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SKYDANCE DALI Controller Installation Guide

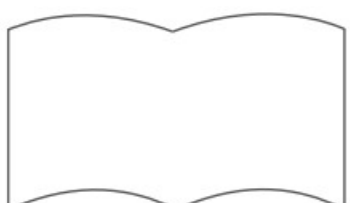**DALI controller
Installation Guide**

Contents

General

DALI Protocol (digital addressable lighting interface) is the international standard lighting control communication protocol, with the group dimming, addressing dimming, a variety of scene mode settings and other powerful dimming functions, through two-way data exchange to monitor and control each device.
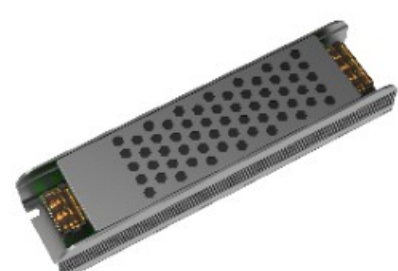
SKYDANCE is one of the DALI Alliance (DiiA) Members and some products such as DA1,DA4,DH have passed DALI2 certification.

Our DALI series products include DALI constant voltage LED dimmers, DALI constant current LED dimmers, DALI AC switches, DALI triac dimmers, DALI 0/1- 10V converters and DALI dimming constant voltage/current drivers and various types of DALI master controller, and so on, follow the IEC62386 standard and can be connected to any device conforming to DALI protocol on the same bus control.

Packing List

DALI controller (optional) 1 pcs	User manual 1 pcs

Outsourced parts

Switching power supply	DALI master	DALI host compu
Signal wire (cuts required)	Power wire (cuts required)	Single color LED

Notes:

1. The output voltage of the switching power supply must be the same as the supply voltage of the light strip, and the output power of the switching power supply ≥ 1.25 times the total output power of all the connected light strips

2. When the controller is dimmed, the switching power supply may emit noise that can be heard by the human ear (20~20KHz), and it is recommended to use the glue filling switching power supply in places with noise requirements.

3. The controller is a constant voltage type, for the switching type constant voltage/constant current conversion lamps, not guaranteed adaptation, dimming process may flicker, subject to actual measurement, the maximum access power of such lamps can not be higher than 50% of the rated power of the controller, otherwise it is easy to cause damage to the controller.

Wire selection:
Wire (signal wire) can choose copper wire or aluminum wire, the cross-sectional area is 1.5mm²,

Example: Copper wire diameter > 2mm ² can basically reach the maximum transmission distance, < 1.5mm ² will have a serious impact.

When need to increase DALI signal transmission distance, it is recommended to choose a wire with a cross-sectional area of 1.5mm² or more..

Material	Copper						
Wire diameter (mm²)	0.14	0.50	0.75	1.00	1.50	2.00	2.50
Max. distance (m)	31	112	168	224	300	300	300
Material²	Aluminium.						
Wire diameter (mm)	0 14	0 50	0 75	1.00	1.50	2.00	2.50
Max. distance (m)	19	68	102	136	205	273	300

Installation steps

1. Understand the DALI system architecture, according to the application scenario, select the appropriate DALI controller. DALI controllers include constant voltage series, constant current series, triac series, 0/1-10V series, and AC switch.

   The DALI controller is responsible for executing dimming commands in the light control system, which can be matched by users according to their needs.

