



KB ELECTRONICS, INC.

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www.kbelectronics.com

*"The Right Control
for Your Application"*

DATA SHEET D-160

KBWC Solid State Variable Speed AC Motor Controls

**UL
Recognized**

—NEW EXPANDED LINE—

Designed for Speed Control
of Shade Pole, AC/DC and
Permanent Split Capacitor (PSC) Motors

TYPICAL APPLICATIONS

- Fans • Air Conditioners •
- Fireplace blowers • Attic fans •
- Humidifiers • Ventilators •
- Ceiling fans • Range hoods •

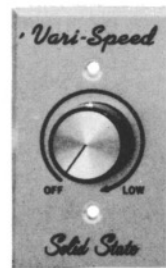
PACKAGE "A"
2.5 & 4.0 AMP. MODELS



PACKAGE "B"
2.5 & 4.0 AMP. MODELS



DIAL PLATE & KNOB
PACKAGE "B" & "C"



PACKAGE "C"
5.0 & 6.0 AMP. MODELS



PACKAGE "D"
8.0 & 10.0 AMP. MODELS



PACKAGE "E"
10.0, 12.0 & 15.0 AMP. MODELS

- DESIGNED FOR 2" x 4" ELECTRICAL WALL BOX INSTALLATION •

DESCRIPTION

The KBWC Series is a comprehensive line of motor speed controls for air-moving applications which utilize shaded pole, permanent split capacitor, and AC/DC motors. These economical controls are designed to replace obsolete, tapped winding, or reactive methods of speed control. The full wave phase control circuitry minimizes power loss, thereby reduces energy requirements. The controls provide infinitely variable speed adjustment which permits the consumer individual selection of air volume, motor speed, and noise level. The models cover a wide range of amperages from 2.5 through 15 amps which allows for the selection of the most economical control for the application.

Important features are standard such as RFI filter, min speed trim, and built-in on/off line switch. Controls are available as bulk packed or in distributor type packaging with accessories such as: knob, dial plate, mounting hardware, instructions, and individual carton. All models are U.L. recognized. (CSA in process.)

KBWC CONTROLS—General Specifications

All Models Rated 120V 60 Hz

Model (1, 2, 3, 4, 5, 6)	Maximum Current Rating (RMS Amps)	Maximum Allowable Ambient Temp. at Full Rating (C)	Available Package Type	On/Off Line Switch Rating (Amps @ 125VAC)
KBWC-13	2.5	25	A, B	3.0
KBWC-14	4.0	40	A, B	4.0
KBWC-15	5.0	40	C	6.0
KBWC-16	6.0	25	C	6.0
KBWC-18	8.0	40	D	15.0
KBWC-110	10.0	25	D	15.0
KBWC-110	10.0	40	E	15.0
KBWC-112	12.0	25	E	15.0
KBWC-112	12.0	40	E	15.0
KBWC-115	15.0	25	E	15.0

STANDARD FEATURES (All Models)

- Built-In On/Off Line Switch
- RFI Filter
- Min. Speed Trimmer

OPTIONAL FEATURES

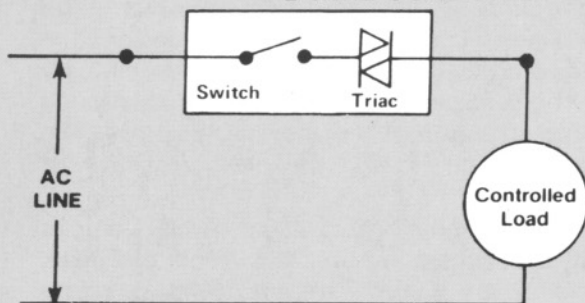
- Q-D or Molex Connectors
- Custom Packaging
- Special lead lengths and colors
- Line voltage compensation (2.5 & 4.0 amp models only)

• 240 Volt versions of above models are available •

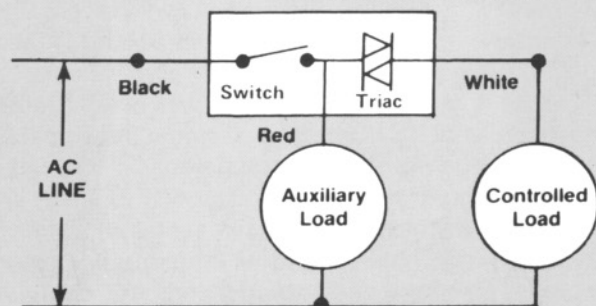
1. To purchase control without on/off line switch add "NS" to Model No. (KBWC-15NS).
2. Standard rotation: Controls with on/off switch - "OFF" to "HIGH" to "LOW". Controls without on/off switch - "LOW" to "HIGH".
3. To obtain distributor kit, add K to Model No. (eg. KBWC-15K). Note: Kit is supplied as standard on Models KBWC-13 Pkg. A, KBWC-14 Pkg. A, KBWC-18, KBWC-110, KBWC-112 and KBWC-115.
4. Leads: all are approximately 6" long and are stripped 1/2".
5. Package "A": Control and dial plate are installed as an integral unit.
6. For 3-wire controls add "L" to Model No. (eg. KBWC-15L).

