

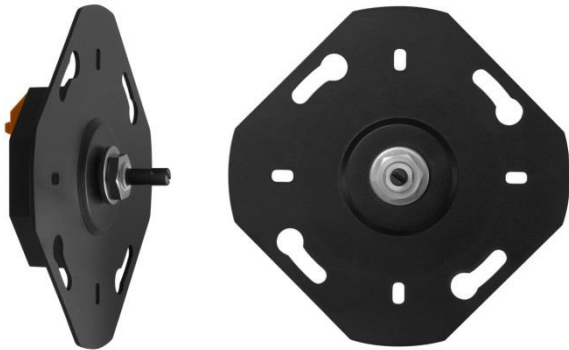


DALI ROT

Rotary Switch

Datasheet

Control Module



Rotary knob for controlling light level, colour and colour temperature in DALI-systems



Art. Nr. 86459822

Art. Nr. 86459822-TW

Art. Nr. 86459822-RGB

Art. Nr. 86459822-RGBW

Art. Nr. 86459822-CH

Art. Nr. 86459822-TW-CH

Art. Nr. 86459822-RGB-CH

Art. Nr. 86459822-RGBW-CH






all versions available with bus power supply (70mA): -PS

cover and rotary knob:
see purchase order information at
end of document

DALI ROT Control Module

Overview

- DALI control module for dimming, colour and colour temperature control, dependent on version.
- Individual DALI Commands and operating modes can be assigned to the push and rotary button.
- Multiple Versions:
- Type for brightness control (light level switching and dimming)
- Type for control of light level and colour temperature of DT8 tuneable white luminaires (TW version)
 - 
- Type for control of light level and colour of DT8 RGB-luminaires (RGB version)
 - 
- Type for control of light level and colour as well as white channel of DT8 RGBW-luminaires (RGBW version)
 - 
- Additional: Balance&Dim or Colour&Dim operating mode for control intensity and colour via 2 separate DALI addresses (supported by Lunatone dimmers)
- Multi-master capable, multiple modules can be installed on one DALI-line.
- factory settings allow easy application
- easy configuration via DALI USB interface and DALI-Cockpit software tool
- the module is supplied directly by the DALI-line, no additional supply required
- double DALI terminals for easy looping of the bus connection
- simple installation, (even with bus power supply), in a standard back box
- Versions with attached bus power supply available (article number addition -PS)
- suitable to be used with cover and knob of most common manufacturers, but also available as accessory
- The device is based on the standard for DALI control devices (IEC 62386-103).
- DALI-2 certificated versions available: check datasheet of [DALI-2 ROT NFC](#)



Specification, Characteristics

type	DALI ROT	DALI ROT TW	DALI ROT RGB	DALI ROT RGBW
article number	86459822 86459822-CH	86459822-TW 86459822-TW-CH	86459822-RGB 86459822-RGB-CH	86459822-RGBW 86459822-RGBW-CH

DALI-interface, supply:

input type	DALI, supply
Marking	DA, DA
input voltage range	9,5V ... 22,5Vdc according to IEC62386
typ. current consumption DALI	1.6 mA
addresses for control gear	0
addresses for control devices	1
output	DALI

environmental conditions:

storing and transportation temperature	-20°C ... +75°C
operational ambient temperature	-20°C ... +75°C
rel. humidity, none condensing	15% ... 90%

general data:

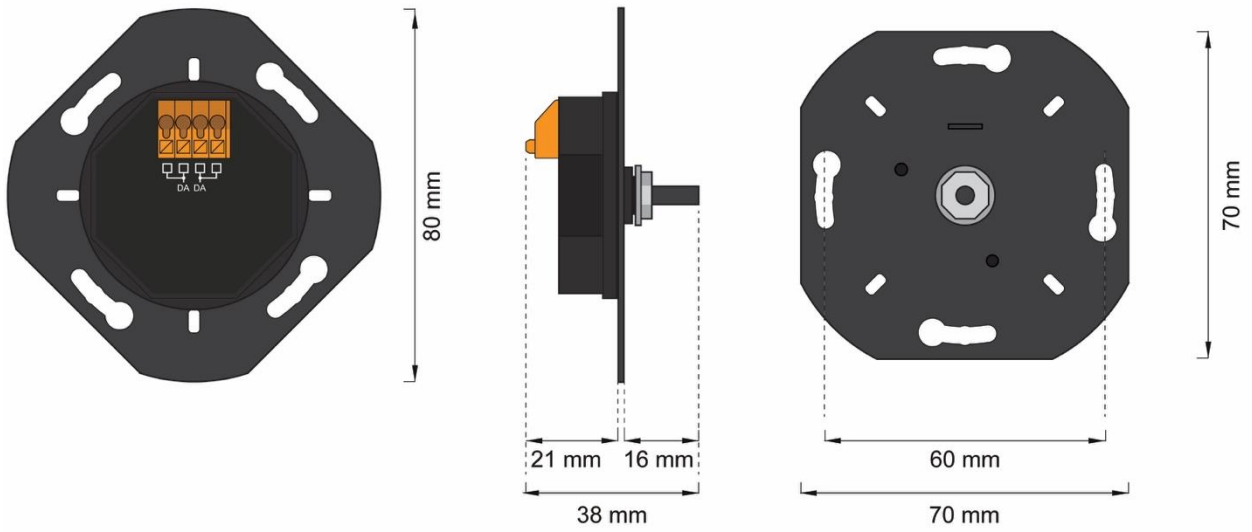
dimensions	70mm x 70mm x 45mm			
shaft diameter	4mm, adapter with 6mm			
mounting / intended use	back box			
protection class	II in intended use			
protection degree housing	IP40			
protection degree terminals	IP20			
manual control	rotary knob with integrated pushbutton function			
function & operating modes	Intensity	Intensity & Tuneable White	Intensity & RGB	Intensity & RGBW

terminals:

