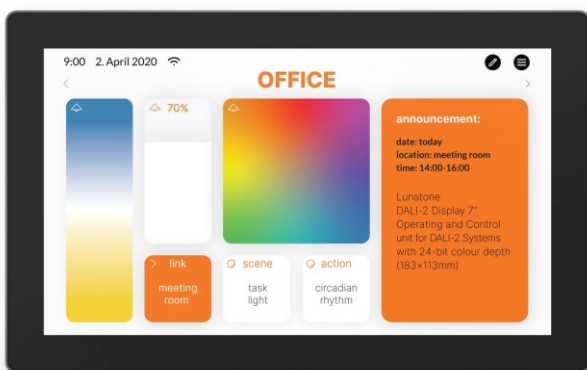




DALI-2 Display 7"

Datasheet DALI-2 Control System

Multifunctional DALI-2 control
and operating unit



DALI-2 Display 7"

Art.Nr.: 86456840-W (white)

DALI-2 Display 7"plus

Art.Nr.: 86456840-P-W (white)

black or colour version on request

DALI-2 Display 7" Multifunctional Control Device

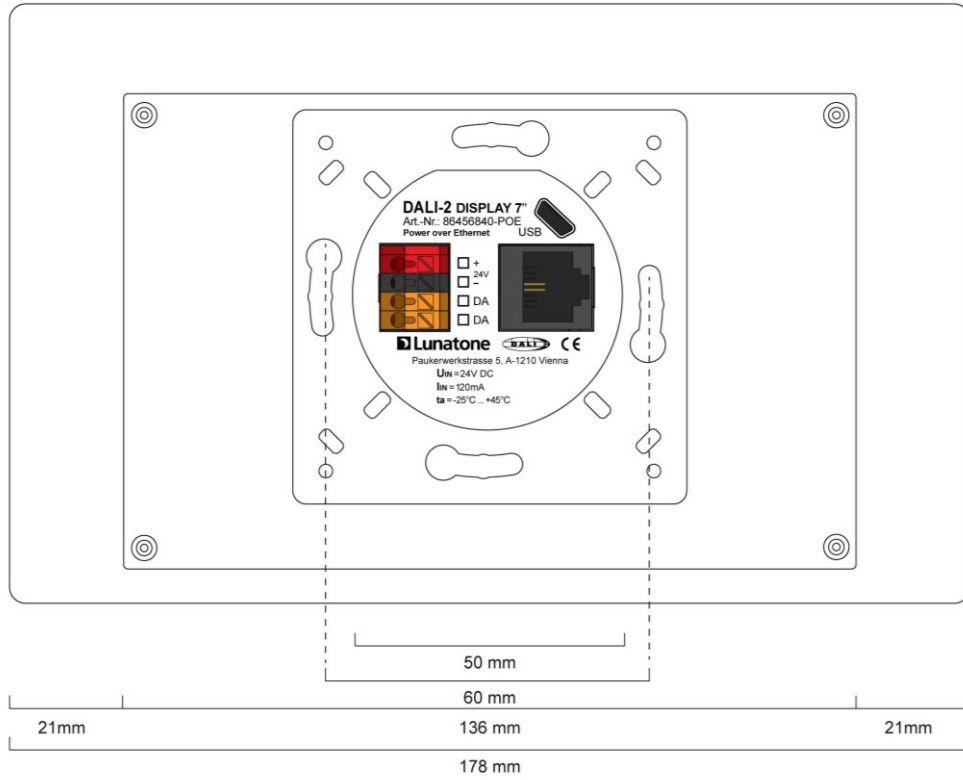
Overview

- Multifunctional control device for DALI systems
 - 7" capacitive touchscreen with 24-bit color depth
 - Dimensions: 178 x 111 x 8 mm
 - comfortable operation via numerous widgets
 - customisable user interface
 - integration via LAN or WLAN in building management systems – *coming soon*
 - dimming and switching of groups and individual addresses
 - Tunable White and RGB colour management
 - configuration of scenes
 - integrated sensors for measurement and visualisation of sensor values such as temperature, air quality, air pressure and humidity
 - Multi-master capable: several modules can be installed within a DALI circuit.
 - Easy installation: the device can be installed on a flush-mounted installation box.
 - 24V or Power Over Ethernet - POE
- Additional functionality of the Display 7" plus:
- addressing and set-up of DALI systems
 - configuration of groups
 - circadian daylight curves (human centric lighting)
 - week schedules
 - sequences
 - control of blinds – *coming soon*
 - version for emergency light monitoring – *coming soon*

