



AL-Struct Distribution panel for LED power and DALI data

Product Description - AL-Struct

This structured wiring panel provides fused power and DALI data to lights and switches. It has two power inputs, a DALI power supply, failover detection and power failover management. It is housed in a familiar case for structured wiring panels. There are two modules – power and data.

A) The Data Module has 6 RJ45 data connectors using typical CAT-5e wire. It includes a DALI 16 volt 60 mA power supply for up to 25 DALI devices total (2 mA each). Three panels can be connected in parallel for 180 mA and 75 DALI devices. It allows multiple panels to connect into a larger network with built in DALI repeaters and power supply. Use CAT-3 or better and RJ45 connectors for simple interconnect. This is not Ethernet – just simple DALI data.

B) The Power Module has spring loaded quick connections for tool-less installation. Each DC output is fuse protected to 2 amps. Dual DC inputs are configured for load balancing and lossless Relay failover. The device has input power and Daisy Chain support for up to 10 amps (500 watts) . Typically used with one or two Meanwell 500 watt power supplies – from 48 to 56 volts.

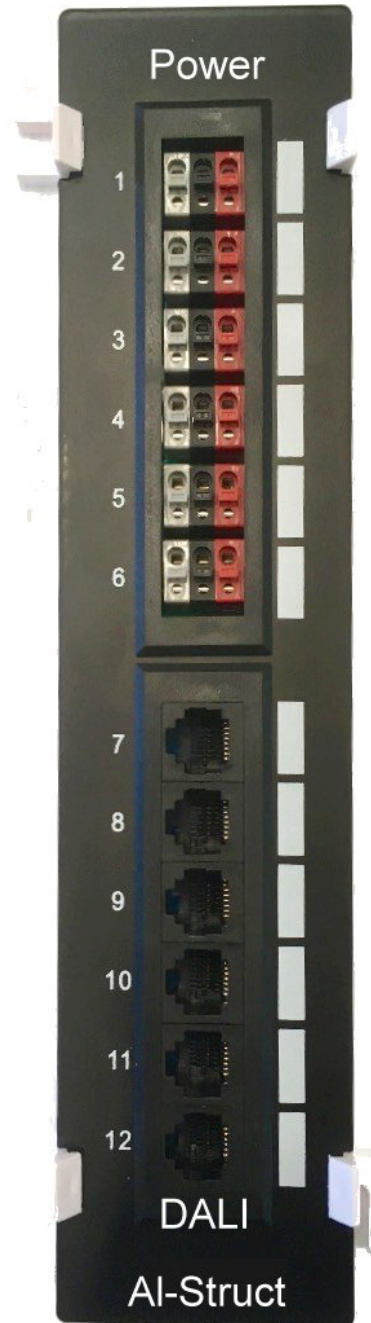
Connect an AL-DALI-Pi Home Automation DALI gateway to allow App and voice control of the entire house with up to 63 switches and 400 lights

Failover Power

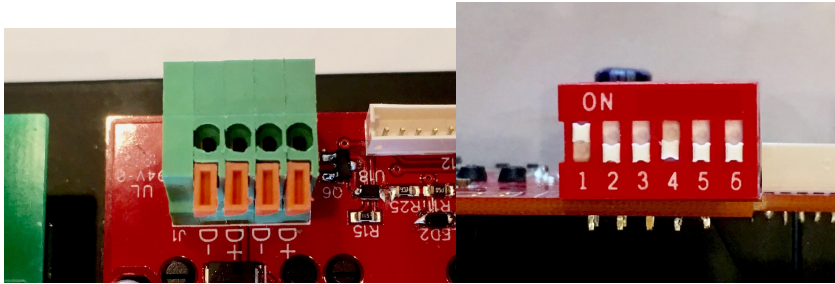
The Power Distribution has 2 inputs – apply a matched set of 48 (max 56v) power supplies to each input. Power from each input is sent to alternate power output terminals. Should either power supply fail, a relay will route the power to all 6 inputs. The matched power supplies can be either rated for full system power each, or using the Failover detection provided, they could be ½ of the rated power. The voltages do not need to match – but they should be spec'd with matching power output. Note: See our UPS/Solar module for intentionally mismatched power inputs

Failover Detection

The onboard microprocessor is used to detect the failure of one of the power supplies and control the system. The DIP switches enable this operation. Either a scene can be sent, or the ATX LED UPS DALI command 49 can be set – UPS 255 is sent on recovery. If one one supply – then the signal will be sent once on power up, then once per day until a 2nd supply is detected.

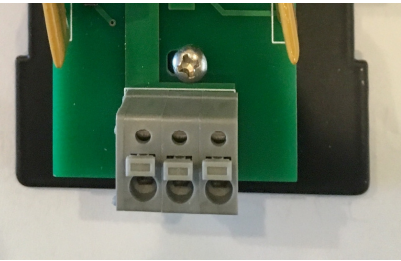


Switch	Function if OFF	Function if ON
1	Disable all signaling	Enable Detection
2	UPS 50% signal on A Fail	UPS 10% on A Failure
3	UPS 50% signal on B Fail	UPS 10% on B Failure
4	Broadcast to all devices	Send only to address 63
5	No Scene override	Send Scene 14 on Fail Send Scene 15 on OK
6	No Group	Send Group 14 on Fail Send Group 15 on OK



