

# Product Manual

## EX-3

High Power DMX Driver with  
Override Inputs and Diagnostic  
Indication



CE

## Table of Contents

Product Summary.....	2
Package Contents, Operating Environment and Absolute Maximum Ratings .....	2
Glossary .....	3
Features.....	3
Front Panel Layout.....	4
Getting Started .....	4
Switch Override Inputs .....	6
Troubleshooting.....	7
Warranty and Contact Information.....	8

## Product Summary

The EX-3 is a professional high power constant voltage DMX Driver designed to control large numbers of LED downlights or very long lengths of LED tape. The driver has built-in diagnostics that are indicated by three tricolor LEDs on the front panel.

## Package Contents

EX-3 DMX Driver

Patch Cable RJ-45 2m

## Operating Environment

The unit is intended for indoor use only.

The unit will operate satisfactorily in an ambient temperature range of 0°C to 35°C. If this is exceeded, the unit will shut down to a safe operating level.

## Absolute Maximum Ratings

Input Voltage : 24V

Output Current: 6A per channel (internally limited by shutdown)

Output Power: 570W at 24v, 288W at 12v

## Glossary

**Base Address:** The address, set by front panel DIP Switch that the unit decodes and sends to the output terminal as a PWM signal.

**Dimmer:** One discretely controlled device or parameter of a device out of 512 possible in the DMX512 protocol. Also referred to as "Address", "DMX Channel" or "Output Channel"

**DMX:** 512 addresses or slots' worth of control information as conveyed by DMX512 protocol. A lighting system may have more than 512 discrete things to control, so multiple universes may be required.

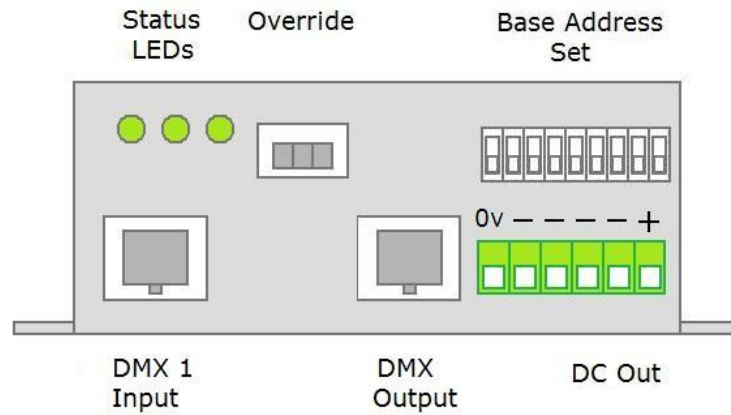
**PWM:** Pulse Width Modulation. The preferred method of dimming LEDs.

**SELV:** Safety Extra-Low Voltage.

## Features

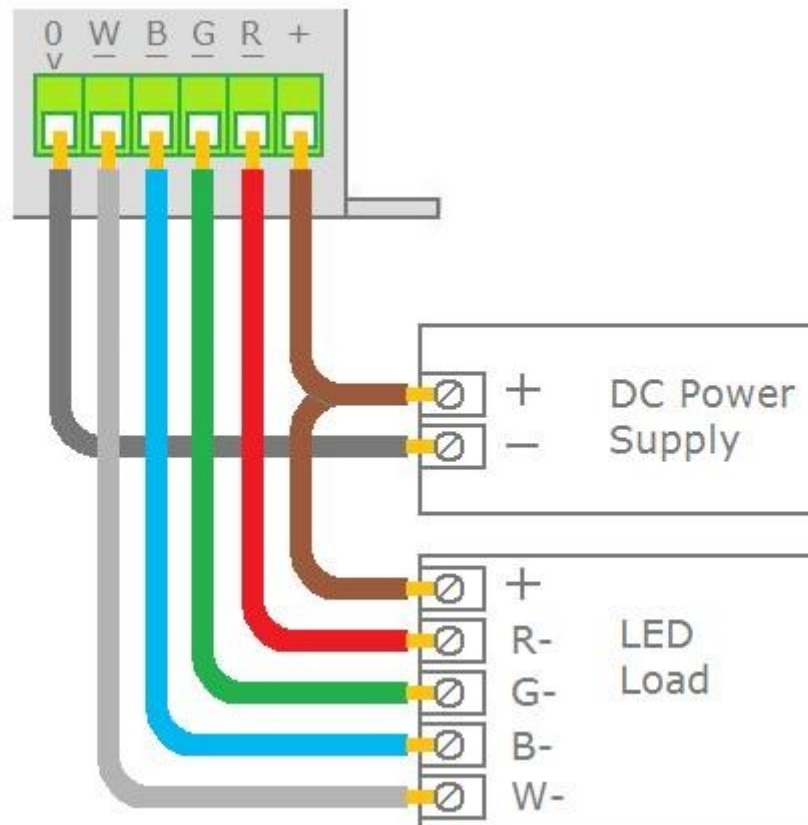
- Complies with the essential requirements of EN 61347-1 General and safety requirements for lamp control gear and EN 61347-2-13 Particular requirements for electronic control gear for LED modules.
- Decodes 4 channels of DMX
- 2 x RJ45 DMX Connections, DMX in and DMX out
- DMX Out signal is buffered for glitchless downstream operation
- 6 pin output to LEDs
- Status LEDs that indicate:
  - DMX Active / Inactive
  - Overtemperature / Overcurrent
  - Overvoltage / Undervoltage
- Override switch inputs allow operation at 50% or 100% output in the event of a DMX controller failure
- MOSFET output devices that offer high reliability, long service life and exceptional resistance to static discharges
- Maybe left infinitely connected to open and short circuits
- Automatic shutdown in the event of overtemperature , overvoltage or overcurrent