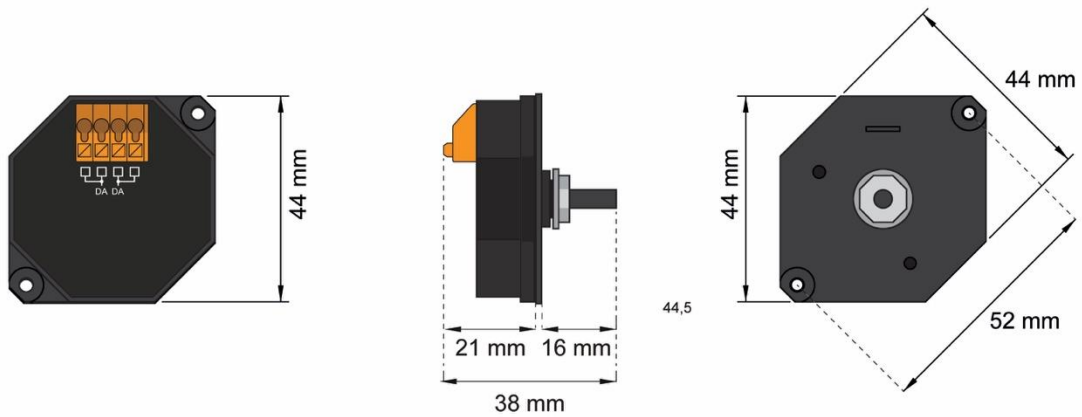
connection type	spring terminal connector
wire size solid core	0,5 ... 1,5 mm ² (AWG20 ... AWG16)
wire size fine core	0,5 ... 1,5 mm ² (AWG20 ...AWG16)
wire size using wire end ferrule	0,25 ... 1 mm ²
stripping length	8,5 ... 9,5 mm / 0,33 ... 0,37 inch

standards:

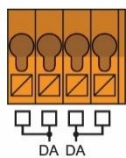
DALI	IEC62386-101:2014 IEC62386-103:2014
EMC	EN 61547 EN 50015 / IEC CISPR15
safety	EN 61347-2-11 EN 61347-1
markings	CE



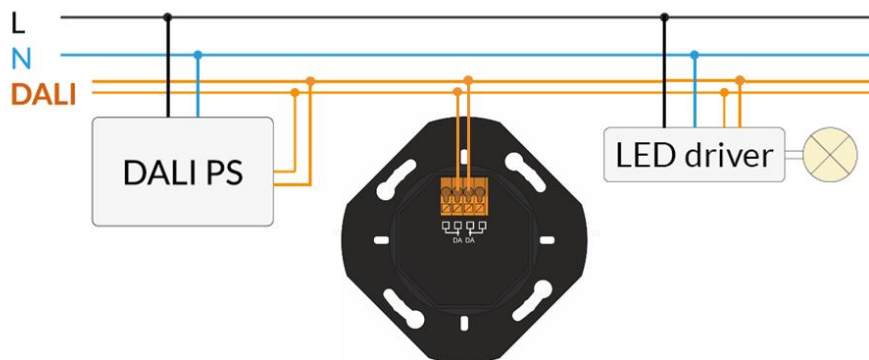
dimensions DALI ROT: 86459822, 86459822-TW, 86459822-RGB, 86459822-RGBW



dimensions DALI ROT CH: 86459822-CH, 86459822-TW-CH, 86459822-RGB-CH, 86459822-RGBW-CH



connection plan DALI ROT



example installation DALI ROT

Specification, Characteristics – DALI ROT PS

If not stated otherwise in the table below all information for standard version applies – all ROT versions are also available with integrated power supply

type	DALI ROT PS	DALI ROT TW PS	DALI ROT RGB PS	DALI ROT RGBW PS
article number	86459822-PS 86459822-CH-PS	86459822-TW-PS 86459822-TW-CH-PS	86459822-RGB-PS 86459822-RGB-CH-PS	86459822-RGBW-PS 86459822-RGBW-CH-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-

