DALI-2 Touchpanel



Datasheet Multi Control Module

Multifunctional
DALI-2 control module
with flexible
button layout

Art.Nr. 24035410-G

Various DALI-2 Touchpanel Layouts:

Art. Nr.: G000 unprinted glasses

Art.Nr.: G01A (Dimming, 4 Scenes)

Art.Nr.: G02A (Dimming, 4 Scenes, 4 Groups)

Art. Nr.: G03A (Dimming, 4 Scenes, Tunable White)

Art. Nr.: G04A (Dimming, 4 Scenes, Tunable White, 4 Groups) Art. Nr.: G05A (Dimming, 4 Scenes, Tunable White, 4 Groups)

Tt. W.. Gosa (billilling, 4 scenes, Tullable Wille, 4 Groups

Art. Nr.: G06A (Dimming, 4 Scenes, Colour RGB)

Art. Nr.: G07A (Dimming, 4 Scenes, Colour RGB, 4 Groups) Art. Nr.: G08A (Dimming, Ceiling Fan, Blinds, 2 Groups, Tunable White, 4 Scenes)

Art. Nr.: G09A (Dimming, 4 Scenes, Colour and White RGBW)

Overview

https://www.lunatone.com/wp-content/uploads/2020/11/DALI-2-Touchpanel-Layouts EN.pdf

DALI-2 Touchpanel Multifunctional Control Module

Overview

- multifunctional control module for DALI and DALI-2 systems
- multi-master capable: Several modules can be installed within a DALI circuit and / or a DALI group.
- capacitive touch interface
- up to 16 configurable keys
- standard layouts and factory settings for easy installation without configuration
- flexible layout individual design layout exchange on site. Additional glass inserts with different prints available as accessories.
- easy configuration via Lunatone DALI USB interface and DALI-Cockpit Software Tool
- touch interface material: glass
- plastic frame (RAL 9016)
 aluminium frame and customer specific frame colours upon request
- integrated DALI-2 application controller

- application controller: direct control of DALI devices
- in addition to the standard DALI commands, the application controller also supports DALI DT8 TC and RGB (W) control as well as macros
- Instance-mode: Easy integration through 16 DALI-2 pushbutton instances and 5 DALI-2 analogue instances (slider)
- easy installation on a flush-mounted installation box
- the module is supplied by the DALI bus – no additional power supply necessary
- version with integrated DALI power supply available ("-PS")
- DALI-2 control unit according to IEC62386-103



Specification, Characteristics

| Туре | DALI-2 Touchpanel | | |
|--|------------------------------------|--|--|
| article number | 24035410 | | |
| GTIN | 9010342013089 | | |
| DALI-Interface, power supply: DA, DA | | | |
| output type | DALI, DALI-2, Multimaster | | |
| terminal markings | DA, DA | | |
| voltage range | 9,5V 22,5Vdc according to IEC62386 | | |
| typical current consumption DALI (16,5V) | 2 mA | | |
| | | | |



| DALI addresses | 0 | |
|--|--|--|
| DALI-2 addresses | 1 | |
| | | |
| Insulation data: | | |
| impulse voltage category | II | |
| pollution degree | 2 | |
| rated insulation voltage | 250V | |
| insulation DALI / mains | reinforced isolation | |
| insulation test voltage DALI / mains | 3000Vac | |
| environmental conditions: | | |
| storing and transportation temperature | -20°C +75°C | |
| operational ambient temperature | -20°C +45°C | |
| rel. humidity, not condensing | 15% 90% | |
| general data: | | |
| dimensions (I x w x h) | 87,7mm x 87,7mm x 16,5mm | |
| mounting | back box installation | |
| material | touch-interface: glass, frame: plastic | |
| expected life time | 100.000h | |
| Protection class | II (when used/installed as intended) | |
| protection degree housing | IP40 | |
| protection degree terminals | IP20 | |
| Operating modes | Application Controller, DALI-2 Instance mode | |
| terminals: | | |
| connection type | spring terminal connectors | |
| wire size: solid core | 0,5 1,5 mm² (AWG20 AWG16) | |
| wire size: fine wired | 0,5 1,5 mm² (AWG20AWG16) | |
| wire size: using wire end ferrule | 0,25 1 mm ² | |
| stripping length | 8,5 9,5 mm / 0,33 0,37 inch | |
| tightening/ release of wire | push mechanism | |
| standards: | | |
| DALI | IEC62386-101:2014 IEC62386-103:2014 | |
| EMV | EN 61547 | |
| LIVIY | EN 50015 / IEC CISPR15 | |
| safety | EN 61347-2-11 EN 61347-1 | |
| Markings | DALI-2, CE | |
| | • | |

