

## wDALI Remote

### Datasheet

#### DALI RF Remote Control

Wireless DALI control unit with 12 programmable momentary switches



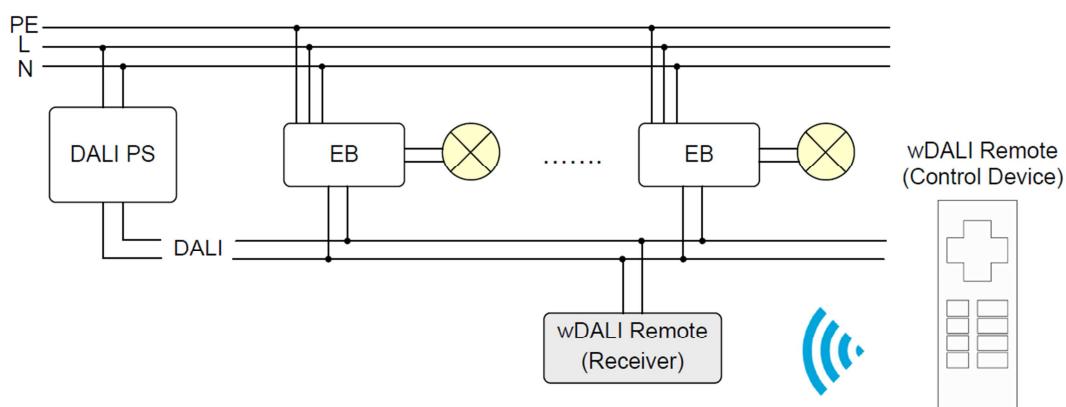
Art. Nr. 86459534-W (white)

Art. Nr. 86459534-B (black)

# wDALI Remote DALI RF Remote Control

## Overview

- DALI control module with 12 pushbuttons
- The wDALI Remote can control a DALI circuit without physical connection between DALI circuit and the control device
- The wDALI Remote consist of two components - the user interface which can be placed anywhere (transmitter) and a transceiver, which has to be connected to the DALI signal line
- The wDALI Remote can control DALI systems without any configuration effort by using the factory settings.
- 2 default settings available.
- Configuration via DALI line and the free software package „DALI-Cockpit“
- Destination address, switching mode and DALI-command can be assigned to each pushbutton.
- Individual addresses (0-63), group addresses (0-15) or broadcast can be set as destination address.
- Various switching modes (short, long press; toggle; etc.) can be assigned to each pushbutton.
- The following functions are available: up, down, off, recall min/max, goto scene 1-16, direct arc power in % as well as macros.
- DALI DT8 support for adjustable white luminaires with the help of special macros.
- Memory function for brightness realized with specific macros.
- The wDALI Remote also has an adjustable „power-up“-function. In other words a user-defined command can be sent on power up (e.g. after power-failure).
- Multiple wDALI Remotes can be used on the same DALI signal line.
- The transmitter part (input device) of the wDALI Remote is designed as a remote control and can be placed anywhere in the radio receiver range (up to 300m).
- The transceiver part of the wDALI Remote must not be connected to the mains. It is supplied directly via the DALI signal line.



typical installation

## Spezifikation, Kenndaten

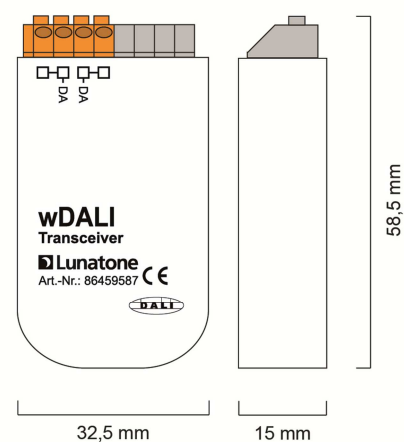
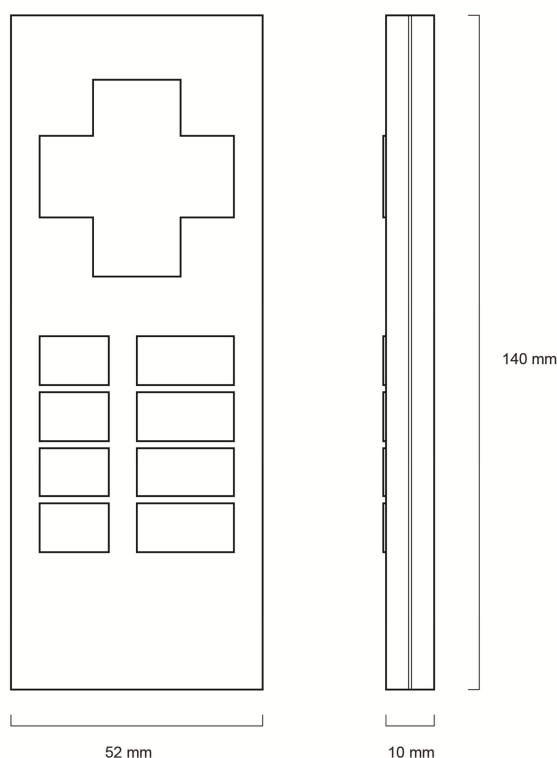
type	wDALI-Remote
article number	86459534-W / 86459534-B
colour	white / black
supply	via DALI-line
typ. current consumption	3,8 mA
output	DALI
function	programmable
frequency range	2,4Ghz
range	up to 300m
geometry input device (L/B/D)	140mm / 52mm / 10mm
estimated battery lifetime	6years
geometry receiver (L/W/H)	59mm / 33mm / 15mm
temperature	-10°C bis +50°C
protection class	IP20
Connecting wire cross section	0.5-1.5 mm <sup>2</sup>