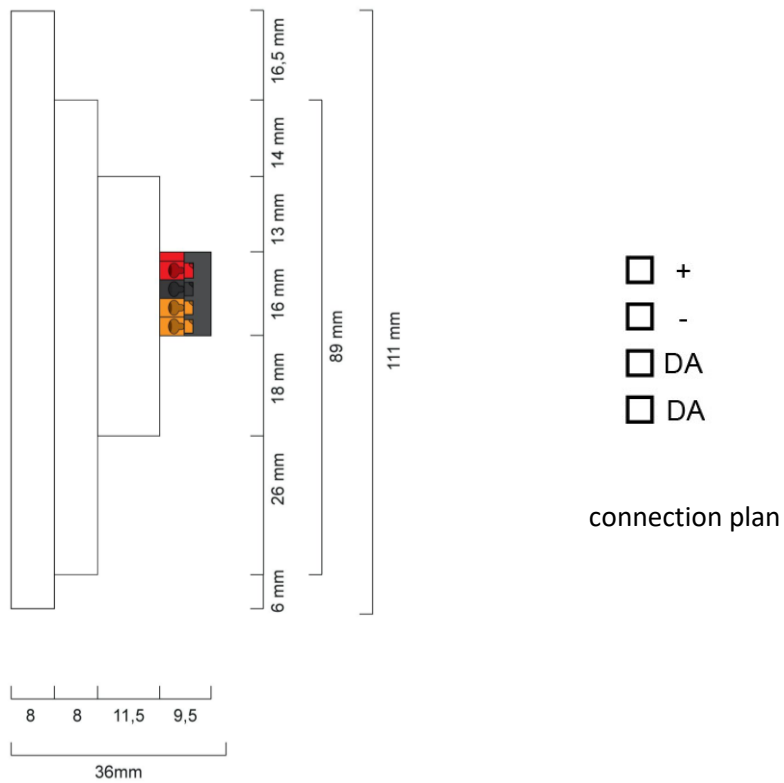
Specification, Characteristics

Type	DALI Display 7" (plus)
article number	86456840-W 86456840-P-W
Electrical data:	
rated supply voltage display	24-56V DC
power consumption	3,5W
number of DALI lines	1
Current consumption DALI-line	<2mA
Interface	DALI
Mechanical data:	
ambient temperature	-10...50°C
type of protection	IP20
dimensions L x W x H	178x111x8mm
touchscreen size	7"
touchscreen pixel	1024 x 600 px
colours	24Bit
colour display frame	white

	(black or colour on request)
colour housing	metallic grey



dimensions Art.Nr.: 86456840-...



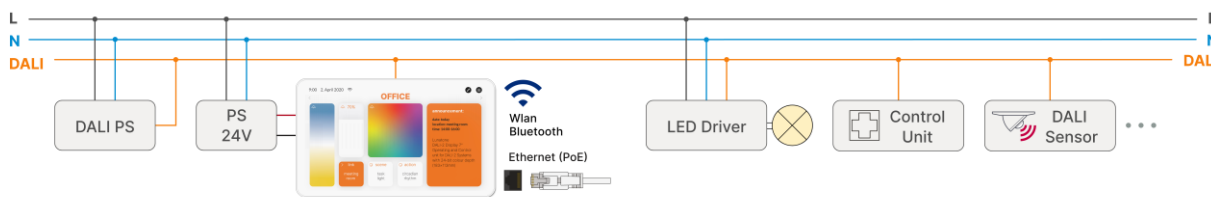


Figure 1 Typical Application

Usage

The DALI display is used for set-up (Version Display 7"plus), configuration and control of a DALI system. The DALI protocol standard IEC62386, is used to control the lighting equipment.

Via the display interface all luminaries, groups, individual addresses can be controlled, and scenes can be recalled.

The user interface can be customized, including background images and colour, function, position, size of control widgets and more.


Typical application


See Figure 1 page 4.

Installation

- The DALI-2 Display can be directly connected to the DALI bus. A DALI bus power supply (e.g. DALI PS) is required.
- The device can be powered over ethernet (POE) or requires an additional 24V supply, which is connected to the corresponding terminals. (suitable power supply unit: PS 24V, 300mA Art.Nr.: 24166012-24HS)

- The connection to the DALI terminals can be made regardless of polarity. The bus input is protected against overvoltage (mains voltage).
- The wiring should be carried out as a permanent installation in a dry and clean environment.
- Installation may only be carried out in a voltage-free state of the system and by qualified specialists.
- National regulations for setting up electrical systems must be followed.
- The DALI wiring can be realised with standard low-voltage installation material. No special cables are required.
- Only 1 wire may be connected to each terminal. When using double wire end ferrules, the connection capacity of the terminal must be considered.

 **Attention:** The DALI-signal is not classified as SELV circuit (Safety Extra Low Voltage). Therefore, the installation regulations for low voltage apply.

 The voltage drop on the DALI line must not exceed 2V at maximum length (300m) and maximum bus load (250mA).

Mounting

The DALI Display 7" can be directly attached to a standard flush-mounted installation box/ electrical socket.

For assembly, the backplate has to be attached to the electrical socket, considering the orientation (connector facing upwards, see Figure 2). Then the display can be put in from above and fixed with the two screws from below

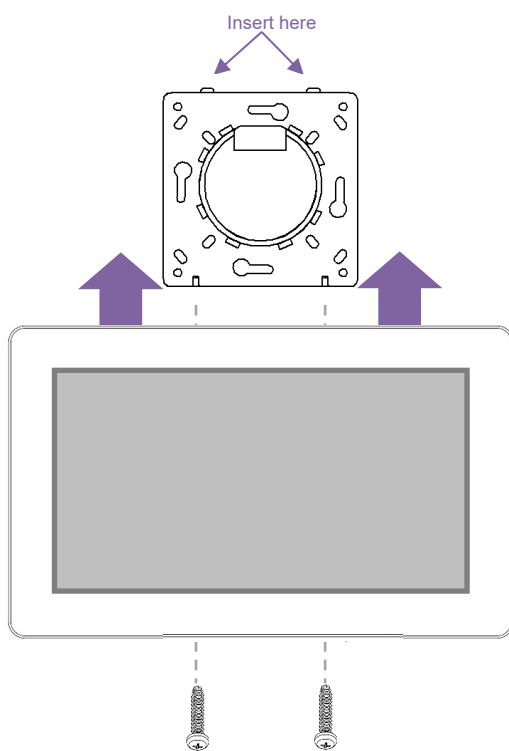


Figure 2 Mounting

Safety instructions

- The device is only suitable for indoor installation.
- Keep the product away from liquids and moisture.
- Cleaning is possible with a dry duster. Please do not use abrasives or solvents. Avoid contact with liquids.
- The housing is made of glass and metal, contact with sharp-edged objects can damage the display.
- If the device is defective, send it to Lunatone Industrielle Elektronik GmbH. Under no circumstances should the display be opened. Dismantling / disassembling the display can lead to damage and / or injuries.

