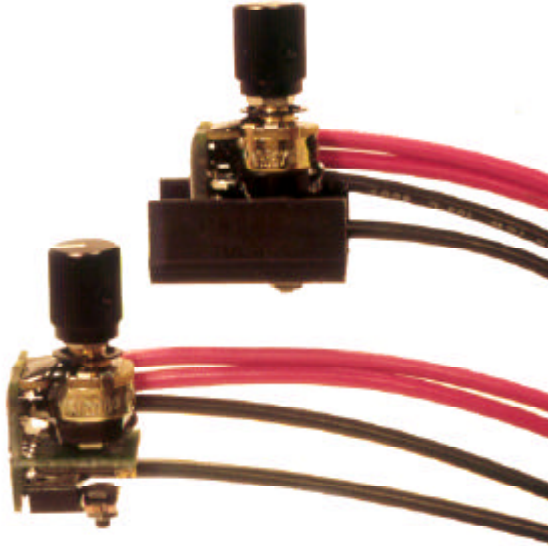


Miniature Dimmer

For Limited Space and Hand-Carried Applications



Amazing performance, miniature dimensions

With as much as 250 watts of power-handling ability per square inch plus click-off, this miniaturized DC Dimmer actually handles more power than many toggle switches of equal size. Efficiency is an incredible 98 percent at most settings to minimize waste heat. Adjustment range is from completely off to about 99 percent of battery voltage at full setting.

Surface mount technology is used extensively to achieve compact dimensions. Board material is 94V-0 flammability rated for extra safety, with triple thick "carved" traces to minimize board dimensions. Wiring is 105 degree C rated, while a heavy internal RC filter and reverse battery diode guard against the major causes of failure. The 100 Hz constant switching frequency drastically reduce the potential for conductive and radiated interference.

Any standard incandescent bulb including tungsten and halogen as well as LED's can be driven. Because starting and ending surge are eliminated, expensive bulbs actually last far longer.

An extensive array of options are available to meet diverse OEM requirements. Configuration for use with 6, 12 and 24V battery supplies is available at the same price. Silicone seal (DOW Corning 1-2620 Dispersion) can be applied for extra protection in corrosive environments. Lead wires for an LED "ON" indicator can be added. To reduce cost still further, the heat sink and/or knob can even be eliminated.

Any portion of the voltage output range can be resistor-selected as a factory option, for example to set a minimal level at click-on, or to eliminate the final volt of adjustment to extend the life of voltage-sensitive halogen bulbs.

Features

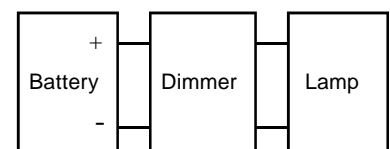
- Ultraminiature size for easy siting in hand-carried equipment.
- High efficiency minimizes battery drain and waste heat
- Output voltage continuously adjustable between zero and full, with partial ranges available
- Minuscule no-load current (about 1mA)
- Versions for 6, 12, and 24V battery supplies at same price
- Drives Incandescent and LED lights, heating elements

Applications

- Mobile lighting where installation space is limited
- Instrument panels
- Lanterns and other hand carried uses

Protected under US Patent 5,237,263

Wiring Diagram



Technical Specifications

Mode of Operation

Continuously variable pulse width modulation

Supply Voltage

6V Battery Version: 3 to 12 vdc working, up to 15 vdc momentary.

12V Battery Version: 8 to 15 vdc working, up to 19 vdc momentary.

24V Battery Version: 20 to 27 vdc working, up to 30 vdc momentary.

Output Voltage Range

From zero vdc to essentially supply voltage. Range can be resistor optimized at factory

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

Load Types

Optimized for resistive loads including incandescent lights and heating elements. Drives most LED devices

Reverse Polarity Protection

Input leads can be reverse connected without damage. Cannot be reverse connected across negative leads

Transient Protection

Resistive/capacitive filtering

Size

Basic size is 0.9" (22 mm) long by 0.75" (19 mm) wide by 1" (26 mm) high (excluding heat sink and knob)

Weight

Basic weight is about 1.3 oz (excluding heat sink and knob)

Line Regulation

Directly proportional to supply voltage

Load Regulation

Generally less than 3% from minimum load to maximum load at any setting

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 (where supplied) 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

6" (15 cm) leads, knob, heat sink, silicon seal, 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 components in life support devices or systems, aircraft, or other hazardous applications.

Any goods returned under warranty must be returned freight prepaid

Miniature DC Dimmer (four-wire) for Panel Installation

Part #	UPC Number	Input Voltage	Maximum Current FreeAir/Confined Space
AMD-48R-6V	16700	6V	12A/8A
AMD-48R-12V	16800	12V	12A/8A
AMD-48R-24V	16900	24V	12A/8A