   Example: TD1-4S as a DALI master, DA-PS-L as a bus power supply, and DA4-L as a control unit connecting power supply and light strip to form a simple light control system.
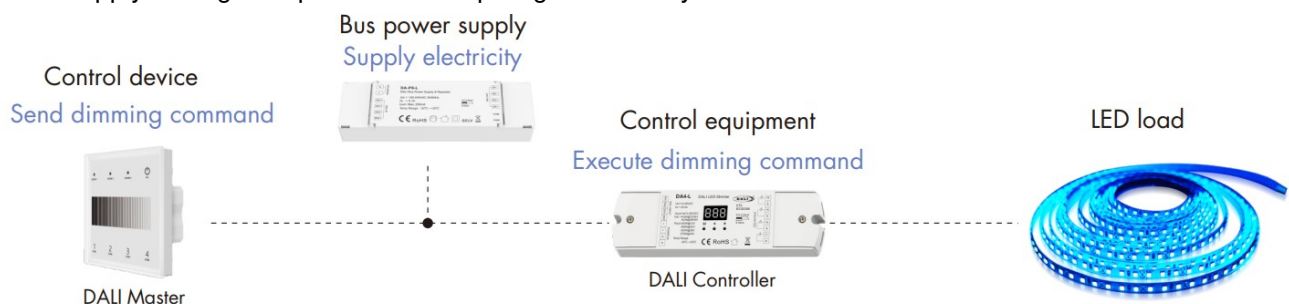
2. Connect the DALI controller, DALI master control panel, and DALI bus power supply to the same DALI bus, and connect and label the switching power supply, and light strip to the DALI controller.
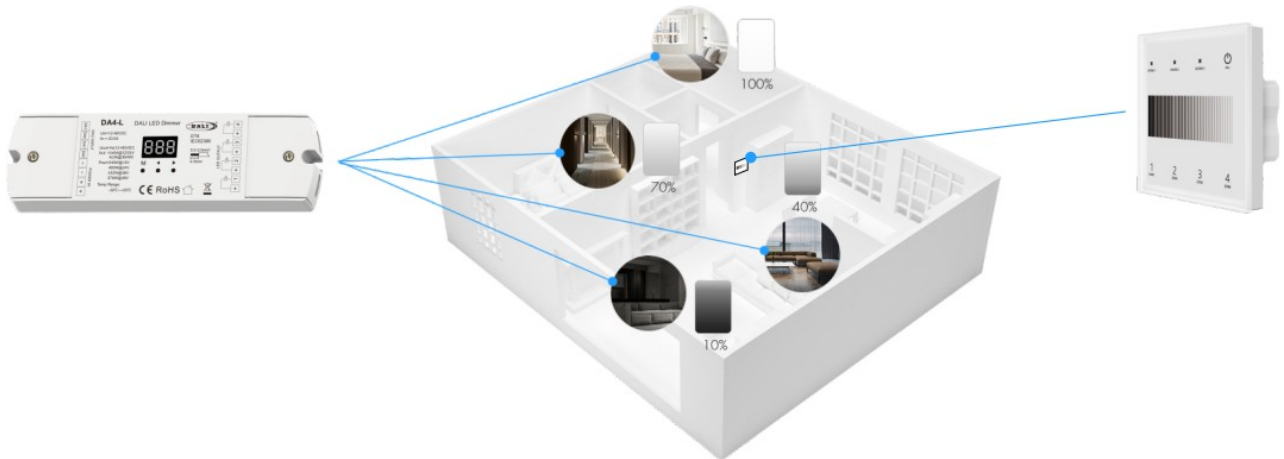

   Notes:

   1 . AC input class DALI controller/dimming driver can be directly connected to the AC mains power, no need to

connect the switching power supply.

2. For the DALI controller with set buttons and display screen, DALI address can be assigned manually or automatically by the DALI host computer.

* The following 3-6 items are expanded with

1 DALI dimming panel (TD1-4S)

+ multiple DALI controllers (DA4-L) as an example to realize the lighting control of each room by distributing multiple DA4-L in different areas.

3. 4 DALI controllers with 4-zone DALI dimming panel, set the DALI address through the controller buttons to realize the zoned dimming effect.

1. Set the DALI addresses of the four DALI controllers (DA4-L) separately.

Step 1: Set the DA4-L controller to the singlechannel dimming output mode (4 channels output is same), that is, 1 DA4-L controller occupies 1 DALI address.

First long press M key for 2s, then short press ◄ or ► key to select "1CH".

Output method

Step 2: Set the DALI addresses of the four DA4 controller to A40, A41, A42 and A43 respectively.

