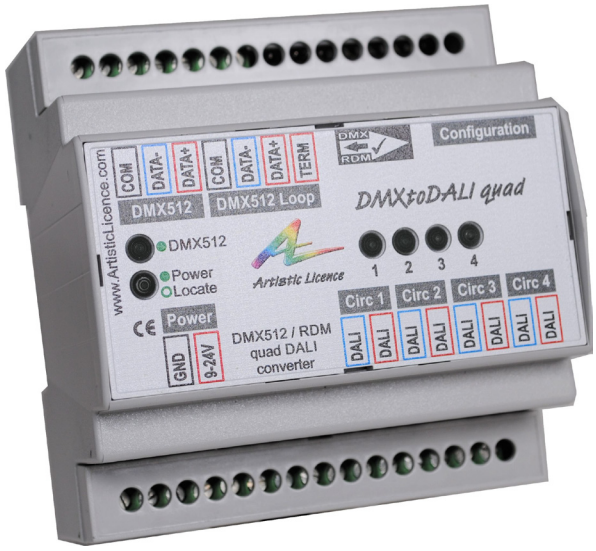
Artistic Licence



DMXtoDALI quad

User Guide

Please read these instructions before using the product.

This product has been designed & manufactured for professional use only.
It should only be installed by a suitably qualified technician and in accordance with electrical regulations in the country of use.

Unless directed in the instructions there are no user serviceable parts inside the outer case of this product.

Always disconnect from the power supply when not in use.

Any specific IP rating, where appropriate, is given in the instructions. Unless otherwise stated this product is designed for indoor use only. If used outdoors it MUST be installed in an appropriate IP rated cabinet. Do not allow this product to be exposed to rain or moisture.

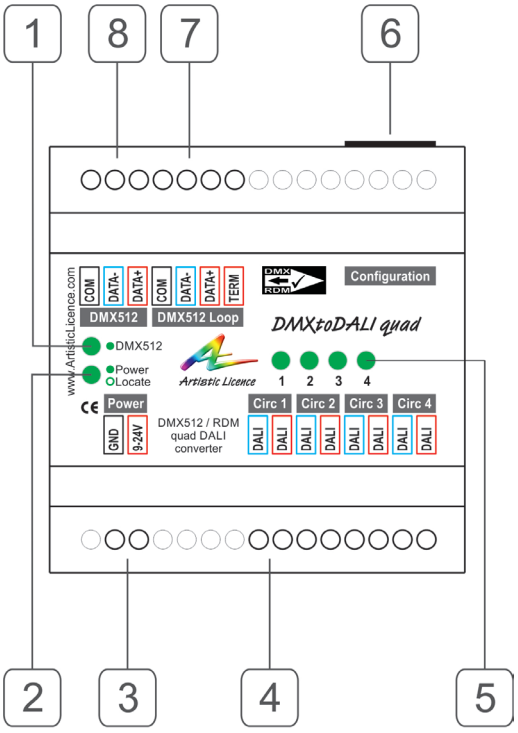
Please recycle all packaging.

Download the user guide by scanning the following QR code:

Connections

Reference	Type	Description
1	LED	DMX received
2	LED	Power/RDM Locate
3	Connection	Power input 9-24 VDC
4	Connection	DALI circuit
5	LED	DALI bus power & data
6	DIP Switch	See table below
7	Connection	DMX Loop & Termination**
8	Connection	DMX input

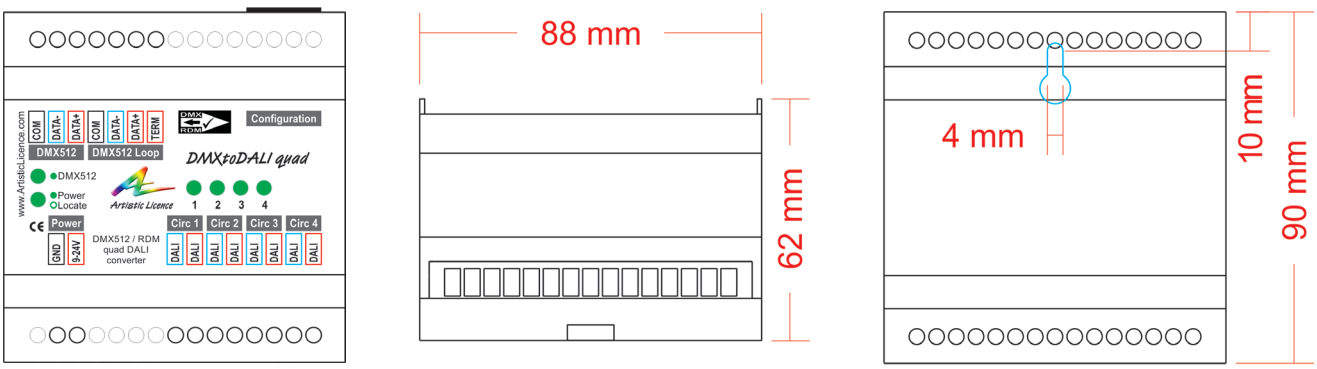
** A passive loop-through connection allows onward connection to other DMX512 devices. If this feature is not required then the signal must be terminated. The product contains an internal termination resistor. This is enabled by fitting a wire link between Term and DATA+.



DIP Switch Table (see also page 10)

Switch	Function	Operation	
1	Curve	Off	DALI dimmer curve
		On	Linear dimmer curve
2	Buffering	Off	A sixteen deep buffer is used per circuit
		On	Buffering disabled
3	Continuous Query	Off	Two queries run at startup
		On	Queries run continuously every 2 minutes
4	Query Disable	Off	Query operation is defined by switch 3
		On	Query operation is disabled
5	Activate	Off	All DT8 commands end with an ACTIVATE
		On	ACTIVATE is not sent
6	n/a	Off	n/a
		On	n/a

Mounting Diagram



Overview

DMXtoDALI quad (hereafter abbreviated to DMXtoDALI) converts DMX values into DALI commands to allow integration between a DMX512 controller and DALI devices. Up to four DALI circuits can be controlled via DMX512 allowing up to 256 devices to be connected.

DMXtoDALI provides simultaneous control via all four addressing modes (Broadcast, Group, Device and Scene) and supports both DT0 (intensity) and DT8 (colour).

Product configuration requires selection of the DMX512 start address and personality, the latter defining the map between the DMX512 channels and DALI addresses. Once configured, a DMX512 channel level change triggers transmission of a DALI command.

Fig.1 opposite shows DMXtoDALI quad being used to its full potential. In this example, a Rail-PSU-D4 is used to provide the DALI bus power supply.

If you are new to DALI, please read the DALI primer on page 5. You can also download our DALI guide.

Quick Start

To use the product in its factory configuration, (see box opposite) follow these steps:

1. Connect the DC power supply to the power input.
2. Connect the DMX512 signal from the controller to the DMX input. If the loop connection is not required, connect a wire between TERM and DATA+ to enable the internal DMX512 termination.
3. Connect the two DALI terminals of circuit 1 to the DALI devices and the DALI Bus Power supply of circuit 1. Repeat for the other circuits. Never interconnect the DALI circuits.
4. Power on the DMXtoDALI, the DALI Bus PSU and the DALI devices.
5. Fade channel 1 of the DMX512 controller up & down; the DALI devices should be controlled. If not, go to the troubleshooting section (page 12).

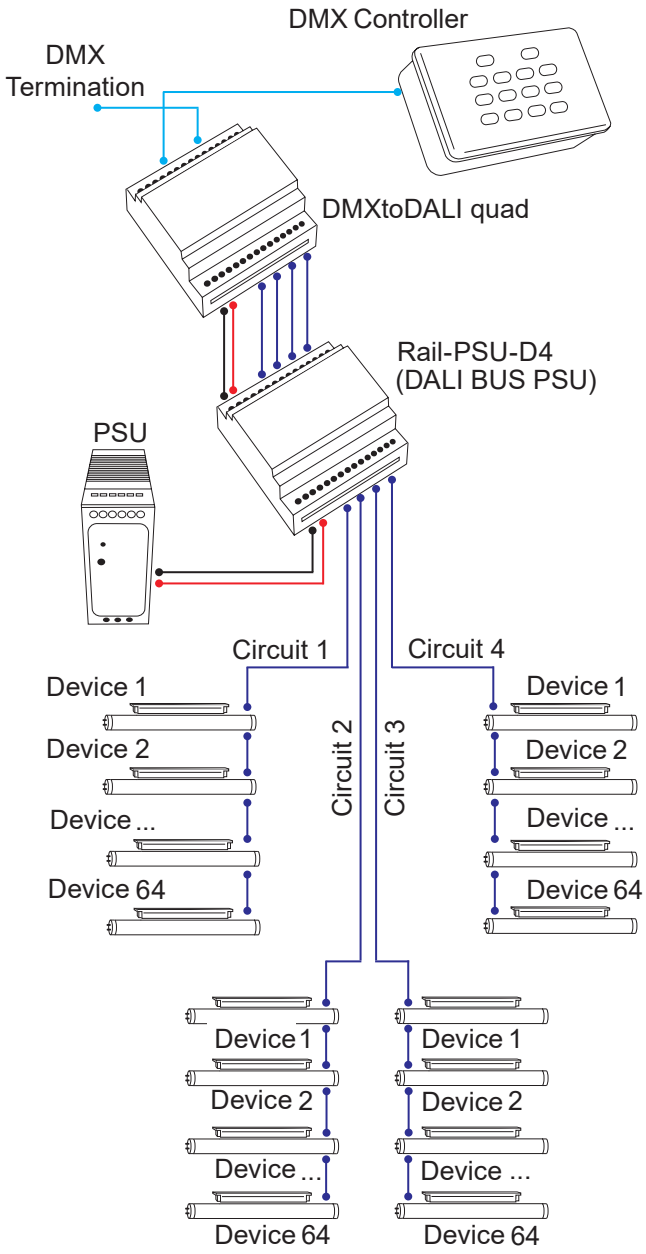


Figure 1 - Electrical wiring diagram

In the product's out-of-box configuration, Channel 1 of the DMX signal controls all DALI devices on all four circuits. This corresponds to the following settings:

- **Personality 1 (broadcast DT0)**
- **Start address: All circuits set to 1**

To set the other configurations, you will need an RDM tool and a DALI commissioning tool. Throughout this user guide we will reference DMX-Workshop as the RDM tool and Dali-Scope as the commissioning tool.

