





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-RGB-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 DALIline.

- 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

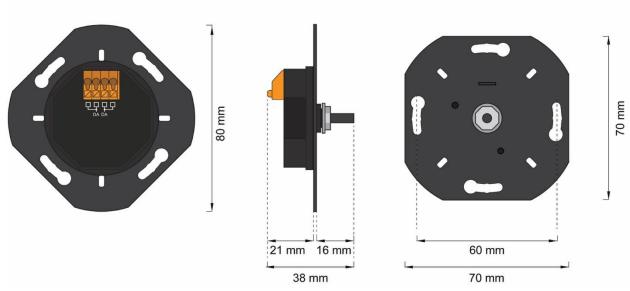




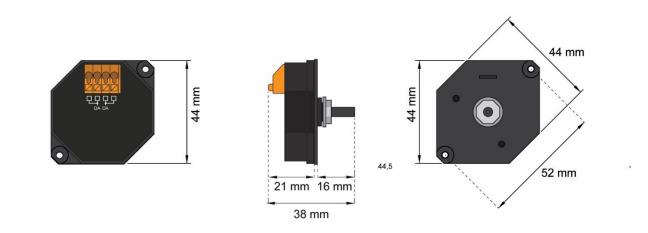


Specification, Characteristics

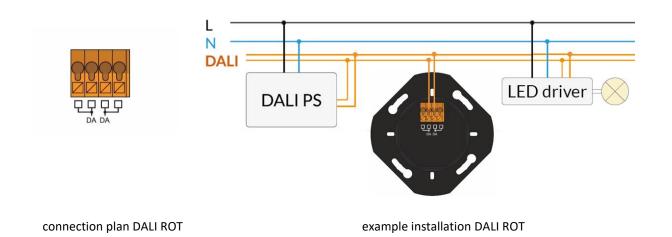
type	DALI ROT	DALI ROT TW	DALI ROT RGB	DALI ROT RGBW
article number	86459822	86459822-TW	86459822-RGB	86459822-RGBW
article number	86459822-CH	86459822-TW-CH	86459822-RGB-CH	86459822-RGBW-CH
DAVIS C				
DALI-interface, supply:		DAI	Leunnly	
input type			_I, supply	
Marking	DA, DA			
input voltage range	9,5V 22,5Vdc according to IEC62386			
typ. current consumption DALI	3.5 mA			
addresses for control gear	0			
addresses for control devices	1			
output	DALI			
environmental conditions:				
storing and transportation		200	C .75°C	
temperature		-20*	C +75°C	
operational ambient		-20°	C +75°C	
temperature				
rel. humidity, none condensing	15% 90%			
annerel data.				
general data:		70	70	
dimensions	70mm x 70mm x 38mm			
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 terr	minal connector	
wire size solid core	0,5 1,5 mm² (AWG20 AWG16)			
wire size fine core	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			
		· · ·	. , ,	
standards:				
DALI	IEC62386-101:2014 IEC62386-103:2014			
	EN 61547			
EMC	EN 50015 / IEC CISPR15			
safety	EN 61347-2-11			
	EN 61347-1			
markings	l		CE	



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



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

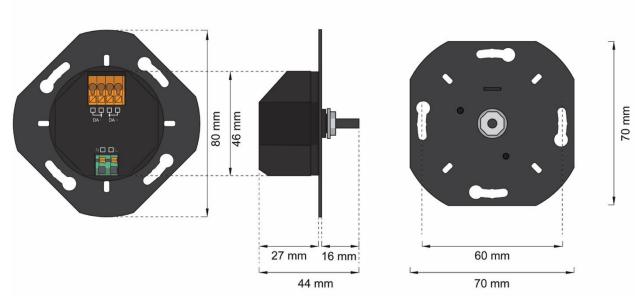




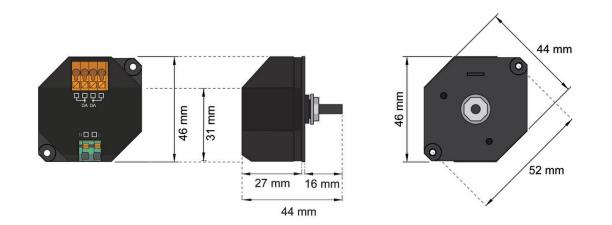
Specification, Characteristics – DALI ROT PS