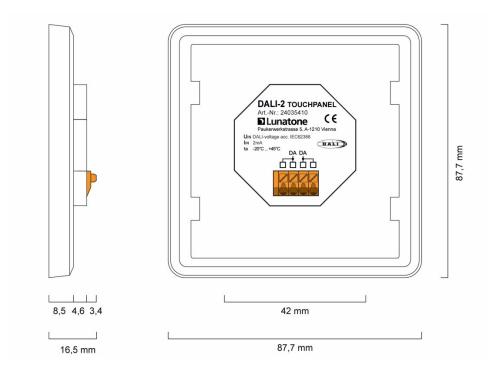


Fig.1. dimensions

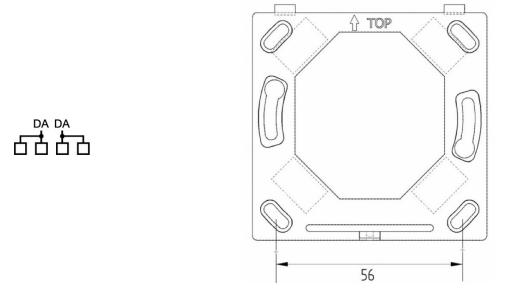


Fig.2. connection plan

Fig.3. mounting plate

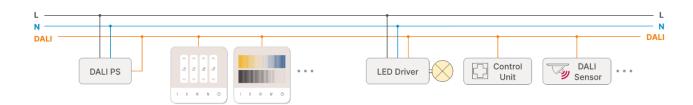


Fig.4. DALI-2 Touchpanel typical application



Specification, Characteristics – DALI-2 Touchpanel PS: Version with integrated Bus Power Supply

Version with integrated bus power supply (70mA). If not stated otherwise in the table below all information for standard version applies – all DALI-2 Touchpanel versions are available with integrated power supply 70mA.

| type | DALI-2 Touchpanel-PS | |
|-------------------------------------|-----------------------|--|
| article number | 24035410 -PS | |
| | | |
| input L,N | | |
| input type | supply, mains-voltage | |
| markings | N, L | |
| input voltage range | 230V AC | |
| max. input supply current | 17 mA | |
| Input supply frequency | 50Hz / 60Hz | |
| power consumption max. | 2W | |
| start-up time | <250ms | |
| | | |
| output DA+, DA- | | |
| - | DALL | |
| output type | DALI | |
| markings | DA-, DA+ | |
| output voltage range | 12Vdc 20,5 Vdc | |
| guaranteed DALI supply current | 70mA | |
| max. DALI supply current | 80mA | |
| Open circuit proof | yes | |
| Short circuit proof | yes | |
| insulation data | | |
| Impulse voltage category | II | |
| Pollution degree | 2 | |
| Rated insulation voltage | 250V | |
| Rated impulse withstanding voltage | 4 kV | |
| Insulation DALI / mains | reinforced isolation | |
| Insulation test voltage DALI /mains | 3000V a.c. | |
| | | |
| general data: | | |
| dimensions | 88mm x 88mm x 39mm | |

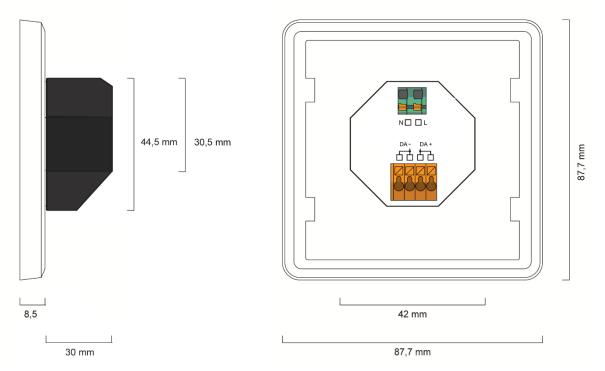


Fig.5. dimensions DALI-2 Touchpanel PS

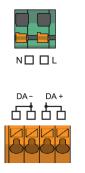


Fig.6. connection plan

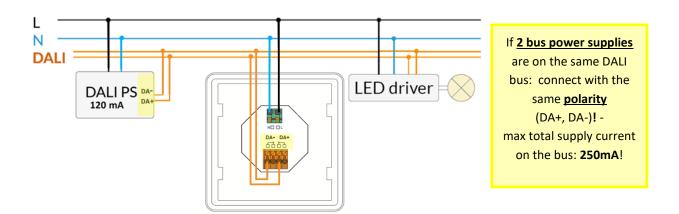


Fig.7. installation example DALI-2 Touchpanel PS with an additional DALI PS on the DALI bus

Installation

The DALI-2 Touchpanel is directly connected and supplied by the DALI bus. A DALI bus power supply (e.g., DALI PS) is required, no additional power supply is needed.

DALI-2 Touchpanel PS: includes a DALI bus power supply (70mA). If 2 or more bus power supplies are connected on the same DALI bus, they need to be connected with the same polarity. (marked with DA+, DA-), see Figure 7, page 6.



It is possible to connect multiple DALI PS on a DALI line, but the sum of all maximum supply currents must not exceed 250 mA!

- **DALI-2 Touchpanel** (and DALI-2 Touchpanel PS with no additional DALI PS): 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 realized 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).

Wall Mounting

The DALI-2 Touchpanel can be attached to an electrical socket using a mounting plate (included), see Fig.3. page 4.

First the mounting plate is attached to the electrical socket, paying attention to the orientation - Marking: 1 TOP.