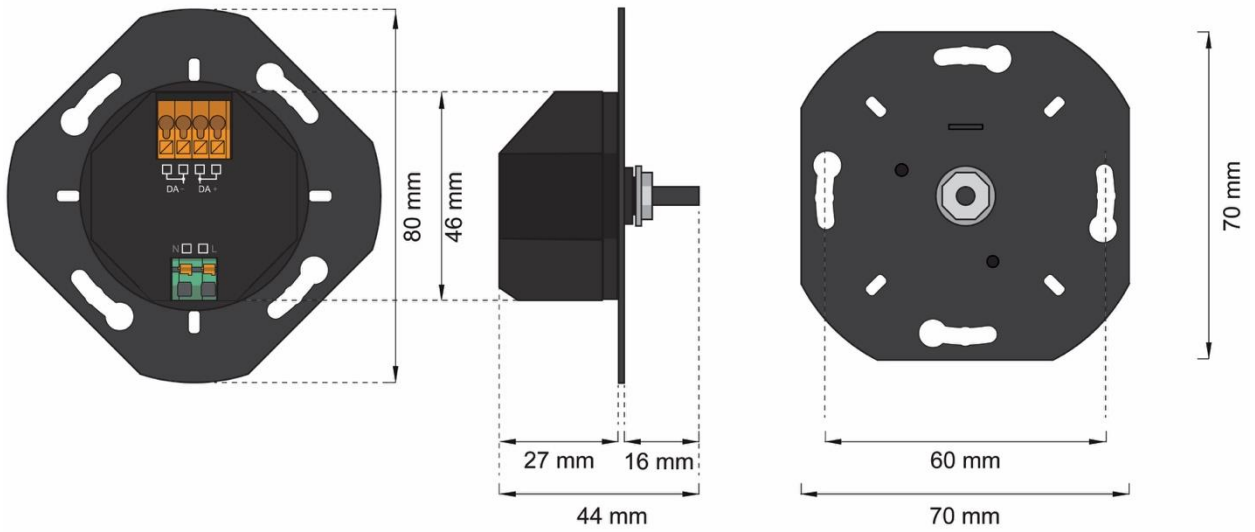
output type	DALI
markings	DA-, DA+
output voltage range	12Vdc.... 20,5 Vdc
guaranteed DALI supply current	70mA
max. DALI supply current	80mA
Open circuit proof	yes
Short circuit proof	yes

insulation data

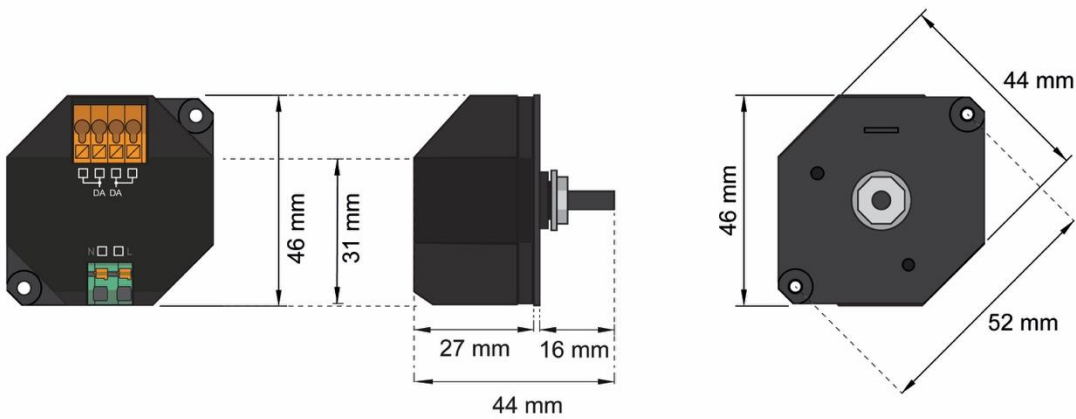
Impulse voltage category	II
Pollution degree	2
Rated insulation voltage	250V
Rated impulse withstanding voltage	4 kV
Insulation DALI / mains	reinforced isolation
Insulation test voltage DALI /mains	3000 V a.c.

general data:

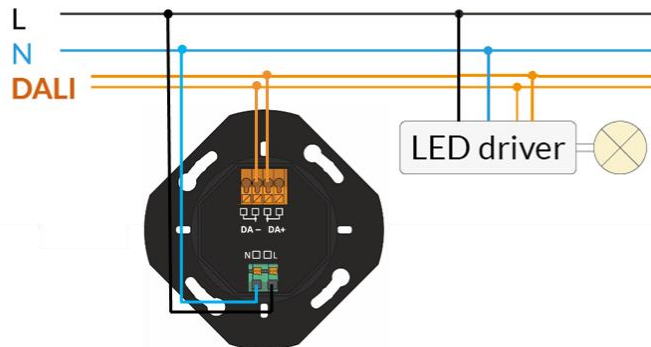
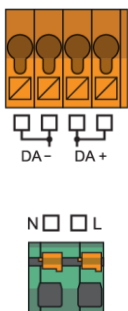
dimensions	70mm x 70mm x 60mm
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dimensions DALI ROT PS: 86459822-PS, 86459822-TW-PS, 86459822-RGB-PS, 86459822-RGBW-PS



dimensions DALI ROT PS CH: 86459822-CH-PS, 86459822-TW-CH-PS, 86459822-RGB-CH-PS, 86459822-RGBW-CH-PS




connection plan DALI ROT PS

example installation DALI ROT PS

Installation


- The DALI ROT is intended for mounting on a flush mounted box or on a cavity wall
- Subsequent assembly of the cover. The device is available with or without a cover and can be combined with covers of common manufacturers. The shaft diameter is 4 mm (or 6mm with adapter)
- The DALI ROT module is connected and supplied directly by the DALI-line (typ. current consumption: 1.6 mA). If no DALI ROT PS is used a general DALI bus power supply (e.g., DALI PS) is required.
- DALI ROT PS: If 2 or more bus power supplies are on the same DALI bus, they need to be connected with the same polarity! (connectors marked with DA+, DA-), see Figure below.


