

eDIN Model 1008 LED Dimmer 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 power supply, as recommended by its manufacturer.

CONNECTIONS

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

POWER

The module will run on a range 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. A grounding terminal is provided for optional connection to Earth Ground.

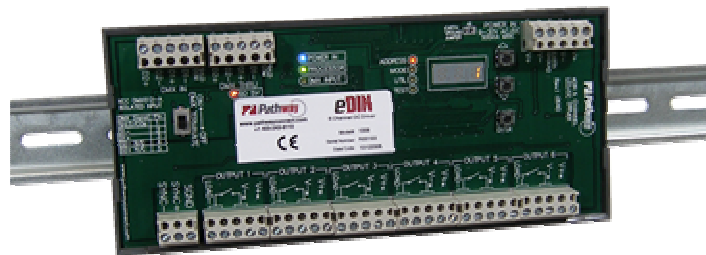
DMX512

DMX connections consist of a shield and one or two data pairs. DMX IN comes from the control console, architectural controller or from the DMX THRU connector of another eDIN module. DMX THRU may be daisy-chained to the DMX IN of other eDIN modules, or to other DMX equipment.

Connect DATA+ and DATA- to D1+ and D1- respectively. The second data pair (unused) may be connected to D2+ and D2-. Observe the same polarity convention throughout the system. Connect the cable shield or common to the SHLD COM terminal. A DMX512 reference is provided on the next page.

DC/PWM OUTPUTS

The LED Dimmer/DC Driver interface provides six (6) outputs that may be used to drive almost any type of DC load from relay or solenoid coils to LED lighting fixtures. Each output will 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 independent and fully opto-isolated from the other outputs, from the DMX signal and from the eDIN board power supply.

Two pins are provided for each of the Load- and the V- to allow load spreading or the attachment of multiple wiring legs. Outputs are connected as follows:

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

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

V+ (Pin 5): Connects to the positive terminal of the load power supply and to the positive terminal of the load, or the LED Anode. This connection is in addition to the required positive PSU to load positive connection.

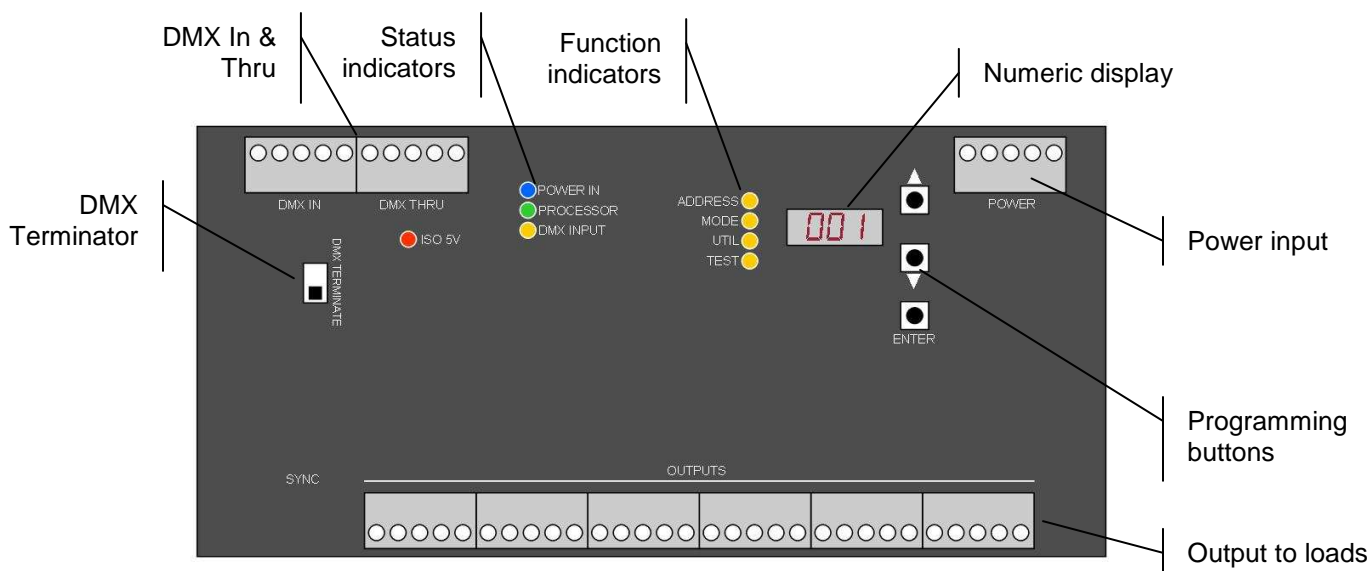
CONFIGURATION

The user interface has 2 operating modes: Function and Edit. Press the ▲ or ▼ buttons to cycle through the available functions: ADDRESS, MODE, UTIL, and TEST.

When the LED beside the desired function is lit, press and hold the ENTER button until a dot appears at the bottom right of the numeric display. The card is now in EDIT mode.

ADDRESS sets the DMX start address of the card. MODE sets the operating mode. UTIL is reserved for future use. TEST toggles the outputs on and off, using the ▲ or ▼ buttons to cycle through the outputs.

When done editing a parameter, press the ENTER



eDIN LED Dimmer/DC Driver Configuration

CONFIGURATION (CONT'D)

button again. The dot will disappear, the parameter will be saved, and the card will be ready for operation.

Hint: You can press and hold the ▲ or ▼ buttons to speed through values.

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

Once in MODE edit, use ▲ or ▼ to choose from:

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. There is no compensating curve, so 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.

TEST MODE

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

DMX REFERENCE

DMX	XLR5 pin	eDIN terminal
Common	1	SHLD / COM
Data -	2	D1-
Data +	3	D1+
Aux Data -	4	D2-
Aux Data +	5	D2+



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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 the function active on the numeric display

DMX TERMINATE

DMX rules require that devices terminate the DMX line unless daisy-chained. If there is no connection to the DMX THRU terminals, the DMX Terminate switch should be ON. If there are other devices connected to the DMX THRU terminals, the DMX Terminate switch should be OFF on all devices except the last device in the daisy chain, which should have its terminate switch 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, such as the Pathway DMX Repeater Pro, can discover and retrieve the card's unique identifier (UID), its DMX start address, firmware version and operating mode (personality). DMX start address and operating mode are remotely configurable by the controller. The RDM standard does not currently support a method of firmware upgrade.

COMMENTARY ON DIMMING LEDS

The eDIN LED Dimmer does not manipulate current or voltage to dim the LED fixtures. Instead, pulse width modulation (PWM) is used 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 smooths out the difference and the LED appears 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 supply any current to the LED. Use a current-regulated power supply, approved by the LED manufacturer, to counteract an LED's tendency to overdraw current as it heats up.

SPECIFICATIONS

Power Supply:	9-30VDC, 500mA
Input Signal:	USITT DMX512A, ANSI E 1.20 RDM
Connections:	Two piece compression screw terminals Accepts AWG 24 to 14