Then the DALI touch panel can be hooked in from the top and fixed with the screw on the bottom.

Addressing and Configuration

- After installation, the device can already be used with the default factory settings.
- Addressing and changes to the factory settings, such as setting the effective range and functions, are possible with the Software tool DALI Cockpit (Windows PC).
- When using the DALI-Cockpit Software, the PC must be connected to the DALI bus via a suitable interface module (DALI USB, DALI 4Net, DALI SCI RS232). The DALI-2 Touchpanel is automatically recognised by the DALI Cockpit during the addressing process and listed in the device overview.
- The addressing is done according to the DALI-2 specification and the device receives a corresponding address.
- For localisation a buzzer is integrated in each DALI-2 Touchpanel. Alternatively, the allocation can also be done via the serial number of the device.

Touch Panel Layout

The DALI-2 Touchpanel is equipped with an interchangeable glass with layout print as user interface.

An overview of the Lunatone standard layouts can be found in section "Standard Layouts and Factory Settings" on page 16.

The devices are delivered with the ordered layouts. Also, customer-specific designs can be realized.

At:

https://www.lunatone.com/en/produkt/dali-<u>2-touchpanel/</u> design templates can be found. The User Interface can be adapted to the respective needs using standard graphics software. On request, it is also possible to use a glass without print and paper inserts (size of the inserts: 86.4mm x 86.4mm).

Thanks to the interchangeable user interface, the touch panel offers customer-specific flexibility and can be adjusted to any application.

The exchange of the layout is carried out by pressing on the upper edge - pushing the frame down, away from the glass, see Fig. 8.

Additional glasses are available as accessories. Both standard and custom designs can be ordered from Lunatone.



Attention: If the position of the buttons does not match after changing the layout, the configuration also needs to be adjusted (DALI Cockpit Software).

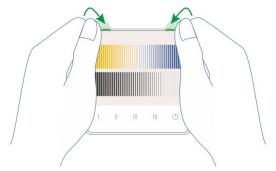


Fig. 8 pressure points to exchange the glass

Operation and Function

The DALI-2 Touchpanel is a universal module to control DALI compatible luminaries.

Each DALI-2 Touchpanel layout can implement up to 16 buttons. The function of each button can be configured individually.

On delivery the buttons are preconfigured, matching the inserted layout.

If the design is changed, the button configuration should be adapted accordingly.

As with other Lunatone control devices, the settings can be changed with the DALI Cockpit Software tool.

In the DALI Cockpit device overview existing configurations can be saved or loaded by right-clicking on the device, using "Export device settings ..." or "Import device settings ..." accordingly, see Figure 9.

All Lunatone standard layout configuration files and descriptions can be found under:

https://www.lunatone.com/en/produkt/dali-2-touchpanel/

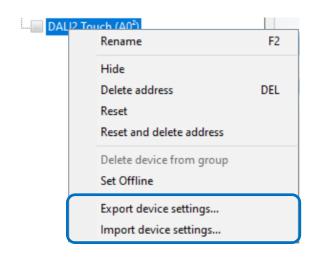


Fig.9 import or export device settings

With the DALI Cockpit Software tool, existing settings can be adjusted to fit the application e.g. number of buttons, button functions, effective range, etc. see Fig.10 and Fig.11.



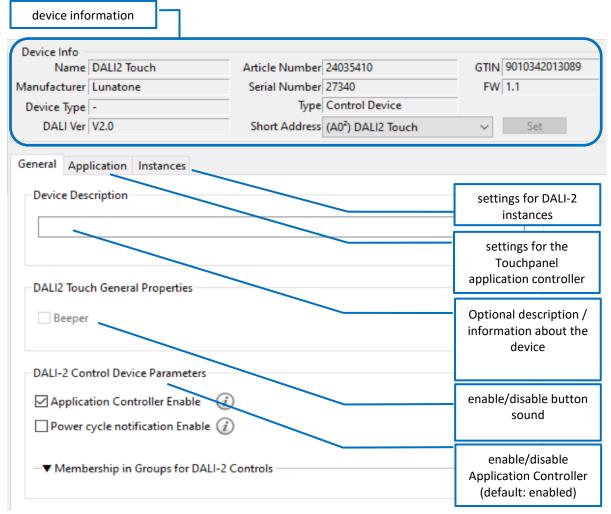


Fig.10 general settings - DALI Cockpit

It is necessary to distinguish between application controller and DALI-2 instances.

The application controller gives direct DALI control commands that are immediately executed by the DALI drivers.

The DALI-2 instances generate event messages that are interpreted and processed by higher-level control units (WAGO, Beckhoff, LUNATONE DALI-2 KNX gateway).



