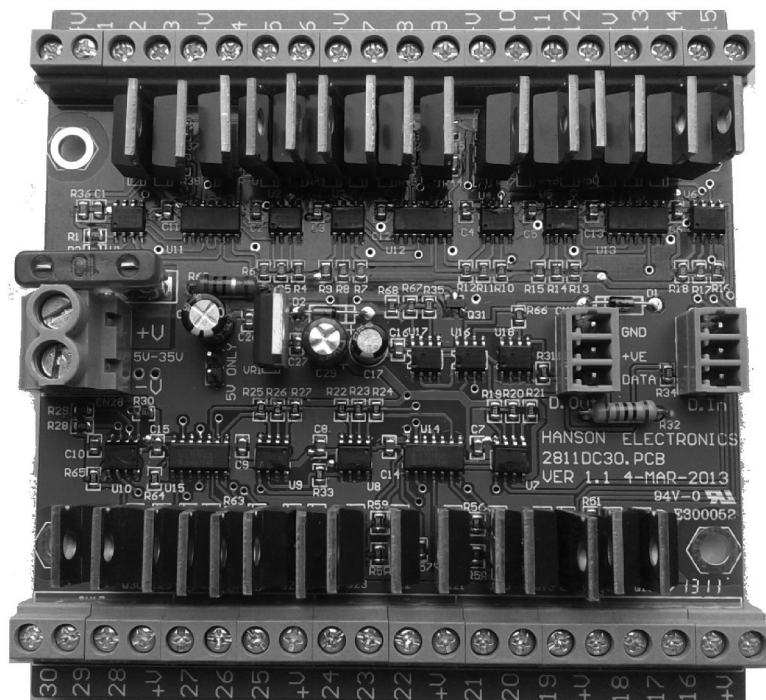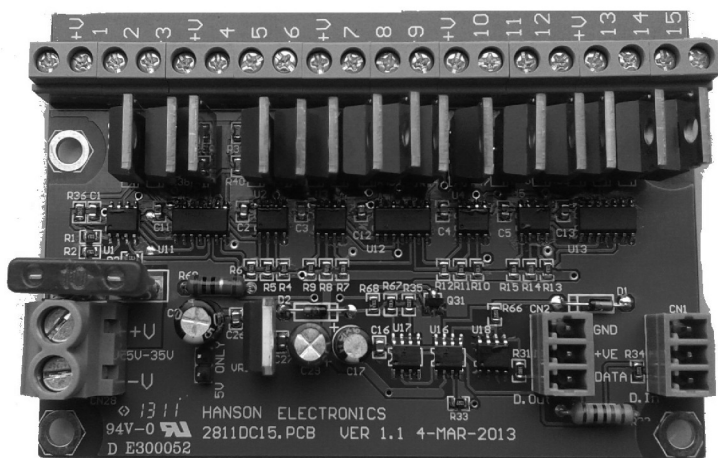# 2811DC15 and 2811DC30
2811 pixel to DC dimmers
USER MANUAL

Features

-The 2811DC15 and 2811DC30 controllers accepts 2811 pixel data input and drives 15 or 30 DC channels.
-DC input (5V - 35V) (large screw terminals)
-30A ATX (automotive)blade fuse
-Common anode (positive) configuration.
-Output terminals arranged as V+, Ch, Ch, Ch (particularly suits RGB)
-Electrically isolated input. 3 pin pixel data input and data output plugs isolated from DC dimmer circuitry

INDEX

Connections

D.In and D.Out

There are 2 removable screw plugs for connecting the pixel into and out of the board. The 3 terminals are for Ground, Data and Positive power. The 2 plugs are labelled as D.In for data in and D.Out for data out. If necessary it is possible to connect power injection points for pixels at the Gnd and +Ve points in parallel with the pixel connections.
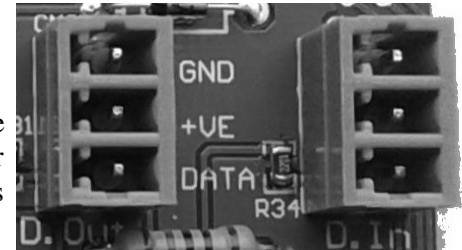
DC Power Input

The large 2 way green connector is the DC inputs from your power supply. The +V terminal is positive and the -V terminal is negative or ground. Any DC voltage in the range of 5V to 35V can be used. There is a standard ATX (automotive) fuse adjacent to the power terminals. The board comes supplied with a10A fuse fitted. Fuses up to 30A can be used. It is recommended changing the fuse to the closest size for the total current that the board is controlling.

Dimmer Outputs

There are 15 (30) channel outputs. The maximum load per channel is 3 Amps, but the overall limit is 30 Amps. This means that you can't turn on all 15 (30) outputs with the maximum load. In reality, this should not be a problem as most loads will be less than 2 Amps.