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

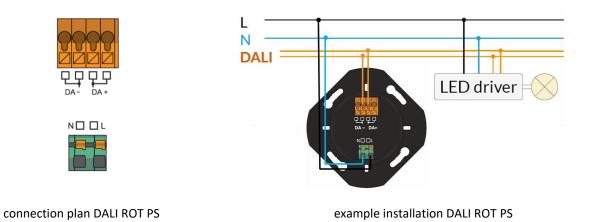
type	DALI ROT PS	DALI ROT TW PS	DALI ROT RGB PS	DALI ROT RGBW PS
article number	86459822-PS	86459822-TW-PS	86459822-RGB-PS	86459822-RGBW-PS
	86459822-CH-PS	86459822-TW-CH-PS	86459822-RGB-CH-PS	86459822-RGBW-CH-PS
input L,N				
input type	supply, mains-voltage			
markings	N, L			
input voltage range	230V AC			
max. input supply current	17 mA			
Input supply frequency	50Hz / 60Hz			
power consumption max.	2W			
start-up time	<250ms			
and the DA L DA				
output DA+, DA-	1		DALL	
output type	DALI			
output voltage range	DA-, DA+			
guaranteed DALI supply	12Vdc 20,5 Vdc			
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	3000 V a.c.			
/mains	3000 v a.c.			
general data:				
dimensions	70mm x 70mm x 44mm			



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



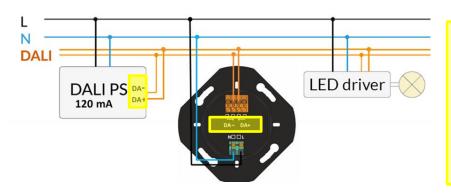
Installation

 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. 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)



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 <u>DALI Cockpit Software</u>, the PC must be connected to the DALI bus via a suitable interface module (<u>DALI-2 USB</u>; <u>DALI USB</u>, <u>DALI-2 WLAN</u>, <u>DALI-2 Display</u>, <u>DALI-2 IOT</u>, <u>DALI 4Net</u>, <u>DALI SCI RS232</u>). 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

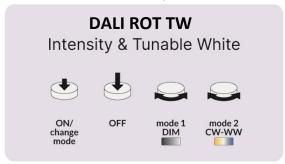
Art. Nr.: 86459822- TW (-CH / -PS / -CH-PS)

short press: ON/CHANGE MODE

long press OFF

mode 1 rotate: dimming

mode 2 rotate: colour temperature



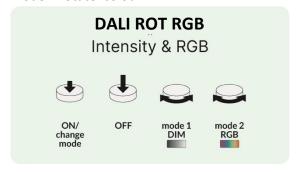
DALI ROT RGB

Art. Nr.: 86459822-RGB (-CH / -PS / -CH-PS)

short press: ON/CHANGE MODE

long press OFF

mode 1 rotate: dimming mode 2 rotate: colour



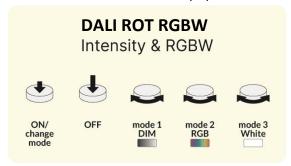
DALI ROT RGBW

Art. Nr.: 86459822-RGBW (-CH / -PS / -CH-PS)