DALI Primer

The DALI data packet comprises three parts:

- Address - device(s) being controlled.
- Command - type of message being sent.
- Data - the value associated with the command.

On any given circuit, DALI device intensity or colour can be controlled in four ways:

1. Scene - replay scenes stored in the DALI devices.
2. Broadcast - all devices receive the same command.
3. Group - each DALI device can be assigned to any of 16 groups.
4. Device – each of the 64 possible devices is controlled individually.

DMX runs at a much higher speed than DALI and so it easily out-runs DALI. If this is not managed, a time lag appears and incoming data will start to be ignored, resulting in a step or ‘bump’ on the dimming curve.

Best results are therefore achieved by sending the lowest number of commands. Efficiency decreases as one moves down the above list, so individual channel control is the most bandwidth-hungry.

Controlling individual channels can cause problems if a large number of s are present due to the high number of commands that need to be sent. If this method is to be used, careful consideration should be given to the bandwidth management.

Commissioning DALI devices

Unlike DMX fixtures, DALI devices do not have a default start address. This is because they need unique addresses (called a short-address) so that only one device replies to the controller at once.

When new DALI devices are used they must be commissioned. This requires a DALI commissioning tool such as an Artistic Licence Dali-Scope.

DALI bus power

DALI requires that a current limited voltage be applied to every circuit, called the DALI bus power. Without this, the DALI devices will enter fault mode and not respond.

Artistic Licence offers Rail-PSU-D4, a four-bus PSU device designed to work alongside DMXtoDALI, DALItoDMX, daliGate quad and other DALI controllers.

Glossary

- DALI device – one of the 64 DALI luminaires.
- DALI short address – a number in the range 0 – 63 which uniquely identifies a DALI device on a given circuit.
- DALI circuit – a two wire interface of maximum distance 300m that contains up to 64 DALI devices.
- DALI Bus power – a current limited DC supply which must be provided in order for DALI to operate.
- DALI Device Type – Defines the capabilities of a DALI device.
- DALI DT0 – Device Type 0 was originally defined as fluorescent but is now used to mean intensity control.
- DALI DT8 – Device Type 8 is used for colour control. There are four possible operating modes of DT8.
- DALI RGBWAF – An operating mode of DT8 where Red, Green, Blue, White, Amber, Free (user defined) and intensity are controlled.
- DALI Colour Temperature – An operating mode of DT8 where colour temperature and intensity are controlled.
- RDM – Remote Device Management. The interface used for bidirectional communication over DMX512.
- Footprint – the number of channels or slots used by a DMX512 interface.
- Root-device – The main entity of an RDM enabled product. There is only one per RDM product.
- Sub-device – Subsidiary entities of an RDM device.

DMXtoDALI quad features and operation

LED Indicators

DMX512:

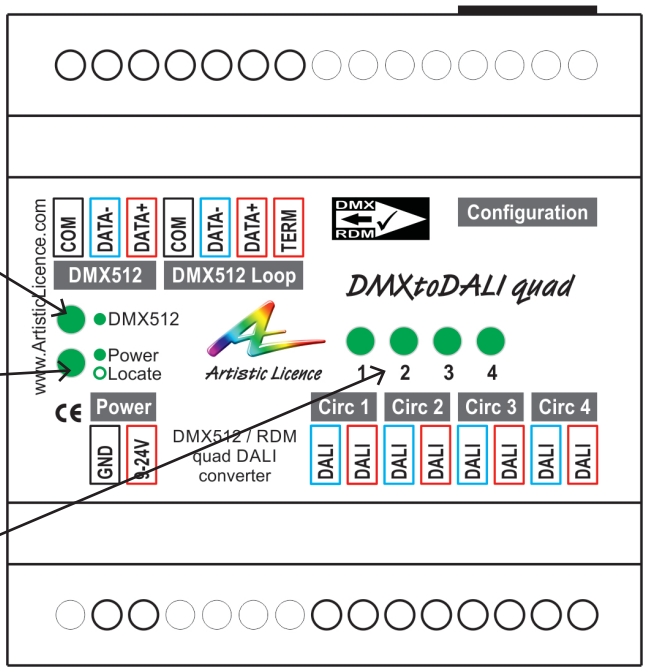
Illuminates green when DMX512 is received.

Power/RDM Locate:

Illuminates green during normal operation. Flashes when an RDM locate command is sent to the root or the sub-devices (see page 9 for more details).

DALI 1 – 4:

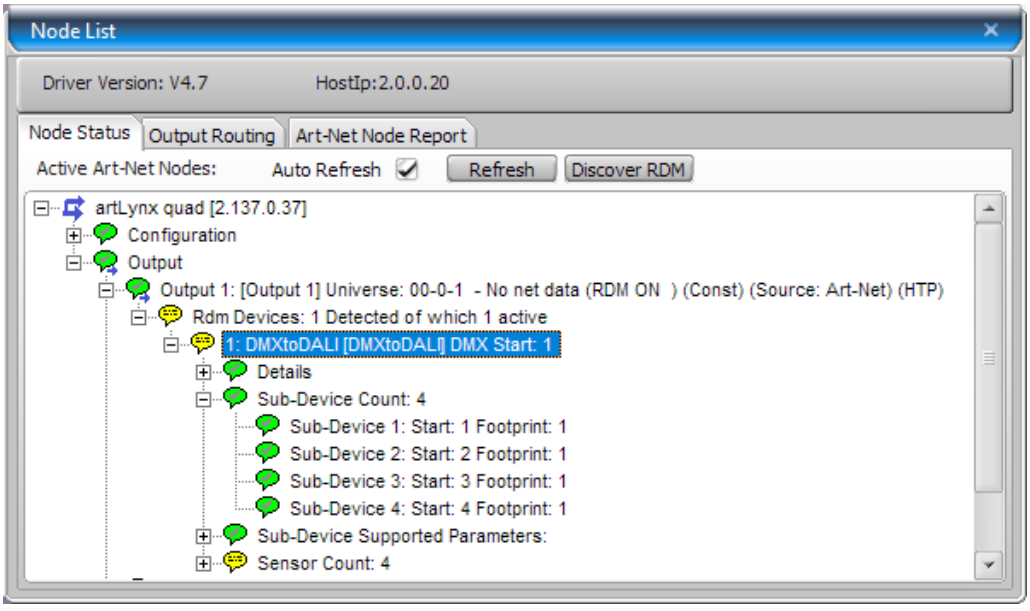
Illuminates when DALI Bus Power is present. Flashes to off when DALI message is sent or received.



RDM Implementation

DMXtoDALI is implemented as an RDM device with 4 sub-devices. Each RDM sub-device represents a DALI circuit. Any RDM programming tool can be used to configure DMXtoDALI. RDM commands sent to the root-device will affect all the sub-devices (DALI circuits).

The screen-shot below shows how this is represented in DMX-Workshop.



Personalities

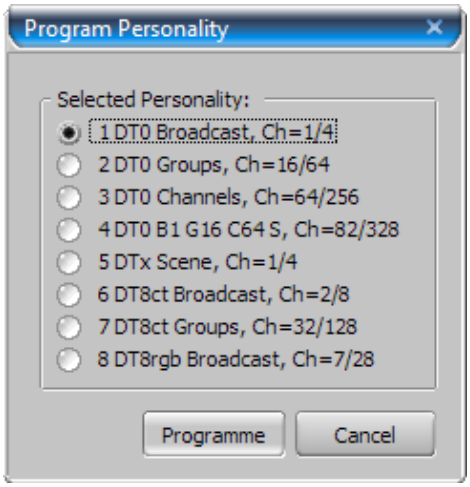
The mapping relationship between received DMX512 and transmitted DALI is defined by selecting one of nine personalities. Personalities are selected using RDM. Changing the personality of the root-device will affect all DALI circuits. Changing the personality of a sub-device will affect only one DALI circuit.

The screen-shot opposite shows the personality selection dialogue in DMX-Workshop (right-click and select personality).

The table below shows the footprint for each of the personalities.

The Circuit Footprint is the number of DMX512 channels that are used per DALI circuit.

The Total Footprint is the number of DMX512 channels that are used if all DALI circuits are patched contiguously.



Personality	Name	Circuit Footprint	Total Footprint	Map**
1	DT0 Broadcast	1	4	Table 1
2	DT0 Group	16	64	Table 2
3	DT0 Devices	64	256	Table 3
4	DT0 Multimode	82	328	Table 4
5	DTx Scene select	1	4	Table 5
6	DT8 Colour Temperature Broadcast	2	8	Table 6
7	DT8 Colour Temperature Group	32	128	Table 7
8	DT8 RGBWAF Broadcast	7	28	Table 8
9	DT8 RGBWAF Group	112	448	Table 9

**** Tables 1-9 are in the Appendix (page 13).**

1 DT0 Broadcast

Only DALI broadcast ARC commands are transmitted to each circuit. This is the simplest mode of operation and the factory default. The DALI devices do not need to be commissioned to operate in this mode. DALI Mask values are not transmitted.

2 DT0 Group

DALI ARC commands are transmitted to the 16 group addresses of each circuit. This is the most efficient use of DALI bandwidth and this mode should be used for most intensity control applications. The DALI devices must be commissioned and group addresses allocated in order to use this mode. DALI Mask values are not transmitted.

3 DT0 Devices

DALI ARC commands are transmitted to the 64 device addresses of each circuit. This mode provides the most flexible control but uses the most DALI bandwidth. The DALI devices must be commissioned in order to use this mode. DALI Mask values are not transmitted.

4 DT0 Mulitmode

All four (broadcast, group, device and scene) addressing modes are available in this mode. This allows the DMX512 controller to manage DALI bandwidth by prioritising use of broadcast and group addressing with occasional use of device addressing. The DALI devices must be commissioned in order to use this mode. DALI Mask values are not transmitted.

