



Beta PWM6A 6 Channel PWM DC Dimmer Instruction Manual

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Beta PWM6A 6 Channel PWM DC Dimmer



OVERVIEW

The Pathway eDIN LED Dimmer/DC Driver provides DMX512 control over LEDs and other DC devices. Each module provides 6 channels of control. When controlling LEDs, the module acts as a dimming interface only. The LED fixture will require a separate regulated DC power supply, as recommended by its manufacturer. These instructions apply to REV 2 hardware running firmware 1.6.2 or higher.

CONNECTIONS

The PWINF DIN PWM features terminal strips that can be removed from the card to facilitate easy wiring installation or replacement. Make the following connections, WITH THE POWER TURNED OFF, and observe ESD precautions by ensuring the installer is properly grounded before handling the device.

POWER

The DMX/RDM Splitter is designed to run on a range of voltages from 9-30 volts DC. Each PWM DC Dimmer requires 5 watts. Observe the correct polarity when connecting to V+ and V-.

A second set of terminals are provided as a DC power-through connection to other DIN devices. The EARTH GND terminal may be connected to the enclosure's chassis or electrical ground terminal to improve EMC compliance.

DMX512

DMX connections consist of a shield wire and one or two data pairs. DMX IN is wired from the control console, or other source. DMX THRU may be daisy-chained to the DMX IN of other eDIN cards, or to other DMX equipment. Connect DATA+ and DATA- wires to D1+ and D1- respectively. The optional data pair may be connected to D2+ and D2-. Observe the same polarity convention throughout the system. Connect the shield wire to the SHLD/COM terminal.

DC/PWM OUTPUTS

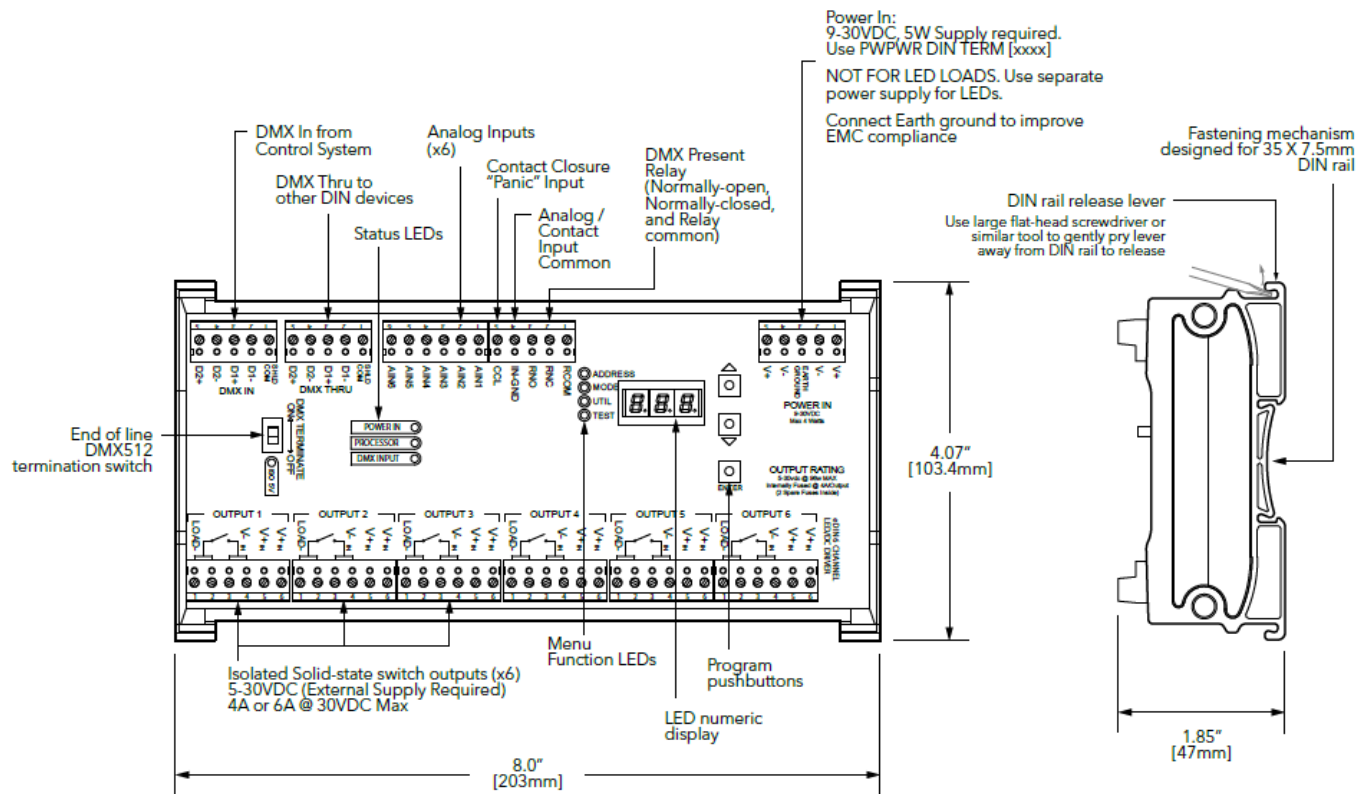
The LED Dimmer/DC Driver interface provides six (6) outputs that will each handle up to 4 amps at voltages up to 30VDC. The outputs are of the current-sinking type. A separate DC power supply is required, appropriately sized for the connected load, as recommended by the connected equipment's manufacturer.

