CONTROL FREAK
Making light work

LIDA-D

User Manual

Issue: Thursday, 8/12/2022

Description

The LIDA-D is a DALI device capable of controlling one or two ceiling fans or between one and four relays/contactors. Note that in fan control mode, high speed is not the fan's maximum speed and tests suggest that 'high' is approx 85% of the fan's maximum rated speed. The LIDA-D should only be installed by qualified electricians.

Safety

This product is NOT for household use and must only be used by a professional qualified electrician. Always ground/earth the LIDA-F electrically.

- Do not megger test with cabling connected.
- Disconnect AC IN and DC power supply before removing the cover
- Use only AC power supply that complies with statutory requirements including electrical and building codes. Ensure that the AC supply has overload and earth fault protection.
- Do not expose to moisture.
- The LIDA-D is designed for din rail mounting on standard din rails.
- The electronics in the LIDA-D can only be serviced by qualified electronics technicians or engineers and should service be necessary, the LIDA-D should be disconnected from AC supply by a qualified electrician and returned to the manufacturer, Creative Lighting, for service and or repair or replacement. Any product returned for service must be accompanied by adequate information including a description of the fault, the date, the location or project name and the like.

Installation

This section of the manual describes the process of connecting DALI, DC supply, and Mains Active to the LIDA-D. Connections for ceiling fan capacitors are also explained.

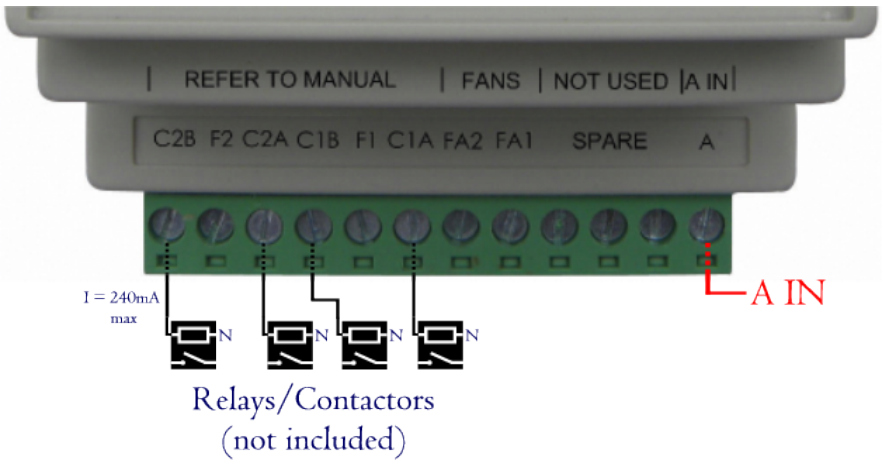
Power Inputs

Similar to an MCB, the LIDA-D only has one connection for mains and it is for the Active. The Active terminal is located at the bottom right terminal and is marked A and A IN.

The LIDA-D operates on DC in. The power supply should be between 8 and 40VDC, 50mA or more (1.2A if LIDA-D is direct powering loads of 240mA). The DC in terminals are located at the top right and are marked DC IN.

Contactor/relay connections

The LIDA-D has 4 outputs for control of contactors/relays which can be normally open or normally closed (operation selectable by bitswitch). The outputs are rated up to 240mA each.



BITSWITCH selection

Do NOT open the LIDA-D without disconnecting from power.
NOTE: All procedures are to be performed only by a qualified electrician due to exposed 240V components.

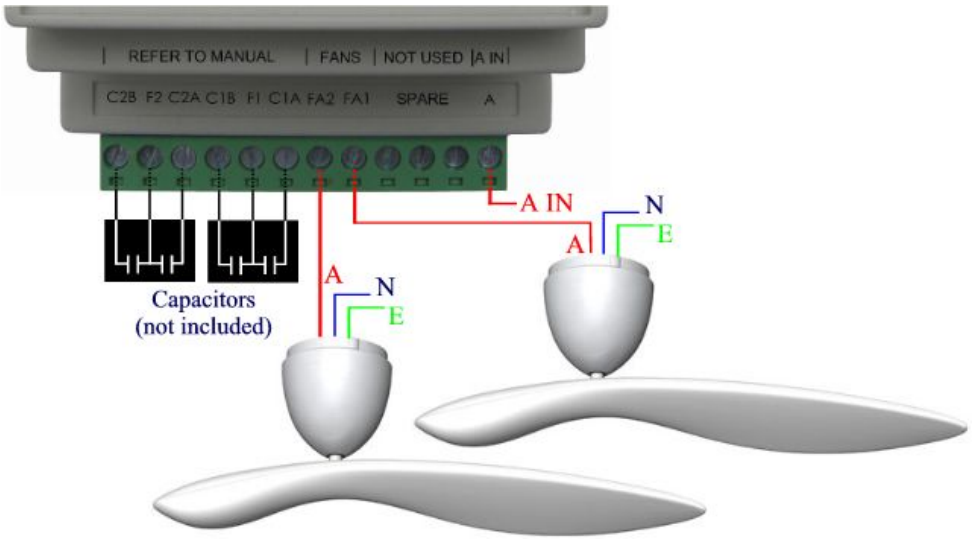
BITSWITCH OPTION SELECTION:

