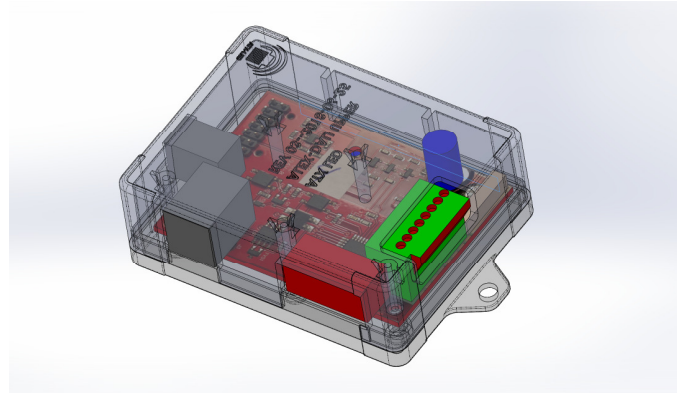




AL-DMX-DALI v2

Convert DMX to DALI

DMX input DALI and 0-10v outputs



Product Description - AL-DMX-DALI

This device receives information address from a DMX512 universe and outputs to a DALI bus or 0-10v signal.

DALI: used for 16 Groups or 64 individual LED drivers
0-10 volts: used for commercial 0-10v LED fixtures and drivers.

To reduce traffic on the DALI bus, and to allow manual switch override, only changes to the addresses monitored by this device will generate DALI packets. This feature means that the AL-DMX-DALI can be combined with AL-DALI-WS wall switches to allow operation without any console active, then be overridden by a console.

Overview DMX operation

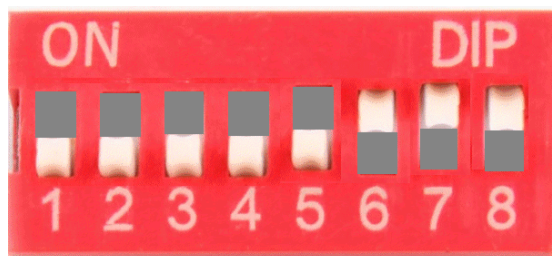
The installer connects this device to his DMX512 universe via a RJ11 to XLR adapter (see pinout below). The DIP switch is set to the DMX starting address (Base Address), or 0. The output is either a DALI broadcast packet or a DALI group packet, or a DALI individual packet depending on the DMX mode and address received.

The DALI side is connected to a DALI bus. A broadcast packet will address all fixtures, Group packets only address those fixtures belonging to that group, individual address just one device.

DALI packets are sent on change of DMX values, or when the DALI bus power is removed and restored. Thus, if no DALI packet is to be sent, then the corresponding DMX address should stay unchanged. A change will trigger a packet.

Broadcast and Group addresses allow multiple fixtures to react completely in sync. Individual addresses will be broadcast with a small time delay between addresses, if 64 addresses were changed, the entire sequence would take about 2 seconds.

DMX addressing



DMX address 0 - All switches off – individual mode

In this case – the DMX addresses 1 thru 64 are tested for changes. If a change occurs, then a DALI packet with the new value will be sent to an individual address which is the same as the DMX address. So a change to DMX address 10 will create a DALI packet to address 10.

DMX address 64 is converted into a Broadcast packet – all lights will be set.

Please set your DMX stage lighting to addresses greater than 64 if this mode is to be used, rapid changes to addresses from 1 to 64 will cause overloading of the DALI bus.

In this mode – if Alexa or Google data is received, it will be set out to DALI addresses as shown in the Cloud section.

DMX address > 0 – At least one switch on – group mode

8 DIP switches on the side control the starting addresses for DALI groups in the DMX512 universe. Only even addresses can be set, from 2 thru 480... A DALI group is configured by a DALI-100 or via the AL-PI device.

Example: setting DMX512 address 10

DMX512 address	Example DMX address	DALI Address	
Base	10	Group 0	
Base+1	11	Group 1	
Base+2	12	Group 2	
Base+3	13	Group 3	
....	
Base+16	26	Broadcast	

Switch 1 is DMX Bit 1, switch 8 is the MSB, (DMX bit 8).. To set the base address to 10 – then set all off except 3 and 1 ($5 \times 2 = 10$). The device will now listen to DMX addresses 10 thru 26, sending out groups 0-15.

DMX512 info sent to address 10 will output a Group 0 packet if it changes. If address 26 is changed – all fixtures will respond – this is broadcast mode. DMX512 info sent to addresses 10-25 will be sent as Group 0-15.