## Front Panel Layout



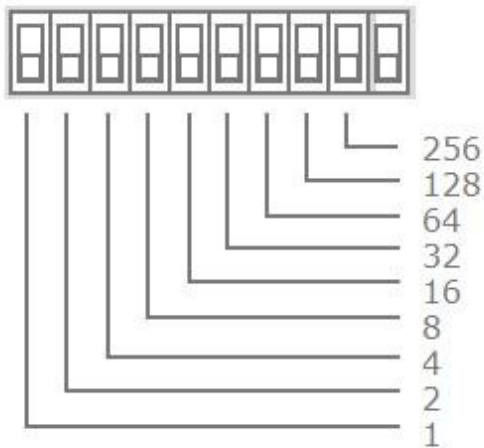
## Wiring The Lights and Power Supply

The LED driver is designed to run 12 or 24v LEDs. They connect directly to the green output connector as follows:



## Setting the Base Address

The base address is set by the DIP switch as follows:



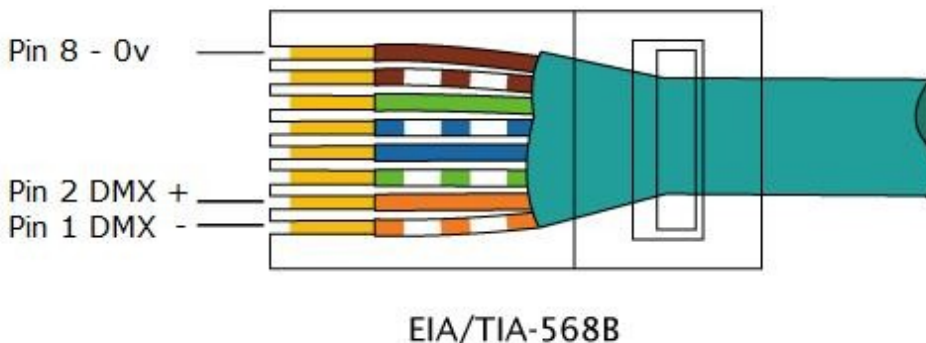
Flipping the switch UP adds the number indicated to the base address. Thus, if the switches marked 1 and 8 were UP, the base address would be 9.

The base address is selectable between 1 and 510.

If no DIP switch is selected the DMX driver assumes the address 1.

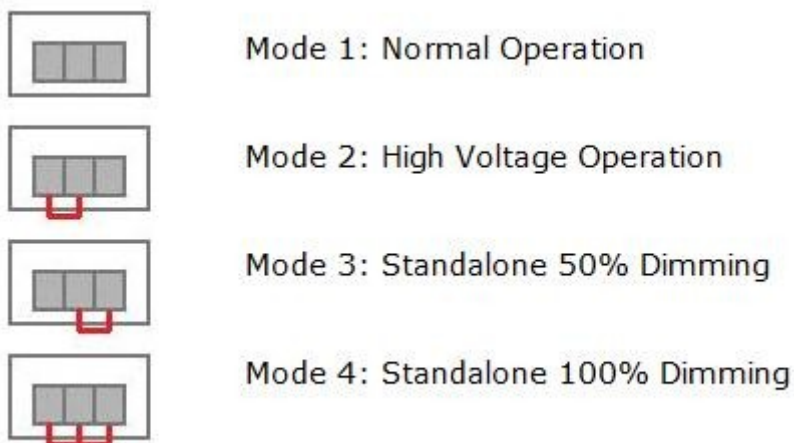
## Connecting the DMX

The pinouts are as follows for both DMX in and DMX out



When the DMX is connected and active the system status LED will go from flashing to solid green.