press button	duration	
definition	min	max
brief	40 ms	500 ms
long	>500 ms	

definition depress time

factory settings 1:  
Switch&Dim

factory settings 2:  
Switch&Dim, Colour Temp Control



geometry

## Installation

The transceiver of the wDALI Remote is connected to the DALI-line and powered directly via the DALI signal line. A typical value of the DALI Switch current consumption is 3,8mA. For the DALI bus supply a DALI PS should be used.

The connection to the DALI-line is polarity free and protected against overvoltage of up to 270Vac.

The remote control (transmitter part) can only be used in the range of the wireless connection. The range is depending on the structural conditions, outdoors it is up to 300m.

## Addressing and Configuration, Factory Settings

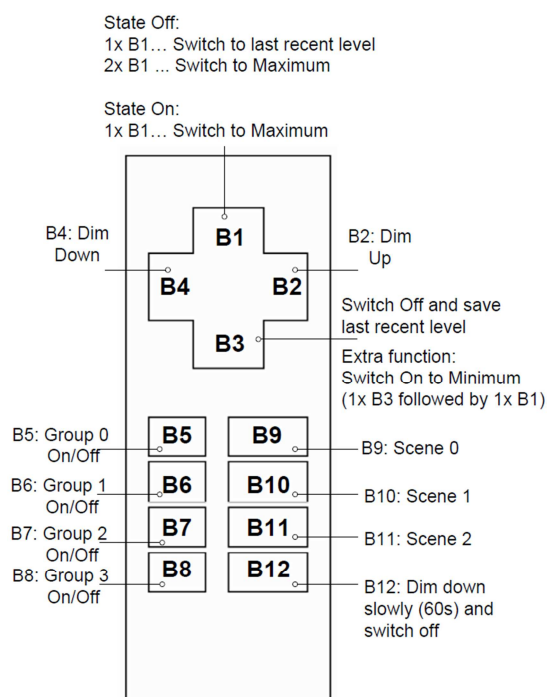
With the help of a DALI-USB interface the DALI-Cockpit software tool can communicate with the wDALI Remote. This way the desired functionality can be configured easily on PC.

During the addressing procedure the DALI-Cockpit software will request pressing a pushbutton on each used wDALI Remote. As a result the DALI-Cockpit will automatically detect and number all modules. If there are more wDALI Remotes on a DALI-line the software will list and number them.

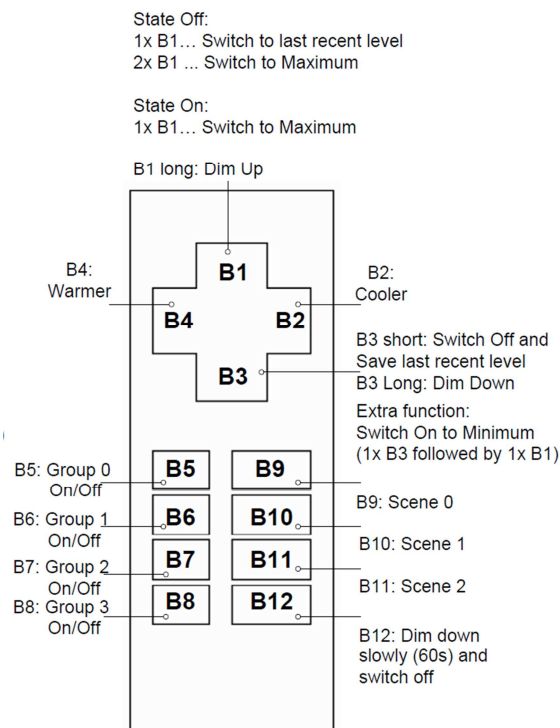
The DALI-Cockpit software is a free configuration tool for DALI systems. Hence standard DALI ballasts can be addressed and configured as well as the wDALI Remote. DALI-Cockpit and DALI-USB Interface are only required for configuration and can be removed after setup (see typical installation drawing).