CONNECTION DIAGRAMS:

2-WIRE CONTROLS

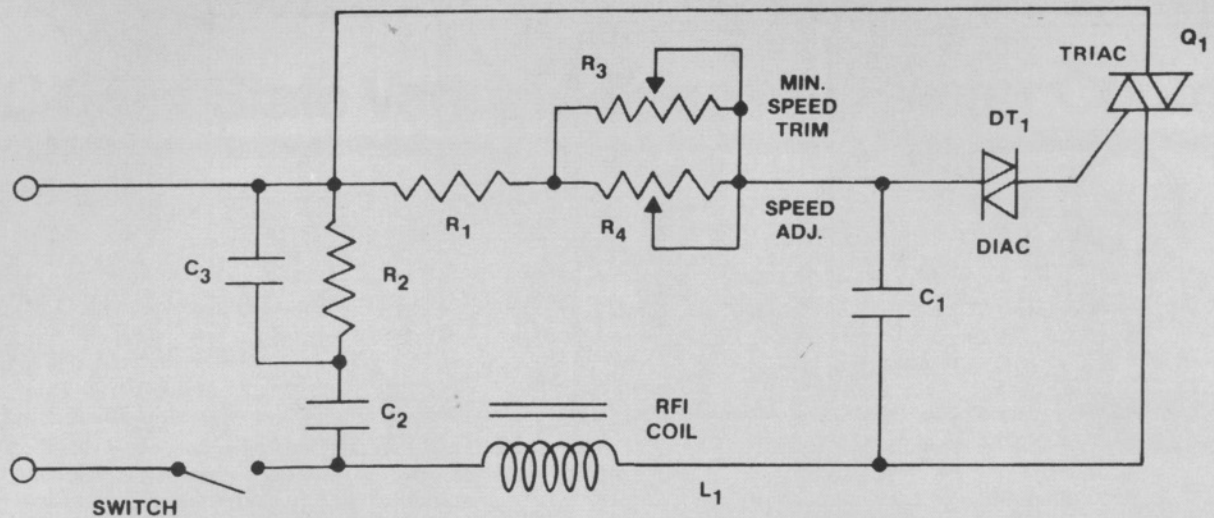


3-WIRE CONTROLS



DO NOT EXCEED SWITCH RATING OF CONTROL

SCHEMATIC



NOTE: In some models actual circuits used may vary from schematic as shown.

APPLICATION NOTES:

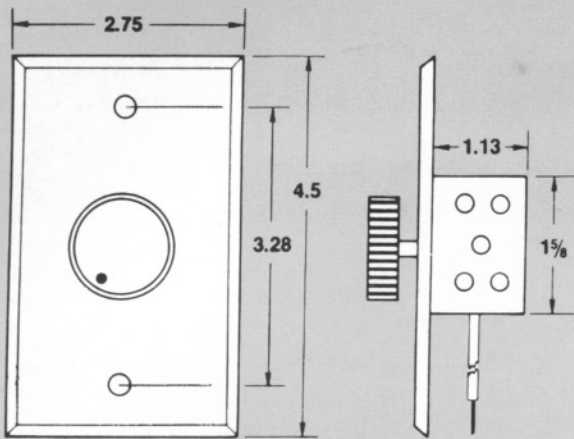
1. *Temperature Test*—The non-sinusoidal output voltage of a solid state control may increase motor heating. Therefore, it is necessary that a temperature test be performed to insure that motor is operating within manufacturer's specifications.
2. *Failure Mode*—Certain failure modes of solid state controls, such as half-waving, can cause high levels of DC. This may produce severe overheating and motor burnout. Therefore, a thermal overload protector is required which will limit the maximum motor temperature as prescribed by the manufacturer.
3. *Radio Frequency Interference (RFI)*—Solid state speed controls usually generate annoying radio noise on the AM broadcast band. KB controls incorporate as standard a high-gain RFI suppression filter which significantly reduces this interference.
4. *Low End Set Point*—All controls are set to 65 volts +/- 3V output as standard with an input voltage of 120 volts. An average responding AC voltmeter is used for calibration. Custom voltage settings are available as per customer requirements.
5. *Motor Suitability*—Motors must be loaded to near full capacity with appropriate fan blade in order to achieve proper speed control. Generally, motor suitability is established by determining motor speed as a function of applied voltage. Motor is determined as suitable if it changes speed linearly over a wide range of voltage.
6. *Overseas Markets*—Standard snubber network components are prone to failure when used on power sources with abnormally high transients. Therefore, controls that are used in remote areas of the world, such as Asia, Africa, and Australia, or where power generation is not properly regulated, require a special snubber. KB uses metalized paper capacitors and flameproof resistors in these applications.