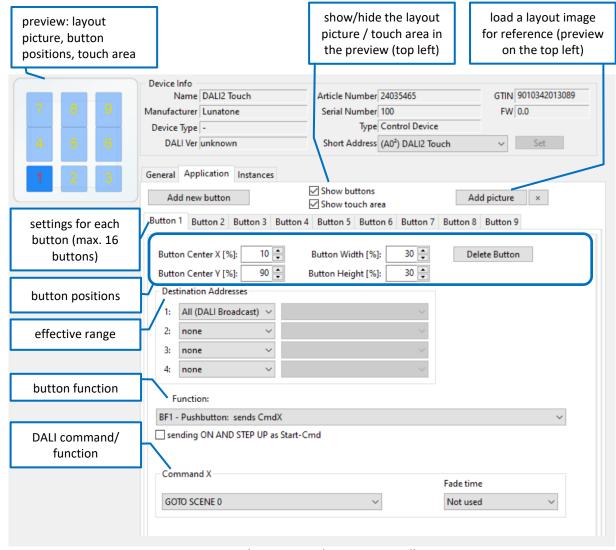


Fig.11 Application: Application Controller

Button position

To adjust the button positions, a reference picture can be added to the preview on the top left corner of the Cockpit Window (Fig.11.: "Add picture"). Supported image formats: bmp, jpg, png, gif, tif, tiff, emf.

The positions of the buttons are defined by 4 parameters:

Button Centre X in % Button Width X in % Button Centre Y in % Button Height Y in %

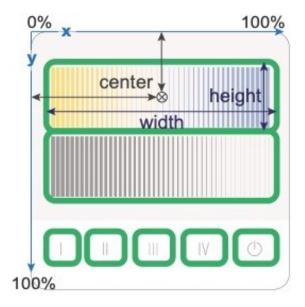


Fig.12 Button positions (indicated in green)



Destination address / effective range

In the section "destination addresses" it is possible to define which devices are affected by the button function. Possible destination addresses:

Broadcast (an alle)
 DALI group (0 - 15)
 DALI single address (0 - 63)

Up to 4 different target addresses can be defined for each button. When the button is pressed the target addresses 1 to 4 will be processed sequentially (see Fig. 13)



Fig.13 Example: Addressing Inputs 1-4 – sequentially processed

Button Function (BF)

Various "Button Functions" (BF) can be assigned to the individual buttons. The "Button Function" defines the behaviour of a button. A short or long press of the button can trigger different DALI commands.

A toggle function (switching between on and off) is also possible.

For the DALI-2 Touchpanel following "Button Functions" are available, Fig.14

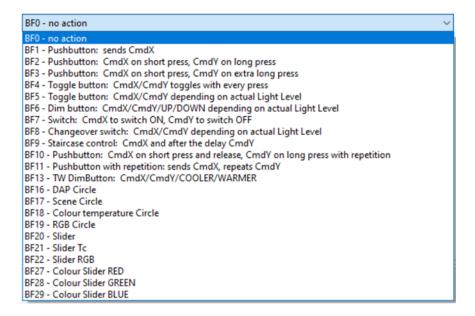


Fig.14 DALI-2 Touchpanel button functions

Key presses (short / long) are queried according to the following timing diagram and translated into internal signals (key events):

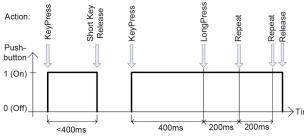


Fig.15 Key Events

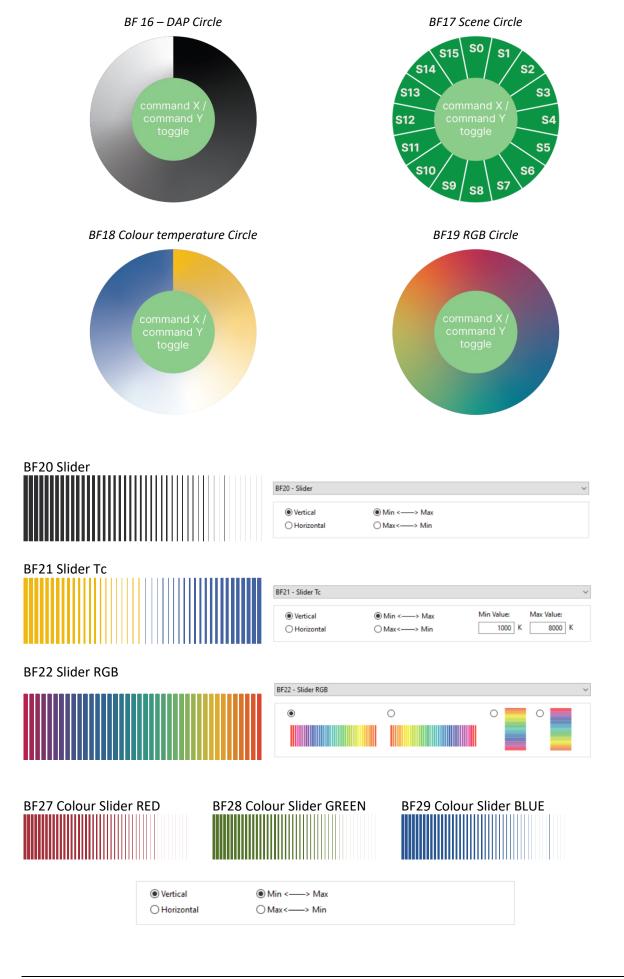
The following table shows how the selected "Button Function" (lines 0 to 13) sends the commands CmdX and CmdY in connection with the "Key Events" (see Fig. 15). CmdX and CmdY refer to DALI commands.