short press: ON/CHANGE MODE

long press OFF

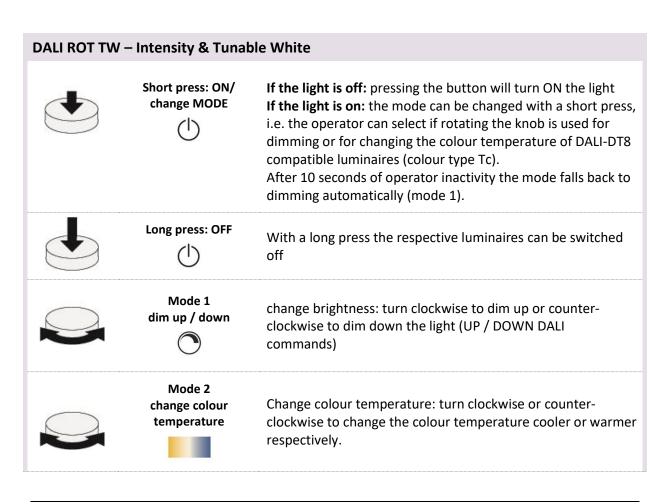
mode 1 rotate: dimming mode 2 rotate: colour (RGB) mode 3 rotate: white channel (W)



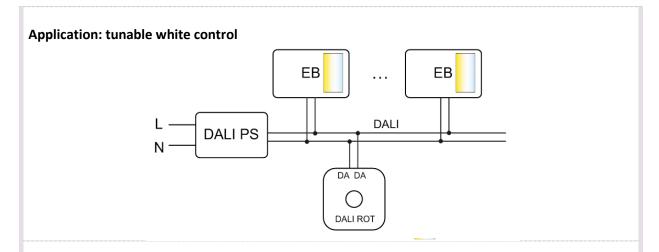


Details to Device Versions

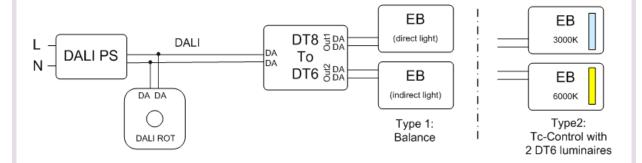
DALI ROT - Intensity: Switch / Dim PRESS: ON/OFF pressing the rotary push button turns the respective luminaires on or off **ROTATE: DIM** Turn clockwise to dim up or counter-clockwise to dim down the light (UP / DOWN DALI commands) Application: switch and dim with DALI ROT module EΒ EΒ **DALIPS** DA DA DA DA () \bigcirc DALI ROT DALI ROT







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)

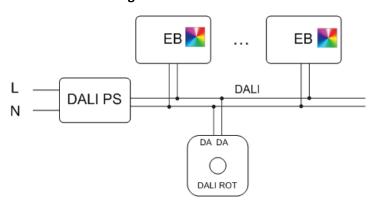


Mode 2 change colour



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



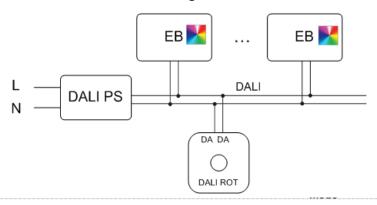
Change the colour value of DT8 compatible RGBW-luminaires (Colour-Type RGBWAF) by turning clockwise or counter-clockwise



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



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)

Lunatone RGBW dimmers in Colour&Dim mode only provide an address for brightness and an address for colour. To control the white channel separately via Colour&Dim, an additional dimmer and thus DALI address for the white channel must be used.



DALI Cockpit Settings

Addressing and device configurations can be made with the DALI Cockpit Software and a suitable interface module (DALI-2 USB; DALI USB, DALI-2 WLAN, DALI-2 Display, DALI-2 IoT, 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. 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	
	specify the light level in	
DIRECT ARC POWER	%	
RECALL MAX	Recalls light level MAX	
RECALL MIN	Recalls light level MIN	
	command for DALI2	
GOTO LAST ACTIVE	gears – recalls last	
LEVEL	active light level	
	Recalls respective scene	
GO TO SCENE _	(0-15)	

Off Commands (OffCmd)