Alexa / Google Interface

The device includes an interface to Alexa / Google home. See the AL-DALI-DMX for setup using the Wiz Connected app. The Alexa / Google device has 5 channels, warm white, cool white, red, green and blue. Should the data on those color channels change – then the device will output on the DALI bus.

Color Channel	DMX address = 0 DALI individual address	DMX address > 0 DALI group address
Warm White	16	10
Cool White	17	11
Red	18	12
Green	19	13
Blue	20	14

Specifications

Name	Function	Description
DC/Gnd	Power source	2.1x5.5 mm DC connector Spring loaded connectors 20 to 57 volts
	Internal Power consumption	200 milliwatt 10 mA at 20 volts 4 mA at 48 volts
DA	DALI Bus	DALI in and out Multi Master collision detect 24 volt max, 300 mA max Opto Isolated
RJ11	DMX	17 DMX addresses
0-10v	Analog Dim	0-10v, or 1-10v output Sourcing method
	Protection	Reverse protection and static protection
	Operating Temperature	0°C ~ 50°C
	Size	75 mm x 55 mm x 27 mm



Connection Pinout

Connections

Power for the AL-DMX-DALI module

Apply power to the Module either using the 2.1mm DC connector or the pins on the green connector marked +DC and Ground. The device uses 24 to 56 volts and 500 milliwatt max.

DALI bus wiring

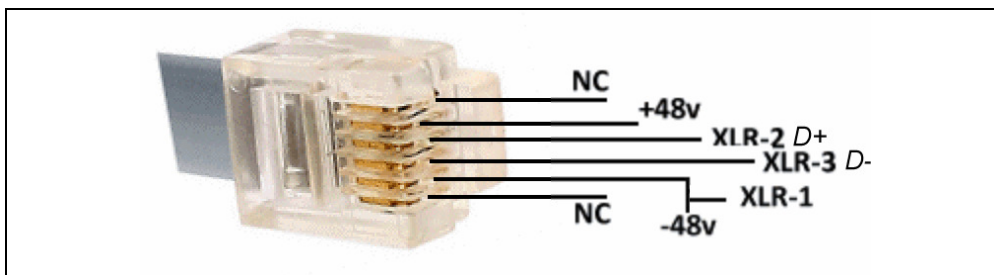
Connect a pair of DA pins (DA+ and DA-) to your DALI bus. You will need a DALI power supply for the bus. The DALI functions are not configurable- this is a output only device. The DALI bus must have a current limited (260 mA) typically 16 volt supply for normal operation.

DMX bus wiring – DMX to DALI bridge

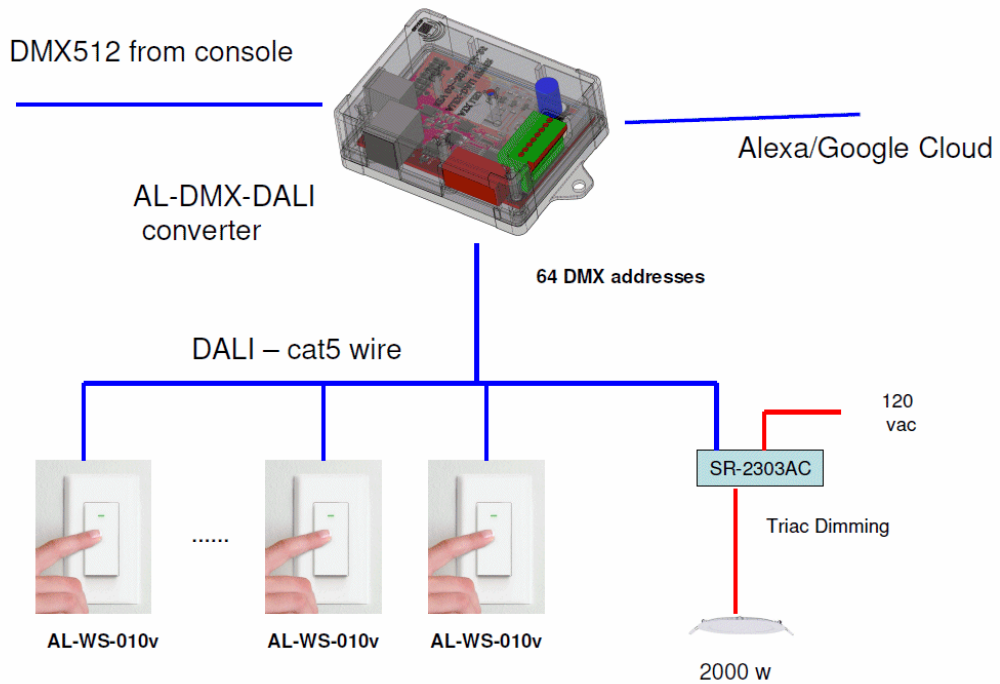
Connect the DMX RJ11 connector to your DMX universe. The pinout is shown below.

