Universal Dimming LED Driver

Class 2 Constant Voltage Power Supply
Suitable for use in dry and damp locations.
Models: MD24W, MD45W, MD60W with 12-Volt DC Output

IMPORTANT: Read before installing
1. This driver works with 12-volt dimmers, RGB controllers, or 120-volt AC dimmers, but not at the same time.
2. Some LED driver models may come with an AC cord. While a plug can be used with 12-volt LED drivers and RGB controllers, the unit must be direct wired when used with a 120-volt AC dimmer. Please read the section, “Using Direct Wire Hook Up” in these instructions.
3. One AC dimmer can be direct wired to multiple LED drivers at the same time.
4. Never combine a 12-volt white LED dimmer and an RGB controller in the same circuit. Using a standard on/off wall switch with a 12-volt dimmer or controller is permitted.

Never combine a 120-volt AC dimmer, a 12-volt DC dimmer, or an RGB controller in the same circuit. Using a standard on/off wall switch with a 12-volt dimmer or controller is permitted.

If direct wiring this LED driver to a 120-volt circuit, route and secure wires so they will not be pinched or become damaged.

Using Direct Wire Hook Up

Electrical code requires hardware hookup to be used when connecting this driver with a 120-volt AC dimmer.

Remove end caps to access the terminal block connectors for both AC input and DC outputs. Use Romex® style 14 gauge cable to tie in with the 120-volt AC line voltage. For 12-volt DC output 18 gauge cable is generally recommended, however, DC terminal block can also accept thicker wires up to 14 gauge if required to reduce voltage drop. Be sure all wires are properly seated inside and under the terminal block screw clamp. Tighten down the clamp with a screwdriver. Do not over-tighten.

Note: Do not use AC ground wire. This LED driver uses Class II AC inputs with a fully isolated plastic case; ground wire is not required.

**Typical Wiring Diagram When Used with an AC Dimmer**

**Dimmer Compatibility**

Armacost Dimming LED Drivers are compatible with both forward phase (leading edge, triac, incandescent) and reverse phase (electronic low-voltage, ELV, and trailing edge) AC dimmers, including higher end lighting controls, such as Lutron GRAFIK Eye® systems. They are also compatible with low-voltage PWM dimmers and RGB color controllers.

Although virtually all dimmers will work with Armacost Dimmable LED Drivers, Armacost recommends using RGB color controllers that can be programmed or have an adjustment dial to set the low end dimming range, such as Lutron® C•L° and Leviton IllumaTech® Universal Dimmers.

**IMPORTANT:** Armacost drivers do not need a minimum wattage load for proper operation, but some AC dimmers may have this requirement. Check the specifications of your dimmer to confirm that your lighting exceeds this value, or choose a dimmer with little or no load requirement.

**Large Area Lighting Applications and Maximum Load**

For synchronized brightness control of large areas of LED lighting or lighting in different areas, connect one 120-volt AC dimmer to multiple dimming drivers. Do not exceed 40% of your AC dimmer’s rated maximum allowable incandescent/halogen wattage capacity.

Use this formula to determine the number of power supplies that your dimmer can accommodate:

\[
\text{AC Dimmer Rating in Watts} \times 40\% = \text{Power Supply Rating in Watts}
\]

For example: If the dimmer states 600 watts maximum incandescent load, and you are using a 24 watt driver, then you can connect no more than ten 24 watt drivers (max combined load of 240 watts).

**Features and Specifications**

See model-specific information on your unit’s case label
- No minimum lighting load required for wide range dimming
- No de-rating is required; load up to 100% of the model's rated capacity
- Rated for 30,000 hours when used 8-12 hours a day at full load; expect longer life when dimmed or when using lesser wattages.
- Full safety shut off protection in case of lighting overload, open circuit, short circuit, over-temperature, or other fault. The driver will automatically restart after the fault has been corrected.
- Output: 12-volt DC constant voltage
- \( Ta = -4° F (-20°C) \) to 104° F (40° C)
- Class II AC input (two-wire connection, requires no ground)
- Complies with FCC Part 15B
- Safety Standards: UL Std. 1310 and 8750, Cert. to CAN/CSA Std. C22.2 No. 223-M91 and C22.2 No. 351.10; For dry and damp location use

Limited three-year warranty. Warranty will be void if LED driver is not installed per these instructions. Disregarding warnings, failure to use this product for its intended purpose, or improper installation will void warranty. Proof of purchase is required for all returns.

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