Recycling

This product has been designed and manufactured using high quality materials and components that can be recycled and reused.

The device must be disposed of separately from household waste. Please follow the local regulations for the separate disposal of electronic products. The correct disposal of old devices protects our environment.

Functionality and Features

The DALI-2 Display serves as a universal module for **control** of a DALI system, as well as **set-up and configuration** for version Display 7"plus.

By default, the display shows the **user interface for light control**. The user interface of the DALI display is made up of individual pages (boards) and the operating elements (widgets) on them. (delivery default: exemplary user interface)

Boards: Any number of boards (pages) can be created, these can be reached by swiping your finger to the right / left or using a link widget. The length of the board is flexible: with an up / down swipe of your finger, you can navigate up and down.

Widgets: Any number of widgets can be created for each board. These can be flexibly arranged on the board.

The user interface can be edited using the pencil symbol at the top right. See section: Editing the user interface on page 9.



Button: edit user interface



Tip: the button „edit user interface“ is not available if password protection was turned on.

The **set-up and configuration menu** can be opened with the menu button at the top right. General settings and DALI device settings can be found there, as well as the board overview and automations (version: 7"plus) Set-up and system configuration see page 7. Board overview and settings see page 9. For automations see page 12 and following.



Menu button

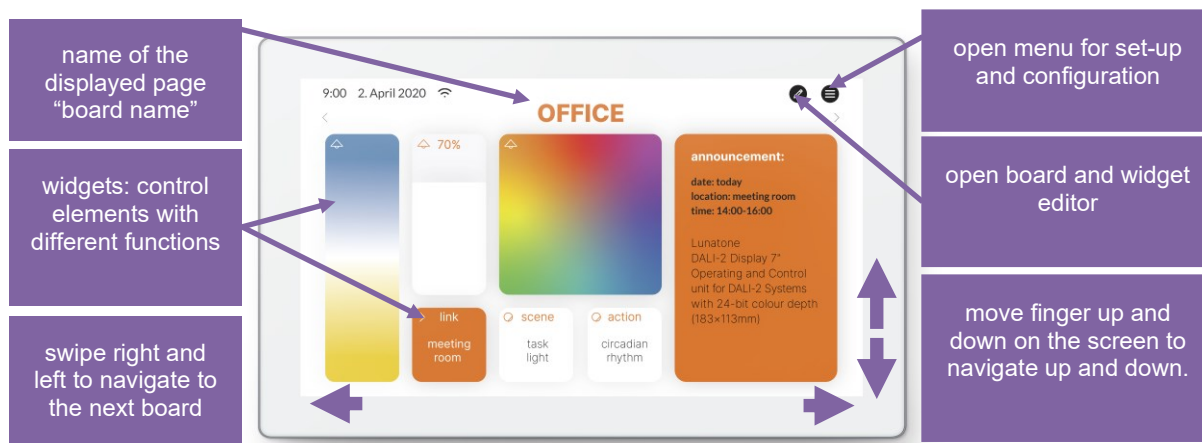



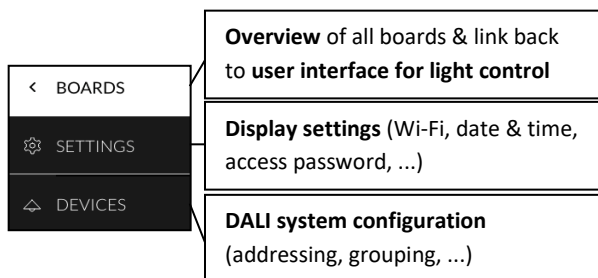
Figure 3 User Interface for Light Control DALI Display 7"

Set-up and configuration Menu

The configuration menu can be reached via the menu button at the top  right.

The configuration menu contains settings for boards, general settings, and settings for the DALI system.

Navigation and menu items



Menu item: Boards

This tab provides an overview of the existing boards and their management.

The pen button at the top right enables the configuration options: renaming, reordering, removing and adding of boards. See section: Boards on page 9.

Clicking on the board tab again will open the interface for light control. Alternatively, clicking on one of the boards, will open the corresponding user interface.

Menu item: Display Settings

General settings for the display can be made here:

- *Save/Load*: saving and loading display settings and boards.
- *General*: Information on firmware version
- *Date & Time*: setting the time zone, date and time
- *Wi-Fi/Ethernet*: establishing an internet connection and displaying the IP address. To avoid unwanted access by

third parties, the device should only be connected to a secure network.

- *Access, Display Passwords*: with enabling “protect Menu & Board editing” and entering a password, the access to the configuration menu and editing mode is restricted. The restriction takes effect on switching to the user interface.