5 DTx Scene Select

The value of the DMX512 channel is used to define the DALI scene number that will be selected (played). Table 10 shows the translation. The value of zero does not trigger a scene select. This mode can be used to recall colour scenes if they have been programmed. The DALI devices do not need to be commissioned to operate in this mode.

6 DT8 Colour Temperature Broadcast

ARC intensity commands and Colour Temperature commands are sent to the broadcast address of each circuit.

DALI colour temperature commands use a unit called Mirek (Mirek = 1,000,000 / Kelvin). The unit does not map well to DMX512 as it inefficiently uses a 16-bit number.

DMXtoDALI uses a unit called Cinc to simplify translation. (Cinc = Mirek – 143). Table 11 shows how this translates. Essentially this allows one DMX512 channel to control all the useful colour temperatures.

The DALI devices do not need to be commissioned to operate in this mode. However, the DALI devices must be set to use “DT8 type Colour Temperature”. DALI Mask values are not transmitted.

7 DT8 Colour Temperature Group

ARC intensity commands and Colour Temperature commands are sent to the 16 group addresses of each circuit. The DALI devices must be commissioned and group addresses allocated in order to use this mode. Additionally, the DALI devices must be set to use “DT8 type Colour Temperature”. DALI Mask values are not transmitted.

8 DT8 RGBWAF Broadcast

ARC intensity commands and RGBWAF (Red, Green, Blue, White, Amber, Free) colour commands are sent to the broadcast address of each circuit. DALI encodes the RGB section and the WAF section in different commands. For this reason, only changing the DMX512 channels that affect RGB or WAF will result in better DALI bandwidth management.

The DALI devices do not need to be commissioned to operate in this mode. However, the DALI devices must be set to use “DT8 type RGBWAF”. DALI Mask values are transmitted for colour values but not intensity.

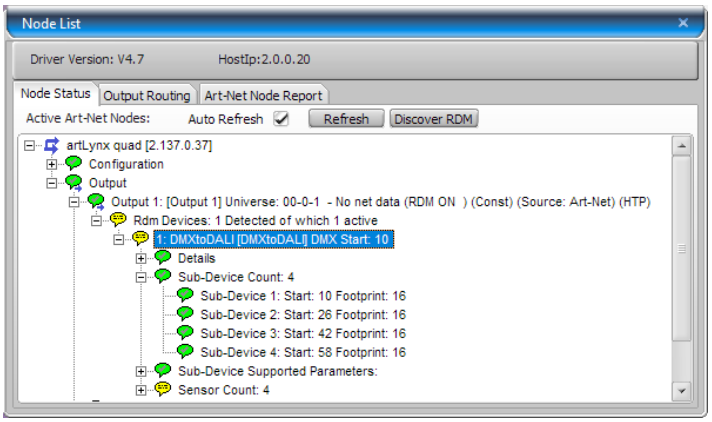
9 DT8 RGBWAF Group

ARC intensity commands and RGBWAF colour commands are sent to the 16 available group addresses of each circuit. The DALI devices do not need to be commissioned to operate in this mode. Additionally, the DALI devices must be set to use “DT8 type RGBWAF”. DALI Mask values are transmitted for colour values but not intensity.

DMX512 Start Addresses

The DMXtoDALI start address is set via RDM. Changing the start address of the root-device will re-patch the sub-devices (DALI circuits) to contiguous addresses based on their footprints. In the example below, all sub-devices are set to personality 2 which has a footprint of 16. Setting the root address to 10 cases a contiguous re-patch with the sub-devices at 10, 26, 42, 58.

The start address of the sub-devices can be set individually if required. Overlapping addresses are allowed.



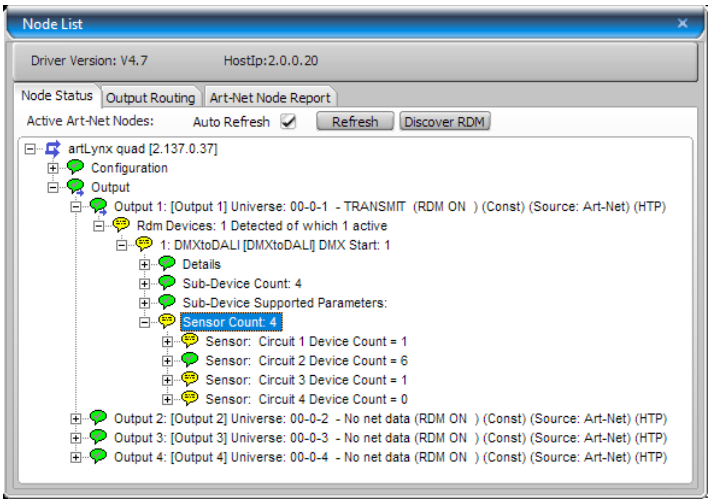
RDM Locate

The RDM locate function can be used to visually locate or identify the DALI devices on each circuit. Selecting locate for the root-device will broadcast an alternating sequence of full-on then full-off ARC commands to all circuits. Selecting locate for a sub-device will broadcast an alternating sequence of full-on then full-off ARC commands to the DALI circuit controlled by that sub-device.

During locate mode the front panel locate indicator will flash and DMX512 to DALI translation is inhibited.

RDM Sensors

Four RDM sensors are used to indicate the quantity of commissioned DALI devices that have been discovered on each circuit. (See the DIP Switch Configuration section on page 10 for information regarding the function of Switches 3 and 4).



DIP Switch Configuration

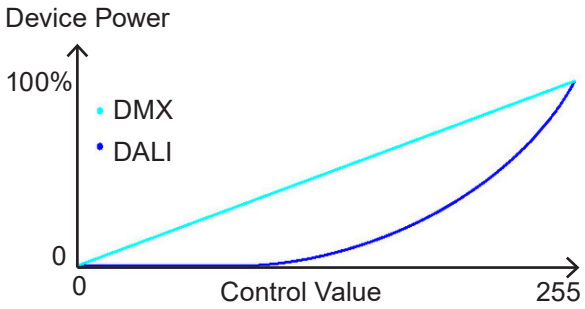
A bank of DIP switches is located under the top right cover. Normal operation is achieved by setting all switches to the off position.

Switch	Function	Operation	
1	Curve	Off	DALI dimmer curve
		On	Linear dimmer curve
2	Buffering	Off	A sixteen deep buffer is used per circuit
		On	Buffering disabled
3	Continuous Query	Off	Two queries run at startup
		On	Queries run continuously every 2 minutes
4	Query Disable	Off	Query operation is defined by switch 3
		On	Query operation is disabled
5	Activate	Off	All DT8 commands end with an ACTIVATE
		On	ACTIVATE is not sent
6	n/a	Off	n/a
		On	n/a

Curve (Switch 1)

The majority of DMX devices operate using a linear dimming curve with the level selected by a decimal value between 0 and 255. DALI works with a non-linear (exponential) curve. As the graph shows, each method produces a different output.

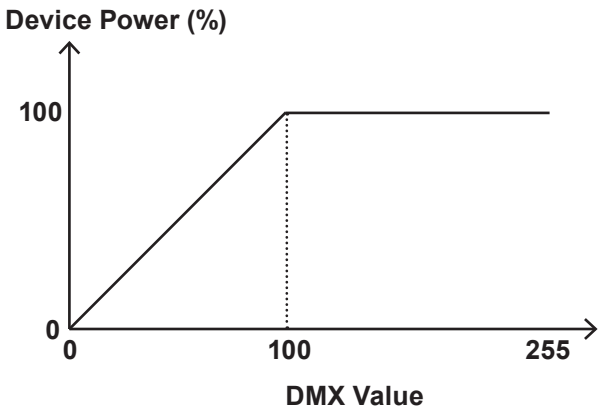
In its default mode of operation (Switch 1 = Off), DMXtoDALI employs a one-to-one mapping between the DMX and DALI values, resulting in the native (exponential) dimming curve of the DALI fixture.



Switch 1 = Off

However, DMXtoDALI can also produce a linear dimming curve (Switch 1 = On). It should be noted that in this mode of operation, the DMX value corresponds to the percentage power level of the fixture. Therefore, any command value above 100 will simply result in 100% power level.

Please refer to Table 12 for the dimming curve.



Switch 1 = On

Buffering (Switch 2)

There is a vast difference between the speed at which DMX512 and DALI operate. This means that when DMX512 levels change rapidly, not all the data can be converted to DALI. There are two possible approaches to solving this problem.

In its default mode of operation (Switch 2 = Off), DMXtoDALI has a 16-deep buffer for each DALI circuit. The buffer allows the differing speeds to be matched and smooths the conversion.

However, in some scenarios (with fast moving effects) a better visual result will be achieved by dropping DMX512 frames. This is achieved by disabling buffering (Switch 2 = On).

Continuous Query (Switch 3)

When querying is enabled (i.e. the default mode corresponding to Switch 4 = Off, see below), its mode of operation can be modified by this switch.

In its default mode of operation (Switch 3 = Off), DMXtoDALI will send two consecutive queries at startup. The delay between each is approximately two minutes. This allows the DALI devices time to boot. DMXtoDALI maps all the device responses and disables any further unicast to devices that did not respond.

The default mode of operation means that DMXtoDALI would require a reboot to detect new DALI devices or short address changes. While this is normally not a problem, it can be inconvenient during installation.

DMXtoDALI can be set to query continuously every two minutes (Switch 3 = On). The query process takes lower priority to level and colour data.

Query Disable (Switch 4)

When DMXtoDALI is using a personality that unicasts directly to DALI devices, large amounts of DALI bandwidth can be consumed by small changes on the DMX512 input. In order to manage DALI bandwidth, DMXtoDALI will only unicast to a device that is actually connected.

DMXtoDALI achieves this by a process of querying all DALI devices.

In some instances, particularly in multi-master systems or if unicast is not being used, querying may not be desired or needed and can be disabled (Switch 4 = On). Note that when querying is disabled, DMXtoDALI will not be able to report back the number of DALI devices detected using the RDM sensors.

Activate (Switch 5)

In its default mode of operation (Switch 5 = Off), DMXtoDALI will send a DALI Activate command after all DT8 colour data. This ensures that colour changes are immediately activated.

