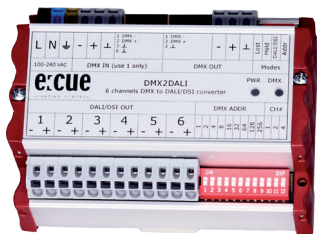# e:cue

DMX2DALI
Setup Manual (FW v2.1)

DMX2DALI

This manual relates for firmware version 2.1. For earlier versions please visit the download section of www.ecue.com.

For a most recent version of this manual please visit:

DMX2DALI

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Device Overview

About DMX2DALI

As a flexible converter from DMX signals to DALI/DSI, DMX2DALI is a simple solution for controlling electrical DALI/DSI ballasts and dimmers using a DMX controller. DMX2DALI's flexibility makes installation easy by using auto and manual DMX addressing modes and the option of using an RJ45 connector or single-wire connection for DMX connection. Six addressable consecutive DMX channels control six DALI outputs. Each output supports up to 16 DALI/DSI ballasts or dimmers (broadcast mode), while one DMX2DALI supports up to 96 electrical DALI/DSI ballasts and dimmers, typically used for control of fluorescent lighting.

Highlights

- 6 outputs with either 1200 Baud DALI transfer speed or 600 baud DSI transfer speed controlled by 6 DMX channels
- Up to 16 DALI/DSI ballasts per output, all controlled by the same DMX channel (broadcast mode)
- Single 100 to 240 V AC supply voltage
- DMX connectors (RJ45) allow standard CAT5 wiring
- Single-wire connectors (In/Out)
- Power and DMX status LEDs
- DMX manual and autoaddressing modes, DIP switches for configuration and manual addressing mode
- User selectable number of DMX channels (1-6)
- DIN rail mounting or standalone operation

Delivery Content

- DMX2DALI
- This Setup Manual

Safety instructions

Only use the device in compliance with the environmental conditions specified in the data sheet! Note the technical characteristics at the end of this manual!

Exposed power wearing cables, do not install under voltage to avoid electrical shocks!

Do not open the metal housing! There are no user operable parts inside.

Do not connect DMX sources to both DMX inputs! Do not short circuit DALI/DSI outputs! Do not share DALI terminals for several outputs!
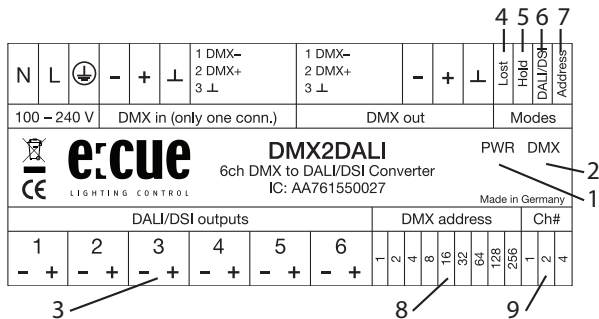
Actions described in this manual may only be performed with special care by skilled personnel.

Repairs may only be carried out by authorized, specially trained personnel. When in doubt, contact e:cue service.

Connectors and switches

1. PWR LED: Indicates operational device

2. DMX LED: Indicates valid DMX input signal

3. DALI/DSI outputs: DALI/DSI direct power arc broadcast mode: max 16 DALI/DSI ballasts per output

4. DMX lost mode: Definition of DALI/DSI outputs when no DMX signal is present
   'Off' = DALI/DSI outputs set to maximum intensity
   'On' = DALI/DSI outputs set to zero intensity

5. DALI/DSI hold mode: Definition of DALI/DSI outputs when no DMX signal is present
   'Off' = As defined by 'DMX Lost Mode'
   'On' = DALI outputs keep last updated values (or 'DMX Lost Mode' setting if there was no DMX present yet.)

6. DALI/DSI selection: Defines protocol for all output channels:
   'Off' = DALI,

'On' = DSI

7. Addressing mode selection: Defines addressing mode:
   'Off' = autoaddressing
   'On' = manual
   Auto addressing converts the defined channels to DALI/DSI and sends a
   modified DMX signal via the DMX output to the next device. The new first
   DMX channel is the one after the last one used.
   Manual addressing forwards the unmodified DMX signal.

