



daliSwitch

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. Do not allow liquid to penetrate the product.

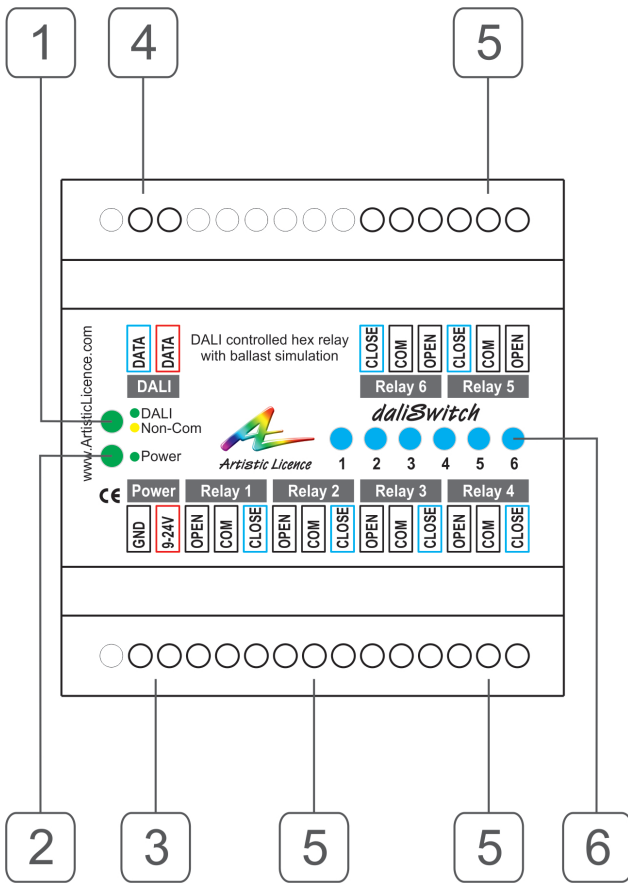
Please recycle all packaging.

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Download the user guide by scanning the following QR code:



Connections

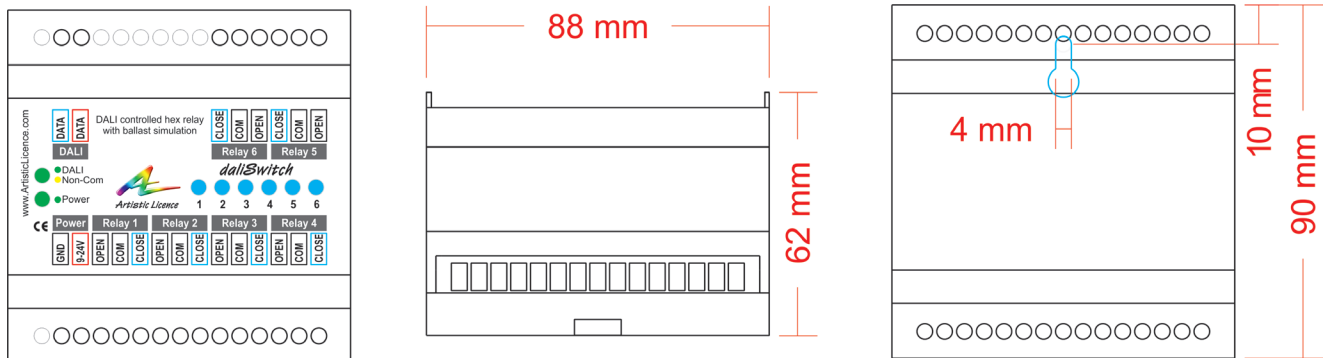


Reference	Type	Description
1	LED	DALI / non-commission warning
2	LED	Power
3	Connection	Power Input
4	Connection	DALI Input
5	Connection	Relay Outputs
6	LED	Relay energised

Internal Earth and Isolation

Circuit	Description
DALI Input	Isolated
Relay Outputs	Isolated
Internal Logic Ground	Connects to Ground Power Input

Mounting Diagram



Overview

In architectural, commercial and entertainment applications there are invariably some devices that do not provide a useful form of remote control. daliSwitch is an elegant solution to the automation of these devices.

daliSwitch is a DIN Rail mounted device that provides 6 mains voltage relays and is controlled via DALI. Each relay simulates a virtual DALI ballast and can be switched independently. Moreover, all the standard DALI commands are enabled, allowing the relays to be controlled in groups or scenes, or to respond identically to a broadcast command.