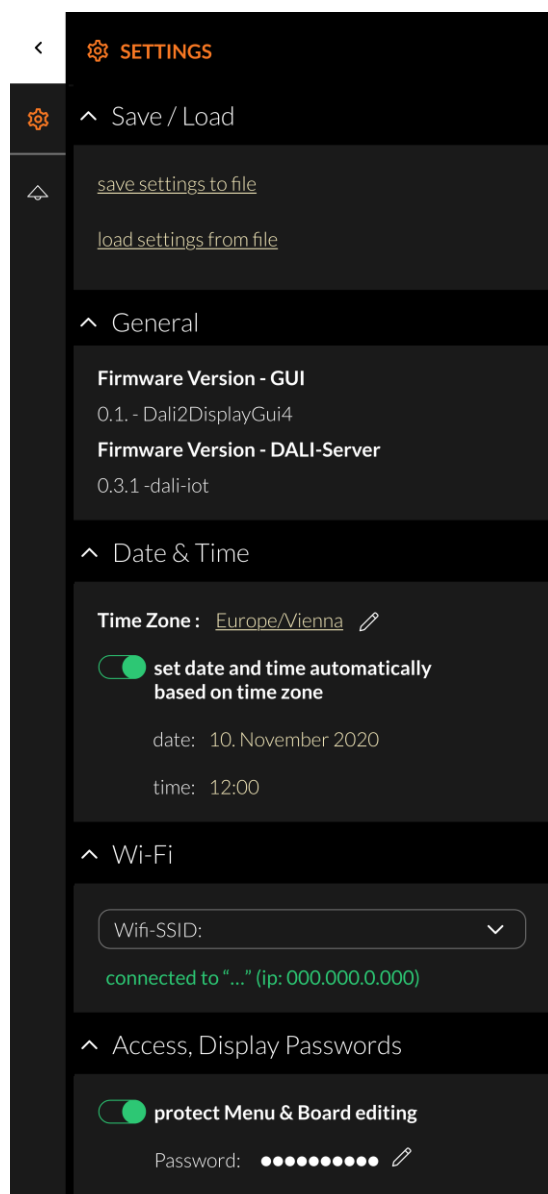


Figure 4 Overview Menu item: Display Settings

Menu item: Devices 

The tab includes set-up and configuration options for the DALI system. Addressed and configured DALI devices of the connected DALI bus are read and listed here.

The DALI Display 7" plus additionally supports addressing/readdressing as well as DALI system extensions.

With the Display 7" plus The devices found can then be grouped.

After the configuration has been completed, the user interface for light control can be created, containing boards and widgets for individual addresses, groups, and scenes.

Addressing devices

Select "addressing - search" at the top right (within the menu item "devices").



Function test: The on and off button can be used to test whether all DALI devices are connected. If all devices respond properly, addressing can be continued. If the devices do not respond please check the DALI bus power supply (not included in the display) and the device wiring.

Available options:

- current device list: loads already addressed DALI bus

additional options for the Display 7" plus:

- New Installation: for new installations or re-addressing; new addressing of all devices on the DALI bus. (devices that already had an address will also get a new address).

- system extension: if devices were added to an existing system; the existing system keeps its addresses and new addresses will be added.

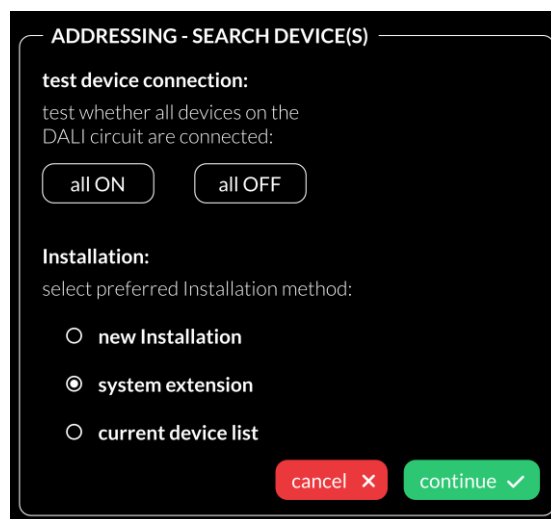


Figure 5 Pop-up addressing, search for devices

After read out/addressing, all devices are displayed in the device list.

Assign device name: Click on the respective device name in the device list

Assign groups: - Version 7" plus - Click on the respective group entry ("select") in the device list to add the device to the corresponding groups.

State: click on the state symbol to switch the respective devices on and off (for easy localization).

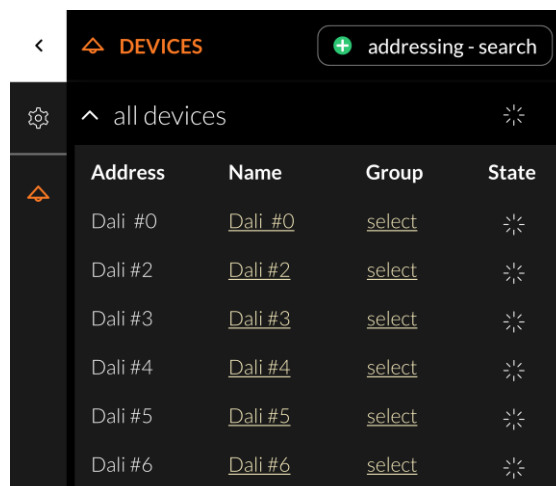


Figure 6 Menu item "Devices"

Edit user interface for light control

The user interface of the DALI Display is made up of individual pages (boards) and the operating elements (widgets) on them.

Boards

An Overview to all boards can be found in the configuration menu ☰ at section BOARDS ☑
 To **create, delete, duplicate, or move** a board: select the edit symbol 🖋 next to the title BOARDS.

- Create new boards -> button at the top left "new board".
- Edit board: click the pencil symbol 🖋 in the board window: rename, duplicate (including or excluding the widgets) or delete.
- Change the order of the pages: select board (blue highlight) move with drag and drop.