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

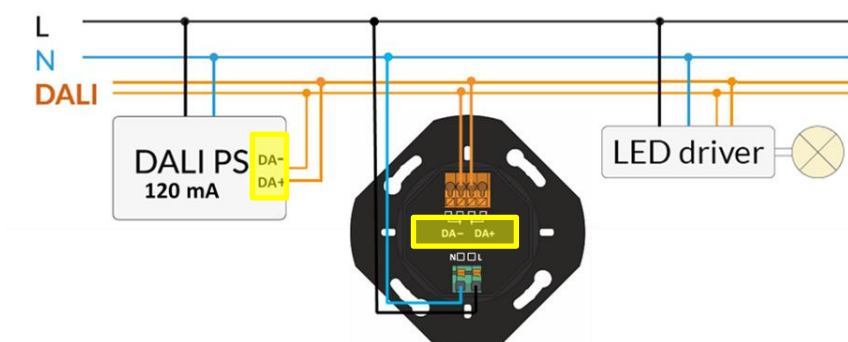
- DALI ROT (and ROT PS with no additional DALI PS): the connection to the DALI terminals can be made regardless of polarity. The bus input is protected against overvoltage (mains voltage).
- Multiple DALI ROT modules and DALI luminaires can be connected to a DALI-

line. DALI ROT modules controlling the same group are synchronized automatically. A changeover switch, cross or step relay circuit is not required.

- 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.

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



If **2 bus power supplies** are on the same DALI bus: connect with the same **polarity** (DA+, DA-)! - max total supply current on the bus: **250mA!**

Set Up

After installation, the device can be operated with the factory default settings. For simple installations, the basic setting is usually sufficient. In default mode (delivery state) the light is controlled broadcast, dimming and colour temperature/colour adjustments (depending on the ROT version) are supported.

Addressing and changes to the 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 ROT is automatically recognized by the DALI Cockpit during the addressing process and listed in the device overview.

Device localization and DALI address assignment is done during the addressing process, by pressing order of rotary knobs or even by the serial number shown on the housing.

Rotary Device Versions – Operating Modes

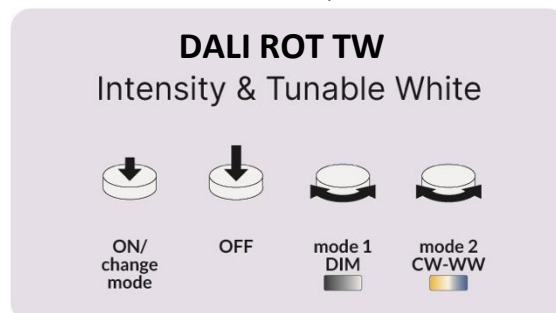
DALI ROT

Art. Nr.: 86459822 (-CH / -PS / -CH-PS)
 press: ON/OFF
 rotate: dimming



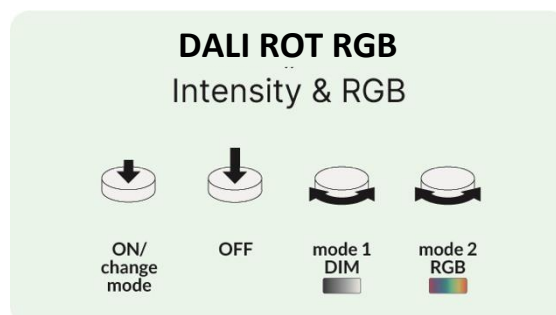
DALI ROT TW

Art. Nr.: 86459822- TW (-CH / -PS / -CH-PS)
 short press: ON/CHANGE MODE
 long press OFF
 mode 1 rotate: dimming
 mode 2 rotate: colour temperature



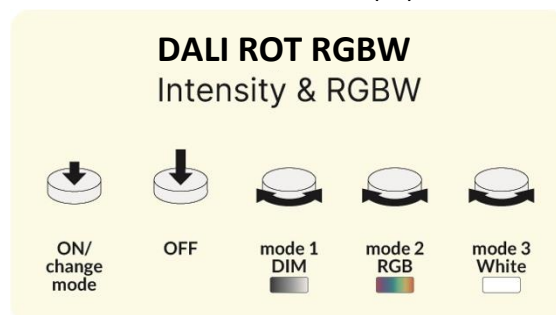
DALI ROT RGB

Art. Nr.: 86459822-RGB (-CH / -PS / -CH-PS)
 short press: ON/CHANGE MODE
 long press OFF
 mode 1 rotate: dimming
 mode 2 rotate: colour