8. DMX address selection: Defines DMX start address (DALI/DSI channel 1) by
   binary values:

All switches 'Off'	default	DMX address 1
Switch value 1 'On'		DMX address 1
Switch values 1 and 2 'On'		DMX address 3
etc. ...		
All switches 'On'		DMX address 511

9. DMX channel count selection: Defines number of channels deleted from
   DMX signal and converted to DALI/DSI in auto addressing mode by binary
   values (remaining DALI outputs are derived from used channels
   repetitively):

 | | | |
   |---|---|---|
   | All switches 'Off' | default | 6 channels (DALI outputs: "123456") |
   | Switch value 1 'On' | | 1 channel (DALI outputs: "111111") |
   | Switch value 2 'On' | | 2 channels (DALI outputs: "121212") |
   | etc. ... | | |
   | Switch values 1 and 4 'On' | | 5 channels (DALI outputs: "123451") |
   | Switch values 2 and 4 'On' | | 6 channels (DALI outputs: "123456") |

Technical information

General data

Model number	
DMX2DALI	AA761550027
General specifications	
Dimensions (W x H x D)	107 x 76 x 59 mm/4.21 x 3 x 2.32 inch
Weight	0.3 kg/0.66 lbs
Power	100 … 240 V AC
Operating/storage temperature	0 … 40 °C/32 … 104 °F
Operating/storage humidity	0 … 80%, non-condensing
Protection class	IP20
Materials	Anodised aluminium, plastic
Mounting	35 mm DIN rail (EN 60715 TH35)
Certifications	CE, UKCA
Input	DMX 512 (spring terminal clamps, RJ45)
Outputs	DALI/DSI, DMX 512 (spring terminal clamps, RJ45)
Changes in FW v2.1	DMX values are now mapped linear to DALI values.

CE UKCA

DMX2DALI

Dimensions

All dimensions in mm

45,5

76

58,4

107
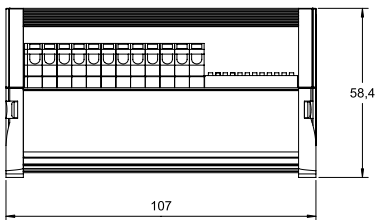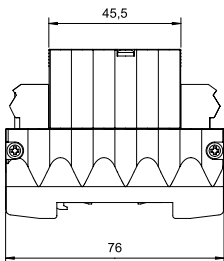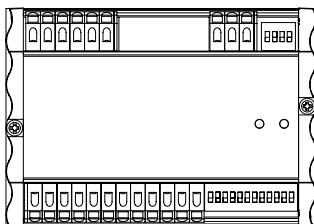
Addendum

About DALI

Digital Addressable Lighting Interface (DALI) is a technical standard for network-based systems that control lighting in buildings. It was established as a successor for 0-10 V lighting control systems, and as an open standard alternative to Digital Signal Interface (DSI), on which it is based. The DALI standard, which is specified in IEC 60929 for fluorescent lamp ballasts, defines the communications protocol and electrical interface for DALI lighting control networks.

A DALI network consists of a controller and lighting devices with DALI interfaces. The controller can monitor and control each light by a bidirectional data exchange. The DALI protocol permits devices to be individually addressed and it also incorporates Group and Scene broadcast messages to simultaneously address multiple devices (e.g., "Group 1 goto 100%" or "Recall Scene 1").

Each lighting device is assigned a unique static address from 0 to 63 in one group. Alternatively, DALI can be used as a subsystem via DALI gateways to address more than 64 devices. Data is transferred between controller and devices at 1200 baud.

DALI requires a single pair of wires for communication to all devices on a single DALI network. The network can be arranged in a "daisy-chain", "star", or "T" topology, or any combination of these. The DALI System is not classified as SELV (Separated Extra Low Voltage) and therefore may be run next to the mains cables or within a multi-core cable that includes mains power. The DALI signal has a high signal to noise ratio which enables reliable communications in the presence of a large amount of electrical noise. DALI employs Manchester encoding so that devices can be wired without regard for polarity. The network cable is required to be mains-rated, with 600v isolation and at least a 1 mm cross-section, with a maximum drop of two volts along the cable.

About DSI

Digital Signal Interface (DSI) is a protocol for the controlling of lighting in buildings (initially electrical ballasts). It was created in 1991 by the Austrian company Tridonic and is based on Manchester-coded 8-bit protocol, data rate of 1200 baud, 1 start bit, 8 data bits (dimming value), 4 stop bits, and is the basis of the more sophisticated DALI protocol. The technology uses a single byte to communicate the lighting level (0-255 or 0x00-0xFF). DSI was the start of digital lighting communication technology and was the precursor to DALI.