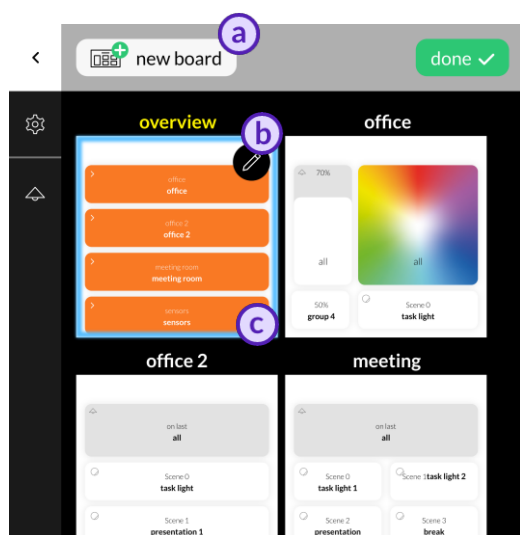
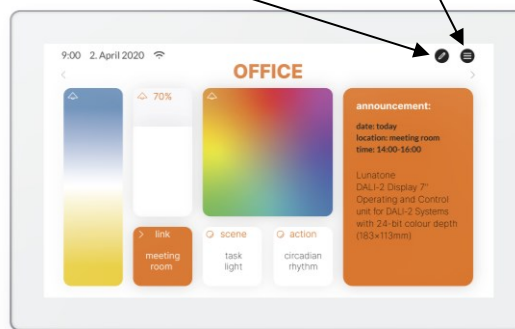


Figure 7 Menu item "Boards"

Close the board setting via the done button: **done ✓**. Return to one of the user interfaces by selecting the respective board.

Editor: edit boards and widgets

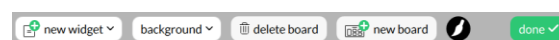
Menu and Board overview



Editor: Widgets and Background Images

On the user interface: Click on the editor icon: 🖋.

If the icon is not visible, check the settings in the menu: -> Settings -> Access, Display Passwords -> protect Menu & Board editing.



Widgets can be added:

new widget , details see page 10

or a background image can be loaded:

background , details see page 10

boards can be added or deleted:

delete board **new board**

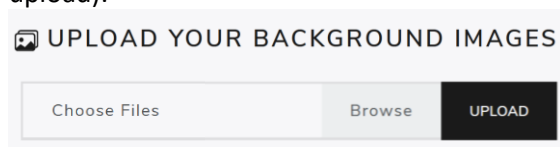
The paintbrush button 🖌 enables editing of the board style. Different colours can be assigned to the background and toolbar.

Load background images

A network connection is necessary, to set up the connection open the menu, tab: Settings -> Ethernet or Settings -> Wi-Fi.

The transmission of images to the display is possible via the IP address of the display with a web browser. To do so, the PC must be in the same network and address range as the display (display of the IP address under Settings -> Ethernet or Settings -> Wi-Fi).

upload interface on the web-browser (tab upload):



The background image should have the dimensions 1361x1361 and a resolution of 72dpi, RGB.

As soon as the image has been uploaded, it can be accessed on the Display by clicking on "background".

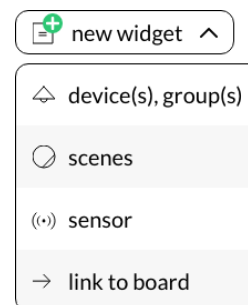
An individual background image can be assigned to each board.



Create a widget

In the user interface for light control: Click on the editor icon: and select "new widget".

The following widget types are available, see Figure 8 and 9



The appearance of the widgets is configurable, widgets on your display may look different.

