KBWC

Wall-Mount Series

Solid-State
Variable Speed AC Motor Controls

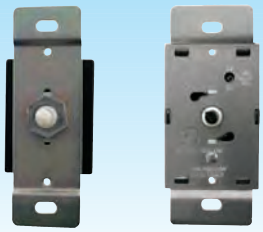
For Use with Shaded Pole, Permanent Split Capacitor (PSC) and Universal Motors

Ratings: 2.5 thru 15.0 Amps
115 and 230 VAC – 50/60 Hz

TYPICAL APPLICATIONS

- Fans • Fireplace Blowers • Humidifiers • Air Conditioners
- Ceiling Fans • Attic Fans
- Ventilators • Range Hoods

ISO 9001 2000 QMS



Pkg."B" Pkg."C"



Dial Plate & Knob Pkgs. "B" & "C"



Pkg."E"



Pkg."D"

STANDARD FEATURES

- Built-In On/Off AC Line Switch
- Minimum Speed Trimpot
- RFI Filter (Provides RFI and EMI Suppression)
- All Models Mount in a Standard 2" x 4" Electrical Wall Box
- Agency Approvals*

  UL Listing / Recognition

  CSA Certified

  ISO-9001: 2000 QMS Certified

OPTIONAL FEATURES (See Options Table)

- Custom Packaging
- Special Lead Lengths, Colors, and Terminations

DESCRIPTION

The KBWC Series is a comprehensive line of motor speed controls for air-moving applications that utilize Shaded Pole, Permanent Split Capacitor (PSC), and AC/DC motors. These economical speed controls are designed to replace obsolete, tapped winding, or reactive methods of speed control. The full-wave phase control circuitry minimizes power loss, thereby reducing energy requirements. The controls provide infinitely variable speed adjustment which allows the end-user to select the desired level of air volume. These models cover a wide range of current ratings (2.5 - 15 Amps AC) and voltage ratings (115, 230, 277 Volts AC).

Important features, such as RFI Filter, Minimum Speed Trimpot, and built-in On/Off Line Switch are standard. These speed controls are available as bulk packaged or in distributor type packaging with accessories such as: knob, dial plate, mounting hardware, instructions, and individual carton. All models are designed to be mounted into a standard 2" X 4" electrical wall box.

OPTIONS (Add Suffix to Model No.)

Suffix	Description	Example
C	Omits mounting tabs (KBWC-16 only).	KBWC-16C
K	Mounting Kit: Includes individual packaging with dial plate, knob, mounting screws, wire connectors, and instructions. Supplied standard on all models rated 8 Amps and above.	KBWC-15K
L	Adds auxiliary lead (3-wire control).	KBWC-15L
4L	Adds DPDT On/Off Switch (4-wire control) (Model KBWC-25 only).	KBWC-25 (4L)
NS	Omits On/Off Switch.	KBWC-15NS
R	Reverses control output from standard rotation. Standard: Controls with On/Off Switch – Off to High to Low. Controls without On/Off Switch (suffix "NS") – Low to High.	KBWC-15R

Note: **See Electrical Ratings table for agency approvals by Model No.*

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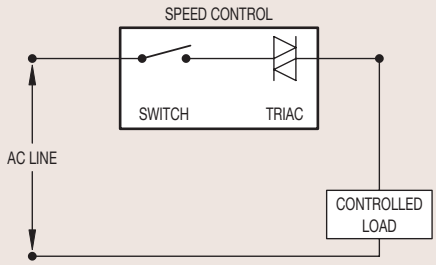
ELECTRICAL RATINGS AND AGENCY APPROVALS

Model No.	AC Line Input Voltage (Volts AC – 50/60 Hz)	Maximum Current Rating (Amps RMS)	Ambient Temperature (°C)	Agency Approvals			Package Type
				c UL us	c UL us	SP	
KBWC-13	115	2.5	25	√		√	B
KBWC-15	115	5	40		√	√	C
KBWC-16	115	6	25	√			C
KBWC-18K[1]	115	8	40		√	√	D
KBWC-110K[1]	115	10	25	√		√	D
KBWC-110K[1]	115	10	40		√	√	E
KBWC-112K[1]	115	10	40		√		E
KBWC-115K[1]	115	15	25	√			E
KBWC-23[2]	230	2.5	25	√			B
KBWC-25[3]	230	5	25				C
KBWC-26	230	6	25				C
KBWC-28K[1]	230	8	25				D
KBWC-210K[1]	230	10	25				E
KBWC-215K[1]	230	15	25				E
KBWC-35	277	5	25	√			C
KBWC-36	277	6	25				C
KBWC-38K[1]	277	8	25				D
KBWC-310K[1]	277	10	25				E
KBWC-312K[1]	277	12	25				E
KBWC-315K[1]	277	15	25				E