DALI devices can be configured to activate colour change in different ways - for example, linked to the next level change. In this scenario the Activate command is not required (Switch 5 = On).

Troubleshooting

1	Power indicator not illuminated	Check that the DC PSU is of the correct voltage and connected with the correct polarity.
2	Data indicator not illuminated	Check that DMX512 cable is connected correctly. The DMX512 screen should connect to the 'COM' terminal on the product top left. Check that the loop connection is terminated if not in use. Use a DMX512 tester to check that your DMX512 controller is transmitting.
3	DALI indicators 1 – 4 not illuminated	These indicators illuminate when DALI Bus Power is present. Check that a DALI Bus PSU is connected.
4	DALI devices cannot be controlled at all	Use personality mode 1 and transmit DMX512 with all channels set to 50%. This will broadcast to all DALI devices. They should respond even if not commissioned. If they do respond, the problem is likely to be that some DALI devices are not commissioned. Use a commissioning tool to solve this. Also check the value of the RDM sensors – this tells you the number of commissioned DALI devices that have been found.
5	Some DALI devices cannot be controlled	If you are using device addressing, check that all DALI devices are commissioned. If you are using group addressing, check that all DALI devices are both commissioned and allocated to groups.
6	Cannot control colour	Is the DALI device capable of DT8 colour control? Check which modes it supports and select the correct one in the DALI device. Select the correct personality in DMXtoDALI.
7	Not responding to RGBWAF colour control	Set the DALI device to DT8 – RGBWAF mode as its default.
8	Not responding to colour temperature control	Set the DALI device to DT8 – Colour Temperature as its default.
9	DALI device only supports XY colour	DMXtoDALI does not support this.
10	DALI device only supports Primary-N colour	DMXtoDALI does not support this.

Appendix

Table 1 - Personality 1 (DT0 Broadcast)

DMX Address	DALI Circuit	DALI Function
1	1	Intensity Broadcast
2	2	Intensity Broadcast
3	3	Intensity Broadcast
4	4	Intensity Broadcast

Table 2 - Personality 2 (DT0 Groups)

DMX Address	DALI Circuit	DALI Function
1	1	Intensity Group 0
2	1	Intensity Group 1
3	1	Intensity Group 2
4	1	Intensity Group 3
5	1	Intensity Group 4
6	1	Intensity Group 5
7	1	Intensity Group 6
8	1	Intensity Group 7
9	1	Intensity Group 8
10	1	Intensity Group 9
11	1	Intensity Group 10
12	1	Intensity Group 11
13	1	Intensity Group 12
14	1	Intensity Group 13
15	1	Intensity Group 14
16	1	Intensity Group 15
17	2	Intensity Group 0
18	2	Intensity Group 1
19	2	Intensity Group 2
20	2	Intensity Group 3
21	2	Intensity Group 4
22	2	Intensity Group 5
23	2	Intensity Group 6
24	2	Intensity Group 7
25	2	Intensity Group 8
26	2	Intensity Group 9
27	2	Intensity Group 10
28	2	Intensity Group 11
29	2	Intensity Group 12
30	2	Intensity Group 13
31	2	Intensity Group 14
32	2	Intensity Group 15

DMX Address	DALI Circuit	DALI Function
33	2	Intensity Group 0
34	3	Intensity Group 1
35	3	Intensity Group 2
36	3	Intensity Group 3
37	3	Intensity Group 4
38	3	Intensity Group 5
39	3	Intensity Group 6
40	3	Intensity Group 7
41	3	Intensity Group 8
42	3	Intensity Group 9
43	3	Intensity Group 10
44	3	Intensity Group 11
45	3	Intensity Group 12
46	3	Intensity Group 13
47	3	Intensity Group 14
48	3	Intensity Group 15
49	4	Intensity Group 0
50	4	Intensity Group 1
51	4	Intensity Group 2
52	4	Intensity Group 3
53	4	Intensity Group 4
54	4	Intensity Group 5
55	4	Intensity Group 6
56	4	Intensity Group 7
57	4	Intensity Group 8
58	4	Intensity Group 9
59	4	Intensity Group 10
60	4	Intensity Group 11
61	4	Intensity Group 12
62	4	Intensity Group 13
63	4	Intensity Group 14
64	4	Intensity Group 15

Table 3 - Personality 3 (DT0 Devices)

DMX Address	DALI Circuit	DALI Function
1	1	Intensity Device 0
2	1	Intensity Device 1
3	1	Intensity Device 2
4	1	Intensity Device 3
5	1	Intensity Device 4
6	1	Intensity Device 5
7	1	Intensity Device 6
8	1	Intensity Device 7
9	1	Intensity Device 8
10	1	Intensity Device 9
11	1	Intensity Device 10
12	1	Intensity Device 11
13	1	Intensity Device 12
14	1	Intensity Device 13
15	1	Intensity Device 14
16	1	Intensity Device 15
17	1	Intensity Device 16
18	1	Intensity Device 17
19	1	Intensity Device 18
20	1	Intensity Device 19
21	1	Intensity Device 20
22	1	Intensity Device 21
23	1	Intensity Device 22
24	1	Intensity Device 23
25	1	Intensity Device 24
26	1	Intensity Device 25
27	1	Intensity Device 26
28	1	Intensity Device 27
29	1	Intensity Device 28
30	1	Intensity Device 29
31	1	Intensity Device 30
32	1	Intensity Device 31
33	1	Intensity Device 32
34	1	Intensity Device 33
35	1	Intensity Device 34
36	1	Intensity Device 35
37	1	Intensity Device 36
38	1	Intensity Device 37
39	1	Intensity Device 38
40	1	Intensity Device 39
41	1	Intensity Device 40
42	1	Intensity Device 41
43	1	Intensity Device 42
44	1	Intensity Device 43
45	1	Intensity Device 44
46	1	Intensity Device 45
47	1	Intensity Device 46
48	1	Intensity Device 47
49	1	Intensity Device 48
50	1	Intensity Device 49
51	1	Intensity Device 50
52	1	Intensity Device 51
53	1	Intensity Device 52
54	1	Intensity Device 53
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57	1	Intensity Device 56
58	1	Intensity Device 57
59	1	Intensity Device 58
60	1	Intensity Device 59
61	1	Intensity Device 60
62	1	Intensity Device 61
63	1	Intensity Device 62
64	1	Intensity Device 63
65	2	Intensity Device 0
66	2	Intensity Device 1
67	2	Intensity Device 2
68	2	Intensity Device 3
69	2	Intensity Device 4
70	2	Intensity Device 5
71	2	Intensity Device 6
72	2	Intensity Device 7
73	2	Intensity Device 8
74	2	Intensity Device 9
75	2	Intensity Device 10
76	2	Intensity Device 11
77	2	Intensity Device 12
78	2	Intensity Device 13
79	2	Intensity Device 14
80	2	Intensity Device 15
81	2	Intensity Device 16
82	2	Intensity Device 17
83	2	Intensity Device 18
84	2	Intensity Device 19

Table 3 - Personality 3 (DT0 Devices) continued

DMX Address	DALI Circuit	DALI Function
85	2	Intensity Device 20
86	2	Intensity Device 21
87	2	Intensity Device 22
88	2	Intensity Device 23
89	2	Intensity Device 24
90	2	Intensity Device 25
91	2	Intensity Device 26
92	2	Intensity Device 27
93	2	Intensity Device 28
94	2	Intensity Device 29
95	2	Intensity Device 30
96	2	Intensity Device 31
97	2	Intensity Device 32
98	2	Intensity Device 33
99	2	Intensity Device 34
100	2	Intensity Device 35
101	2	Intensity Device 36
102	2	Intensity Device 37
103	2	Intensity Device 38
104	2	Intensity Device 39
105	2	Intensity Device 40
106	2	Intensity Device 41
107	2	Intensity Device 42
108	2	Intensity Device 43
109	2	Intensity Device 44
110	2	Intensity Device 45
111	2	Intensity Device 46
112	2	Intensity Device 47
113	2	Intensity Device 48
114	2	Intensity Device 49
115	2	Intensity Device 50
116	2	Intensity Device 51
117	2	Intensity Device 52
118	2	Intensity Device 53
119	2	Intensity Device 54
120	2	Intensity Device 55
121	2	Intensity Device 56
122	2	Intensity Device 57
123	2	Intensity Device 58
124	2	Intensity Device 59
125	2	Intensity Device 60
126	2	Intensity Device 61

DMX Address	DALI Circuit	DALI Function
127	2	Intensity Device 62
128	2	Intensity Device 63
129	3	Intensity Device 0
130	3	Intensity Device 1
131	3	Intensity Device 2
132	3	Intensity Device 3
133	3	Intensity Device 4
134	3	Intensity Device 5
135	3	Intensity Device 6
136	3	Intensity Device 7
137	3	Intensity Device 8
138	3	Intensity Device 9
139	3	Intensity Device 10
140	3	Intensity Device 11
141	3	Intensity Device 12
142	3	Intensity Device 13
143	3	Intensity Device 14
144	3	Intensity Device 15
145	3	Intensity Device 16
146	3	Intensity Device 17
147	3	Intensity Device 18
148	3	Intensity Device 19
149	3	Intensity Device 20
150	3	Intensity Device 21
151	3	Intensity Device 22
152	3	Intensity Device 23
153	3	Intensity Device 24
154	3	Intensity Device 25
155	3	Intensity Device 26
156	3	Intensity Device 27
157	3	Intensity Device 28
158	3	Intensity Device 29
159	3	Intensity Device 30
160	3	Intensity Device 31
161	3	Intensity Device 32
162	3	Intensity Device 33
163	3	Intensity Device 34
164	3	Intensity Device 35
165	3	Intensity Device 36
166	3	Intensity Device 37
167	3	Intensity Device 38
168	3	Intensity Device 39