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

Factory Default Settings

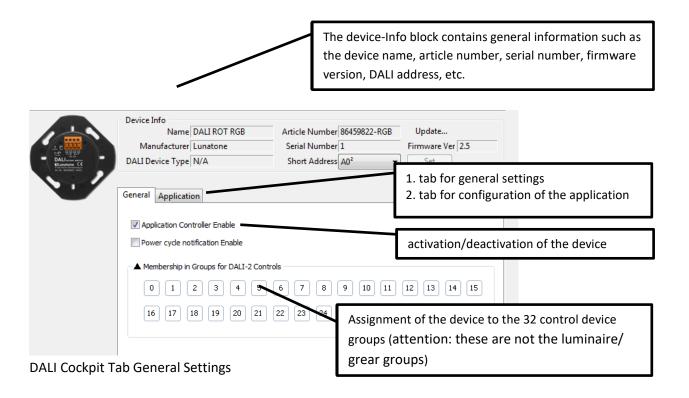
The DALI ROT is delivered with these settings:

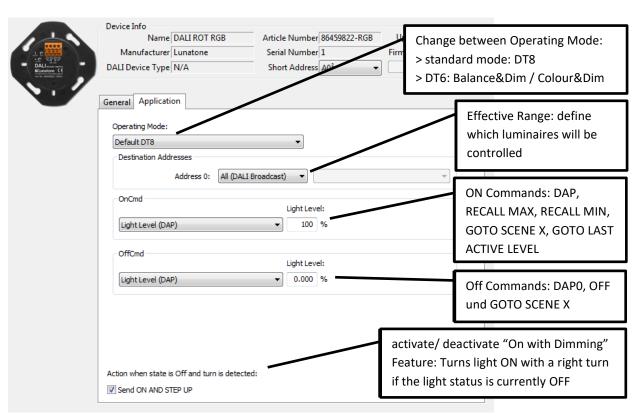
Destination: Broadcast On-Command: DAP 100% Off-Command: DAP 0%



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%)



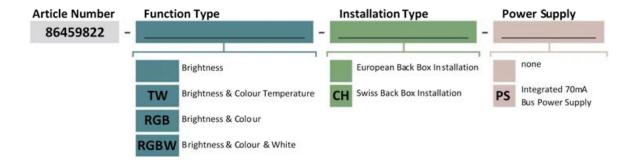




DALI Cockpit Tab: Application Settings



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.

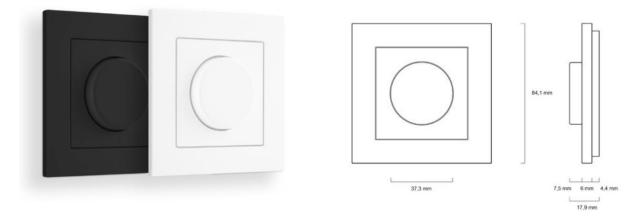
Art.Nr. 86459822-TW-CH-PS: DALI ROT TW CH, rotary switch insert, for switching, dimming and colour temperature adjustment in DALI systems, suitable for back boxes in Switzerland (Feller), with bus power supply 70mA.

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.



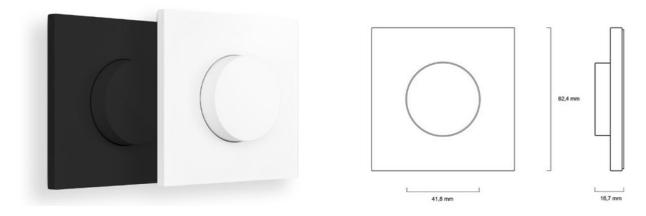
Accessory



Art.Nr. 86459822-Z01: cover and rotary knob, alpine white, Jung Series A – discontinued model **Art.Nr. 86459822-Z02:** cover and rotary knob, black, Jung Series A- discontinued model



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 – DALI system configuration tool, free when using a Lunatone interface device 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

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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.