



Austin Led Consultants

DMX and Led power over ethernet

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AL-DALI-WS-DR2 Dual DC Dimmer / Driver Constant Current 48 watt 3-Way DALI



Product Description - AL-DR2 wall switch

This switch operates just like any standard residential light switch – however it takes 24-56v DC instead of 120VAC, and directly drives up to 20 LEDs. This Decora style switch in a standard residential style outline fits into any home, looks like any switch yet requires no licensed electrician for installation. No complicated controller is required.

For 3-way operation – a simple 2 wire link with AWG24 or better allows 2, 3, or an unlimited numbers of switches to control one set of LED's. Any single pole switch found at Home Depot can be used to add a 3-Way remote switch, or dual pole switch for an unlimited number of switch points.

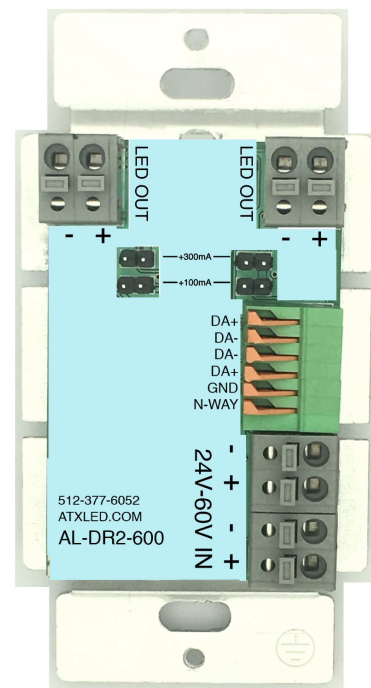
Stand alone it operates as a simple switch for 2 strings of LED's. Jumper selections for 300, 400, 600 or 700 mA LEDs with up to 28 watts per channel – two channels are provided for 56 watts total. For example, 16 3 Watt LEDs can be connected in series and parallel to this switch / dimmer device. Use AWG 16 or 18 to bring 48v (or 24 to 56 volts) from a central power supply over to the switches, then use AWG 18 to connect to your LEDs – no tools are required to wire this device.

A proven rocker switch and brightness slider leverages mass production of 120 VAC switches, now for low voltage applications – any casual user requires no training, no App to use this switch. Perfect, flicker free dimming from 0 to 100%. No network setup is required. Temperature controlled switching assures excellent dimming.

To enable Home / Business automation – the AL-DR2 includes an opto isolated serial bidirectional port for remote and voice control. Use a DALI home automation hub to connect to Alexa or google home voice control. The DALI protocol is supported, with automatic addressing. Use low cost CAT-3 wire up to 1000 ft to implement remote management. Power and DALI are duplicated allowing easy installation.

Specifications

Power source and load	Spring loaded connectors (2 pairs) for AWG 16-20 wire
LED constant current output	300 mA base current, jumper options for 400, 600 or 700 mA per channel Spring loaded connectors (2 pairs)
Input voltage range (must be higher than attached LED)	12v to 57 volts
Standby power consumption	50 milliwatts
Conversion efficiency	Over 95%
Protection	Reverse protection and static protection
Operating Temperature	0°C ~ 50°C
Size	115 x 46 x 50 mm
Dimming	1 to 100 %, log scale, Current control with temperature tracking
FCC and interference	All outputs are RF filtered for minimal interference
Max output voltage	Input minus 2 volts
Min output voltage	6 volts
Hot Swap	Yes – can unplug and connect LEDs with power applied.
Microprocessor	STM32L0 - Customization is available
Other Options	Please see our DMX and PoE products
DALI interface	Random 16 bit address at startup, assignable to 64 short addresses Opto Coupled
Individual, group and scene support	AWG 18-24 gauge wire spring fit



Default and / or DALI operation

By default – the AL-DALI-WS-DR2 operates stand alone – no controller or master is required. Simply connect the power input to a 48v power supply and the LED outputs to a serial parallel connection of LEDs with up to 40 volts forward voltage and / or 700 ma current. See application note for recommended configurations.

3-WAY - To use this switch for 3-way wiring – simply connect a AWG24 (solid CAT-3 is recommended) between the N-WAY pins and a remote 1 pole 110vac type standard wall switch. If 3 or more control switches are needed – use a dual pole switch. No controller is required.

Simple Expansion – if more output power or more LEDs need to be driven – connect the DA+ and DA- pins (polarity is not significant) to your DALI driver. We offer a low cost DALI multi port power supply. No configuration is required. The device operates in broadcast mode – sending broadcast ARC commands with dimming to the remote DALI drivers.

Simple remote control – the device accepts DALI broadcast commands – so any DALI switch or master that sends broadcast commands can connect to this device remotely for on/off/dimming.

Full DALI operation – the device handles the provisioning support under control of a DALI master. The random address assigned at first power application can be mapped to a short address from any DALI configuration tool. Once a short address is assigned – the device can be understood to operate as two devices in one.




DALI driver – the two built in LED drivers each have a unique DALI short address after provisioning. Typically up to 8 LEDs (28 watts) is connected to each driver – for 56 watts total. Both channels are assigned to a group and a scene with their short addresses included in one group and scene. Typically the left channel will start with short address 0, and the right channel with short address 32.

DALI Switch – after provisioning – the Switch in this device is placed into Group mode – changing the built-in switch, or the 3-way remote switches, or the dimming value will cause a DALI Group command to be sent to both internally to the internal drivers as well as externally to the DALI bus. Since the internal drivers are loaded into the assigned group for the switch – the device works as expected.

Use a DALI provisioning tool to assign any other Dali drivers to the switch Group address. The default Group that the switch is assigned is the same as the left short address (up to 15).

A DALI Reset command will return all switches to default (broadcast) operation. Remove DALI bus power if the broadcast operation is not wanted – since all switches will control all lights on the DALI bus.

High Power 0-10v operation – use our AL-DALI-010v device to receive DALI commands and drive high power 0-10v LEDs.

		
<p style="text-align: center;">Structured Wiring DALI power supply with easy wiring</p>	<p style="text-align: center;">Meanwell 500 watt power supply</p>	<p style="text-align: center;">Meanwell DC-DC Dali driver expansion option</p>