For the most common applications a PC-configuration is not needed. Preset 1 (Factory Default) is for Switching and Dimming. Another Preset can be selected with the help of the DALI-Cockpit. Preset2 can be used for controlling DT8 adjustable white DALI-ballasts. The two possible settings and commands are shown in the diagram. All commands are sent to the entire DALI circuit. (Broadcast)

### Preset 1: Factory Settings



### Preset 2:



## Adjustable Functions

With the help of the DALI-Cockpit the wDALI Remote can be configured. Any of the 12 pushbutton can be assigned with DALI-commands which will be sent to the assigned target addresses or groups when pressed.

For each application a high level on flexibility and individualism is offered due to the parameters available. Switching mode,

destination addresses and DALI commands belong to the settings for a momentary switch. By means of the switching mode different actions for brief and long depress time can be defined for the momentary switches for miscellaneous applications. The functions vary from simple push buttons or toggle push buttons via lighting based push button dimming keys to standard stairwell function with configurable delay time. A complete overview is given in the table below.

	Funktion	Aktion	Beschreibung
1	Taster	kurz/lang: 1xBefehl X	bei kurzer/ langer Betätigung des Tasters wird einmal Befehl X ausgegeben
2	Taster	kurz: 1xBefehl X lang: 1x Befehl X, dann 1xBefehl Y	bei kurzer Betätigung des Tasters wird einmal Befehl X ausgegeben bei langer Betätigung des Tasters wird einmal Befehl X und dann einmal Befehl Y ausgegeben
3	Taster	kurz: 1xBefehl X lang: 1xBefehl X dann wiederholt Befehl Y	bei kurzer Betätigung des Tasters wird einmal Befehl X ausgegeben bei langer Betätigung des Tasters wird einmal Befehl X und danach wiederholt der Befehl Y ausgegeben
4	Toggletaster	kurz: Wechsel zwischen Befehl X und Y	Abwechselnd werden Befehl X und Befehl Y gesendet
5	Wechseltaster	Kurz: Befehl X oder Y abhängig vom Beleuchtungszustand	In Abhängigkeit des Beleuchtungszustands wird entweder Befehl X oder Befehl Y ausgegeben.
6	Dimmtaster	kurz: Befehl X oder Befehl Y lang: ON AND STEP UP und wiederhold UP/DOWN	Abhängig vom Beleuchtungszustand werden Befehl X oder Y gesendet Bei langem Tastendruck wird mit ON AND STEP UP gestartet und danach abhängig vom Beleuchtungszustand mit UP oder DOWN gedimmt
9	Treppenhaus	Befehl X, nach Nachlaufzeit Befehl Y	Beim Betätigen des Tasters wird der Befehl X ausgegeben und die Nachlaufzeit startet. Nach Ablauf wird Befehl Y ausgegeben
10	Taster	Kurz: 1xBefehl X (nach auslassen) Lang: wiederholt Befehl Y	Nach einem kurzen Tastendruck (nach dem Auslassen) wird Befehl X gesendet, bei langem Tastendruck wird Befehl Y wiederholt ausgegeben.
11	Taster	Kurz: 1xBefehl X, dann wiederholt Befehl Y ohne delay	Nach einem kurzen Tastendruck (nach dem Auslassen) wird Befehl X gesendet und danach wiederholt Befehl Y (ohne Longpress-Delay)

In addition to the switching mode the reaction on a depress action has to be defined.

It is necessary to define the command receiver. It is possible to send to single

addresses, groups as well as broadcast. Each button can be assigned 4 target addresses.