1 OFF = Normal Relay Mode 2 OFF and 3 OFF = 4 Dali Devices 2 OFF and 3 ON = 3 Dali Devices 2 ON and 3 OFF = 2 Dali Devices 2 ON and 3 ON = 1 Dali Device 4 OFF = Normally Open Outputs 4 ON = Normally Closed Outputs	1 ON = Fan Controller Mode 2 OFF = 2 Dali Devices 2 ON = 1 Dali Device 3 UNUSED 4 OFF = "Kick-start" disabled 4 ON = "Kick-start" enabled

The Relays are ordered in Right-to-Left order and change depending on the above bitswitch selection. The tablet below shows Normal Relay Mode output designations.

	C2B	C2A	C1B	C1A
1 DALI Device	Device 1			
2 DALI Devices	Device 2		Device 1	
3 DALI Devices	Device 3		Device 2	Device 1
4 DALI Devices	Device 4	Device 3	Device 2	Device 1

Capacitor Installation (fan control only)



NOTE: Capacitors are NOT provided with the LIDA controller. Capacitors are usually supplied with the fan by the fan manufacturer. Each LIDA-D requires a capacitor to be connected for each ceiling fan. The image above shows the screw terminals on the LIDA-D to which the capacitors are connected.

FAN SPEEDS and corresponding DALI arc levels

Specifying the DALI address for a fan and sending the following arc levels will give the corresponding speeds:

Speed	Minimum	Maximum
Off	0% (0)	25% (203)
Medium	26% (204)	50% (243)
High	76% (244)	100% (254)

DALI

The LIDA D complies with DALI version 2 and implements up to 4 standard DALI Devices. The LIDA will react to DALI Type 7 (Switching Gear) commands. To receive DALI commands, connect DALI to DA1 and DA2 terminals. Terminals are parallel wired DA1 : DA1; DA2 : DA2.

Default Operation

In relay mode, the LIDA D will change the output state (Normally Open/Closed depending on dipswitches) when the arc level has passed a certain point. In default mode, this relay will switch on when any arc level of 1 or higher is selected. The relay will then switch off when an arc level of 0 is received. The LIDA will respond to all arc levels and commands, and also Identify (Relay mode only) itself using the DALI V2 Identify Command, per device.

Device Type 7

DALI Device type 7 allows for the threshold points to be changed using DALI type 7 commands. Not only can the threshold be changed, but the thresholds depending on direction can be changed. There is a secondary threshold available for each direction. The figure below, taken from the DALI type 7 standard, shows the switching points when the arc level is changed. When the Up Switch-Off threshold and the Down Switch-On Thresholds are 'MASK', then the device will operate as default. This will only work when relay mode is selected.