RJ11 pinout

Please fabricate a cable from the RJ11 connector to your DMX512 system. The pinout is shown below. If it does not work – reverse the DA + and DA- pins.



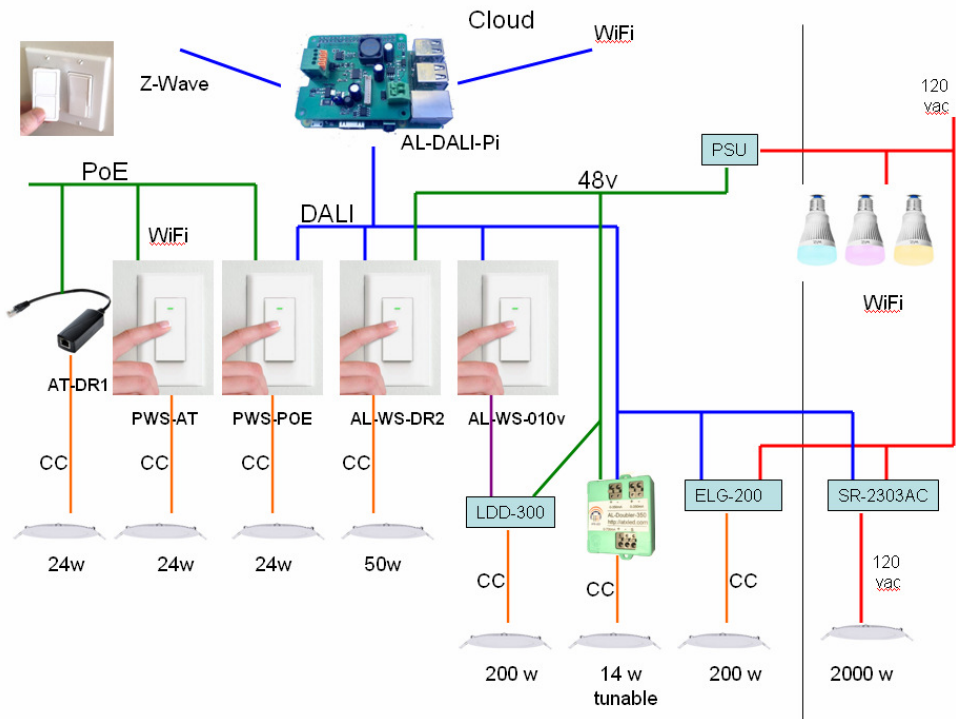
Stage / Audience lighting system



For 0-10v applications

Connect the 0-10v output to your LED driver. 0 volts is off, 10 volts is full on. If the DMX address is set to 0, then DMX address 16 is used to control the 0-10v output. If an Alexa command is set to the device, on the Warm White channel, it will control the 0-10v output. The last change wins.

DALI system expansion options



Example Church setup

Please see the AL-WS-010v manual for instructions on setting the AI-WS-010v to individual or group mode.

Case 1: no DALI Master, DIP switch = 0

In this mode – the DMX512 console addresses the DALI lights on DMX address 1 thru 63. Address 64 is broadcast to all DALI fixtures.

Function	AL-WS-010v Location	AL-WS-010v address	SR-2303AC Address	DMX Address
Stage Lights				64-511
Audience Left	Left	1	1	1
Audience Right	Right	3	3	3
Balcony			5	5
All Lights	Entrance	Broadcast		64

Case 2: DALI Master configured system, DIP switch = 16

In this mode – the DMX512 console addresses the DALI lights on DMX address 17 thru 32. Address 32 is broadcast to all DALI fixtures. The SR-2303AC is set to individual address, and the DALI-100 Master is used to assign the SR-2303AC to different groups.

Group 1 is left, Group 2 is Right, Group 3 is Balcony, Group 4 is the main floor.

Function	AL-WS-010v Location	AL-WS-010v address	SR-2303AC Address	DMX Address
Stage Lights				
Audience Left	Left	Group 1	1, Group 1, 4	17
Audience Right	Right	Group 2	3, Group 2, 4	18
Balcony			5, Group 3	19
Main Floor				20
All Lights	Entrance	Broadcast		32