Note: The DALI commands are transmitted to all assigned target addresses.

| button function number | event: press | event: short press | event: long press | event: extra- long press | event: repeat | function | typical application |
|------------------------------|--|--------------------------|-------------------------|-----------------------------------|--------------------|--|------------------------|
| 0 | | - | - | - | - | - | - |
| 1 | CmdX | - | - | - | - | sends CmdX on key press | master off |
| 2 | CmdX | - | CmdY | - | - | sends CmdX on key press | switch to 2 |
| 3 | - | CmdX | - | CmdY | - | sends CmdY on long key press different level sends CmdX on key press store level as sends CmdY on extra-long key press scene | |
| 4 | CmdX / CmdY toggle | - | - | - | - | sends alternating CmdX and CmdY on key press | toggle push button |
| 5 | CmdX / CmdY toggle | - | - | - | - | sends CmdX or CmdY on key press (depending on bus status) | changeover button |
| 6 | - | CmdX / CmdY toggle | ON AND STEPUP | - | UP / DOWN | sends CmdX or CmdY on short key press (depending on bus status) sends ON and STEPUP, if bus state is OFF before UP sends alternating UP or DOWN on repeat | push and dim |
| 7 | CmdX (CmdY on release) | - | - | - | - | sends CmdX on key press sends CmdY on key release | switch |
| 8 | CmdX / CmdY toggle (CmdY / CmdX toggle on release) | - | - | - | - | sends CmdX or CmdY on key press (depending on bus status) sends CmdY or CmdX on key release (depending on bus status) | changeover switch |
| 9 | CmdX (CmdY on delay) | - | - | - | - | sends CmdX on key press sends CmdY after a programmable delay | staircase control |
| 10 | - | CmdX | CmdY | - | CmdY | sends CmdX on short key press sends CmdY on long key press sends CmdY on repeat | push and dim |
| 11 | CmdX | - | - | - | CmdY | sends CmdX on key press sends CmdY on repeat | push and dim |
| 13 | - | CmdX / CmdY toggle | - | - | WARMER / COOLER | sends CmdX or CmdY on short key press (depending on bus status) sends alternating WARMER or COOLER on repeat | tunable white dim |

Tab. 1





Commands:

The actual action (which function is triggered when pressing a button) is determined by the button function and command assigned to the button.

In most cases, an X command (CmdX) and also a Y command (CmdY) can be selected.

The following options are available:

| Command | Command | |
|---------|--------------|--|
| number | name | action / function |
| | DIRECT ARC | direct arc power Level |
| no Nr. | POWER | in % |
| 0 | OFF | off |
| 1 | UP | dim up (using fade rate) |
| 2 | DOWN | dim down (using fade rate) |
| 3 | STEP UP | increases light level by one increment |
| | | decreases light level by |
| 4 | STEP DOWN | one increment |
| 5 | RECALL MAX | recalls MAX value |
| 6 | RECALL MIN | recalls MIN value |
| | | decreases light level by |
| | STEP DOWN | one increment, if value |
| 7 | AND OFF | at MIN switch off |
| | | increases light level by |
| | ON AND STEP | one increment, if OFF |
| 8 | UP | switch on |
| | | DALI-2-Cmd for |
| | | switching on to the last |
| | GOTO LAST | active level (Memory- |
| | ACTIVE LEVEL | Function) (Firmware 2.0 |
| 10 | (DALI 2) | and up) |
| 16-31 | GO TO SCENE | go to scene 0-15 |

Tab. 2

Depending on the selected command, additional input fields might appear for further settings:



Fig. 16

Predefined macros:

Macros are predefined/ user defined command sequences that can be triggered by a single command.

The following macros are available:

| Nr | Macro | Function |
|-----|--|--|
| M1 | Go Home | Light dims down to DAP 0 with predefined fade time, then fade time is set back to a programmable value |
| M2 | Sequential Scenes | A list of the scenes can be defined; the scene is switched with each button press. |
| M3 | Dynamic Scenes | A dynamic sequence of up to 16 scenes can be defined, including custom fade times and delays. |
| M4 | Save actual light level as scene | When triggered the current level is saved in a scene (options: light level, RGB colour value, WAF colour value or colour temperature). |
| M5 | User Defined Cmd-List | A user-defined macro script with up to 19 commands is executed. |
| M6 | TC cooler | Activates the DT8 mode and sends the command "COOLER" 3 times. |
| M7 | TC warmer | Activates the DT8 mode and sends the command "WARMER" 3 times. |
| M8 | Send RGB + | Activates the DT8 mode and sends an ascending RGB colour table value. |
| M9 | Send RGB - | Activates the DT8 mode and sends a descending RGB colour table value. |
| M10 | Delayed Off | Sends a DAP level and after a delay the OFF command. DAP level and delay are user defined. |

Tab. 3

DALI-2 instances

In this operating mode, no DALI control commands are sent on the bus, but DALI-2 event messages for DALI-2 compatible central control systems. General information on DALI-2 Instancemode can be found here.