DALI ROT RGBW

Art. Nr.: 86459822-RGBW (-CH / -PS / -CH-PS)
 short press: ON/CHANGE MODE
 long press OFF
 mode 1 rotate: dimming
 mode 2 rotate: colour (RGB)
 mode 3 rotate: white channel (W)



Details to Device Versions

DALI ROT – Intensity: Switch / Dim



PRESS: ON/OFF



pressing the rotary push button turns the respective luminaires on or off

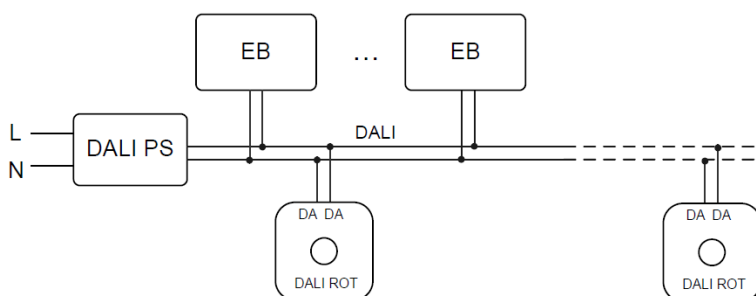


ROTATE: DIM



Turn clockwise to dim up or counter-clockwise to dim down the light (UP / DOWN DALI commands)

Application: switch and dim with DALI ROT module



DALI ROT TW – Intensity & Tunable White



Short press: ON/ change MODE



If the light is off: pressing the button will turn ON the light
If the light is on: the mode can be changed with a short press, i.e. the operator can select if rotating the knob is used for dimming or for changing the colour temperature of DALI-DT8 compatible luminaires (colour type Tc).
 After 10 seconds of operator inactivity the mode falls back to dimming automatically (mode 1).



Long press: OFF



With a long press the respective luminaires can be switched off



Mode 1 dim up / down



change brightness: turn clockwise to dim up or counter-clockwise to dim down the light (UP / DOWN DALI commands)

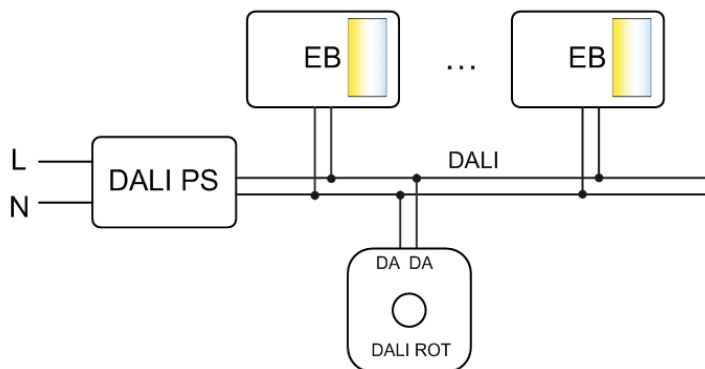


Mode 2 change colour temperature

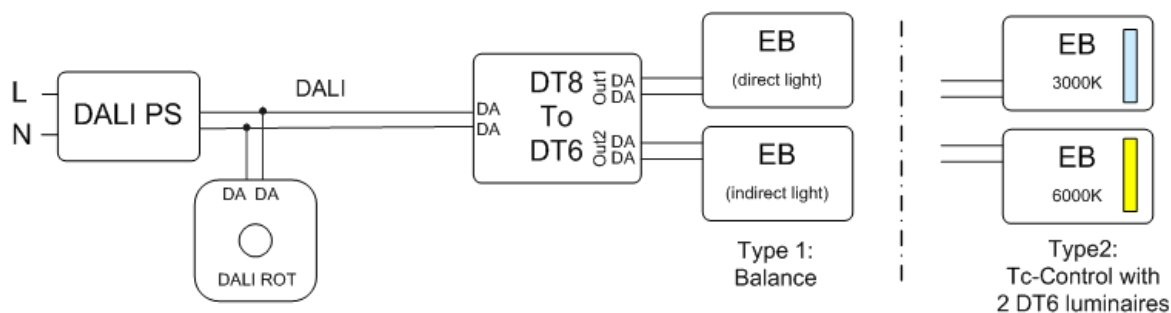


Change colour temperature: turn clockwise or counter-clockwise to change the colour temperature cooler or warmer respectively.

Application: tunable white control



DT8toDT6: With the help of a DT8toDT6-converter the colour temperature (balance) on conventionally DALI-controlled single luminaires (DT6) can be adjusted. Even the balance between direct and indirect can be adapted.



application: balance- and level control of direct and indirect lighting (type 1) or tunable white and level control of 2 conventional DT6-luminaires (type 2) with the help of a DT8toDT6 converter

Balance&Dim: In combination with Lunatone dimmers the operating mode Balance&Dim can be used. In this mode the brightness and colour temperature information are submitted to two separate DALI-addresses (using DALI standard commands only). This operating mode needs to be set via the DALI Cockpit Software, where also the correct addresses for the brightness channel and the colour temperature channel of the dimmer need to be entered. (address entry 1: brightness, address entry 2: balance)

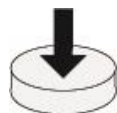
DALI ROT RGB – Intensity & RGB



**Short press: ON/
change MODE**



If the light is off: pressing the button will turn ON the light
If the light is on: the mode can be changed by a short press, i.e., the operator can select if rotating the knob is used for dimming or for changing the colour of DALI DT8 compliant RGB luminaires (colour type RGBWAF).
After 10 seconds of operator inactivity there the mode falls back to dimming automatically (mode 1).