First Long press <q or PB key for 2s, then short press ◄ or ► key to set DALI address.

4 DA4-L Set the DALI address

Step 3: The default PWM frequency of DA4-L controller is 2 KHz.

Try modifying the PWM frequency if the cell phone is shooting lights with significant ripple or if the switching power supply is noisy.
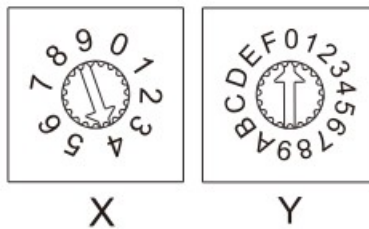

PWM frequency

Long press M & ◄ key for 2s, then short press ◄ or ► key to select different PVM frequency, for example, select "F80" (8KHz).
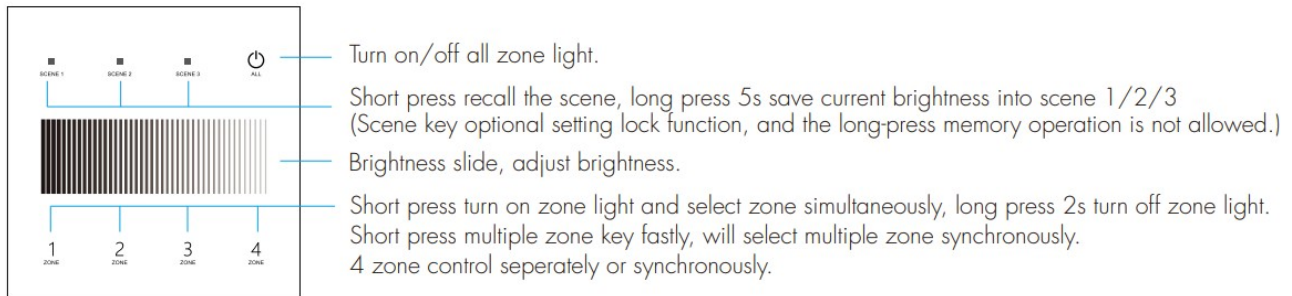
2. Sets the address of the 4-Zone DALI dimmer panel (TD1-4S).

Addresses are set through knobs on the back of the panel, for example, set the two knobs to X=4 and Y=0.

At this time, zone 1, 2, 3, and 4 will control the DALI controllers for addresses A40, A41, A42 and A43 respectively.

X Y

3. 4-Zone DALI Dimming Panel {TD 1-45} Function

Turn on/off all zone light.

Short press recall the scene, long press 5s save current brightness into scene 1/2/3 (Scene key optional setting lock function, and the long-press memory operation is not allowed.)

Brightness slide, adjust brightness.

Short press turn on zone light and select zone simultaneously, long press 2s turn off zone light. Short press multiple zone key fastly, will select multiple zone synchronously. 4 zone control seperately or synchronously.

4. Set address, group, scene and system parameters by the host computer.4

Each lamp has an independent address, a standard DALI bus link can control up to 64 lamps, if more than this number, require another DALI bus link to control.

To realise single-lamp or group control, address assignment and group setting of the control device should be carried out first.

Set address, group, scene and system parameters on the host computer based on the application scenario.