Table 3 - Personality 3 (DT0 Devices) continued

DMX Address	DALI Circuit	DALI Function
169	3	Intensity Device 40
170	3	Intensity Device 41
171	3	Intensity Device 42
172	3	Intensity Device 43
173	3	Intensity Device 44
174	3	Intensity Device 45
175	3	Intensity Device 46
176	3	Intensity Device 47
177	3	Intensity Device 48
178	3	Intensity Device 49
179	3	Intensity Device 50
180	3	Intensity Device 51
181	3	Intensity Device 52
182	3	Intensity Device 53
183	3	Intensity Device 54
184	3	Intensity Device 55
185	3	Intensity Device 56
186	3	Intensity Device 57
187	3	Intensity Device 58
188	3	Intensity Device 59
189	3	Intensity Device 60
190	3	Intensity Device 61
191	3	Intensity Device 62
192	3	Intensity Device 63
193	4	Intensity Device 0
194	4	Intensity Device 1
195	4	Intensity Device 2
196	4	Intensity Device 3
197	4	Intensity Device 4
198	4	Intensity Device 5
199	4	Intensity Device 6
200	4	Intensity Device 7
201	4	Intensity Device 8
202	4	Intensity Device 9
203	4	Intensity Device 10
204	4	Intensity Device 11
205	4	Intensity Device 12
206	4	Intensity Device 13
207	4	Intensity Device 14
208	4	Intensity Device 15
209	4	Intensity Device 16
210	4	Intensity Device 17
211	4	Intensity Device 18
212	4	Intensity Device 19
213	4	Intensity Device 20
214	4	Intensity Device 21
215	4	Intensity Device 22
216	4	Intensity Device 23
217	4	Intensity Device 24
218	4	Intensity Device 25
219	4	Intensity Device 26
220	4	Intensity Device 27
221	4	Intensity Device 28
222	4	Intensity Device 29
223	4	Intensity Device 30
224	4	Intensity Device 31
225	4	Intensity Device 32
226	4	Intensity Device 33
227	4	Intensity Device 34
228	4	Intensity Device 35
229	4	Intensity Device 36
230	4	Intensity Device 37
231	4	Intensity Device 38
232	4	Intensity Device 39
233	4	Intensity Device 40
234	4	Intensity Device 41
235	4	Intensity Device 42
236	4	Intensity Device 43
237	4	Intensity Device 44
238	4	Intensity Device 45
239	4	Intensity Device 46
240	4	Intensity Device 47
241	4	Intensity Device 48
242	4	Intensity Device 49
243	4	Intensity Device 50
244	4	Intensity Device 51
245	4	Intensity Device 52
246	4	Intensity Device 53
247	4	Intensity Device 54
248	4	Intensity Device 55
249	4	Intensity Device 56
250	4	Intensity Device 57
251	4	Intensity Device 58
252	4	Intensity Device 59
253	4	Intensity Device 60
254	4	Intensity Device 61
255	4	Intensity Device 62
256	4	Intensity Device 63

Table 4 - Personality 4 (DT0 Broadcast, Groups, Devices, Scenes)

DMX Address	DALI Circuit	DALI Function
1	1	Intensity Broadcast
2	1	Intensity Group 0
3	1	Intensity Group 1
4	1	Intensity Group 2
5	1	Intensity Group 3
6	1	Intensity Group 4
7	1	Intensity Group 5
8	1	Intensity Group 6
9	1	Intensity Group 7
10	1	Intensity Group 8
11	1	Intensity Group 9
12	1	Intensity Group 10
13	1	Intensity Group 11
14	1	Intensity Group 12
15	1	Intensity Group 13
16	1	Intensity Group 14
17	1	Intensity Group 15
18	1	Intensity Device 0
19	1	Intensity Device 1
20	1	Intensity Device 2
21	1	Intensity Device 3
22	1	Intensity Device 4
23	1	Intensity Device 5
24	1	Intensity Device 6
25	1	Intensity Device 7
26	1	Intensity Device 8
27	1	Intensity Device 9
28	1	Intensity Device 10
29	1	Intensity Device 11
30	1	Intensity Device 12
31	1	Intensity Device 13
32	1	Intensity Device 14
33	1	Intensity Device 15
34	1	Intensity Device 16
35	1	Intensity Device 17
36	1	Intensity Device 18
37	1	Intensity Device 19
38	1	Intensity Device 20
39	1	Intensity Device 21
40	1	Intensity Device 22
41	1	Intensity Device 23
42	1	Intensity Device 24

DMX Address	DALI Circuit	DALI Function
43	1	Intensity Device 25
44	1	Intensity Device 26
45	1	Intensity Device 27
46	1	Intensity Device 28
47	1	Intensity Device 29
48	1	Intensity Device 30
49	1	Intensity Device 31
50	1	Intensity Device 32
51	1	Intensity Device 33
52	1	Intensity Device 34
53	1	Intensity Device 35
54	1	Intensity Device 36
55	1	Intensity Device 37
56	1	Intensity Device 38
57	1	Intensity Device 39
58	1	Intensity Device 40
59	1	Intensity Device 41
60	1	Intensity Device 42
61	1	Intensity Device 43
62	1	Intensity Device 44
63	1	Intensity Device 45
64	1	Intensity Device 46
65	1	Intensity Device 47
66	1	Intensity Device 48
67	1	Intensity Device 49
68	1	Intensity Device 50
69	1	Intensity Device 51
70	1	Intensity Device 52
71	1	Intensity Device 53
72	1	Intensity Device 54
73	1	Intensity Device 55
74	1	Intensity Device 56
75	1	Intensity Device 57
76	1	Intensity Device 58
77	1	Intensity Device 59
78	1	Intensity Device 60
79	1	Intensity Device 61
80	1	Intensity Device 62
81	1	Intensity Device 63
82	1	Scene select
83	2	Intensity Broadcast
84	2	Intensity Group 0

Table 4 - Personality 4 (DT0 Broadcast, Groups, Devices, Scenes) continued

DMX Address	DALI Circuit	DALI Function
85	2	Intensity Group 1
86	2	Intensity Group 2
87	2	Intensity Group 3
88	2	Intensity Group 4
89	2	Intensity Group 5
90	2	Intensity Group 6
91	2	Intensity Group 7
92	2	Intensity Group 8
93	2	Intensity Group 9
94	2	Intensity Group 10
95	2	Intensity Group 11
96	2	Intensity Group 12
97	2	Intensity Group 13
98	2	Intensity Group 14
99	2	Intensity Group 15
100	2	Intensity Device 0
101	2	Intensity Device 1
102	2	Intensity Device 2
103	2	Intensity Device 3
104	2	Intensity Device 4
105	2	Intensity Device 5
106	2	Intensity Device 6
107	2	Intensity Device 7
108	2	Intensity Device 8
109	2	Intensity Device 9
110	2	Intensity Device 10
111	2	Intensity Device 11
112	2	Intensity Device 12
113	2	Intensity Device 13
114	2	Intensity Device 14
115	2	Intensity Device 15
116	2	Intensity Device 16
117	2	Intensity Device 17
118	2	Intensity Device 18
119	2	Intensity Device 19
120	2	Intensity Device 20
121	2	Intensity Device 21
122	2	Intensity Device 22
123	2	Intensity Device 23
124	2	Intensity Device 24
125	2	Intensity Device 25
126	2	Intensity Device 26

DMX Address	DALI Circuit	DALI Function
127	2	Intensity Device 27
128	2	Intensity Device 28
129	2	Intensity Device 29
130	2	Intensity Device 30
131	2	Intensity Device 31
132	2	Intensity Device 32
133	2	Intensity Device 33
134	2	Intensity Device 34
135	2	Intensity Device 35
136	2	Intensity Device 36
137	2	Intensity Device 37
138	2	Intensity Device 38
139	2	Intensity Device 39
140	2	Intensity Device 40
141	2	Intensity Device 41
142	2	Intensity Device 42
143	2	Intensity Device 43
144	2	Intensity Device 44
145	2	Intensity Device 45
146	2	Intensity Device 46
147	2	Intensity Device 47
148	2	Intensity Device 48
149	2	Intensity Device 49
150	2	Intensity Device 50
151	2	Intensity Device 51
152	2	Intensity Device 52
153	2	Intensity Device 53
154	2	Intensity Device 54
155	2	Intensity Device 55
156	2	Intensity Device 56
157	2	Intensity Device 57
158	2	Intensity Device 58
159	2	Intensity Device 59
160	2	Intensity Device 60
161	2	Intensity Device 61
162	2	Intensity Device 62
163	2	Intensity Device 63
164	2	Scene select
165	3	Intensity Broadcast
166	3	Intensity Group 0
167	3	Intensity Group 1
168	3	Intensity Group 2

Table 4 - Personality 4 (DT0 Broadcast, Groups, Devices, Scenes) continued

DMX Address	DALI Circuit	DALI Function
169	3	Intensity Group 3
170	3	Intensity Group 4
171	3	Intensity Group 5
172	3	Intensity Group 6
173	3	Intensity Group 7
174	3	Intensity Group 8
175	3	Intensity Group 9
176	3	Intensity Group 10
177	3	Intensity Group 11
178	3	Intensity Group 12
179	3	Intensity Group 13
180	3	Intensity Group 14
181	3	Intensity Group 15
182	3	Intensity Device 0
183	3	Intensity Device 1
184	3	Intensity Device 2
185	3	Intensity Device 3
186	3	Intensity Device 4
187	3	Intensity Device 5
188	3	Intensity Device 6
189	3	Intensity Device 7
190	3	Intensity Device 8
191	3	Intensity Device 9
192	3	Intensity Device 10
193	3	Intensity Device 11
194	3	Intensity Device 12
195	3	Intensity Device 13
196	3	Intensity Device 14
197	3	Intensity Device 15
198	3	Intensity Device 16
199	3	Intensity Device 17
200	3	Intensity Device 18
201	3	Intensity Device 19
202	3	Intensity Device 20
203	3	Intensity Device 21
204	3	Intensity Device 22
205	3	Intensity Device 23
206	3	Intensity Device 24
207	3	Intensity Device 25
208	3	Intensity Device 26
209	3	Intensity Device 27
210	3	Intensity Device 28
211	3	Intensity Device 29
212	3	Intensity Device 30