Each group of 3 outputs is grouped into 4 terminals. These are the 3 outputs and a common positive. RGB lights with a single common anode should have the common wire connected to the terminal +V and the red, green and blue wires to channels 1,2,3 (or 4,5,6 etc). The order and specific channels is actually dependant on what is configured in your sequencing software. For lights that have single colours (or single channels) per pair of wires then 1 wire gets connected to the +V and 1 gets connected to the channel output. For led lights which require the polarity to be around the right way then the anode (positive) gets connected to +V and the cathode (negative) goes to the channel. For lights that do not have three channels commoned then 3 wires will be joined and fitted to the +V for the 3 channels.

USING THE 2811DC15 or 2811DC30

How they work

The 2811DC15 and 2811DC30 appear to a 2811 pixel network as 5 and 10 pixels respectively. Based on the 2811 pixel specifications it is possible to have the 2811DCxx boards separated from the pixel (or 2811DCxx board) before or after it by 10m depending on quality of the cable, electrical noise and the voltage drop in the pixel line. For the best results it will always be best to have a minimum voltage drop. This can be achieved by using the 2811DCxx board as a power injection point if desired.

Data

The pcb has 2 terminals blocks for getting the data into and out of the pcb. These are removable screw terminals and the wire that goes into each position is marked on the pcb. The data into the pcb comes in via the D.In terminal and data out to other boards or pixels goes out the D.Out terminals.

5V only jumper

There is a jumper on the pcb that is *ONLY* to be installed if the power supplying the pcb is 5V. If this jumper is installed and ANY voltage higher than 5.1V is applied to the power terminals then damage to the board will result. If the jumper isn't installed and the board is powered by 5V then unpredictable lighting and no data output will occur.

Power

The pcb can be powered by any DC voltage in the range of 5V to 35V. Because the data and outputs are electrically isolated from one another then there is no need to run the pixels and pcb from the same power supply. IF the same power supply is being used for both the pixels and the 2811DCxx then ideally the power supply should be located close to the 2811DCxx pcb. In this case of the same power supply being used for both then the V- and V+ connections from the power supply can be connected to both the power input to the pcb and to 1 or both of the data terminals D.In and D.Out.

Faultfinding

| Fault	Solution/solutions
No lights working	-Fuse is blown
	-Data is not being sent out
	-Data in (D.In) and Data out (D.Out) swapped
	-Pixel power is too low to control input logic. Power injection at some point/s along pixel string may be required.
	-Resistor R60 has been burnt out by the 5V only jumper being installed and more than 5V having been applied to the power terminals. 1 ohm resistor will need to be replaced.
Channel failing to turn on	-Mosfet transistor has been damaged. The mosfet must be replaced with the exact same type to ensure correct operation
	-PCB track has been burnt out. Should be evident if bottom of pcb is inspected
Channel turned on all the time	-Mosfet transistor has been damaged. The mosfet must be replaced with the exact same type to get correct operation
Fuse blowing	-Fuse selection too low for lights that are connected
	-1 or more lights connected have short circuited wires

Connection Examples
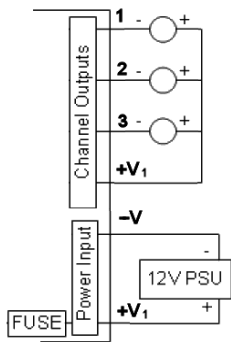
Typical connection arrangement showing 3 leds and a 12V power supply. The lights can be single colour, multicolour, RGB or whatever. For individual lights with 2 wires the positive wires would be joined and connected to the +V terminal.
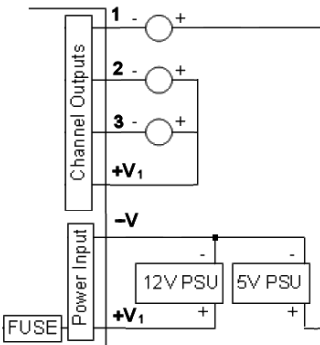
Connection example showing channel 1 connected to a second power supply. This method is used where lights other than the main power supply voltage is needed. This method can be used for ACL strobes or similar devices. The primary power supply powering the 2811DCxx needs to be in the range of 5V to 25V DC. The secondary power supply can be any voltage up to a maximum of 40V DC. This method can also be used if an output is used to control a relay at a voltage other than the supply voltage.
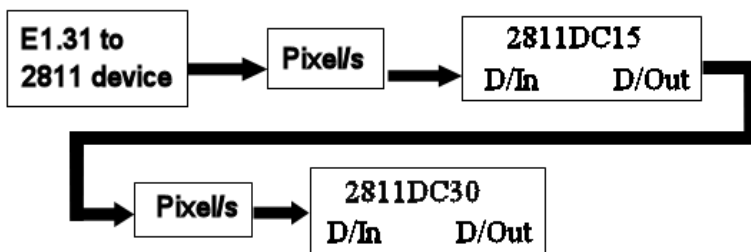
Connection example showing how a 2811DC15 and 2811DC30 could be connected into a 2811 pixel network. Any combinations of pixels and 2811xx boards can be cascaded up to the maximum number of pixels controllable by the E1.31 to 2811 generating device. A 2 universe output of a pixel controller could control 340 pixels or 34 2811DC30 boards.