DALI outputs

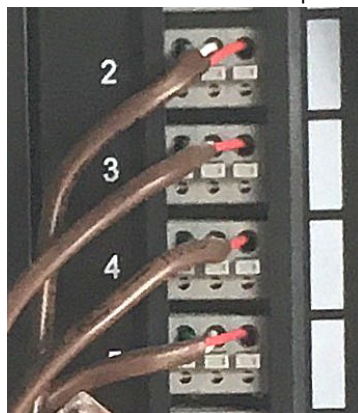
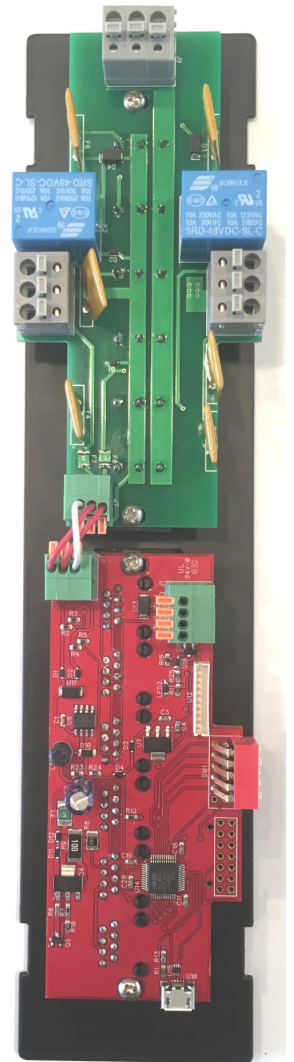
DIP switch



Earth Ground connector

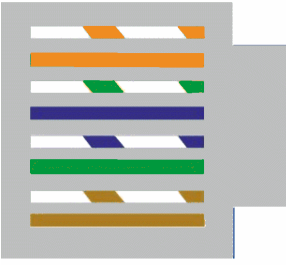
Specifications

Power source and load	Dual spring loaded connectors AWG 24 to AWG 16
Failover	Relay from 2 DC power inputs assures all outputs are live Normal operation – input A connects to 1,3,5, B to 2,4,6
Input voltage range	36v to 57 volts (for Relay activation)
Dali Bus power	16v at 60 mA for 25 DALI devices
Internal Power consumption	100 milliwatts standby 1.5 watts peak during DALI transmission (20 milliseconds per packet)
Protection	Reverse protection and static protection
Operating Temperature	0°C ~ 50°C
Size	255mm x 45mm x 65 mm
Hot Swap	Yes – can unplug and connect power and/or data with power applied.
Fuse protection	PTC self resetting fuses with 2 Amps per each of 6 outputs
Earth Ground	Bus bar for earth grounding
Failover Detection	DALI command 49 (Decrease max output level) or DALI scene command 14/15 sent on fail of either supply
Option	Ask about our UPS model with 3 rd input for Battery or Solar backup

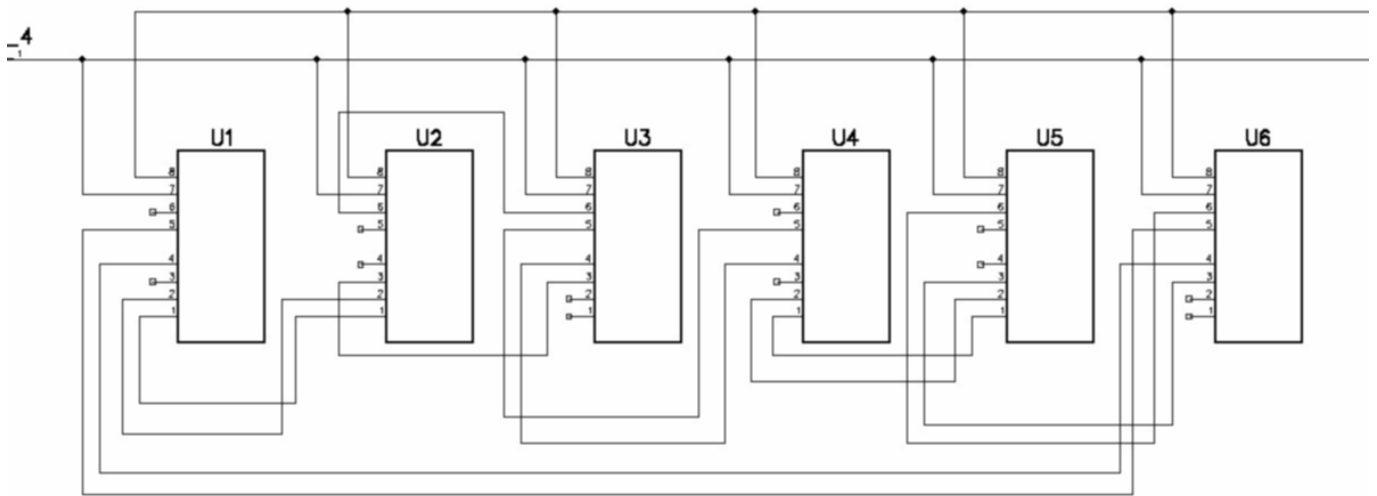


Earth Ground on the left, minus voltage in the middle, plus on the right

RJ45 connector pinout

	Pin	Function
	1	3-Way up
	2	3-Way up
	3	3-Way down
	4	3-Way down
	5	NC
	6	NC
	7	DALI +
	8	DALI -

The Up and Down refer to the interconnect between adjacent RJ45 connectors. This allows 3-Way from one device to be passed to another via the RJ45 board



LED status Display power status

- a) the Amber LED indicates good DALI power
- b) the Green LED indicates 48v power – it flashes as follows
 - 1/3 on – means one of the 2 inputs has failed
 - 2/3 on – means both 48v inputs are active