DMX Address	DALI Circuit	DALI Function
213	3	Intensity Device 31
214	3	Intensity Device 32
215	3	Intensity Device 33
216	3	Intensity Device 34
217	3	Intensity Device 35
218	3	Intensity Device 36
219	3	Intensity Device 37
220	3	Intensity Device 38
221	3	Intensity Device 39
222	3	Intensity Device 40
223	3	Intensity Device 41
224	3	Intensity Device 42
225	3	Intensity Device 43
226	3	Intensity Device 44
227	3	Intensity Device 45
228	3	Intensity Device 46
229	3	Intensity Device 47
230	3	Intensity Device 48
231	3	Intensity Device 49
232	3	Intensity Device 50
233	3	Intensity Device 51
234	3	Intensity Device 52
235	3	Intensity Device 53
236	3	Intensity Device 54
237	3	Intensity Device 55
238	3	Intensity Device 56
239	3	Intensity Device 57
240	3	Intensity Device 58
241	3	Intensity Device 59
242	3	Intensity Device 60
243	3	Intensity Device 61
244	3	Intensity Device 62
245	3	Intensity Device 63
246	3	Scene select
247	4	Intensity Broadcast
248	4	Intensity Group 0
249	4	Intensity Group 1
250	4	Intensity Group 2
251	4	Intensity Group 3
252	4	Intensity Group 4
253	4	Intensity Group 5
254	4	Intensity Group 6
255	4	Intensity Group 7
256	4	Intensity Group 8

Table 4 - Personality 4 (DT0 Broadcast, Groups, Devices, Scenes) continued

DMX Address	DALI Circuit	DALI Function
257	4	Intensity Group 9
258	4	Intensity Group 10
259	4	Intensity Group 11
260	4	Intensity Group 12
261	4	Intensity Group 13
262	4	Intensity Group 14
263	4	Intensity Group 15
264	4	Intensity Device 0
265	4	Intensity Device 1
266	4	Intensity Device 2
267	4	Intensity Device 3
268	4	Intensity Device 4
269	4	Intensity Device 5
270	4	Intensity Device 6
271	4	Intensity Device 7
272	4	Intensity Device 8
273	4	Intensity Device 9
274	4	Intensity Device 10
275	4	Intensity Device 11
276	4	Intensity Device 12
277	4	Intensity Device 13
278	4	Intensity Device 14
279	4	Intensity Device 15
280	4	Intensity Device 16
281	4	Intensity Device 17
282	4	Intensity Device 18
283	4	Intensity Device 19
284	4	Intensity Device 20
285	4	Intensity Device 21
286	4	Intensity Device 22
287	4	Intensity Device 23
288	4	Intensity Device 24
289	4	Intensity Device 25
290	4	Intensity Device 26
291	4	Intensity Device 27
292	4	Intensity Device 28
293	4	Intensity Device 29
294	4	Intensity Device 30
295	4	Intensity Device 31
296	4	Intensity Device 32
297	4	Intensity Device 33
298	4	Intensity Device 34
299	4	Intensity Device 35
300	4	Intensity Device 36
301	4	Intensity Device 37
302	4	Intensity Device 38
303	4	Intensity Device 39
304	4	Intensity Device 40
305	4	Intensity Device 41
306	4	Intensity Device 42
307	4	Intensity Device 43
308	4	Intensity Device 44
309	4	Intensity Device 45
310	4	Intensity Device 46
311	4	Intensity Device 47
312	4	Intensity Device 48
313	4	Intensity Device 49
314	4	Intensity Device 50
315	4	Intensity Device 51
316	4	Intensity Device 52
317	4	Intensity Device 53
318	4	Intensity Device 54
319	4	Intensity Device 55
320	4	Intensity Device 56
321	4	Intensity Device 57
322	4	Intensity Device 58
323	4	Intensity Device 59
324	4	Intensity Device 60
325	4	Intensity Device 61
326	4	Intensity Device 62
327	4	Intensity Device 63
328	4	Scene select

Table 5 - Personality 5 (DTx Scenes)

DMX Address	DALI Circuit	DALI Function
1	1	Scene Select
2	2	Scene Select
3	3	Scene Select
4	4	Scene Select

Table 6 - Personality 6 (DT8 Colour Temperature Broadcast)

DMX Address	DALI Circuit	DALI Function
1	1	Intensity Broadcast
2	1	Colour Temperature Broadcast (Cinc)
3	2	Intensity Broadcast
4	2	Colour Temperature Broadcast (Cinc)
5	3	Intensity Broadcast
6	3	Colour Temperature Broadcast (Cinc)
7	4	Intensity Broadcast
8	4	Colour Temperature Broadcast (Cinc)

Table 7 - Personality 7 (DT8 Colour Temperature Groups)

DMX Address	DALI Circuit	DALI Function
1	1	Intensity Group 0
2	1	Colour Temperature Group 0 (Cinc)
3	1	Intensity Group 1
4	1	Colour Temperature Group 1 (Cinc)
5	1	Intensity Group 2
6	1	Colour Temperature Group 2 (Cinc)
7	1	Intensity Group 3
8	1	Colour Temperature Group 3 (Cinc)
9	1	Intensity Group 4
10	1	Colour Temperature Group 4 (Cinc)
11	1	Intensity Group 5
12	1	Colour Temperature Group 5 (Cinc)
13	1	Intensity Group 6
14	1	Colour Temperature Group 6 (Cinc)
15	1	Intensity Group 7
16	1	Colour Temperature Group 7 (Cinc)
17	1	Intensity Group 8
18	1	Colour Temperature Group 8 (Cinc)

Table 7 - Personality 7 (DT8 Colour Temperature Groups) continued

DMX Address	DALI Circuit	DALI Function
19	1	Intensity Group 9
20	1	Colour Temperature Group 9 (Cinc)
21	1	Intensity Group 10
22	1	Colour Temperature Group 10 (Cinc)
23	1	Intensity Group 11
24	1	Colour Temperature Group 11 (Cinc)
25	1	Intensity Group 12
26	1	Colour Temperature Group 12 (Cinc)
27	1	Intensity Group 13
28	1	Colour Temperature Group 13 (Cinc)
29	1	Intensity Group 14
30	1	Colour Temperature Group 14 (Cinc)
31	1	Intensity Group 15
32	1	Colour Temperature Group 15 (Cinc)
33	2	Intensity Group 0
34	2	Colour Temperature Group 0 (Cinc)
35	2	Intensity Group 1
36	2	Colour Temperature Group 1 (Cinc)
37	2	Intensity Group 2
38	2	Colour Temperature Group 2 (Cinc)
39	2	Intensity Group 3
40	2	Colour Temperature Group 3 (Cinc)
41	2	Intensity Group 4
42	2	Colour Temperature Group 4 (Cinc)
43	2	Intensity Group 5
44	2	Colour Temperature Group 5 (Cinc)
45	2	Intensity Group 6
46	2	Colour Temperature Group 6 (Cinc)
47	2	Intensity Group 7
48	2	Colour Temperature Group 7 (Cinc)
49	2	Intensity Group 8
50	2	Colour Temperature Group 8 (Cinc)
51	2	Intensity Group 9
52	2	Colour Temperature Group 9 (Cinc)
53	2	Intensity Group 10
54	2	Colour Temperature Group 10 (Cinc)
55	2	Intensity Group 11
56	2	Colour Temperature Group 11 (Cinc)
57	2	Intensity Group 12
58	2	Colour Temperature Group 12 (Cinc)
59	2	Intensity Group 13
60	2	Colour Temperature Group 13 (Cinc)
61	2	Intensity Group 14

Table 7 - Personality 7 (DT8 Colour Temperature Groups) continued

DMX Address	DALI Circuit	DALI Function
62	2	Colour Temperature Group 14 (Cinc)
63	2	Intensity Group 15
64	2	Colour Temperature Group 15 (Cinc)
65	3	Intensity Group 0
66	3	Colour Temperature Group 0 (Cinc)
67	3	Intensity Group 1
68	3	Colour Temperature Group 1 (Cinc)
69	3	Intensity Group 2
70	3	Colour Temperature Group 2 (Cinc)
71	3	Intensity Group 3
72	3	Colour Temperature Group 3 (Cinc)
73	3	Intensity Group 4
74	3	Colour Temperature Group 4 (Cinc)
75	3	Intensity Group 5
76	3	Colour Temperature Group 5 (Cinc)
77	3	Intensity Group 6
78	3	Colour Temperature Group 6 (Cinc)
79	3	Intensity Group 7
80	3	Colour Temperature Group 7 (Cinc)
81	3	Intensity Group 8
82	3	Colour Temperature Group 8 (Cinc)
83	3	Intensity Group 9
84	3	Colour Temperature Group 9 (Cinc)
85	3	Intensity Group 10
86	3	Colour Temperature Group 10 (Cinc)
87	3	Intensity Group 11
88	3	Colour Temperature Group 11 (Cinc)
89	3	Intensity Group 12
90	3	Colour Temperature Group 12 (Cinc)
91	3	Intensity Group 13
92	3	Colour Temperature Group 13 (Cinc)
93	3	Intensity Group 14
94	3	Colour Temperature Group 14 (Cinc)
95	3	Intensity Group 15
96	3	Colour Temperature Group 15 (Cinc)
97	4	Intensity Group 0
98	4	Colour Temperature Group 0 (Cinc)
99	4	Intensity Group 1
100	4	Colour Temperature Group 1 (Cinc)
101	4	Intensity Group 2
102	4	Colour Temperature Group 2 (Cinc)
103	4	Intensity Group 3
104	4	Colour Temperature Group 3 (Cinc)

Table 7 - Personality 7 (DT8 Colour Temperature Groups) continued

DMX Address	DALI Circuit	DALI Function
105	4	Intensity Group 4
106	4	Colour Temperature Group 4 (Cinc)
107	4	Intensity Group 5
108	4	Colour Temperature Group 5 (Cinc)
109	4	Intensity Group 6
110	4	Colour Temperature Group 6 (Cinc)
111	4	Intensity Group 7
112	4	Colour Temperature Group 7 (Cinc)
113	4	Intensity Group 8
114	4	Colour Temperature Group 8 (Cinc)
115	4	Intensity Group 9
116	4	Colour Temperature Group 9 (Cinc)
117	4	Intensity Group 10
118	4	Colour Temperature Group 10 (Cinc)
119	4	Intensity Group 11
120	4	Colour Temperature Group 11 (Cinc)
121	4	Intensity Group 12
122	4	Colour Temperature Group 12 (Cinc)
123	4	Intensity Group 13
124	4	Colour Temperature Group 13 (Cinc)
125	4	Intensity Group 14
126	4	Colour Temperature Group 14 (Cinc)
127	4	Intensity Group 15
128	4	Colour Temperature Group 15 (Cinc)