The product is powered via an external DC power supply unit.

Summary of Key Features

- 6 mains relays
- Relays rated at 250 VAC, 8A non-inductive
- DALI controlled
- LED indication for data, DALI circuit non-commission warning, power and each relay output
- DIN Rail or surface mount

DALI background

DALI was primarily designed for commercial lighting to respond to the growing demands of energy efficient lighting systems. It was developed to provide two-way communication between controller and ballasts.

The most common DALI device is a fluorescent ballast. Compared to DMX512, speed has been sacrificed in favour of flexibility and ease of use.

Each DALI circuit must have a DALI Bus PSU to provide the voltage on the line. An example is the Artistic Licence Rail-PSU-D4. There can be no more than 64 ballasts on a single bus (this corresponds to one circuit). Ballasts being used for the first time require commissioning to give them a unique short

address. A tool such as the Artistic Licence Dali-Scope can be used for this.

The DALI data packet comprises three parts: Address (ballast(s) being signalled), Command (what type of message is being sent) and Data (the value associated with the command). On any given circuit, DALI ballast intensity can be controlled in four ways: Broadcast, Individual Channel, Groups (up to 16) and Scenes (up to 16 per ballast).

For more information about DALI, please refer to www.DALI-ag.org. A handy guide to DALI for those more familiar with DMX can be downloaded from www.ArtisticLicence.com.

Connections

Input

The DALI input is attached via a 2-pin screw terminal. Please refer to the connections diagram.

Output

Six relay outputs are provided. It is recommended that the output wires are fitted with separate ferrite cores when driving a high current load.

Power

daliSwitch is powered from an external DC power supply (9-24 VDC). It is recommended that a ferrite core be fitted onto the DC power lines as close as possible to the daliSwitch. This protects the unit from any electrical spikes that appear on the DC line.

Relays

The relays respond to standard DALI commands relating to the intensity level of the ballast. They will switch on at power levels of 50% and above. Switch-on is instant and ignores any fade times.

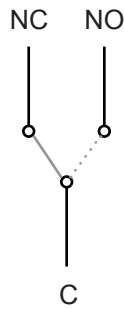
Each relay has three connections; Common, Normally Open and Normally Closed.

Common (C)

This connection is always used and is connected to either the open or closed pin depending on the state of the relay.

Normally Open (NO)

This pin is not normally connected to the Common pin. The relay must be energised for a connection to be made.



Normally Closed (NC)

This pin is connected to Common when the relay is not energised.

Loading

daliSwitch uses electromechanical relays that are rated for 8A at 240 VAC when switching non-inductive loads. The product can be used to drive inductive loads, or those with high inrush currents, so long as external surge protection is added. These devices stop the contacts from being damaged by arcing. Part code 'Sequence-Filter' is an external PTC filter suitable for this purpose.

The user must also ensure that external circuit protection such as circuit breakers or fuses are connected in compliance with the local wiring regulations.

LED Indication

daliSwitch has front-panel LED indicators for the following functions:

Data (upper):

OFF = no data received

Green = DALI received

Yellow = Warning: DALI circuit not commissioned (see below)

Power (lower):

OFF = no power

Green = Power

Relays 1 - 6 (right-hand side):