Each output is fully opto-isolated from the other outputs, from the DMX signal and from the eDIN board power supply. Multiple pins are provided to allow for load spreading. Outputs are connected as follows:

LOAD- (Terminals 1 & 2): Connects to the negative terminal of the load, or the LED Cathode.

V- (Terminals 3 & 4): Connects to the negative or common terminal of the load power supply.

V+ (Terminals 5 & 6): Connects to the positive terminal of the load power supply and to the positive terminal of the load, or the LED Anode.



STATUS INDICATORS

POWER IN

Blue. Glowing steadily indicates power supply OK; off indicates no power.

PROCESSOR

Green. Glowing steadily indicates processor is OK; off when POWER IN is lit indicates processor failure.

DMX INPUT

Amber. Glowing steadily indicates data signal received; off indicates no signal present.

MENU FUNCTION

Amber. Indicates which function is active on the numeric display.

ISO INPUT

Red. Steady glow indicates isolated 5V supply is OK. Off indicates no power.

OUTPUT

Amber. Glow approximates output level.

DMX PRESENT RELAY CLOSURE

Wire RCOM to RNC or RNO for a normally closed or normally open DMX indicator, as desired.
When DMX is present, the closure will be held in a state opposite to its 'normal' position.

CONTACT CLOSURE PANIC INPUT

When CCL is shorted to IN-GND, for example by closing an e-stop switch, all outputs are forced to the MAX output level, regardless of DMX level or signal presence.

ANALOG INPUT

Applying a 0-10VDC input between any AIN(x) and the IN-GND pin will drive that particular output. Output level is an HTP-merge between the DC voltage level and the incoming DMX signal for that channel.

Do not exceed 10VDC maximum input voltage.

CONFIGURATION

The DIN Interface has 2 operating modes: Function and Edit. Press the **▲** or **▼** buttons to select a function, as indicated by the LEDs next to ADDRESS, MODE, UTIL, and TEST. Once selected, press and hold the ENTER button until a dot appears in the lower right-hand corner of the display. The card is now in EDIT mode. Use the **▲** or **▼** buttons to change, then press ENTER to accept the new value.

SET DMX ADDRESS

Once in ADDRESS edit mode, press **▲** or **▼** to change the start address to the desired value between 1 and 512. Press ENTER to save the new start address.

SET OPERATING MODE

- **Mode 1:** Default LED Control Mode (6 channels)

The incoming DMX channel level is interpolated to produce a 16-bit value. A weighted fade curve is also applied to compensate for LED response, producing an apparently linear fade to the human eye.