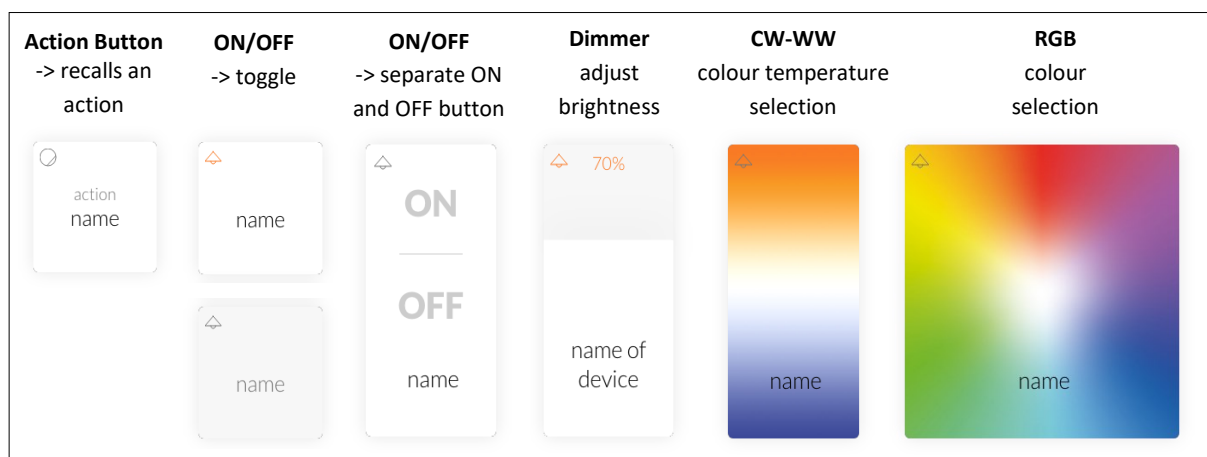


Figure 8 Widgets for devices and groups

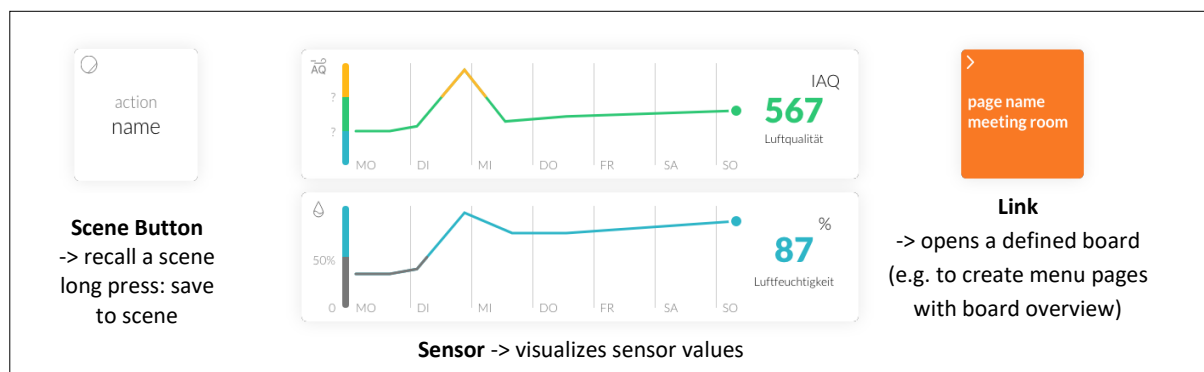


Figure 9 Widgets for scenes, sensors and links

Dialog box “New Widget”

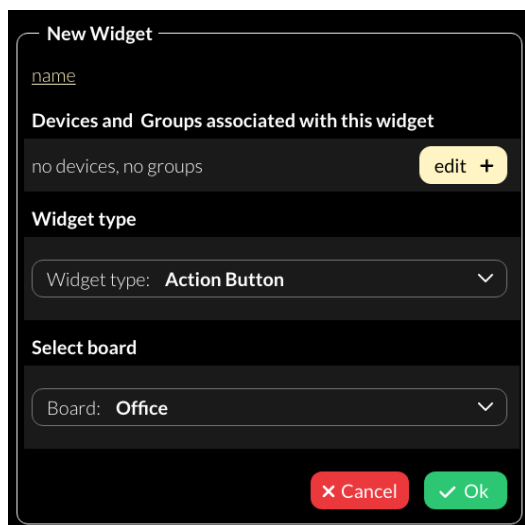



Figure 10 Pop-up “New Widget”

1. Define the name of the widget,
2. Select the devices and groups to be controlled (define groups: see page 8)
3. Select / change the widget type,
4. Depending on the widget type, further settings can be made e.g. defining an action.
5. Select the board on which the widget should be displayed.

Edit Widget

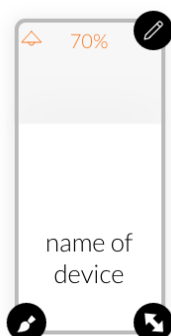
On the user interface for light control: click on the editor icon . select the widget to edit:

Pencil icon:

- edit (opens dialog box: “create widget”)
- duplicate
- delete

Brush icon:

- edit style
- copy style
- assign style
- more (more style related options)




With the style colours and form of the widgets can be customized.

Arrow icon:

- drag the arrow key to change the widget size

Drag and Drop:

- hold and move to change the order of the widgets

Edit the next widget or quit the widget editor with the button done: 

Create scenes


The scene widget on the display makes it possible to save the current light status (brightness, color temperature, color) in one of the 16 different scenes.


- Create a scene widget (with the intended scene number and effective range), see page 10.
- Set up the room lighting as desired for the scene (using for example the widgets on the Display). When set, long press the previously created scene widget -> a window appears to save the scene settings.


Create Schedules

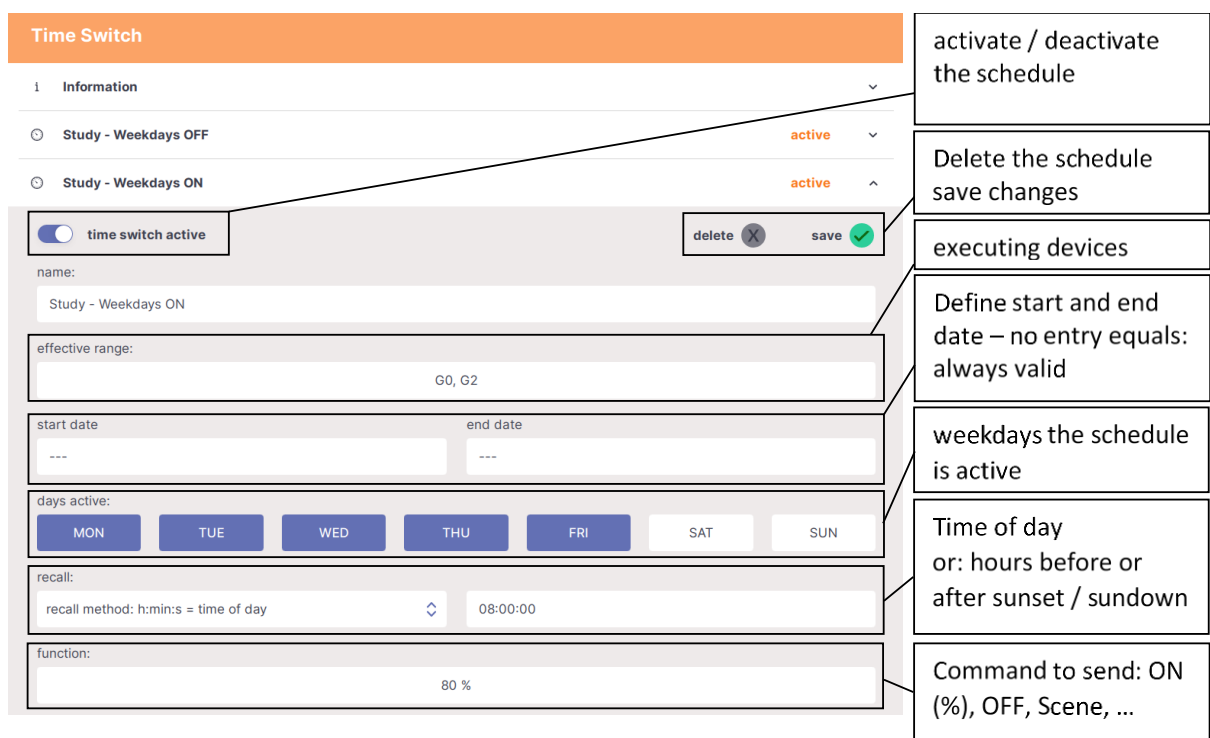
Version Display 7"plus - FW 0.4.X and higher