For DALI constant voltage/current controllers or DALI dimmable drivers without address setting keys or displays, short address (Short Address) assignment can only be performed by the host computer.
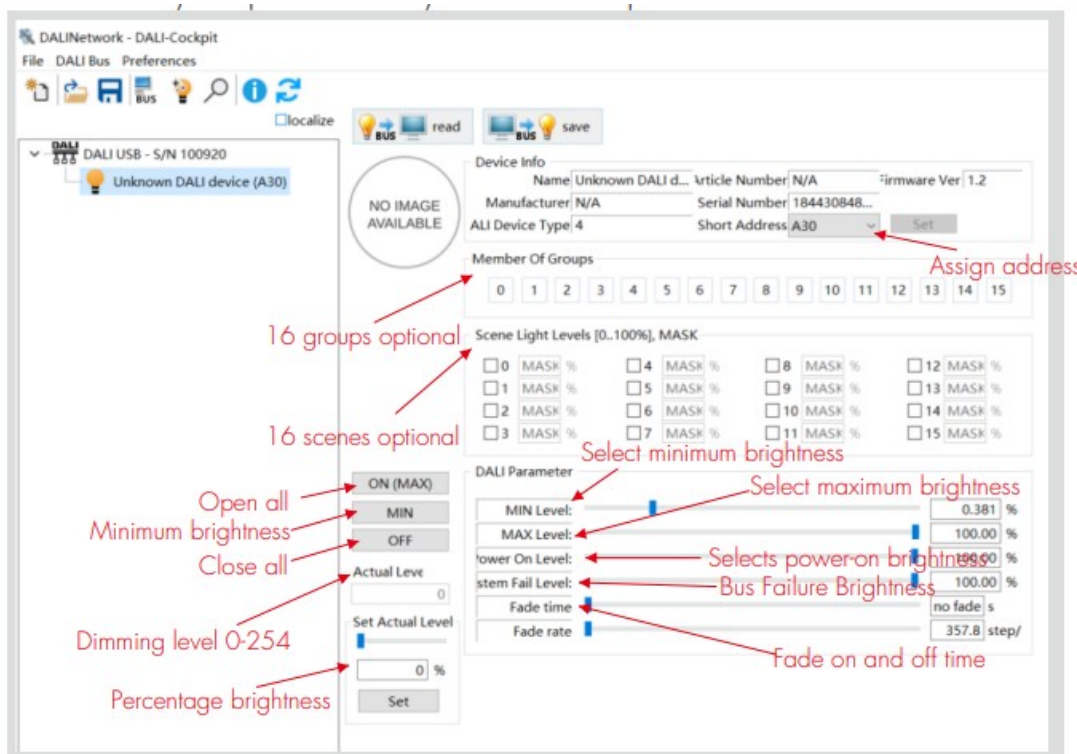
Example:

1. Select device, assign address

Click "Short Address" and select addresses A0-A63.

2.Setting Group

Under "Member Of Groups", click 0-15 to set the group.

3. Setting the scene

Under "Scene Light Levels", click 0-15 to set the value of MASK (0-100%).

4. Setting DALI system parameters

Slide the "MIN/MAXLevel" bar to set the min/max brightness respectively;

Slide the "PowerOnLevel" bar to set the power-on default brightness;

Slide the "SystemFail Level" bar to set the bus fault brightness;

Slide the "Fade time/Fade rate" bar to set the fading time/fading speed respectively.
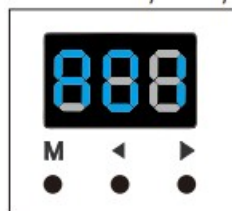
5. Through the host computer to realize the precise dimming control of single lamp or group.
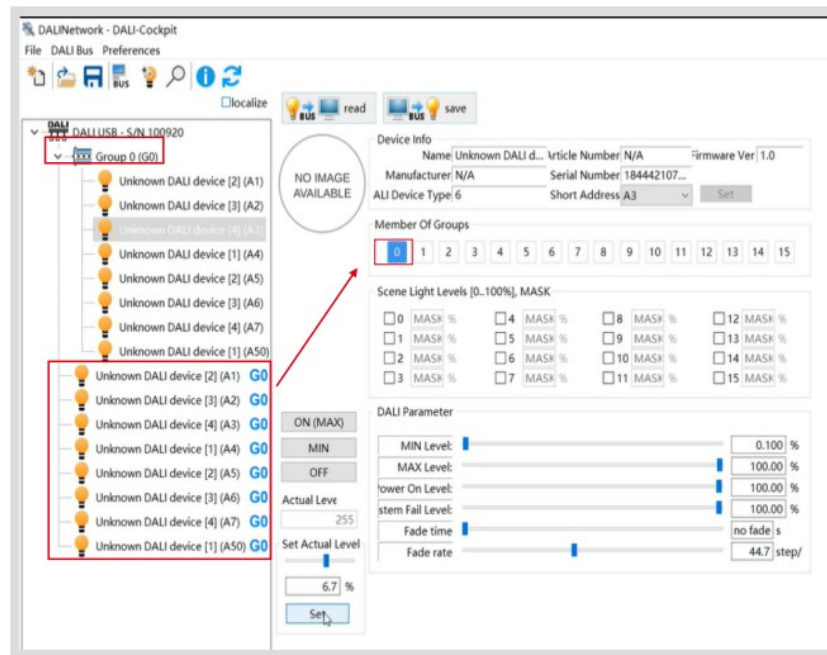
1. Single lamp control