- **Mode 2:** DMX Double Precision Mode with Curve (12 channels) Two DMX control channels are used to produce a 16-bit value for each output. A weighted curve is also applied.

- **Mode 3:** DMX Double Precision Mode without Curve (12 channels) Two DMX control channels are used to produce a 16-bit value for each output with no compensating curve. Output follows the DMX values linearly.

- **Mode 4:** Non-Dim Mode

When the DMX channel is below 50%, the corresponding output will be off. When the channel level is above 50%, the corresponding output will be on (full). Use for nondimming loads such as solid state relays or solenoid coils.

- **Mode 5:** Single channel control

One DMX channel, the start address, controls all six outputs from the module.

- **Mode 6:** 3 Channel Mirror Mode with Curve (3 channels)

Outputs are paired (1/4, 2/5, 3/6). Paired outputs are driven by the same DMX channel, with the weighted curve applied to the output.

- **Mode 7:** 3 Channel Mirror Mode without Curve (3 channels) Outputs are paired (1/4, 2/5, 3/6). Paired outputs are driven by the same DMX channel, with no compensating curve. Output follows the DMX values linearly.

UTIL MODE

There are four UTIL modes.

A: Adjusts the smoothing algorithm between 1 (very smooth) to 100 (no smoothing). Factory default is 64.

B: Sets a MIN output level between 0 (default) and 255, that the card will output in the absence of DMX.

C: Adjusts a Grand Master maximum output level between 0 (off) and FL (100% – default).

D: Sets DMX signal loss behavior. Options are “0” – zero seconds, “0.5” – thirty seconds, “1” – one minute, “5” – five minutes and “–” forever (default).

TEST MODE

Use **▲** or **▼** to cycle the display from 1 through 6. The corresponding output will be at full. Normal DMX input will be ignored. Press ENTER to exit test mode.

DMX TERMINATION

DMX rules require the final device in-line have a terminating resistor. If there are other devices connected to the DMX THRU terminals, the DMX TERMINATE switch should be OFF. Otherwise the terminator should be ON.

RDM RESPONDER FEATURES

The PWINF DIN PWM DC Dimmer is fully compliant with ANSI E1.20 Remote Device Management as a responder device. An RDM controller can discover and retrieve the card's DMX start address, firmware version and operating mode (personality). DMX start address and operating mode are remotely configurable by the controller. Starting with firmware 1.5.5, an RDM utility can upgrade the firmware in the field.

COMENTARY ON DIMMING LEDs

The #1008 eDIN LED Dimmer does not regulate the current supplied to the LED. Always use a current-regulated power supply, approved by the LED manufacturer, to supply the LED fixture.

ELECTRICAL INFORMATION

- **Power input:** 9-30VDC (DO NOT USE main device supply also for LED loads; use separate supply)
- 5W maximum power consumption
- 4A or 6A Switched output (PWM4A or PWM6A model) (must use external power source appropriate for loads)
- **Isolation:** 1500V isolation between DMX output and analog/contact inputs
- **Fault protection:** 250V fault protection on DMX port

COMPLIANCE

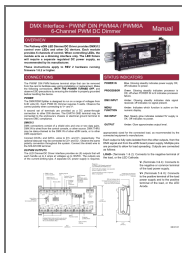
- ANSI E1.11 DMX512-A R2013
- ANSI E1.20 RDM – Remote Device Management

PHYSICAL

- 8.0"W x 4"H x 1.85"D (203mm x 103mm x 47mm)
- 0.7 lbs (0.32 kg)
- Operating Conditions: 14°F-113°F (-10°C to 45°C); 5-95% relative humidity, non-condensing

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Documents / Resources



[Beta PWM6A 6 Channel PWM DC Dimmer](#) [pdf] Instruction Manual
PWINF DIN PWM4A, PWM6A, 6 Channel PWM DC Dimmer, PWM6A 6 Channel PWM DC Dimmer, PWM DC Dimmer, DC Dimmer, Dimmer

References

-  [DMX Lighting & Networking | Pathway Connectivity](#)