The 7 "plus display enables the creation of time and weekday-controlled commands: schedules. A schedule consists of a function to be executed, the active days of the week and a time stamp (absolute or related to sunrise or sunset).

Schedules can be configured, activated and deactivated in the configuration menu  section TIME SWITCH

For information on the configuration see Figure 11 

Additional schedules can be added using the Add-Button: 



The screenshot shows the 'Time Switch' configuration page. It features a list of schedules at the top, including 'Study - Weekdays OFF' and 'Study - Weekdays ON', both marked as 'active'. Below this is a detailed configuration form for a selected schedule. The form includes a 'time switch active' toggle, a 'name' field (Study - Weekdays ON), an 'effective range' field (G0, G2), 'start date' and 'end date' fields (both empty), a 'days active' section with buttons for MON, TUE, WED, THU, FRI, SAT, and SUN, a 'recall' section with a dropdown for 'recall method' (set to 'h:min:s = time of day') and a time input field (08:00:00), and a 'function' field (80 %). Callout boxes on the right provide explanations for these fields: 'activate / deactivate the schedule' points to the active status; 'Delete the schedule save changes' points to the delete and save buttons; 'executing devices' points to the effective range; 'Define start and end date – no entry equals: always valid' points to the date fields; 'weekdays the schedule is active' points to the day selection buttons; 'Time of day or: hours before or after sunset / sundown' points to the recall time field; and 'Command to send: ON (%), OFF, Scene, ...' points to the function field.

Figure 11 Configuration of schedules

Create Circadian Daylight Schedules

Version Display 7"plus - FW0.4.X and higher

The display 7 "plus enables the creation of circadian daylight schedules.

The circadian daylight control simulates the natural course of daylight by continuously adjusting the colour temperature and brightness. The colour temperature and

brightness course can be set for each hour. The values are interpolated every minute between these timepoints.

Two courses (one for the longest and one for the shortest day of the year) can be defined. The control system interpolates the values

between the two courses over the year, to match the current season.

Circadian daylight schedules can be configured, activated and deactivated in the configuration menu section CIRCADIAN



For information on the configuration see Figure 12.

Additional circadian daylight schedules can be added using the add-button:

Circadian Daylight Schedule

1 Information

active

circadian active delete X save ✓

name: enter name

effective range: define range

date shortest day: --- date longest day: ---

time - light settings

12:00

shortest day longest day

1 color temperature control

2 color temp. (*K) ▾ 5800 K

3 brightness control

4 brightness ▾ 50 %

8.500
5.200
1.900
100%
50%
OFF

06:00 12:00 18:00

not controlled

Activate/ deactivate circadian daylight schedule

Delete the schedule Save changes

executing devices

Specification of the longest and shortest day - over the year, the two different courses are interpolated. if no information is given, only one course is used for the entire year.

Switch between the course of the shortest and longest day.

Switching between timepoints: 0:00 to 23:00

Resulting control course: colour temperature above, brightness below for the shortest or longest day (depending on the selection on the left)

Settings for the selected time point:

- 1. Colour temperature control:** if enabled the colour value is defined for this time point. Else (if disabled) an interpolated value between the last and next actively set colour value is used.
- 2. Colour temperature:** Enter the desired colour temperature (in case of active control)
- 3. brightness control:** if enabled the brightness is defined for this time point. Else (if disabled) an interpolated value between the last and next actively set brightness is used
- 4. Brightness:** Enter the desired brightness (in case of active control)

Figure 12 Configuration of Circadian daylight schedules

Create Sequences

Version Display 7"plus - FW 0.4.X and higher

The display 7"plus enables the creation and operation of sequences - an automatic playback of commands. A sequence consists of


a series of DALI commands (a maximum of 16), to implement e.g. a sequence of brightness and colour changes (via scenes). Time delays can be set between commands.

A sequence can be called once or with repetitions (loop).

Sequences can be configured, activated and deactivated in the configuration menu section SEQUENCE



For information on the configuration see Figure 13

Additional sequences can be added using the add-button: 

The screenshot shows the 'Sequence' configuration page. At the top, there are buttons for 'start', 'stop', 'delete', and 'save'. Below these are input fields for 'name' (set to 'Presentation Sequence') and 'recall options' (with 'x repetitions' selected and '0' entered). A 'define entries' section shows a table of sequence entries. A callout box on the right lists settings for the selected entry (entry 5):

- 1) activate / deactivate entry
- 2) add delay to the previous entry
- 3) executing devices
- 4) function/command ON, OFF; Scene, ..

change between entries by selecting the respective entry in the list on the right

	recalled after	range	function
1.	00:00	G0	45 %
2.	00:20	G0	S5
3.	00:30	G2, G4, G5	100 %
4.	01:00	all	S10
5.	10:00	all	OFF
6.	00:00	---	---
7.	00:00	---	---
8.	00:00	---	---
9.	00:00	---	---
10.	00:00	---	---

Figure 13 Configuration of Sequences

Firmware Update

An internet connection is necessary: menu item "Settings" -> "Ethernet" or "Settings" -> "Wi-Fi".