In the next step the DALI commands have to be defined. The table below contains a summary of the available DALI commands.

command number	command name	function
-	DIRECT ARC POWER	direct arc power Level 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
4	STEP DOWN	decreases light level by one increment
5	RECALL MAX	recalls MAX value
6	RECALL MIN	recalls MIN value
7	STEP DOWN AND OFF	decreases light level by one increment, if value at MIN switch off
8	ON AND STEP UP	increases light level by one increment, if OFF switch on
16-31	GO TO SCENE	go to scene 0-15

As an alternative to the transmission of any single DALI command initiated by a depress action, it is possible to transmit a set of commands within a DALI-macro. This option can be used for either predefined processes (such as a scene sequencer) or any user-defined sequence of DALI-commands.

macro (required memory)	function
Go Home (2 Byte)	Light dims down to DAP 0 with predefined fade time, then fade time is set back to a programmable value
Sequential Scenes (3Byte)	Selectable scenes (or OFF) will be sent sequentially with each button press.
Dynamic Scenes (9 Byte)	Dynamic sequence of up to 4 scenes, fadetimes and delays, stops with next button press
DALI-Reset (1 Byte)	Sends DALI-Reset (address can be deleted optionally)
User defined Commands (5 Byte per cmd, 19 cmds max.)	A user defined macro file can be loaded
DT8 Cooler 3x (0 Byte)	Activates DT8 and sends STEP COOLER command 3x
DT8 Warmer 3x (0 Byte)	Activates DT8 and sends STEP WARMER command 3x

Switch On (3 Byte)	MEMORYFUNKTION recalls last used level, only works in combination with Switch Off macro
Switch Off (2 Byte)	MEMORYFUNKTION Stores the actual value in the ballast and switches off
Dim Up (after Switch Off) (2 Byte)	MEMORYFUNKTION Macro for dimming up if Switch Off Macro has been used before

For the push buttons 1-4 a macro memory of max 96 bytes is available. Those can be divided on commands X and Y. The sum of CmdX and CmdY macro memory may not exceed this value of 96 bytes.

For the push button group 5-8 and group 9-12 a total macro memory of max 192 bytes is available. Those can be divided on commands X and Y.

For more details on the selection of predefined macros and the ability to create custom macro files check the manual of the DALI-Cockpit configuration software.

Another configurable feature is the “power-up”-function. This is a user-defined reaction on a power up. The following options are available for the wDALI Remote:

- no action
- OFF
- go to scene 0-15

Um die Startupzeit der DALI-Betriebsgeräte bei Spannungswiederkehr zu berücksichtigen kann die Verzögerungszeit bis zum Start der Übermittlung des ausgewählten Befehls parametrisiert werden.

To take the startup-time of DALI-ballasts into account a delay time can be configured between power up and the start of transmission of the selected command.

Those ballasts usually have a POWER ON LEVEL for mains power up, but no predefined

dim level after bus voltage return. (SYSTEM FAILURE LEVEL in case of bus voltage loss). The wDALI Remote turns to the last set dim level at power up.

Based on the described configuration options the wDALI Remote enables comprehensive and flexible lighting control in a very simple manner.

## DALI Instruction Set

The wDALI Switch operates as control device on the DALI-line and transmits the predefined DALI-commands when a momentary switch is pressed. It is based on the standard for DALI Control Gears (IEC 62386-102). In addition to the DALI commands mentioned above the special command for writing the data transfer register (DTR) and command 47 (STORE DTR AS FADE RATE) are implemented. Furthermore the ACTIVATE command and the DT8-commands STEP COOLER and STEP WARMER are used for colour temperature control.

## Modes of Operation

The DALI Switch Cross offers 3 modes of operation. (firmware V1.5 or higher)

### Master Mode (Default)

In this operating mode the device works as DALI control device sending DALI commands to DALI ballasts, according to the configuration settings. When used in combination with a central system controller the direct master mode might not be suitable and should be changed to one of the other operating modes.

### Event Message Mode

If an event occurs at the input a command is sent to the target address as an event indicator, this happens within the scope of the proprietary protocol extension. This message contains information about the type of action (short push, long push, or the end of a long

push). Additionally the master-module can retrieve the origin of the event (switch number).

In this operating mode the wDALI Remote does not control DALI-loads.

### Slave Mode

The slave mode is a passive operating mode. The wDALI Remote is not automatically active, it only replies on request. For information retrieval a set of commands can be used, provided within the scope of the proprietary protocol extension. It is also possible to give the wDALI Remote an address and information can be retrieved via scene-retrieval.

The operating mode can be set within the DALI Cockpit.

## Additional Information and Equipment

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

<http://lunatone.at/en/downloads/Lunatone-DALI-Cockpit.zip>

Lunatone DALI products

<http://www.lunatone.at/en/>

Lunatone datasheets and manuals

<http://lunatone.at/en/downloads/>

## Contact

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