Warranty

This light controller is covered by a warranty for a period of 12 months from the time of purchase.

The warranty covers only faulty material and workmanship if properly setup and operated in accordance with the specifications and setup sections of this document.

The repair and or replacement of this controller will only be at the workshop of Alan Hanson. The cost of freight to/from will be borne by the user.

The warranty does not cover damage to the controller due to misuse i.e.. shorting of outputs, connecting an AC supply, connecting a supply higher than the rated voltage etc

The controller is supplied as is. Alan Hanson and Hanson Electronics reserves the right to make changes to the specifications and the design without notification.

Misuse, using this for other than its designed use, water damage, mechanical damage or attempting to modify or repair your controller will void this warranty.

Alan Hanson and Hanson Electronics shall not be liable for any incidental damage, inconvenience, rental, loss of profits or any other loss due to the unsuitability, failure or use of this controller.

If the user does not agree to these terms the cost of the product (minus freight) will be refunded on the return of the product. The controller must be in unused condition and must be returned within 14 days.

Please return this controller with a copy of your invoice if it develops a fault. Any controller returned without a copy of the invoice will be charged at a standard repair rate. The warranty does not cover freight.

Mounting standoff drilling patterns.   (Scaled. Not 1:1)
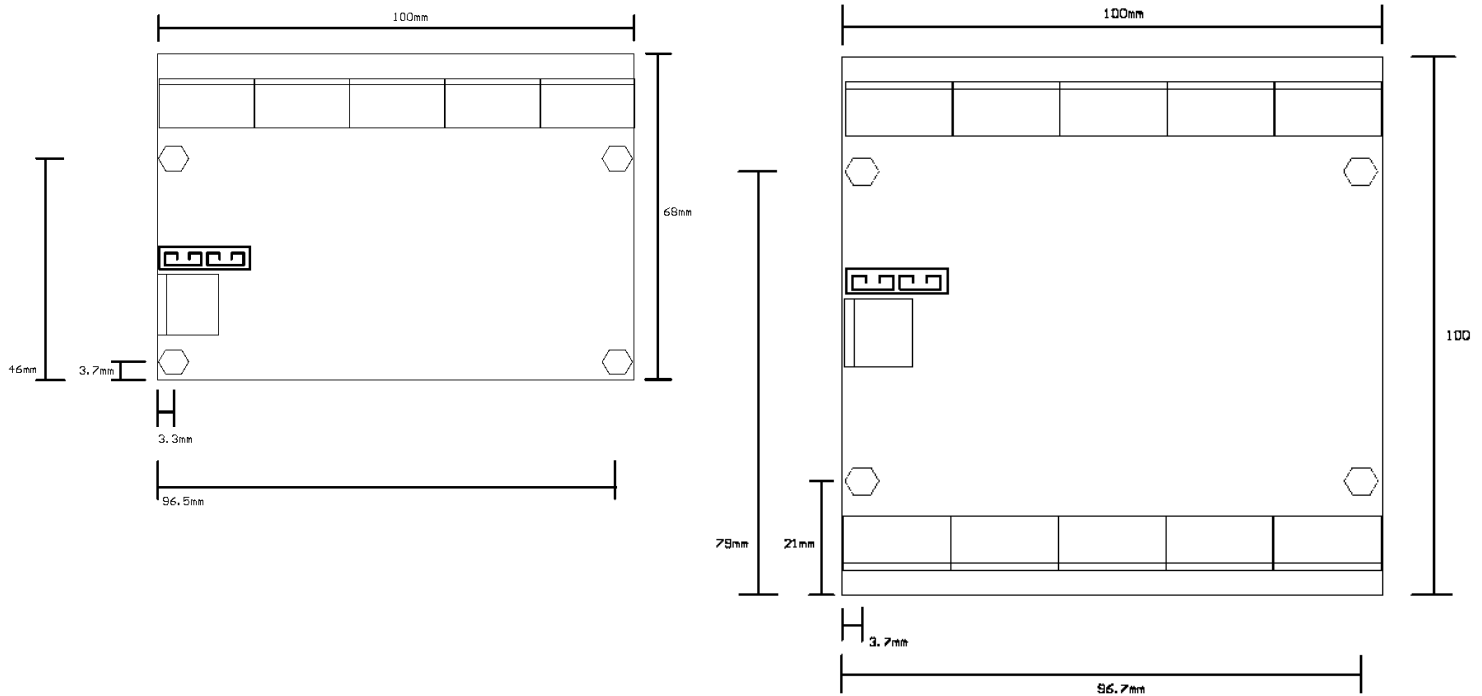
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