MECHANICAL SPECIFICATIONS

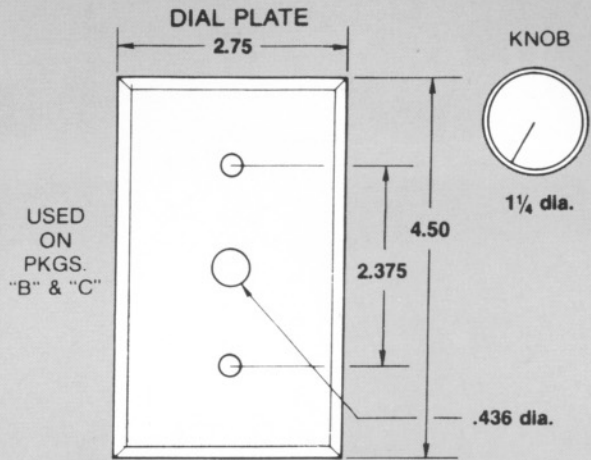
DIMENSIONS (Inches)

All controls are designed for 2" x 4" electrical wall box mounting

SHAFT ROTATION (All Models): $325^{\circ} \pm 5^{\circ}$

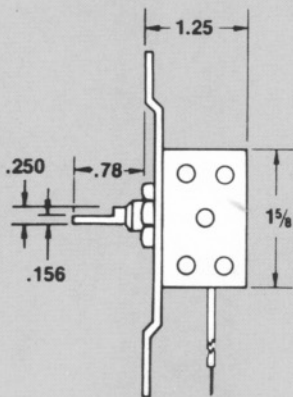


PACKAGE "A"
2.5 & 4.0 AMP MODELS
(Dial plate and knob part of control)

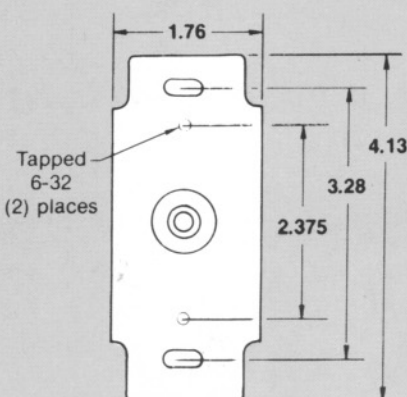


USED ON PKGS. "B" & "C"

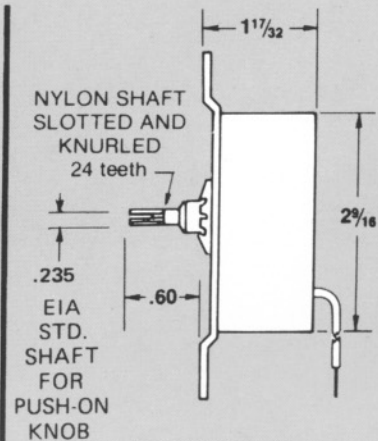
"K" MOUNTING KIT: Contains dial plate, knob, instructions, mtg. hardware and individual packaging. Bulk packaging is also available.



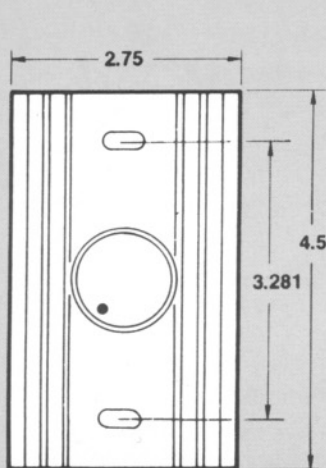
PACKAGE "B"
2.5 & 4.0 AMP MODELS
(Requires separate dial plates)
Add "K" to Model No. for Mounting Kit



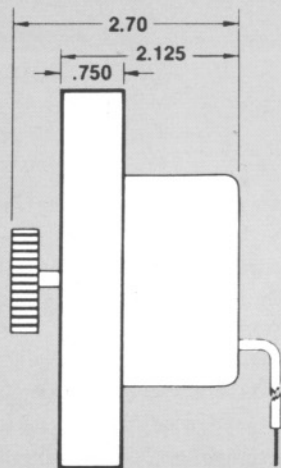
PACKAGE "B" & "C"
2.5, 4.0, 5.0 & 6.0 AMP MODELS
Add "K" to Model No. for Mtg. Kit



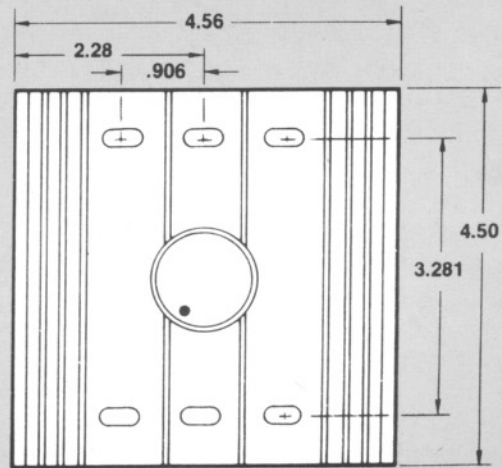
PACKAGE "C"
5.0 & 6.0 AMP MODELS
Add "K" to Model No. for Mtg. Kit



PACKAGE "D"
8.0 & 10.0 AMP MODELS



PACKAGE "D" & "E"
8.0, 10.0, 12.0 & 15.0 AMP MODELS



PACKAGE "E"
10.0, 12.0 & 15.0 AMP MODELS