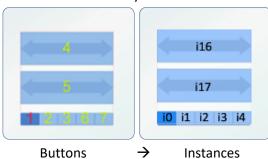
The DALI-2-Touchpanel supports up to 16 instances of type 1 (IEC62386-301, Input Devices – Push Button), and 5 instances of type 2 (IEC62386-301, Analogue Input Device) which are assigned to the 16 buttons and 5 sliders / circles accordingly.

The number of sliders (BF20-BF22,BF27-BF29) or circles (BF16-BF19) is therefore limited to 5 for the instance mode.

The instances are assigned to the buttons one after the other - see the example below:



Layout



| Button1 | Pushbutton | BF1 | Instance 0 |
|---------|------------|------|------------|
| Button2 | Pushbutton | BF1 | Instance 1 |
| Button3 | Pushbutton | BF1 | Instance 2 |
| Button4 | Slider Tc | BF21 | Instance |
| | | | 16 |
| Button5 | Slider | BF20 | Instance |
| | | | 17 |
| Button6 | Pushbutton | BF1 | Instance 3 |
| Button7 | Pushbutton | BF1 | Instance 4 |

Button – Instance Assignment

DALI-2 Pusbutton Instance (instance type 1)

As defined in the standard, the following events are supported and sent on the DALI bus as INPUT NOTIFICATIONs:

| Event name | Event Information | Description |
|-------------------------|----------------------|---|
| Button released | 00 0000 0000b | The button is released |
| Button pressed | 00 0000 0001b | The button is pressed |
| Short press | 00 0000 0010b | The button is pressed and released, without being pressed quickly again (in case of double press enabled), or the button is pressed and quickly released (in case double press is disabled) |
| Double press | 00 0000 0101b | The button is pressed and released, quickly followed by another button press |
| Long press start | 00 0000 1001b | The button is pressed without releasing it |
| Long press repeat | 00 0000 1011b | Following a long press start condition the button is still pressed, the event occurs at regular intervals as long as the condition holds |
| Long press stop | 00 0000 1100b | Following a long press start condition, the button is released |

| Button | 00 0000 | The button has been |
|--------|---------|-------------------------|
| free | 1110b | stuck and is now |
| | | released |
| | | |
| Button | 00 0000 | The button has been |
| stuck | 1111b | pressed for a very long |
| | | time and is assumed |
| | | stuck. |
| | | |

Tab.4

Further parameters of the instances 0-15 are: event filter and event timer settings (short timer, double timer, repeat timer, stuck timer), which can be configured via the DALI Cockpit Software. See Fig. 17.

Default settings for pushbutton instances:

| Assigned Instance | None |
|--------------------|---------------------|
| groups | |
| Event Scheme | Instance addressing |
| Selected Event | Short press, |
| Filters | Long press start |
| | Long press repeat |
| | Long press stop |
| | Button Stuck/free |
| Short press timer | 500ms |
| Double press timer | - (not used) |
| Repeat timer | 160ms |
| Stuck Timer | 20s |
| | |

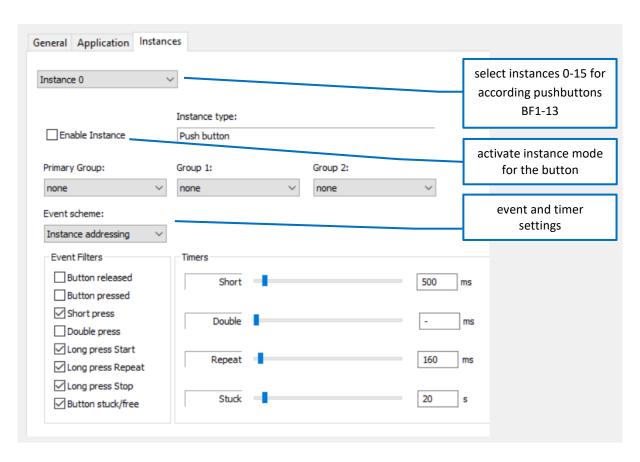


Fig.17 Instance Settings – Pushbutton Instances 0-15



DALI-2 Analog Instance (Instancetype 2)

The event input value of the analogue instance corresponds to the selected position value on the assigned slider or circle. If this value is changed, the instance generates a DALI-2 event ("INPUT NOTIFICATION").

Parameters of the analogue input device instances 16-20 are: event filter and event timer settings (report, deadtime), which can be configured via the DALI Cockpit Software.

By using the report timer, the input value is sent periodically as a DALI-2 event regardless of input value changes. (Report Timer set to 0s, means no event is sent) The deadtime can be used to prevent the generation of an event by the instance for the set deadtime-period.