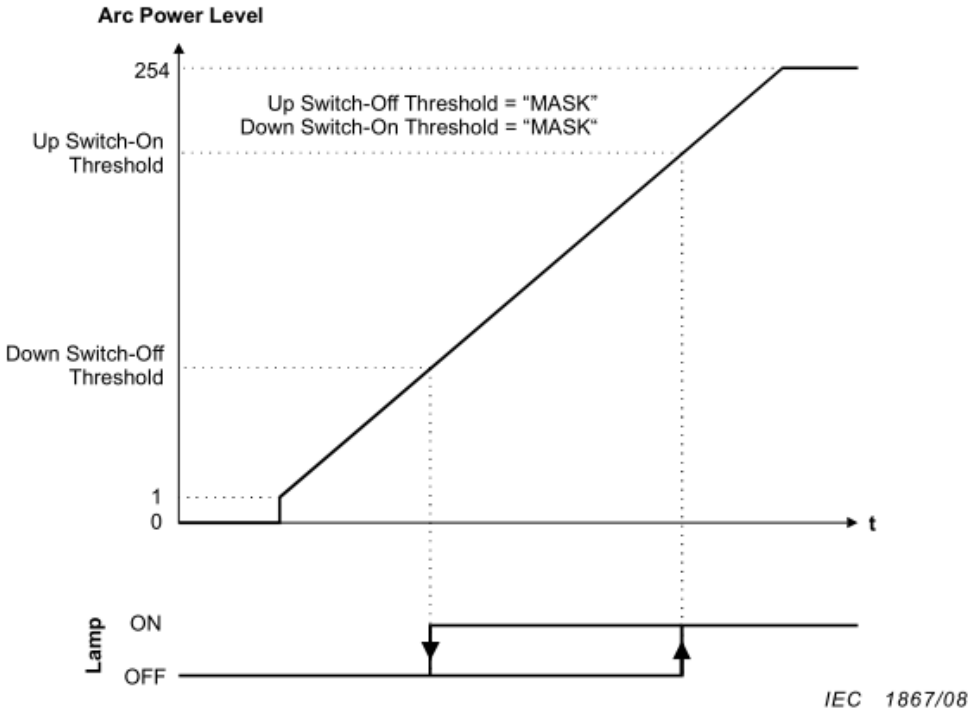


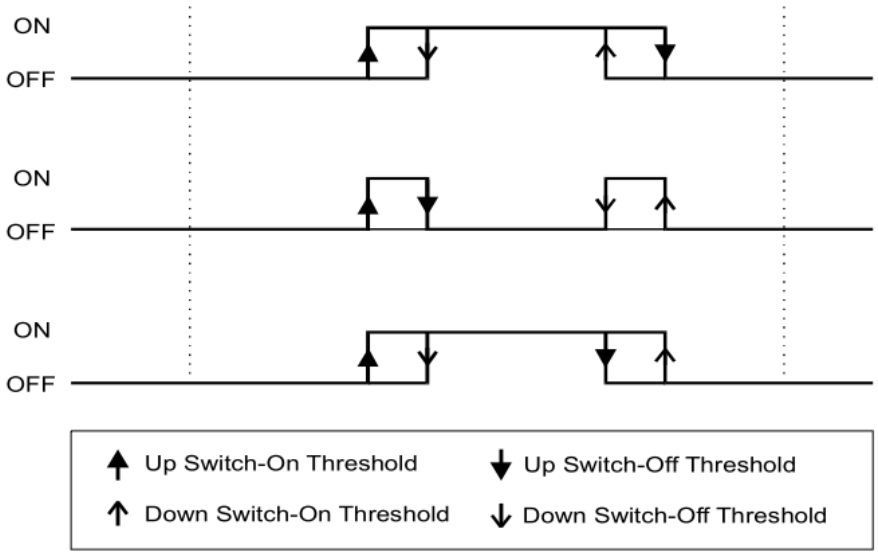
Figure 1 – Example of a possible configuration

The commands to send to the unit for the threshold are shown in the table below;

Table 1 – virtual arc power level (VAPL)

Dimming direction (virtual)	Result of comparison	Action
Up	VAPL ≥ up switch-on threshold	Switch the output on
Up	VAPL ≥ up switch-off threshold	Switch the output off
Down	VAPL ≤ down switch-on threshold	Switch the output on
Down	VAPL ≤ down switch-off threshold	Switch the output off

Examples of the thresholds can be seen in the following image from the DALI Type 7 Standard.



Other useful commands from enabled in this Type 7 device are shown in the table below, along with their possible responses.