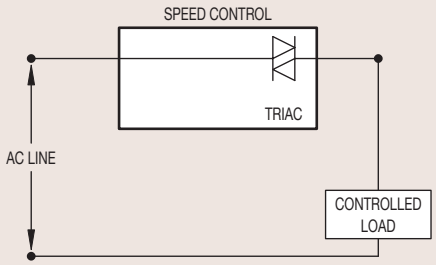
*Notes: **1.** Models rated 8 Amps and above include Mounting Kit (suffix "K"). **2.** Only model containing suffix "NS" is UL Recognized. **3.** Only Model KBWC-25 (4L) is UL Recognized. **4.** The maximum Locked Rotor current for UL listed controls is 6 times the Maximum Current Rating.*

CONNECTION DIAGRAMS

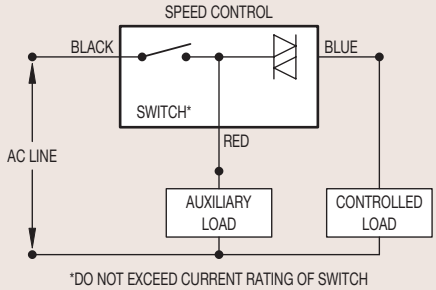
2-Wire Controls with On/Off Switch (Standard)



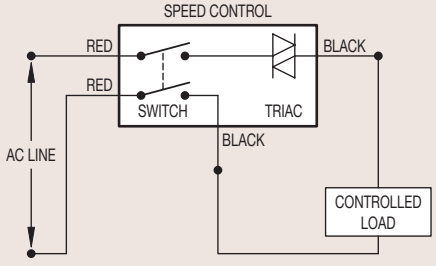
2-Wire Controls without On/Off Switch (Suffix "NS")



3-Wire Controls with Auxiliary Lead (Suffix "L")

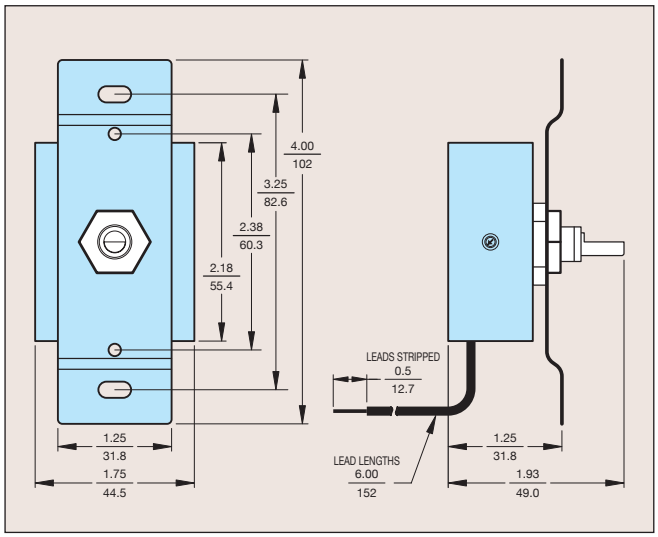


4-Wire Controls with DPDT On/Off Switch (Suffix "4L")

