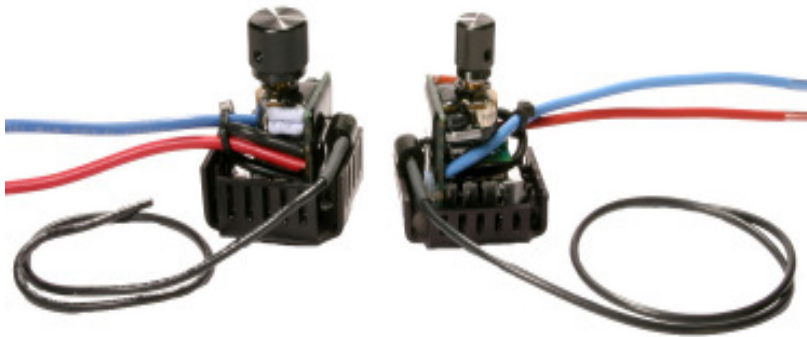


Two-Wire DC Motor Speed Control

Speed Control Plus On/Off in a Single Modular Unit



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 into new and retrofit applications. The ZANE Two-Wire Motor Speed Control delivers all 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 CW for varying intensities of smooth delivered power, or full CCW for tactile on/off. A truck, RV, or marine heater fan 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 lower, more economical rate.

Two-wire hookup and low heat generation means this Speed Control is typically a drop-in replacement for a toggle switch, glow wire system, dropping resistors, rheostat, or tapped winding system. Low speeds

are practical, where resistive devices are ineffective.

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 even operate a small motorized appliance while maintaining ideal knob linearity. Both 12V and 24V versions are available.

Double filtering reduces radio interference to the nil-to-none range, while open frame circuit construction and a heavy heat sink promote long life and high reliability. An efficiency of about 97 percent at all settings dramatically reduces battery drain. The premium-quality machined aluminum knob adds distinction and durability to the installation.

Each Control comes complete and ready-to-install with wiring harness, marked leads, and detailed installation instructions. Continuous current capacity is your choice of 3, 5, 8, or 15A when free air sited, somewhat less in confined space siting (see table, reverse side).

Options include silicone seal for extra corrosion protection in adverse environments, and factory mounting on a variety of switch plates for direct installation into an outlet box.

Features

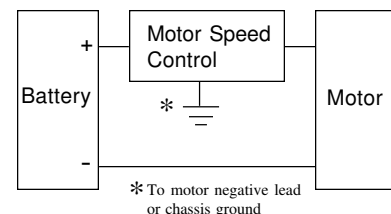
- Full-range speed control plus tactile on/off
- Directly replaces a toggle switch, glow wire system, dropping resistors, rheostat, tapped winding system
- Compact size, low cost, reduced acoustical noise
- 5-minute installation
- Quality constructed for heavy service
- 12V and 24V versions

Applications

- Heater fan
- Ventilating fan, exhaust fan
- Roof vent
- Fill/empty pump

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

Wiring Diagram



Technical Specifications

Mode of Operation

Continuously variable, pulse width modulation. Loop powered to eliminate power connection to negative wiring. Unit is designed for motor under constant load such as 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 voltage only. Fuse or breaker in 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

Fuse or breaker in electrical box opens. Alternately, 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

Installation

Installs through a 1/4" drilled hole with included hardware. Star washer prevents unwanted rotation of unit (lugs, keys, flats, etc unneeded)

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

Detailed installation instructions, mounting hardware (nut, star washer, o-ring)

Safety Construction

Complies with ANSI/RVIA 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, aircraft, or other 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, DC Motor Speed Control for Panel Installation

Part #	UPC Number	Input Voltage	Maximum Current Confined Space/Free Air
AM2-34R-12V	23800	12V	3A/3A
AM2-34R-24V	23900	24V	
AM2-44R-12V	24000	12V	5A/5A
AM2-44R-24V	24100	24V	
AM2-48R-12V	24200	12V	8A/8A
AM2-48R-24V	24300	24V	
AM2-54R-12V	24400	12V	11A/15A
AM2-54R-24V	24500	24V	