Table 8 - Personality 8 (DT8 RGBWAF Broadcast)

DMX Address	DALI Circuit	DALI Function
1	1	Intensity Broadcast
2	1	Red Broadcast
3	1	Green Broadcast
4	1	Blue Broadcast
5	1	White Broadcast
6	1	Amber Broadcast
7	1	Free Broadcast
8	2	Intensity Broadcast
9	2	Red Broadcast
10	2	Green Broadcast
11	2	Blue Broadcast
12	2	White Broadcast
13	2	Amber Broadcast
14	2	Free Broadcast
15	3	Intensity Broadcast
16	3	Red Broadcast
17	3	Green Broadcast
18	3	Blue Broadcast
19	3	White Broadcast
20	3	Amber Broadcast
21	3	Free Broadcast
22	4	Intensity Broadcast
23	4	Red Broadcast
24	4	Green Broadcast
25	4	Blue Broadcast
26	4	White Broadcast
27	4	Amber Broadcast
28	4	Free Broadcast

Table 9 - Personality 9 (DT8 RGBWAF Group)

DMX Address	DALI Circuit	DALI Function
1	1	Intensity Group 0
2	1	Red Group 0
3	1	Green Group 0
4	1	Blue Group 0
5	1	White Group 0
6	1	Amber Group 0
7	1	Free Group 0
8	1	Intensity Group 1
9	1	Red Group 1
10	1	Green Group 1
11	1	Blue Group 1
12	1	White Group 1
13	1	Amber Group 1
14	1	Free Group 1
15	1	Intensity Group 2
16	1	Red Group 2
17	1	Green Group 2
18	1	Blue Group 2
19	1	White Group 2
20	1	Amber Group 2
21	1	Free Group 2
22	1	Intensity Group 3
23	1	Red Group 3
24	1	Green Group 3
25	1	Blue Group 3
26	1	White Group 3
27	1	Amber Group 3
28	1	Free Group 3
29	1	Intensity Group 4
30	1	Red Group 4
31	1	Green Group 4
32	1	Blue Group 4
33	1	White Group 4
34	1	Amber Group 4
35	1	Free Group 4
36	1	Intensity Group 5
37	1	Red Group 5
38	1	Green Group 5
39	1	Blue Group 5
40	1	White Group 5
41	1	Amber Group 5
42	1	Free Group 5

DMX Address	DALI Circuit	DALI Function
43	1	Intensity Group 6
44	1	Red Group 6
45	1	Green Group 6
46	1	Blue Group 6
47	1	White Group 6
48	1	Amber Group 6
49	1	Free Group 6
50	1	Intensity Group 7
51	1	Red Group 7
52	1	Green Group 7
53	1	Blue Group 7
54	1	White Group 7
55	1	Amber Group 7
56	1	Free Group 7
57	1	Intensity Group 8
58	1	Red Group 8
59	1	Green Group 8
60	1	Blue Group 8
61	1	White Group 8
62	1	Amber Group 8
63	1	Free Group 8
64	1	Intensity Group 9
65	1	Red Group 9
66	1	Green Group 9
67	1	Blue Group 9
68	1	White Group 9
69	1	Amber Group 9
70	1	Free Group 9
71	1	Intensity Group 10
72	1	Red Group 10
73	1	Green Group 10
74	1	Blue Group 10
75	1	White Group 10
76	1	Amber Group 10
77	1	Free Group 10
78	1	Intensity Group 11
79	1	Red Group 11
80	1	Green Group 11
81	1	Blue Group 11
82	1	White Group 11
83	1	Amber Group 11
84	1	Free Group 11

Table 9 - Personality 9 (DT8 RGBWAF Group) continued

DMX Address	DALI Circuit	DALI Function
85	1	Intensity Group 12
86	1	Red Group 12
87	1	Green Group 12
88	1	Blue Group 12
89	1	White Group 12
90	1	Amber Group 12
91	1	Free Group 12
92	1	Intensity Group 13
93	1	Red Group 13
94	1	Green Group 13
95	1	Blue Group 13
96	1	White Group 13
97	1	Amber Group 13
98	1	Free Group 13
99	1	Intensity Group 14
100	1	Red Group 14
101	1	Green Group 14
102	1	Blue Group 14
103	1	White Group 14
104	1	Amber Group 14
105	1	Free Group 14
106	1	Intensity Group 15
107	1	Red Group 15
108	1	Green Group 15
109	1	Blue Group 15
110	1	White Group 15
111	1	Amber Group 15
112	1	Free Group 15
113	2	Intensity Group 0
114	2	Red Group 0
115	2	Green Group 0
116	2	Blue Group 0
117	2	White Group 0
118	2	Amber Group 0
119	2	Free Group 0
120	2	Intensity Group 1
121	2	Red Group 1
122	2	Green Group 1
123	2	Blue Group 1
124	2	White Group 1
125	2	Amber Group 1
126	2	Free Group 1

DMX Address	DALI Circuit	DALI Function
127	2	Intensity Group 2
128	2	Red Group 2
129	2	Green Group 2
130	2	Blue Group 2
131	2	White Group 2
132	2	Amber Group 2
133	2	Free Group 2
134	2	Intensity Group 3
135	2	Red Group 3
136	2	Green Group 3
137	2	Blue Group 3
138	2	White Group 3
139	2	Amber Group 3
140	2	Free Group 3
141	2	Intensity Group 4
142	2	Red Group 4
143	2	Green Group 4
144	2	Blue Group 4
145	2	White Group 4
146	2	Amber Group 4
147	2	Free Group 4
148	2	Intensity Group 5
149	2	Red Group 5
150	2	Green Group 5
151	2	Blue Group 5
152	2	White Group 5
153	2	Amber Group 5
154	2	Free Group 5
155	2	Intensity Group 6
156	2	Red Group 6
157	2	Green Group 6
158	2	Blue Group 6
159	2	White Group 6
160	2	Amber Group 6
161	2	Free Group 6
162	2	Intensity Group 7
163	2	Red Group 7
164	2	Green Group 7
165	2	Blue Group 7
166	2	White Group 7
167	2	Amber Group 7
168	2	Free Group 7

Table 9 - Personality 9 (DT8 RGBWAF Group) continued

DMX Address	DALI Circuit	DALI Function
169	2	Intensity Group 8
170	2	Red Group 8
171	2	Green Group 8
172	2	Blue Group 8
173	2	White Group 8
174	2	Amber Group 8
175	2	Free Group 8
176	2	Intensity Group 9
177	2	Red Group 9
178	2	Green Group 9
179	2	Blue Group 9
180	2	White Group 9
181	2	Amber Group 9
182	2	Free Group 9
183	2	Intensity Group 10
184	2	Red Group 10
185	2	Green Group 10
186	2	Blue Group 10
187	2	White Group 10
188	2	Amber Group 10
189	2	Free Group 10
190	2	Intensity Group 11
191	2	Red Group 11
192	2	Green Group 11
193	2	Blue Group 11
194	2	White Group 11
195	2	Amber Group 11
196	2	Free Group 11
197	2	Intensity Group 12
198	2	Red Group 12
199	2	Green Group 12
200	2	Blue Group 12
201	2	White Group 12
202	2	Amber Group 12
203	2	Free Group 12
204	2	Intensity Group 13
205	2	Red Group 13
206	2	Green Group 13
207	2	Blue Group 13
208	2	White Group 13
209	2	Amber Group 13
210	2	Free Group 13
211	2	Intensity Group 14
212	2	Red Group 14
213	2	Green Group 14
214	2	Blue Group 14
215	2	White Group 14
216	2	Amber Group 14
217	2	Free Group 14
218	2	Intensity Group 15
219	2	Red Group 15
220	2	Green Group 15
221	2	Blue Group 15
222	2	White Group 15
223	2	Amber Group 15
224	2	Free Group 15
225	3	Intensity Group 0
226	3	Red Group 0
227	3	Green Group 0
228	3	Blue Group 0
229	3	White Group 0
230	3	Amber Group 0
231	3	Free Group 0
232	3	Intensity Group 1
233	3	Red Group 1
234	3	Green Group 1
235	3	Blue Group 1
236	3	White Group 1
237	3	Amber Group 1
238	3	Free Group 1
239	3	Intensity Group 2
240	3	Red Group 2
241	3	Green Group 2
242	3	Blue Group 2
243	3	White Group 2
244	3	Amber Group 2
245	3	Free Group 2
246	3	Intensity Group 3
247	3	Red Group 3
248	3	Green Group 3
249	3	Blue Group 3
250	3	White Group 3
251	3	Amber Group 3
252	3	Free Group 3
253	3	Intensity Group 4
254	3	Red Group 4
255	3	Green Group 4
256	3	Blue Group 4

