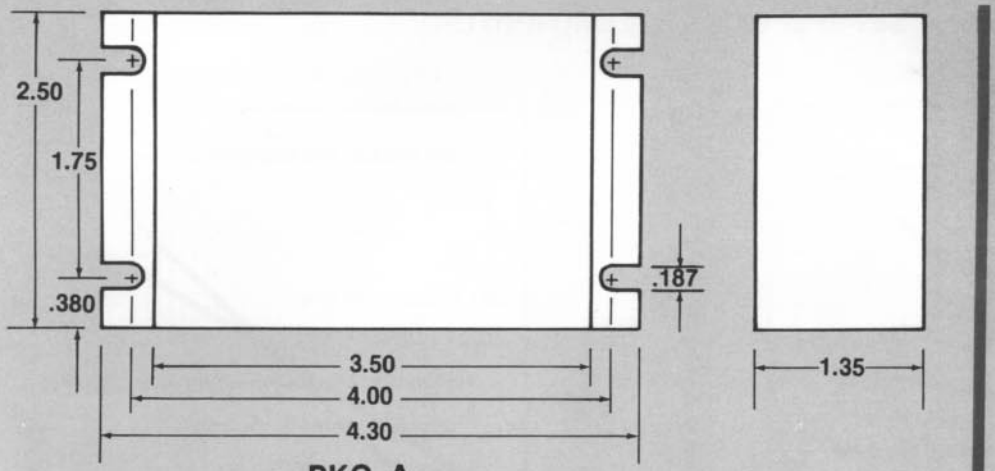
Current AC Amps	Resistance Ohms-25 Watt
2.5 - 3.5	2
1.0 - 2.5	3
.5 - 1.0	5

Current reading should be taken on the AC side of speed control under full load conditions.

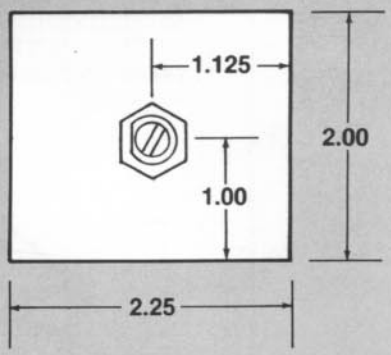


DYNAMIC BRAKE CIRCUIT

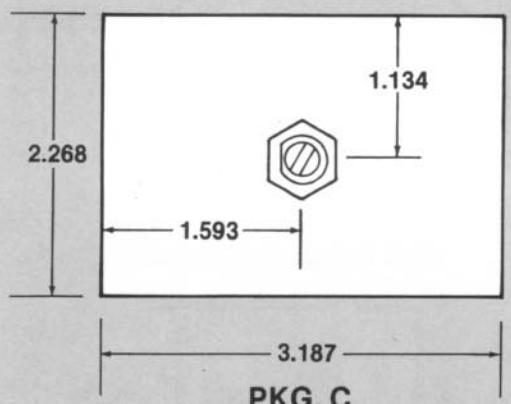
MECHANICAL SPECIFICATIONS (Dimensions in Inches)



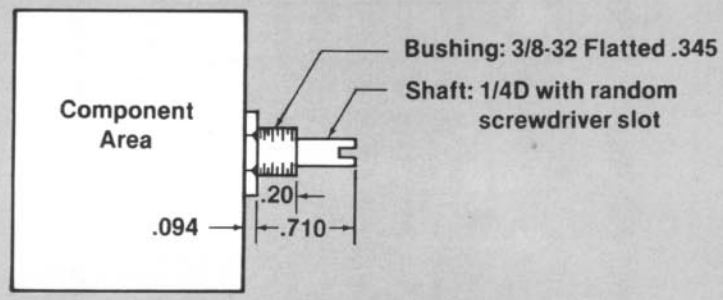
PKG. A



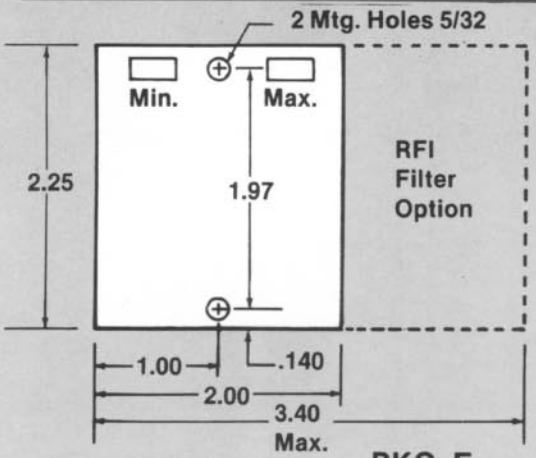
PKG. B



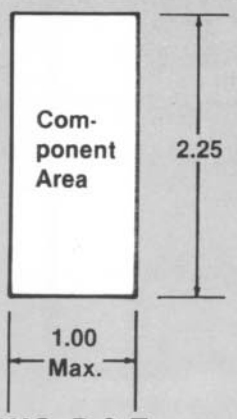
PKG. C



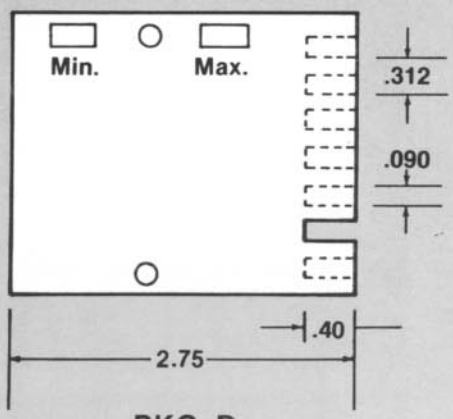
PKG. B & C



PKG. E

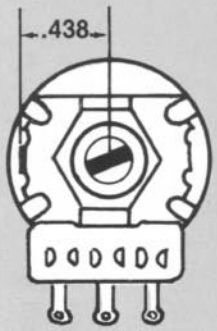


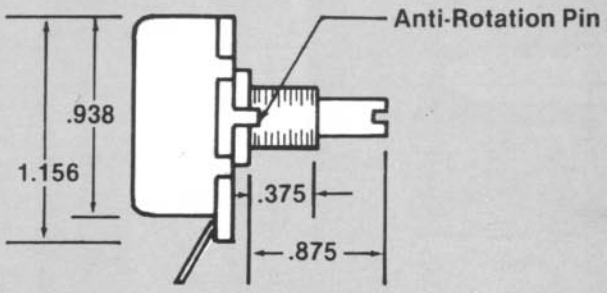
PKG. D & E



PKG. D

REMOTE POTENTIOMETER





SPECIFICATIONS

Resistance - 1.0 Meg.
Taper - Reverse Log
Tolerance - 20%
Rotation - 300 Degrees
Bushing - 3/8-32 Flatted .345
Shaft - 1/4D with random screwdriver slot

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