Command Number	Name	Supported	Response
224	Reference System Power	NO	No Response
225	Store DTR as Up Switch On Threshold	YES	No Response
226	Store DTR as Up Switch Off Threshold	YES	No Response
227	Store DTR as Down Switch On Threshold	YES	No Response
228	Store DTR as Down Switch Off Threshold	YES	No Response
229	Store DTR as Error Hold Time	No	No Response
230-231	Reserved		No Response
232-239	Reserved		No Response
240	Query Features	YES	0x0A
241	Query Switch Status	YES	8 bit response
242	Query Up Switch On Threshold	NO	8 bit response
243	Query Up Switch Off Threshold	NO	8 bit response
244	Query Down Switch On Threshold	NO	8 bit response
245	Query Down Switch Off Threshold	NO	8 bit response
246	Query Error Hold	NO	No Response
247	Query Gear Type	NO	8 bit response
248	Reserved	NO	No Response

249	Query Reference Running	NO	No Response
250	Query Reference Measurement failed	NO	No Response
251	Reserved	NO	No Response
252	Reserved	YES	No Response
253	Reserved	YES	No Response
254	Reserved	YES	No Response
255	Query Extended version Number	YES	0x01
272	Enable Device Type 6	SPECIAL	No Response

In order to send a Type 7 command, the Enable Device Type 7 command must be sent first, and then the desired command. The Type 6 command must also be repeated within 100ms in order for it to be successfully read. The 'Enable Device Type 7' command must be sent before every type 7 command, it does not enable it indefinitely.

Fading

The LIDA D is capable of fading using both the standard DALI fade times and the Extended Fade times. By selecting a high fade time and setting the 'Up Switch on Threshold' the LIDA-D can be used for timeout switching, or vice versa.

Miscellaneous

The LIDA contains a memory bank that has information such as UID, DALI version, Hardware version and software version. This information is all available through reading the memory bank through DALI.

Manufacturer's Information

The LIDA-F is the result of research and development undertaken entirely in Australia by Creative Lighting and its related company Int'Act Pty Ltd. Both the design and the firmware of the LIDA-F are also the product of Australia by Creative Lighting and related companies. The LIDA-F is manufactured to Creative Lighting's stringent specifications in PROC exclusively for Creative Lighting.

REGISTRATION – LIDA-D

Please complete this form and fax to 07 32828700 to register for manufacturer's warranty.
Name of project

_____

Location of project_____

Brief description of project

_____

_____

Purchaser Name

_____

Purchaser Company

_____

Contact Details – Email

_____

Contact Details – Telephone

_____

Date of Purchase

_____

Purchased from

_____

Other products – SLAMMO, DALI, DMX512, IR, 0-10v, DSI, RS232, RF, DIGITAL TRIGGERS. SEQUENCERS, CONTROLLERS, TRANSLATORS & INTERFACES, INFRARED REMOTE CONTROL, FAN & SWITCHED LOAD CONTROL, HID CONTROL, LIGHTING CONTROL, TOOLS

Creative Lighting also make SLAMMO XC1 constant current dimmers for DALI DMX512 DSI and RDM, DIDIO DALI Serial Communication Interfaces, DIDIO DALI line power supplies, DIDIO Scene & Group Controllers, DIDIO RGB and Sequence Controllers, DIDIO DMX-DALI interfaces, LIDA DALI AC controllers for Contactors/relays, Fans and HID loads. UBi DALI test and distribution, Ubi Power DALI power supplies, test and distribution, DALI-0:10V convertor

Warranty

Congratulations on acquiring this genuine Control Freak® product ("the goods") which is guaranteed to the purchaser for a period of:

LIDA-D PCB - 5 years (parts) and 3 years (parts and labour)
other accessories and options – 12 months
from the date of original purchase from Creative Lighting and its authorised agents and resellers. Under normal use and for applications for which this product was designed, this Control Freak® product and all component electronics are warranted to be free of defects in material and workmanship. In the unlikely event that the goods prove to be defective, Creative Lighting will decide either to repair or to replace the defective components. Before that can happen, the goods must first be returned to Creative Lighting at the purchaser's cost.

Australia only: If we determine that the goods are defective, we will not only repair or replace the defective components at no cost to the purchaser; we will also pay the cost to return them to the purchaser by our standard freight method, with any cost to reinstall the goods borne by the purchaser.

This Guarantee specifically excludes faults which arise as a result of alteration, tampering, misuse, abuse, accident, vandalism, negligence, improper installation, or the use of other manufacturer's products in combination with the goods except where such use of other manufacturers' goods is authorised by us. All other warranties inclusive of any warranties of merchantability or fitness for any particular purpose whether expressed or implied are hereby expressly negatived to the fullest extent permissible by law. Under no circumstances will Creative Lighting be liable for reinstallation or freight except in the case of freight within Australia. In no event shall the manufacturer be liable for consequential damages. This Guarantee constitutes the sole and exclusive remedy to the purchaser for proven defects.