Long press: OFF



With a long press the respective luminaires can be switched off



**Mode 1
dim up / down**



change brightness: turn clockwise to dim up or counter-clockwise to dim down the light (UP /DOWN DALI commands)

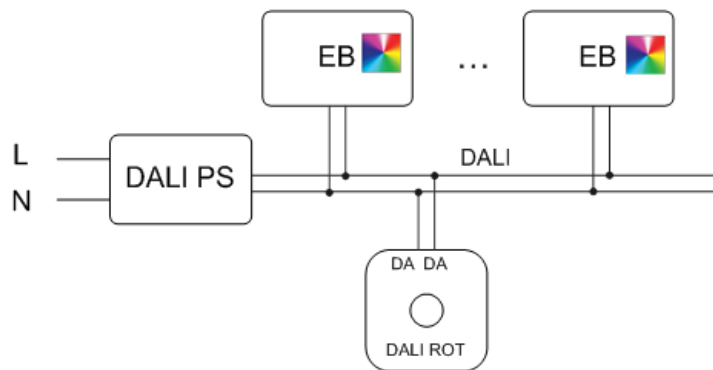


**Mode 2
change colour**



Change the colour value of DT8 compatible RGB-luminaires (Colour-Type RGB) by turning clockwise or counter-clockwise.

Application: colour control RGB + dimming



Colour&Dim: In combination with Lunatone dimmers the operating mode Colour&Dim can be used. In this mode the brightness and colour information are submitted to two separate DALI-addresses (using DALI standard commands only). This operating mode needs to be set via the DALI Cockpit Software where also the correct addresses for the brightness channel and the colour channel of the dimmer need to be entered.

(address entry 1: brightness, address entry 2: colour)

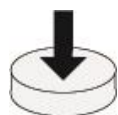
DALI ROT RGBW – Intensity & RGBW



**Short press: ON/
change MODE**



If the light is off pressing the button will turn ON the light.
If the light is on: the mode can be changed by a short press, i.e. the operator can select if rotating the knob is used for dimming, for changing the colour or for changing the white component of DALI DT8 compliant RGBW luminaires (colour type RGBWAF).
After 10 seconds of operator inactivity there the mode falls back to dimming automatically (mode 1).



Long press: OFF



with a long press the respective luminaires can be switched off



**Mode 1
dim up/down**



Change brightness: turn clockwise to dim up or counter-clockwise to dim down the light (UP / DOWN DALI commands)



**Mode 2
change colour**



Change the colour value of DT8 compatible RGBW-luminaires (Colour-Type RGBWAF) by turning clockwise or counter-clockwise

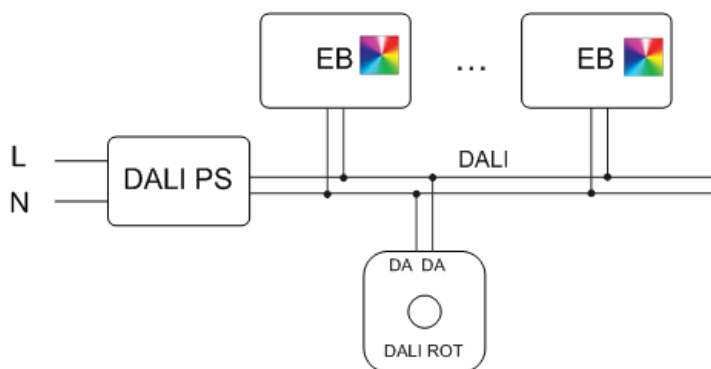


**Mode 2
change white**



Reduce or increase the white channel brightness of DT8 compatible RGBW-luminaires (Colour-Type RGBWAF) value by turning clockwise or counter-clockwise respectively

application: colour control RGB+W and dimming



Lunatone RGBW-LED-dimmer provide various output modes, hence intensity of RGB and white component can be controlled together or separated.

Colour&Dim: In combination with Lunatone dimmers the operating mode Colour&Dim can be used. In this mode the brightness, colour, and white channel information are submitted to three separate DALI-addresses (using DALI standard commands only). This operating mode needs to be set via the DALI Cockpit Software where also the correct addresses for the brightness channel, the colour channel and the white channel of the dimmer need to be entered.
(address entry 1: brightness, address entry 2: colour, address entry 3: white)

DALI Cockpit Settings

Addressing and device configurations can be made with the DALI Cockpit Software tool and a suitable interface module (DALI USB, DALI 4Net, DALI SCI RS232).

With the selection of the device in the component tree, the DALI ROT settings page is shown. The settings page is split in two tabs: one for general settings and one for application settings, see figures on page 14.