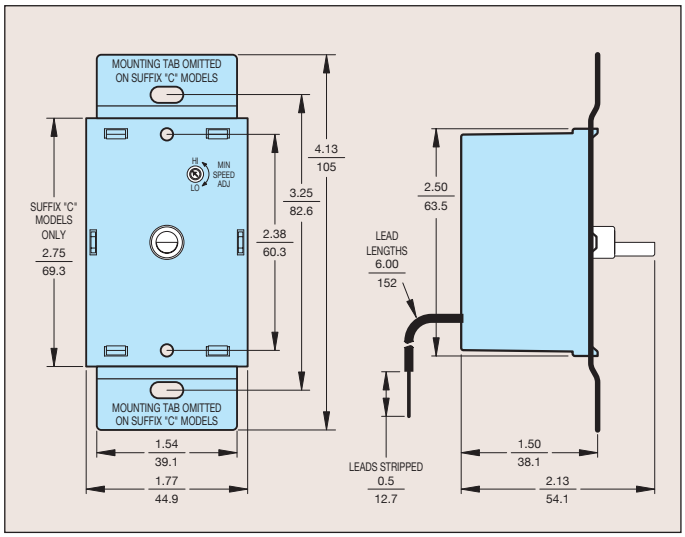


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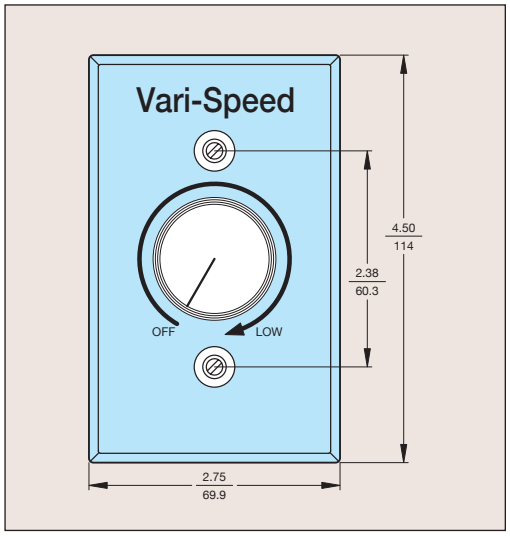
KBWC-13, 23 (Pkg. B)
Mechanical Specifications (Inches/mm)



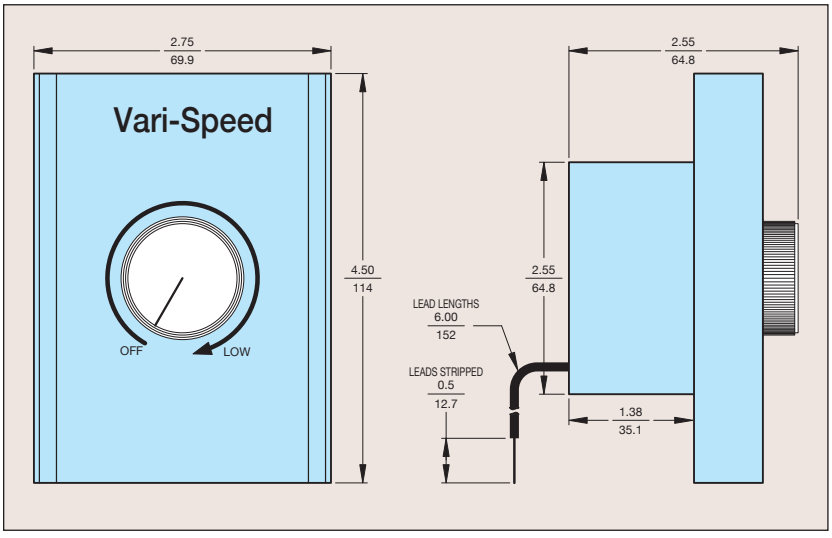
KBWC-15, 16, 25, 26, 35, 36 (Pkg. C)
Mechanical Specifications (Inches/mm)