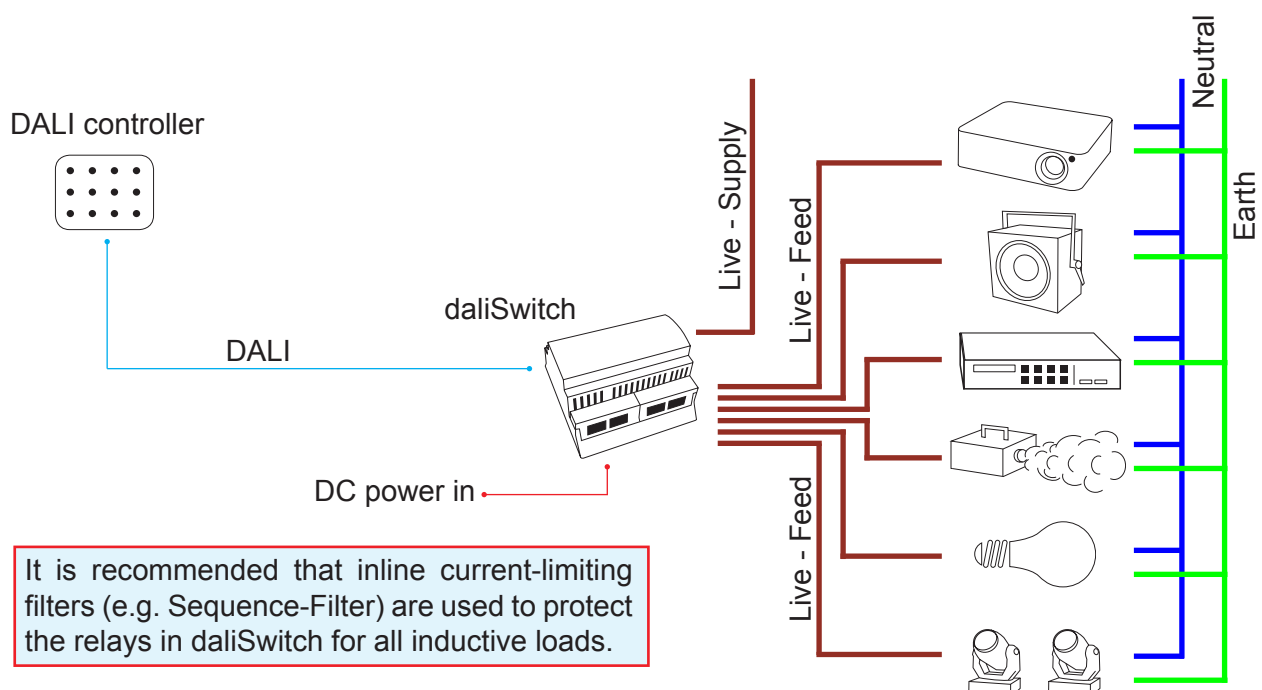
Blue = Relay is energised

Commissioning

As with all DALI products, daliSwitch must be commissioned. Prior to this, the yellow warning indicator will flash and the relays will be controlled by broadcast only.

Application Diagram

The diagram below shows how daliSwitch could be utilised in a typical application.



daliSwitch Specification

Mechanical <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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, FCC, WEEE, RoHS• Warranty: 2-year (return to base)
Power & Electrical <ul style="list-style-type: none">• Input voltage: 9-24 VDC• Input connector: 2-pin pluggable screw terminal (1 no.)• Input power (max): 10 W• Duty cycle: 100% @ 25°C• DC fuse: internal resettable fuse for control electronics
DALI input <ul style="list-style-type: none">• Input mode: Isolated

Outputs <ul style="list-style-type: none">• Type: 6 x changeover relay, volt-free contacts• Connectors: 3-pin screw terminals (6 no.)• Maximum switching voltage: 250 VAC• Maximum peak current: 8A• Rated load (AC1 non-inductive): 2,000 VA• Rated load (AC15 inductive): 500 VA• Rated load (Single phase motor): 0.37 kW• Minimum load: 500 mW• Protection: User supplied external protection• Isolation: 1 kV between relay contacts
Control <ul style="list-style-type: none">• DALI
Data Connection <ul style="list-style-type: none">• 2-pin Screw Terminal DALI Input (1 no.)
LED Indication <ul style="list-style-type: none">• Power / DALI / Non-commission / Relay
Configuration <ul style="list-style-type: none">• DALI configuration commands
Package Contents <ul style="list-style-type: none">• daliSwitch• User guide
Ordering Info <ul style="list-style-type: none">• Product code: daliSwitch
Accessories (not included) <ul style="list-style-type: none">• PSU-24-2-DR

Compliance

All Products manufactured or sold by Artistic Licence Engineering Ltd are fully compliant with the appropriate CE, FCC, 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.

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

CE Compliance



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

Safety Warning

When daliSwitch is used for high current or voltages the unit shall be placed within a locked enclosure and shall be connected to the power by a qualified electrician.

All relay connections that are used with high current or voltages shall be externally fused.

This unit has not been designed for domestic use. Proper safety precautions need to be followed when using dangerous voltage or current levels.



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