Destination address / effective range

defines which devices are affected by the commands sent. Possible destination addresses:

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

For the DALI ROT and DALI ROT TW up to 4 different target addresses can be defined for each button input. When the button is pressed the target addresses 1 to 4 will be processed sequentially.

For the DALI ROT RGB and RGBW only one address can be set.

In the operating modes Balance&Dim / Colour&Dim the first address is used for brightness, the second for colour temperature / colour and the third for the white channel if applicable.

Commands

Which commands are sent when pressing the pushbutton can be defined with the OnCmd and OffCmd.

On Commands (OnCmd):

Command	Description
DIRECT ARC POWER	specify the light level in %
RECALL MAX	Recalls light level MAX
RECALL MIN	Recalls light level MIN
GOTO LAST ACTIVE LEVEL	command for DALI2 gears – recalls last active light level
GO TO SCENE _	Recalls respective scene (0-15)

Off Commands (OffCmd)

Command	Description
DIRECT ARC POWER 0	specification of the light level as 0%
OFF	Turns light off
GO TO SCENE X	Recalls respective scene (0-15)

Factory Default Settings

The DALI ROT is delivered with these settings:

Destination: Broadcast

On-Command: DAP 100%

Off-Command: DAP 0%



Recommendation for Dimmers: for optimal dimming behaviour and adequate response time a fade-rate of 63.3 steps per second is recommended for a dimming range for 0.1-100% (or 44.7 steps/s for 1%-100%)

The device-Info block contains general information such as the device name, article number, serial number, firmware version, DALI address, etc.

1. tab for general settings
2. tab for configuration of the application

activation/deactivation of the device

Assignment of the device to the 32 control device groups (attention: these are not the luminaire/ gear groups)

DALI Cockpit Tab General Settings

Change between Operating Mode:
> standard mode: DT8
> DT6: Balance&Dim / Colour&Dim

Effective Range: define which luminaires will be controlled

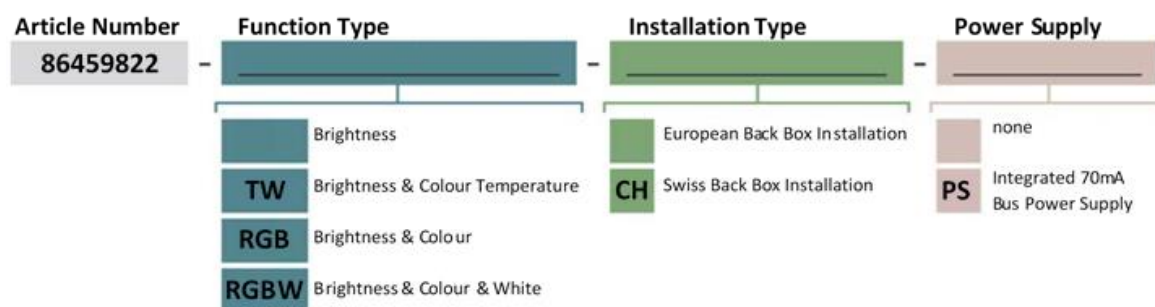
ON Commands: DAP, RECALL MAX, RECALL MIIN, GOTO SCENE X, GOTO LAST ACTIVE LEVEL

Off Commands: DAP0, OFF und GOTO SCENE X

activate/ deactivate "On with Dimming" Feature: Turns light ON with a right turn if the light status is currently OFF

DALI Cockpit Tab: Application Settings

Purchase Order Information



Versions without Bus Power supply

Art.Nr. 86459822: DALI ROT, rotary switch insert, for switching and dimming DALI systems

Art.Nr. 86459822-TW: DALI ROT TW, rotary switch insert, for switching, dimming and colour temperature adjustment in DALI systems

Art.Nr. 86459822-RGB: DALI ROT RGB, rotary switch insert, for switching, dimming and adjusting colour in DALI systems

Art.Nr. 86459822-RGBW: DALI ROT RGB, rotary switch insert, for switching, dimming and adjusting colour and white in DALI systems

Art.Nr. 86459822-CH: DALI ROT, rotary switch insert, for switching and dimming DALI systems, suitable for back boxes in Switzerland (Feller)

Art.Nr. 86459822-TW-CH: DALI ROT TW CH, rotary switch insert, for switching, dimming and colour temperature adjustment in DALI systems, suitable for back boxes in Switzerland (Feller)

Art.Nr. 86459822-RGB-CH: DALI ROT RGB CH, rotary switch insert, for switching, dimming and adjusting colour in DALI systems, suitable for back boxes in Switzerland (Feller)

Art.Nr. 86459822-RGBW-CH: DALI ROT RGBW CH, rotary switch insert, for switching, dimming and adjusting colour and white in DALI systems, suitable for back boxes in Switzerland (Feller)

Versions with Bus Power supply 70mA

Art.Nr. 86459822-PS: DALI ROT, rotary switch insert, for switching and dimming DALI systems, with bus power supply 70mA

Art.Nr. 86459822-TW-PS: DALI ROT TW, rotary switch insert, for switching, dimming and colour temperature adjustment in DALI systems, with bus power supply 70mA