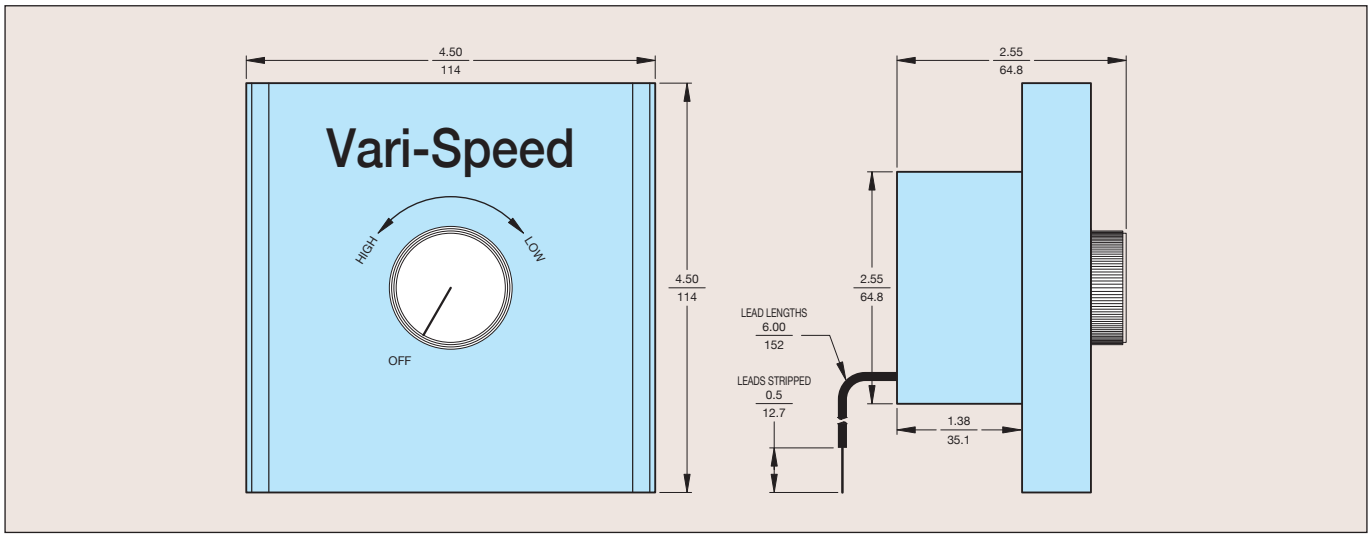
Dial Plate and Knob Kit (Suffix "K")
Mechanical Specifications (Inches/mm)



KBWC-18K, 110K, 28K, 38K, 310K (Pkg. D)
Mechanical Specifications (Inches/mm)



KBWC-110K, 112K, 115K, 210K, 212K, 215K, 312K, 315K, (Pkg. E)
Mechanical Specifications (Inches/mm)



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APPLICATION NOTES

1. **Radio Frequency Interference (RFI):** All solid-state speed controls generate annoying radio noise on the AM band. KB speed controls contain, as standard, a high-gain RFI suppression filter which significantly reduces this interference.
2. **Low End Set Point (Minimum speed):** All 115 Volt input speed controls are factory set to 65 Volts AC output (±3 Volts), as standard. All 230 Volt input speed controls are factory set to 120 Volts AC output (±6 Volts), as standard. All controls are factory calibrated using an average responding AC voltmeter. Custom voltage settings are available.
3. **Motor Suitability:** Motors must be loaded to near full capacity with the 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. A motor is determined as suitable if it changes speed linearly over a wide range of voltage.
   It is required that all motors contain a built-in thermal overload protector when used with solid-state speed controls.
4. **230 & 277 VAC Controls:** To achieve maximum reliability, all 230 VAC controls contain snubber networks that utilize Y-Type capacitors and flame-proof resistors. In addition, all 277 VAC controls contain MOV Transient Suppression.
5. **Temperature Test:** The non-sinusoidal output voltage of a solid-state speed control may increase motor heating. Therefore, it is necessary that a temperature test be performed to ensure that the motor is operating within manufacturer's specifications.
6. **Leads:** All leads are approximately 6" (15 cm) long and stripped 1/2" (1.25 cm). Custom lead lengths, colors, and terminations also available.

OTHER AC MOTOR SPEED CONTROLS

KBNH	KBMS	KBMC	Dial-A-Temp
			

RATINGS			
2.5 Amps AC at 115 and 230 Volts AC 50/60 Hz	1.6 and 3 Amps at 115 and 230 Volts 50/60 Hz	1.6, 2.5 and 4 Amps at 115 and 230 Volts AC 50/60 Hz	300 Watts, 2.5 Amps AC at 115 Volts AC 50/60 Hz
DESCRIPTION			
PANEL MOUNT: For ceiling fans, range hoods, vibrators, humidifiers, air conditioners, fireplace blowers, window fans, etc. Designed for Shaded Pole, AC/DC, and Permanent Split Capacitor Motors.			PLUG-IN: For incandescent lamps and wood-burning fireplaces and stove fans. Plugs into a standard 115 Volt AC outlet.

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