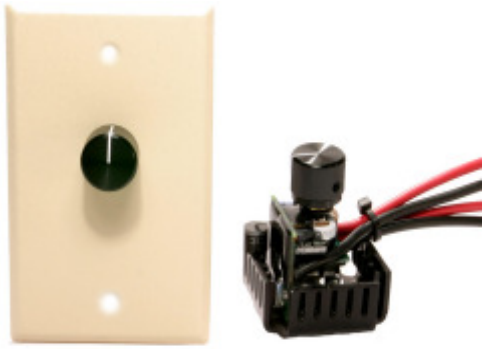
# Standard (four-wire) DC Motor Speed Control

## Versatile, Quiet Performance, Energy Savings



## Robust high surge design, full voltage delivery

This Standard (four-wire) DC Motor Speed Control provides infinitely-variable speed control plus on/off for a wide range of DC appliances including pumps, ventilators, blowers, fireplace inserts, range hoods, and mixers in both mobile and stationary applications. In retrofit applications, this Speed Control replaces an array of old, less effective devices including a toggle switch, tapped winding, and glow wire system.

Utility is greatly enhanced because you can choose the optimum speed for the appliance and purpose -- neither too fast or slow. Over 99 percent of battery voltage is delivered to the motor at maximum setting for performance that truly equals a toggle switch. Motor hum is minimal even at low speeds, while a tactile off feature allows you to reduce battery drain to zero when inactive.

Meanwhile, 97 percent conversion efficiency at most settings dramatically reduces battery drain. An included on/off activation wire allows remote switching by such devices as a standard thermostat on the "cool" or "hot" side, or the electrical contacts of a float or similar mechanism.

For example, cool air can be drawn into a building by a ventilator at a preset speed as temperature falls, or hot air vented as temperature rises. A pump can be activated at a preset speed as water level rises.

Continuous current capacity is your choice of 3, 5, 8, or 11A at your choice of 12V or 24V (see table, reverse side).

Quality construction features include double filtering to reduce radio interference to the nil-to-none range. A high performance heat sink keeps operating temperature low for high reliability and long life, and acts as a protective, open frame circuit enclosure. A premium-quality machined aluminum knob adds distinction and durability to the installation.

Each unit comes complete and ready-to-install with color-coordinated mounting screws into a standard, 1-gang outlet box in about 10 minutes. A metal/ivory switch plate is standard, while a stainless steel plate is available as an extra-cost option. A resealable clamshell package can be included for counter sales.

## Features

- Provides infinitely-variable speed control plus on/off for a wide range of DC applications
- Replaces obsolete toggle switch or resistive device
- Full power/voltage delivery at maximum setting
- Low hum, plus silencing capacitor option
- Easy outlet box installation in minutes
- High conversion efficiency
- Compact size, low cost, high reliability

## Applications

- DC pumps, ventilators, blowers, fireplace inserts, range hoods, mixers
- Replace toggle switch, tapped winding system, glow wire system
- Use with thermostat to activate fan or pump preset to ideal speed
- Optimize speed of dc power tools

Protected under US Patent 5,237,263
Pat Pend
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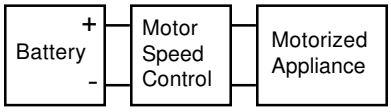
**Wiring Diagram**




ZANE
Low-Voltage Power Systems

# Technical Specifications

**Mode of Operation**
Continuously variable, pulse width modulation

**Supply Voltage**
*12V Version:* 8 to 20 vdc working, up to 32 vdc momentary.
*24V Version*: 18 to 30 vdc working, up to 40 vdc momentary.
Fuse or breaker in electrical box

**Output Voltage Range**
From zero vdc to essentially supply voltage

**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 97% at full output setting, somewhat lower at lower settings

**Load Types**
Optimized for motors

**Reverse Polarity Protection**
Power can be reverse connected across the input leads for a short period without damage. Fuse link on rear of circuit board blows if power is connected across negative leads and user-installed fuse is absent

**Transient Protection**
Double resistive/capacitive filtering, zener diode clamping

**Size**
Sized to fit a standard, 1-gang outlet box

**Weight**
From 3 to about 5 oz (84 to 140 gm) depending on options

**Load Regulation**
At a given setting, a relatively constant voltage (within about 3%) is delivered to the motor regardless of loading

**Line Regulation**
Directly proportional to supply voltage

**Voltage Drift**
Nil with steady input voltage

**Power Dissipation of Drive Circuitry**
Less than 0.038W. No-load current draw is about 1mA. Nil current 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

**Reverse Battery**
Reverse battery connection will blow user-installed fuse

**Accessories Included**
Color-coordinated switch plate mounting screws and detailed installation instructions

**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 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.

**Standard (four-wire) Motor Speed Control for Outlet Box Installation**

| Part # | UPC Number | Input Voltage | Maximum Current |
|---|---|---|---|
| AMS-34L-12V | 17000 | 12V | 3A |
| AMS-34L-24V | 17100 | 24V | 3A |
| AMS-44L-12V | 17200 | 12V | 5A |
| AMS-44L-24V | 17300 | 24V | 5A |
| AMS-48L-12V | 17400 | 12V | 8A |
| AMS-48L-24V | 17500 | 24V | 8A |
| AMS-54L-12V | 17600 | 12V | 11A |
| AMS-54L-24V | 17700 | 24V | 11A |

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