A firmware update is possible via the IP address of the display with a web browser. To do so, the PC must be in the same network and address range are located like the display (IP address display under "Settings" -> "Ethernet" or "Settings" -> "Wi-Fi")

The configuration file can be uploaded in the web browser under the "Update" tab and the update can be started using the "Upload" button see Figure 14

The update can take up to 15 minutes. After an automatic restart of the display, the update is complete.

Save and Load Configuration Files

The display configuration can be saved in the display menu ☰ under "Settings" - in the "Save / Load" tab. The configuration file includes all settings, boards and widgets.

The saved configurations can be downloaded in the web browser under "Download" e.g., to transfer created display user interfaces to other displays.

The files can be uploaded to a display in the web browser –under the respective display IP - tab "Upload".

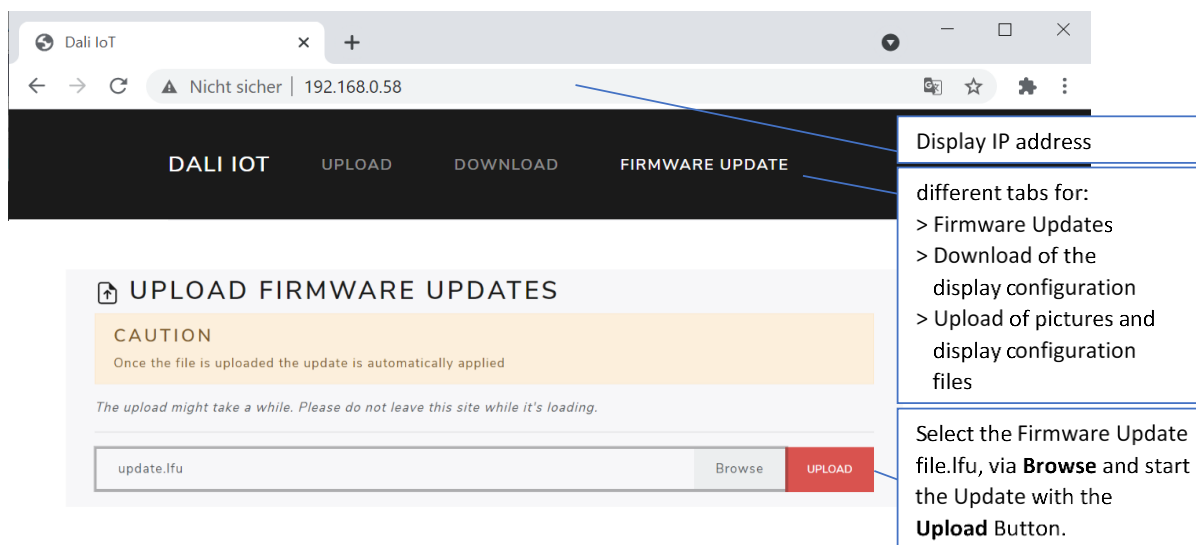
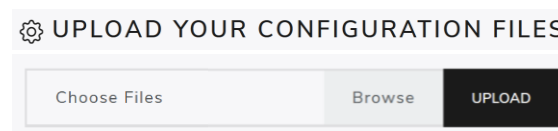


Figure 14 Web browser: Display Firmware Updates

Version Overview

	Display 7" 86456840	Display 7" Plus 86456840-P
customisable user interface	✓	✓
LAN and WLAN	✓	✓
dimming and switching	✓	✓
Tunable White and RGB colour management	✓	✓
configuration of scenes	✓	✓
configuration of groups		✓
integrated sensors for measurement and visualisation of sensor values such as temperature, air quality, air pressure and humidity	✓	✓
addressing and set-up of DALI systems		✓
automation: circadian daylight curves		✓
automation: sequences		✓
automation: week schedules		✓

Purchase Information

Art.Nr.: 86456840-W

DALI-2 Display 7", white
capacitive touchscreen with 24-bit colour depth, control unit for 64 DALI addresses, customisable user interface
white, 178 x 111 x 8mm

Art.Nr.: 86456840-P-W

DALI-2 Display 7" plus, white
capacitive touchscreen with 24-bit colour depth, control unit for 64 DALI addresses, customisable user interface, advanced configuration/control features: addressing, circadian control, schedules, sequences,
white, 178 x 111 x 8mm

On request:

Art.Nr.: 86456840-B

DALI-2 Display 7", black
capacitive touchscreen with 24-bit colour depth, control unit for 64 DALI addresses, customisable user interface
black, 178 x 111 x 8mm

Art.Nr.: 86456840-P-B

DALI-2 Display 7" plus, black
capacitive touchscreen with 24-bit colour depth, control unit for 64 DALI addresses, customisable user interface, advanced configuration/control features: addressing, circadian control, schedules, sequences,
black, 178 x 111 x 8mm

Additional Information and Equipment

Art.Nr.: 24166012-24HS

PS 24V, 300mA – fitting power supply

Lunatone DALI products

<https://www.lunatone.com/en>

Lunatone Datasheets and Manuals

<https://www.lunatone.com/en/downloads-a-z/>

Contact

Technical Support:

support@lunatone.com

Requests:

sales@lunatone.com

www.lunatone.com



Disclaimer

Subject to change. Information provided without guarantee. The datasheet refers to the current delivery.

The function in installations with other devices must be tested for compatibility in advance.