Default Settings for analog input instances:

| None |
|---------------------|
| |
| Instance addressing |
| Position |
| |
| 5 (lowest) |
| 255s |
| 12,75s |
| |

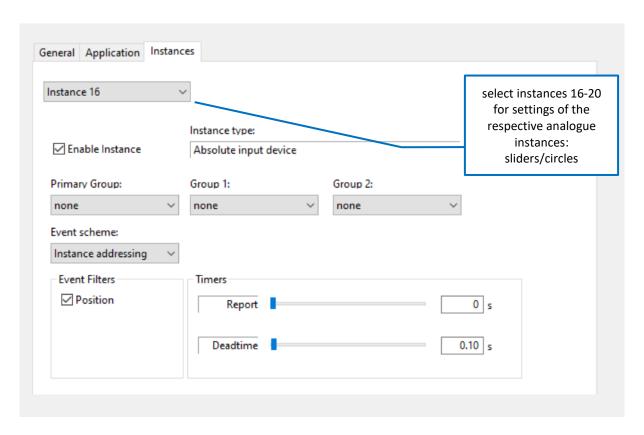
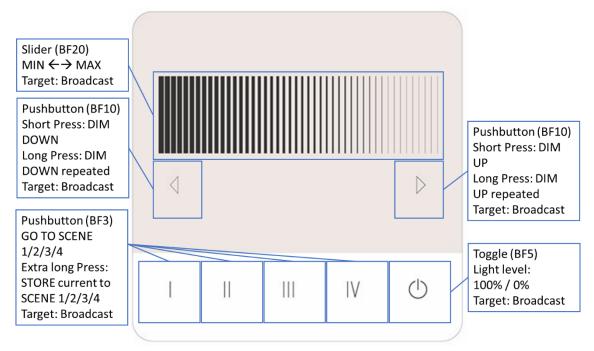
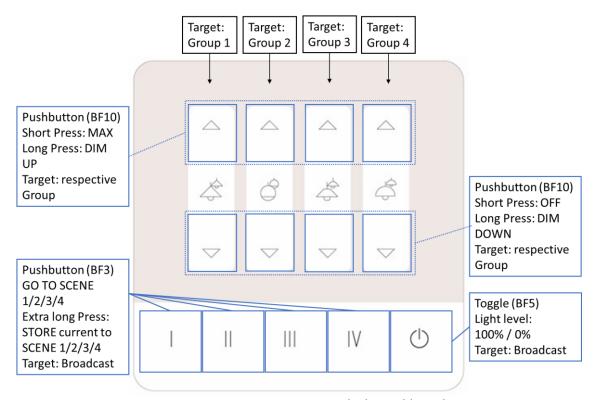


Fig.18 Instance Settings – Analogue Instances 16-20

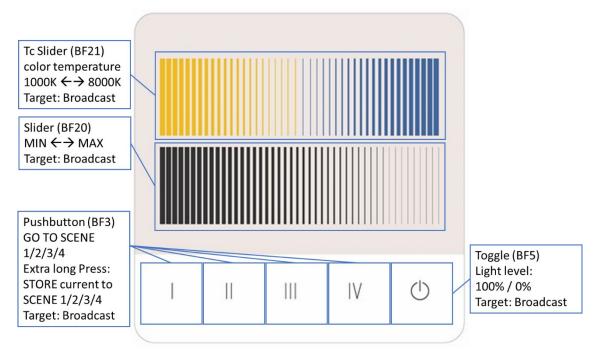
Standard Layouts – Factory Settings



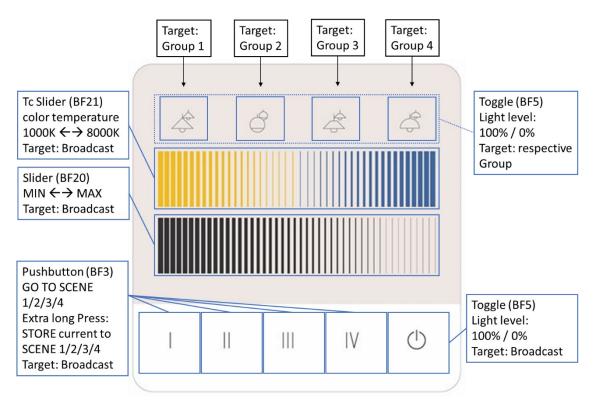
Layout Art. Nr.: G01A brightness slider & arrows for fine adjustment



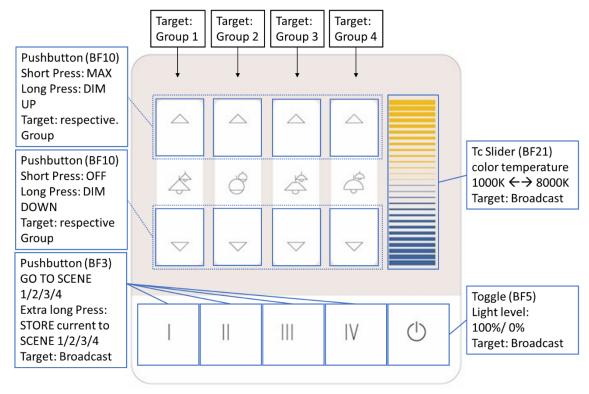
Layout Art. Nr.: G02A 4 groups separately dimmable with arrows