## Switch Override Inputs



In normal operation, this function is not required. However, in exceptional circumstances, for example a failure of the main DMX signal or a requirement to drive more than 3 LEDs, this is a useful feature.

The additional modes are invoked by shorting-out the centre terminal to one or both of the other screw terminals with a piece of wire, as shown above. The modes are described below: -

**Mode 1:** This is the default mode and decodes 4 channels of DMX at 12v

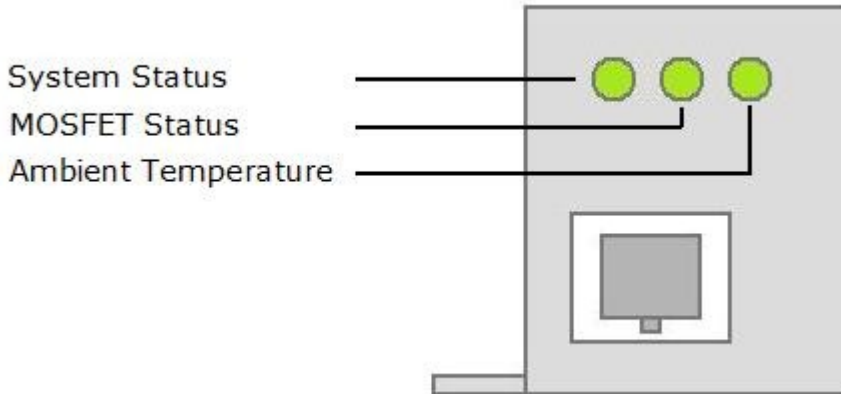
**Mode 2:** This mode allows the unit to accept an input greater than 12V. The maximum input voltage is 24V DC.

**Mode 3:** In the event that the DMX controller fails to output a signal, or there is a cable break, this is a standalone mode that drives the LEDs at 50% output. The unit ignores the DMX input signal.

**Mode 4:** In the event that the DMX controller fails to output a signal, or there is a cable break, this is a standalone mode that drives the LEDs at 100% output. The unit ignores the DMX input signal.

## Troubleshooting

The system status LEDs give a useful indication of what is going on. The ideal indication is 3 steady green LEDs. The indications are as follows:



### System Status

Solid green	-	DMX active, all OK
Flashing green	-	system OK but no DMX received
Solid orange	-	low voltage
Flashing red	-	overvoltage, output limited to 25% (Mode 1 only)

### MOSFET status

Solid green	-	OK
Solid orange	-	transistors running within safe limits
Flashing red	-	overtemperature, output limited to 25%

### Ambient temperature

Solid green	-	OK
Solid orange	-	unit running within safe limits
Flashing red	-	overtemperature, output limited to 25%

## Warranty

LED Lighting Products Ltd warrants that the product it manufactures and sells will be free from defects in materials and workmanship for a period of 1 year from the date of despatch. If the device proves defective within the respective period, LED Lighting will repair or replace the defective hardware at its sole discretion. If the failure is due to an operator error the user accepts to pay for any charge relating to the diagnosis of the hardware, faulty parts or shipping from our factory.

**LED Lighting Products Ltd makes no warranty of any kind, express or implied, including without limitation the implied warranties of merchantability and fitness for a particular purpose. In no event shall LED Lighting Products Ltd be liable for indirect, special or consequential damages.**

**Opening the unit voids the warranty as described above.**

## Contact Information

LED Lighting Products Ltd  
15 Lincoln Croft  
Shenstone  
Lichfield  
Staffordshire  
WS14 0ND  
United Kingdom

Tel: +44 1543 481532  
Email: [sales@ledlightingproducts.co.uk](mailto:sales@ledlightingproducts.co.uk)  
Website: [www.ledlightingproducts.co.uk](http://www.ledlightingproducts.co.uk)