Table 9 - Personality 9 (DT8 RGBWAF Group) continued

DMX Address	DALI Circuit	DALI Function
257	3	White Group 4
258	3	Amber Group 4
259	3	Free Group 4
260	3	Intensity Group 5
261	3	Red Group 5
262	3	Green Group 5
263	3	Blue Group 5
264	3	White Group 5
265	3	Amber Group 5
266	3	Free Group 5
267	3	Intensity Group 6
268	3	Red Group 6
269	3	Green Group 6
270	3	Blue Group 6
271	3	White Group 6
272	3	Amber Group 6
273	3	Free Group 6
274	3	Intensity Group 7
275	3	Red Group 7
276	3	Green Group 7
277	3	Blue Group 7
278	3	White Group 7
279	3	Amber Group 7
280	3	Free Group 7
281	3	Intensity Group 8
282	3	Red Group 8
283	3	Green Group 8
284	3	Blue Group 8
285	3	White Group 8
286	3	Amber Group 8
287	3	Free Group 8
288	3	Intensity Group 9
289	3	Red Group 9
290	3	Green Group 9
291	3	Blue Group 9
292	3	White Group 9
293	3	Amber Group 9
294	3	Free Group 9
295	3	Intensity Group 10
296	3	Red Group 10
297	3	Green Group 10
298	3	Blue Group 10
299	3	White Group 10
300	3	Amber Group 10
301	3	Free Group 10
302	3	Intensity Group 11
303	3	Red Group 11
304	3	Green Group 11
305	3	Blue Group 11
306	3	White Group 11
307	3	Amber Group 11
308	3	Free Group 11
309	3	Intensity Group 12
310	3	Red Group 12
311	3	Green Group 12
312	3	Blue Group 12
313	3	White Group 12
314	3	Amber Group 12
315	3	Free Group 12
316	3	Intensity Group 13
317	3	Red Group 13
318	3	Green Group 13
319	3	Blue Group 13
320	3	White Group 13
321	3	Amber Group 13
322	3	Free Group 13
323	3	Intensity Group 14
324	3	Red Group 14
325	3	Green Group 14
326	3	Blue Group 14
327	3	White Group 14
328	3	Amber Group 14
329	3	Free Group 14
330	3	Intensity Group 15
331	3	Red Group 15
332	3	Green Group 15
333	3	Blue Group 15
334	3	White Group 15
335	3	Amber Group 15
336	3	Free Group 15
337	4	Intensity Group 0
338	4	Red Group 0
339	4	Green Group 0
340	4	Blue Group 0
341	4	White Group 0
342	4	Amber Group 0
343	4	Free Group 0
344	4	Intensity Group 1

Table 9 - Personality 9 (DT8 RGBWAF Group) continued

DMX Address	DALI Circuit	DALI Function
345	4	Red Group 1
346	4	Green Group 1
347	4	Blue Group 1
348	4	White Group 1
349	4	Amber Group 1
350	4	Free Group 1
351	4	Intensity Group 2
352	4	Red Group 2
353	4	Green Group 2
354	4	Blue Group 2
355	4	White Group 2
356	4	Amber Group 2
357	4	Free Group 2
358	4	Intensity Group 3
359	4	Red Group 3
360	4	Green Group 3
361	4	Blue Group 3
362	4	White Group 3
363	4	Amber Group 3
364	4	Free Group 3
365	4	Intensity Group 4
366	4	Red Group 4
367	4	Green Group 4
368	4	Blue Group 4
369	4	White Group 4
370	4	Amber Group 4
371	4	Free Group 4
372	4	Intensity Group 5
373	4	Red Group 5
374	4	Green Group 5
375	4	Blue Group 5
376	4	White Group 5
377	4	Amber Group 5
378	4	Free Group 5
379	4	Intensity Group 6
380	4	Red Group 6
381	4	Green Group 6
382	4	Blue Group 6
383	4	White Group 6
384	4	Amber Group 6
385	4	Free Group 6
386	4	Intensity Group 7
387	4	Red Group 7
388	4	Green Group 7
389	4	Blue Group 7
390	4	White Group 7
391	4	Amber Group 7
392	4	Free Group 7
393	4	Intensity Group 8
394	4	Red Group 8
395	4	Green Group 8
396	4	Blue Group 8
397	4	White Group 8
398	4	Amber Group 8
399	4	Free Group 8
400	4	Intensity Group 9
401	4	Red Group 9
402	4	Green Group 9
403	4	Blue Group 9
404	4	White Group 9
405	4	Amber Group 9
406	4	Free Group 9
407	4	Intensity Group 10
408	4	Red Group 10
409	4	Green Group 10
410	4	Blue Group 10
411	4	White Group 10
412	4	Amber Group 10
413	4	Free Group 10
414	4	Intensity Group 11
415	4	Red Group 11
416	4	Green Group 11
417	4	Blue Group 11
418	4	White Group 11
419	4	Amber Group 11
420	4	Free Group 11
421	4	Intensity Group 12
422	4	Red Group 12
423	4	Green Group 12
424	4	Blue Group 12
425	4	White Group 12
426	4	Amber Group 12
427	4	Free Group 12
428	4	Intensity Group 13
429	4	Red Group 13
430	4	Green Group 13
431	4	Blue Group 13
432	4	White Group 13

Table 9 - Personality 9 (DT8 RGBWAF Group) continued

DMX Address	DALI Circuit	DALI Function
433	4	Amber Group 13
434	4	Free Group 13
435	4	Intensity Group 14
436	4	Red Group 14
437	4	Green Group 14
438	4	Blue Group 14
439	4	White Group 14
440	4	Amber Group 14
441	4	Free Group 14
442	4	Intensity Group 15
443	4	Red Group 15
444	4	Green Group 15
445	4	Blue Group 15
446	4	White Group 15
447	4	Amber Group 15
448	4	Free Group 15

Table 10 - Scene conversion

DMX Value	Scene
01-15	1
16-31	2
32-47	3
48-63	4
64-79	5
80-95	6
96-111	7
112-127	8
128-143	9
144-159	10
160-175	11
176-191	12
192-207	13
208-223	14
224-239	15
240-255	16

N.B. A DMX value of zero results in no Scene commands.

Table 11 - Kelvin, Mirek, Cinc translation for DT8 Colour Temperature modes

Kelvin	Mirek (Dec)	DMX Value (Cinc)
2510	398	255
2600	385	242
2700	370	227
2800	357	214
2900	345	202
3000	333	190
3100	323	180
3200	313	170
3300	303	160
3400	294	151
3500	286	143
3600	278	135
3700	270	127
3800	263	120
3900	256	113
4000	250	107
4100	244	101
4200	238	95
4300	233	90
4400	227	84
4500	222	79
4600	217	74
4700	213	70
4800	208	65
4900	204	61
5000	200	57
5100	196	53
5200	192	49
5300	189	46
5400	185	42
5500	182	39
5600	179	36
5700	175	32
5800	172	29
5900	169	26
6000	167	24
6100	164	21
6200	161	18
6300	159	16
6400	156	13
6500	154	11
6600	152	9
6700	149	6

Kelvin	Mirek (Dec)	DMX Value (Cinc)
6800	147	4
6900	145	2
7000	143	0

Table 12 - Dimming Curve Translation

The table expresses the function:

y = 10 exp [(3/253)(x-1) - 1]

where x is the DALI value and y is the DMX value. It is derived from the DALI specification.

DMX Value (equals % Device Power)	DALI Value
0	0
1	86
2	111
3	126
4	137
5	145
6	151
7	157
8	162
9	166
10	170
11	174
12	177
13	180
14	182
15	185
16	187
17	190
18	192
19	194
20	196
21	197
22	199
23	201
24	202
25	204
26	205
27	207
28	208
29	209
30	210
31	212
32	213
33	214
34	215
35	216
36	217

DMX Value (equals % Device Power)	DALI Value
37	218
38	219
39	220
40	221
41	222
42	223
43	223
44	224
45	225
46	226
47	227
48	227
49	228
50	229
51	230
52	230
53	231
54	232
55	232
56	233
57	234
58	234
59	235
60	235
61	236
62	237
63	237
64	238
65	238
66	239
67	239
68	240
69	240
70	241
71	241
72	242
73	242

Table 12 - Dimming Curve Translation (continued)

DMX Value (equals % Device Power)	DALI Value
74	243
75	243
76	244
77	244
78	245
79	245
80	246
81	246
82	247
83	247
84	248
85	248
86	248
87	249
88	249
89	250
90	250
91	251
92	251
93	251
94	252
95	252
96	253
97	253
98	253
99	254
100	254

DMXtoDALI quad Specification

Mechanical

- Housing: DIN rail case
- Material: Polycarbonate plastic - UL94-V0 rated
- Overall dimensions: 90 mm (H) x 88 mm (W) x 62 mm (D)
- Weight: 0.2 kg
- Mounting: 35 mm DIN rail or surface mount
- Country of manufacture: UK

Environmental

- Operating temperature: 0°C to 40°C
- Storage temperature: -10°C to +50°C
- Operating relative humidity (max): 80% non-condensing
- IP rating: IP20 indoor use only
- Certification: CE, WEEE, RoHS
- Warranty: 2-year (return to base)

Power & Electrical

- Input voltage: 9-24 VDC
- Input connector: (1) 2-pin screw terminal
- Input power (max): 10 W
- DC fuse: internal resettable fuse for control electronics

DALI Outputs

- Output mode: optically isolated

DMX512 Input

- Input mode: non-isolated
- Input ESD protection: 12 kV
- Electrocution protection: Input & Loop protected against continuous connection to 425 VAC (self-healing)

Control

- Input Protocols: DMX512, DMX512 (1990), DMX512-A, RDM (E1.20 - 2010 ESTA)
- Output Protocols: DALI DT0/DT8

Configuration

- RDM (Personalities, Start addresses)
- DIP Switches

Data Connections

- 3-pin Screw Terminal DMX Input (1 no.)
- 3-pin Screw Terminal DMX Loop (1 no.)
- 2-pin Screw Terminal DALI Outputs (4 no.)

LED Indication

- Power / DMX / Locate / DALI / Bus power

Package Contents

- DMXtoDALI quad

Ordering Info

- Product code: DMXtoDALI quad

Accessories (not included)

- PSU-24-2-FER
- Rail-PSU-D4
- Dali-Scope

CE Compliance CE

DMXtoDALI quad is CE compliant when installed in a shielded and earthed metal case

Warranty

All products are covered from date of purchase by a two year return to base warranty.

By return to base, we mean that the customer is responsible for all costs of transport to and from Artistic Licence.

Returns will not be accepted without prior authorisation. In order to discuss a request to return goods, please email:

Sales@ArtisticLicence.com

Compliance

All Products manufactured or sold by Artistic Licence Engineering Ltd are fully compliant with the appropriate CE and RoHS regulations. Product specific information is available on request.

Waste Electrical & Electronic Equipment (WEEE)

Artistic Licence is a member of a WEEE compliance scheme and will happily recycle any of our products that you, at your expense, return to us.

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