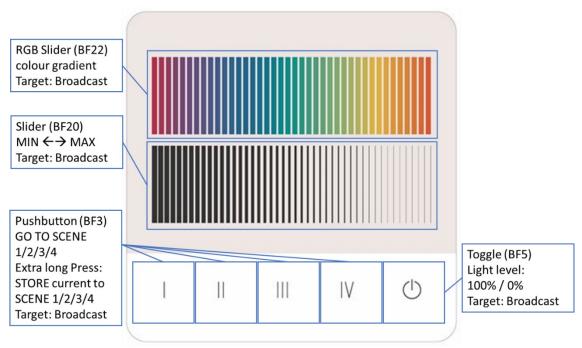
Layout Art. Nr.: G03A brightness slider & tunable white slider



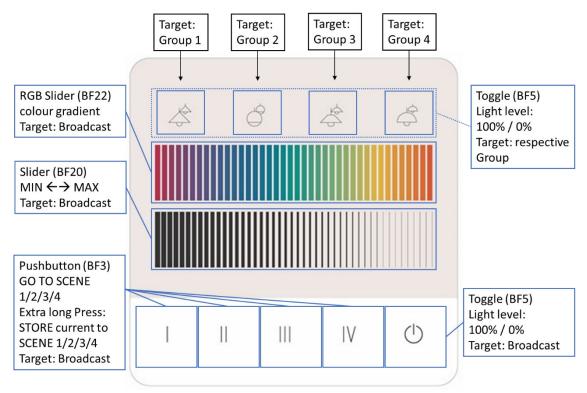
Layout Art. Nr.: G04A 4 groups on/off, brightness slider, tunable white slider



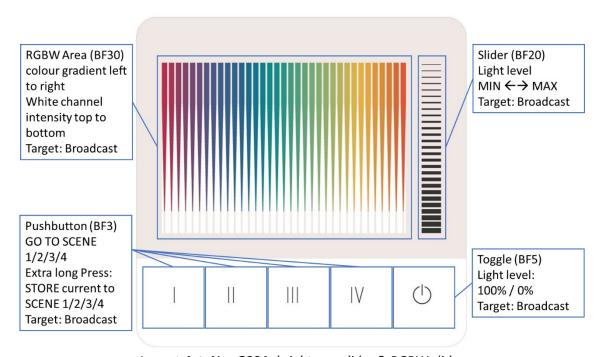
Layout Art. Nr.: G05A 4 groups separately dimmable with arrows & tunable white slider



Layout Art. Nr.: G06A brightness Slider & RGB slider



Layout Art. Nr.: G07A 4 groups on/off, brightness slider, RGB slider



Layout Art. Nr.: G09A brightness slider & RGBW slider

Purchase information

Art. Nr. 24035410-G__ GTIN 9010342013089 DALI-2 Touchpanel please indicate the desired Layout: G01A to G08A below.

Art. Nr. 24035410-PS-G__

DALI-2 Touchpanel PS Version with integrated DALI-PS 70mA please indicate the desired Layout: G01A to G08A below.

Glass Standard layouts

Various layouts, overview: https://www.lunatone.com/wpcontent/uploads/2020/11/DALI-2-Touchpanel-Layouts EN.pdf

Art. Nr. 24035410-**G000** unprinted glass GTIN 9010342013652

Art. Nr. 24035410-**G01A** dimming, 4 scenes GTIN 9010342013669

Art. Nr. 24035410-**G02A** dimming, 4 scenes, 4 groups GTIN 9010342013676

Art. Nr. 24035410-G03A dimming, 4 scenes, tunable white GTIN 9010342013683

Art. Nr. 24035410-**G04A** dimming, 4 scenes, tunable white, 4 groups GTIN 9010342013690

Art. Nr. 24035410-**G05A** dimming, 4 scenes, tunable white, 4 groups GTIN 9010342013706

Art. Nr. 24035410-**G06A**

dimming, 4 scenes, colour RGB GTIN 9010342013713

Art. Nr. 24035410-**G07A** dimming, 4 scenes, colour RGB, 4 groups GTIN 9010342013720

Art. Nr. 24035410-**G08A** dimming, ceiling fan, blinds, 2 groups, tunable white, 4 scenes GTIN 9010342013737

Art. Nr. 24035410-**G09A** dimming, 4 scenes, colour and white RGB GTIN 9010342013843

Glass sample sets:

Art. Nr. G000 3 pieces of unprinted glasses

Art. Nr.: G01A - Art. Nr.: G08A Sample set of 3 pieces of according glasses

Art. Nr.: GMIX5
Set of 5 glasses - please state the desired article numbers (Art. Nr.: G01A - Art. Nr.: G08A)

Additional Information and Equipment

Touchpanel Layout configuration files for the DALI cockpit

https://www.lunatone.com/wpcontent/uploads/2021/03/TouchpanelLay out KonfigFiles.zip

DALI Cockpit - free configuration software for DALI systems

https://www.lunatone.com/en/product/dalicockpit/

Lunatone DALI products https://www.lunatone.com/en

Lunatone Datasheets and Manuals https://www.lunatone.com/en/downloads-a-z/

DALI-2 Instancemode Information sheet https://www.lunatone.com/wp-content/uploads/2021/10/DALI-2 Instance-Guide EN M0024.pdf

Contact

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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.