For DALI controllers with set keys and display, set the DALI address by key.

Long press ◄ or ► key for 2s, enter DALI address setting status. then press ◄ or ► key to set the value of DALI address. Setting range is O0-63-FF (FF means unassigned address).

For example: The controller sets the 01 address and controls the lamp at the 01 address. For DALI controllers without set keys and displays, address assignment can only be done by the host computer.

Select a device, click "Short address" to assign address, and the set range is AO-A63.

For example: select Al, controls the lamp at the O1 address.

Then select Al from the device list on the left, set the light brightness (Actual Level), click ON (Max) or Off fo turn on /off light, to realize the brightness adjustment and switch control of 01 address lamps.

2. Group control

When using the group control method, multiple DALI controllers need to be grouped by the host computer, and different DALI controllers are assigned to the same group for group control.

For example: click Al device, select the Oth group among 16 groups, and then click A2 device, the same select the Oth group among 16 groups, and so on, to assign the devices that need group control to the same group.

Then select Group O{GO} from the device list on the lef, set the light brightness (Actual Level) , click ON (Max) or Off to turn on /off light, to realize the brightness adjustment and on/off control of Group 0(GO).

6. Multiple DALI controllers with 4-zone DALI dimming panels for multi-light multi-group control.

When multiple DALI controllers through the host computer for the group setup, you can select the group mode

through the panel for zoning control, each 4-zone dimming panel (TD1-4S) can control four consecutive group address.

Example: Group multiple DALI controllers according to the application requirements and set Group 5 (G5), Group 6 (G6), Group 7 (G7), and Group 8 (G8) group addresses respectively.

X   Y
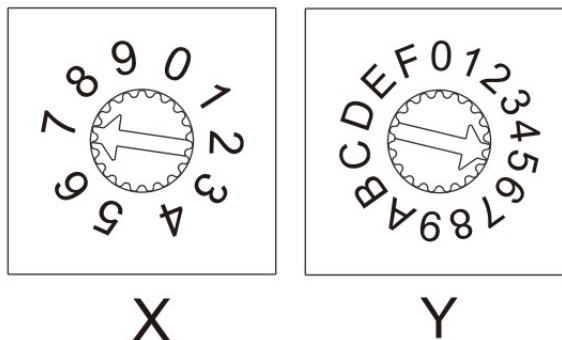
Then set the two knobs on the back of the dimmer panel to X=7 and Y=5, that is, the group address values corresponding to zone 1, 2, 3, and 4 are set to 5, 6, 7, and 8.
Zone 1 controls all DALI controllers under Group 5 (G5).
Zone 2 controls all DALI controllers under Group 6 (G6).
Zone 3 controls all DALI controllers under Group 7 (G7).
Zone 4 controls all DALI controllers under Group 8 (G8).
When the dimming panel is set to broadcast mode (X=9), all DALI controllers/DALI dimming drivers on this DALI bus can be controlled at the same time.
In this case, recommend the use of a single-zone dimming panel (example: TD1-S).

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Documents / Resources

SKYDANCE DALI Controller [pdf] Installation Guide
DALI Controller, DALI, Controller

References

- **User Manual**