

Four-Wire, Low-Voltage AC Dimmer

Packed With Features for Incandescent and AC rated LED



New dimensions in low-voltage AC lighting

With the ZANE Four-Wire, Low-Voltage AC Dimmer, you can blend safe-to-the-touch 12- or 24 VAC with the superior illumination qualities of low-voltage lighting in new and innovative ways. Compatible with halogen, AC-rated LED, and now the new generation of AC/DC rated LED as well.

First, this ZANE AC Dimmer installs on the low-voltage side of a magnetic step-down transformer for easy system design, fast installation, individual control, better LED dimming performance, and affordable price.

With only four connections and tagged leads, you can expect first-time-through installation success in about 10 minutes (see diagram, below right). There is never a grounding or bypass wire to connect, or special components to match.

An innovative "pi" trigger circuit delivers flicker-free, wide-band dimming performance -- from warm glow through high-intensity halogen or LED brightness. Triac-based power circuitry coupled by dual low-firing-point diacs minimizes waste heat and maximizes efficiency and brightness.

A quality machined aluminum knob adds elegance and value to the

installation. Rotary action is crisp and smooth, while a tactile off position eliminates power drain when inactive. An accelerating response curve allows better control over the important low brightness range. Bugs are not attracted at low incandescent settings.

You can even optimize minimum brightness "on the fly" with an included potentiometer to compensate for low or high AC source voltage, create some special effect, or reset after additional lamps are added. Soft start/end extend the life of expensive incandescent bulbs.

A heavy RF noise filter delivering about 10 times the suppression of an ordinary filter attenuates interference with nearby radios and other electronic appliances to the nil-to-none range.

Each Dimmer comes complete and ready-to-install with wiring harness and detailed installation instructions. Rating is your choice of 12- or 24 VAC at either 10- or 20A (see table, reverse side). The standard switch plate is metal/ivory, with other styles including stainless steel available. Extra-cost options include a resealable clamshell package for counter sales, and silicone seal for extra protection in difficult operating environments.

Applications

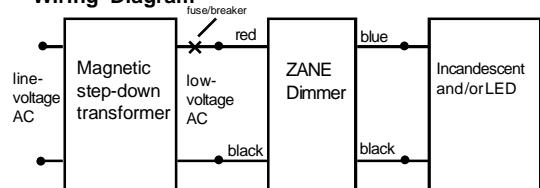
- Yard:** Optimize illumination for pool, patio, spa, pathway, pond, fountain, security. Bugs are not attracted at low incandescent settings
- Architectural and Landscape:** Heighten dramatic effect and improve balance for spot, wash, flood. "Moon Garden" applications. Hard-to-replace incandescent bulbs last far longer
- Interior:** "Presentation" lighting, night lighting, stage lighting
- Mobile:** Variable lighting for RV and marine interior and exterior

Application Note:

For incandescent only applications, any combination of ZANE Dimmers and switched circuits can be installed on a given transformer. For example switched for kitchen overhead, dimmed for under-counter, dimmed on another circuit for over sink...

For mixed incandescent and LED (or LED only) applications, just one ZANE Dimmer can be installed on a given transformer without possible LED flicker. From here any combination of dimmed or switched incandescent or LED can be added. For example dimmed LED for exterior walkway, switched incandescent or LED for garage, switched incandescent or LED for front porch...

Wiring Diagram



Technical Specifications

Dimmers and Transformers

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Mode of Operation

Triac-based with pi-configured trigger circuit, dual low-firing-point diacs, and heavy RF filter

Supply Voltage

12- or 24 VAC (nominal)

Fuse/Breaker

The Dimmer should be fused/breakered for rated capacity (ie, 10A or 20A). The Dimmer can then be used up to the point the fuse/breaker opens

Maximum Load

Normal is 70-80% of rated current, though usable up to point the 10A or 20A user-installed fuse/breaker opens

Minimum Load

None

Heat Dissipation

Low-voltage operation inherently results in more waste heat than line voltage for a given power delivery. The metallic wall plate serves as an external heat dissipater and should remain out of direct sunlight and unobstructed by thermal insulating material for maximum service life of unit. Temperature rise of plate at rated current is typically under 40 F (22 C) above ambient (could become hot to the touch under unusual conditions)

Ambient Temperature Range

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

Dimming Range

From about 10% min (factory setting) through about 90% max. Can be manually set for about 5% min

Voltage Drift

Nil with steady input voltage

Line Regulation

Directly proportional to AC line voltage

Load Regulation

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

AC-AC Conversion Efficiency

About 85% at full rated load

Transient Protection

Pi trigger circuit acts as spike filter for protection against transient voltages

Load Types

Any combination of resistive loads (incandescent, halogen, heating elements) and/or AC- or AC/DC rated LED. Not suitable for electronic appliances, fluorescent lighting, or DC-rated LED. Damage may result

Service Life of on/off Switch

About 50,000 cycles

Size of Dimmer

About 1.9" (49 mm) long by 1.3" (33 mm) wide by 1.7" (43 mm) high (excluding knob)

Weight Including Plate

About 7 oz (195 gm) for 10A version, about 8 oz (224 gm) for 20A version

Installation Procedure

Installs directly into a standard outlet box with included screws

Accessories Included

Color coordinated mounting screws, tagged leads, 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. 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.

Four-Wire, Low-Voltage AC Dimmer for Outlet Box Installation

Part #	UPC Number	Input Voltage	Maximum Current/Watts
AC4-10AL-12V	27300	12 VAC	10A/125W
AC4-10AL-24V	27400	24 VAC	10A/250W
AC4-20AL-12V	27700	12 VAC	20A/250W
AC4-20AL-24V	27800	24 VAC	20A/500W