

eDIN Model 1008 LED Dimmer_{REV 2} Manual

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 modules.

CONNECTIONS

eDIN LED Dimmer/DC Driver modules feature terminal strips that can be removed from the module to facilitate wiring and replacement. Make the following connections *WITH THE POWER TURNED OFF*:

POWER

The module is designed to run on a range of voltages from 9 to 30 VDC, at 500mA per card connected.

Observe the correct polarity when connecting to V+ and V-. A second set of terminals is provided on the same connector to daisy-chain power to other eDIN modules. Earth Ground must be connected to the enclosure's chassis or ground terminal to ensure 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.

'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.

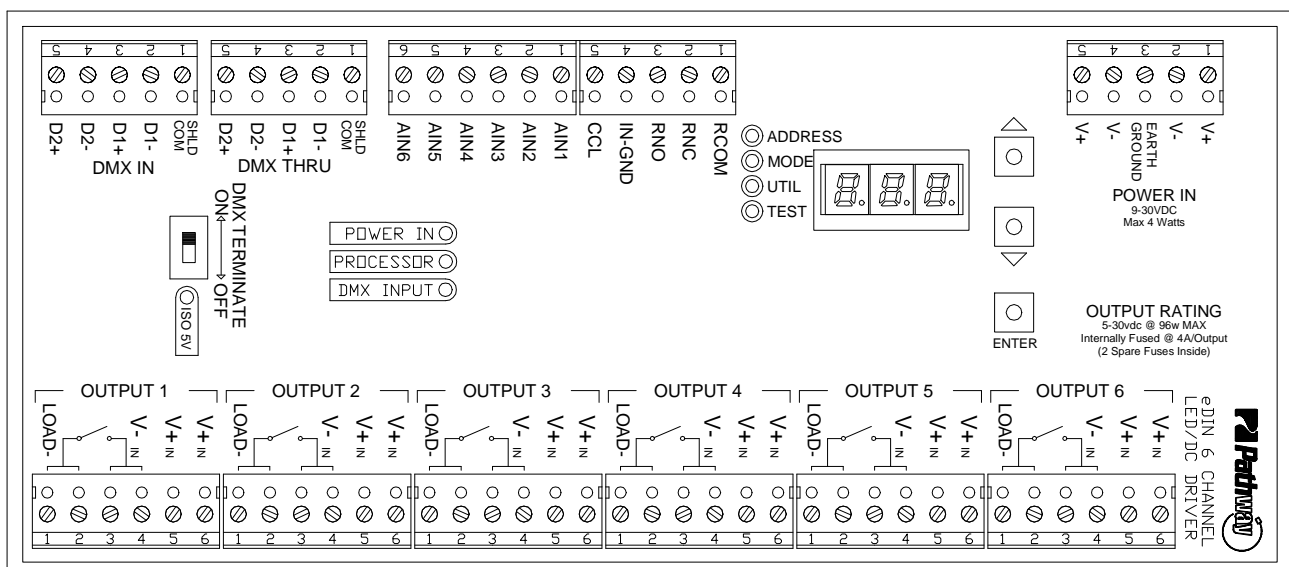
CONTACT CLOSURE 'PANIC' INPUT

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 eDIN user 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. 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 to compensate for LED response, producing an apparently linear fade to the human eye.

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. The PWM output values follow the DMX input values linearly.

Mode 4: *Non-Dim Mode*

When the DMX channel is lower than 50% (hex 80, decimal 128), the corresponding output will be off. When the channel level is above 50%, the corresponding output will be on. Use this mode to drive non-dimming 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.

UTIL MODE

There are three UTIL modes. The first adjusts the smoothing algorithm between 1 (very smooth) to 100 (no smoothing). Factory default is 64. The second adjusts a Grand Master maximum output level between 0 (off) and 256 (default). The third sets a MIN output level between 0 and 255, that the card will always output even in the absence of DMX.

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.

STATUS INDICATORS

| | |
|----------------------|---|
| POWER IN | Blue. Steady glow indicates power supply OK; off indicates no power. |
| PROCESSOR | Green. Steady glow indicates processor is OK; off when POWER IN is lit indicates processor failure. |
| DMX INPUT | Amber. Steady glow indicates data signal received; off indicates no data signal. |
| 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 TERMINATE

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 eDIN 1008 LED Dimmer module 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.

COMMENTARY ON DIMMING LEDS

The eDIN LED Dimmer uses pulse width modulation (PWM), instead of voltage or current control, to turn the LED on and off very rapidly. Unlike tungsten lamps, LEDs have no latency—when they're off, they're off. But if the LED is switched quickly enough, the human eye smoothes out the difference, causing the LED to appear to 'dim'.

High frequency pulsing is not sufficient alone to prevent 'staircasing' or visible steppiness in the dimming curve. Fine control of the width, or length of time the LED is in a given state, is also important.

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.

SPECIFICATIONS

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|-------------------|--|
| Power Supply: | 9-30VDC, 500mA |
| Input Signal: | USITT DMX512A, ANSI E 1.20 RDM |
| Data Connections: | Pluggable screw-down connector, AWG 24 to 14 |
| Output Rating | 4A at 30VDC maximum each |



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