Art.Nr. 86459822-RGB-PS: DALI ROT RGB, rotary switch insert, for switching, dimming and adjusting colour in DALI systems, with bus power supply 70mA

Art.Nr. 86459822-RGBW-PS: DALI ROT RGB, rotary switch insert, for switching, dimming and adjusting colour and white in DALI systems, with bus power supply 70mA

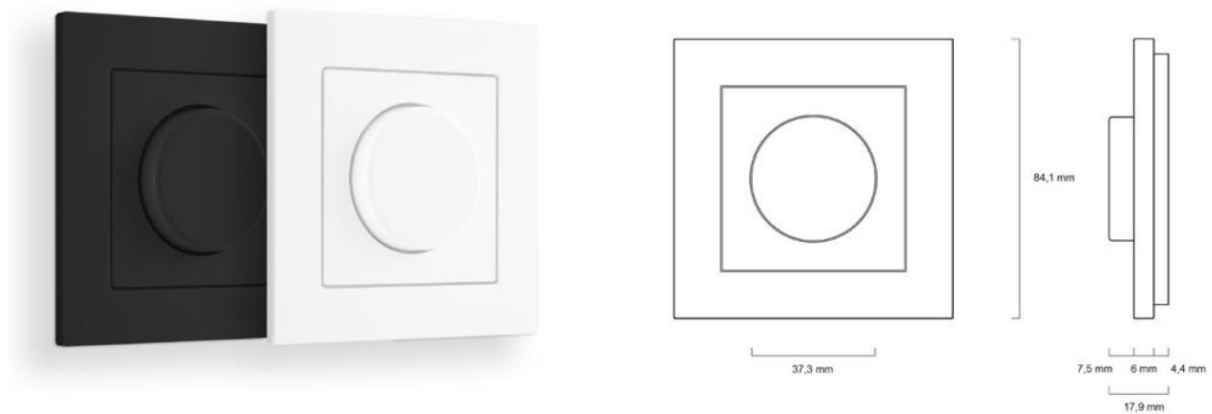
Art.Nr. 86459822-CH-PS: DALI ROT, rotary switch insert, for switching and dimming DALI systems, suitable for back boxes in Switzerland (Feller), with bus power supply 70mA.

Art.Nr. 86459822-TW-CH-PS: DALI ROT TW CH, rotary switch insert, for switching, dimming and colour temperature adjustment in DALI systems, suitable for back boxes in Switzerland (Feller), with bus power supply 70mA.

Art.Nr. 86459822-RGB-CH-PS: DALI ROT RGB CH, rotary switch insert, for switching, dimming and adjusting colour in DALI systems, suitable for back boxes in Switzerland (Feller), with bus power supply 70mA.

Art.Nr. 86459822-RGBW-CH-PS: DALI ROT RGBW CH, rotary switch insert, for switching, dimming and adjusting colour and white in DALI systems, suitable for back boxes in Switzerland (Feller), with bus power supply 70mA.

Accessory

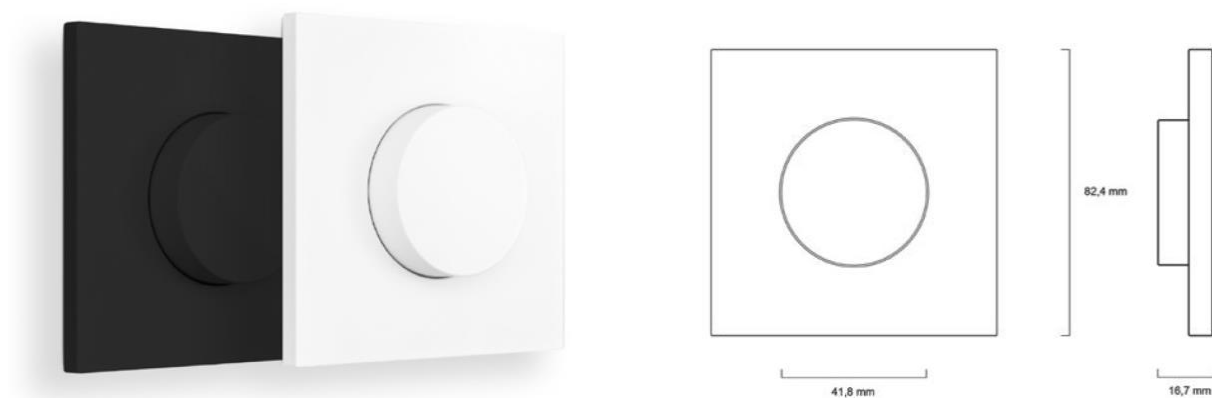


Art.Nr. 86459822-Z01: cover and rotary knob, alpine white, Jung Series A

Art.Nr. 86459822-Z02: cover and rotary knob, black, Jung Series A



Art.Nr. 86459822-Z03: Adapter 6mm



Art.Nr. 86459822-Z04: cover and rotary knob, white (RAL9016)

Art.Nr. 86459822-Z05: cover and rotary knob, black

Additional Information and Equipment

DALI-Cockpit – free configuration tool from Lunatone for DALI systems

<https://www.lunatone.com/en/product/dali-cockpit/>

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.