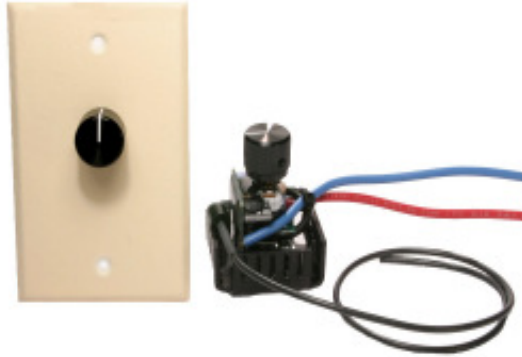


Two-Wire DC Motor Speed Control

Speed Control Plus On/Off in a Singular, Modular Unit



New dimensions in speed control

Imagine the versatility, reduced acoustical noise, and energy savings possible with a full-range DC motor speed control with on/off. Also imagine the same two-wire hookup as a toggle switch for 5-minute installation. The ZANE Two-Wire Motor Speed Control delivers this and more for a wide variety of constant-load applications including heater fans, ventilating and exhaust fans, roof vents, and fill/empty pumps.

Motorized appliances truly take on new dimensions when set at energy and noise-reducing lower levels. Rotate the control knob for the optimal intensity of smooth delivered power, or full CCW for zero current on/off. The heater fan of a truck, RV, or car can be precisely set for ideal output without interfering with conversation or radio listening or requiring frequent resets. An exhaust fan or roof vent can slowly revolve to vent excess heat, a drain pump can operate at a slower, more economical rate.

Two-wire hookup and low heat generation typically make this Speed Control a drop-in replacement for a toggle switch, glow wire system, dropping resistors, rheostat, or tapped winding system. Speed can be adjusted far lower than is practical with resistive devices.

Often-troublesome ground wiring is completely bypassed, while an included third wire sends aberrant voltages generated by the motor to ground at any convenient tie-in point (see wiring diagram, below right). This Speed Control can operate motorized appliances from small to large while maintaining ideal knob linearity. Both 12V and 24V versions are now available.

Construction of this Speed Control is to exacting specifications of premium quality material:

- * Machined aluminum knob adds lasting elegance to the installation. Rotary action is crisp and exacting.
- * Double filtering reduces radio interference to nil.
- * UL 105 C color-coded wiring is tagged for quick and error-free identification.
- * Step-by-step instructions included for first-time-through installation success. Color-coordinated mounting screws provided. Current rating is your choice of 3, 5, 8, or 11A.
- * Resealable clamshell package can be included for counter sales. Transparent front label with supersized text lists key electrical ratings and displays package contents.

Features

- Installs in minutes with only three electrical connections
- Adds speed control plus on/off to almost any motorized application
- Reduces energy draw and acoustical noise
- Low motor speeds practical, where dropping resistors and mechanical rheostat are ineffective

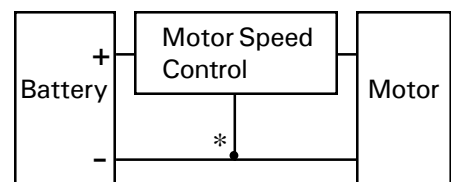
- High efficiency, compact size, low cost

Applications

- Optimize speed of heater motor or circulating fan to eliminate frequent resets
- Turn up exhaust fan or roof vent to expel air quickly ... then down for gentle air exchange
- Adjust a fill/empty pump at a slower, more economical and metered rate

Protected under US Patent 5,237,263
Pat Pend
Made in USA
web: www.zaneinc.com

Wiring Diagram



*To motor negative lead or chassis ground

Technical Specifications

Mode of Operation

Continuously variable, pulse width modulation. Loop powered to eliminate power connection to ground wiring. Unit is designed for motors under a constant load such as a fan blade. For motor that must be run unloaded, use ZANE Four-Wire DC Motor Speed Control instead

Supply Voltage

12V Version: 7 to 17 vdc working, up to 24 vdc momentary.

24V Version: 19 to 30 vdc working, up to 43 vdc momentary.

Battery or filtered dc source only. Fuse at electrical box

Output Voltage Adjustment Range

From zero vdc to supply voltage minus about 1 vdc

Continuous Output Current

Full rated current up to 105 F (40 C) ambient, 75% of rated current up to 115 F (46 C)

Ambient Temperature Range

- 40 F (- 40 C) to 115 F (46 C) (with restrictions noted)

DC-DC Conversion Efficiency

About 98% at full rated load

Reverse Connection Protection

Can be reverse connected without damage (will be full ON without knob control)

Reverse Battery Protection

User installed fuse opens. If no user installed fuse present, fuse link on rear of circuit board opens

Transient Protection

Double resistive/capacitive filtering, zener diode clamping

Size

3A unit is about 1.2" (29 mm) square. Other units are about 1.8" (47 mm) square

Weight

From 3 to about 5 oz (84 to 140 gm) depending on version and options

Line Regulation

Directly proportional to supply voltage

Voltage Drift

Nil with steady input voltage

Load Regulation

Delivered voltage normally regulates less than 5% from minimum to maximum load, other parameters steady

Power Dissipation of Drive Circuitry

Nominally about 0.038W. Power draw at minimum setting is about 0.002W. Nil power used in click-off position

Service Life of on/off Switch

About 50,000 cycles

Heat Sink

Heat sink is electrically isolated from voltage and acts as a circuit enclosure. Temperature rise under maximum load is about 40 F (22 C) above ambient

Accessories Included

Color coordinated switch plate mounting screws, and detailed installation instructions

Safety Construction

Conforms with ANSI-12V Standards

Warranty and Disclaimer:

Although Manufacturer warrants the goods, so far as the same are of its manufacturer, against defects in materials and workmanship under normal use and service for which they were designed for a period of 90 days after invoice date, Manufacturer's obligation under this warranty are limited, at its option, to the replacement of the part or parts determined to be defective or to the refund of the purchase price.

Claims made in this data sheet are based on extensive testing and are believed to be true. Manufacturer shall under no circumstances be liable for any special, indirect, incidental, or consequential damages owing to failure of the goods. Manufacturer makes no warranty of fitness for a particular purpose or merchantability or any other warranty, oral or written, expressed or implied, except as specifically set forth herein. Do not use ZANE products as critical components in life support devices or systems, or for proprietary or hazardous applications. Quotation, order acknowledgment, purchase, etc. does not grant or imply a license under any present or future patents owned by seller except to extent purchases are made from seller.

Any goods returned under warranty must be returned freight prepaid to ZANE International Inc., Minden, NV.

Two-Wire Motor Speed Control for Outlet Box Installation

Part #	UPC Number	Input Voltage	Maximum Current
AM2-34L-12V	23000	12V	3A
AM2-34L-24V	23100	24V	3A
AM2-44L-12V	23200	12V	5A
AM2-44L-24V	23300	24V	5A
AM2-48L-12V	23400	12V	8A
AM2-48L-24V	23500	24V	8A
AM2-54L-12V	23600	12V	11A
AM2-54L-24V	23700	24V	11A