DALI **4Ch LED Dimmer CV**

Datasheet

Control Gear

4-channel LED Dimmer (CV, DT6)

Art. Nr. 89453835 (8A) Art. Nr. 86459560 (10A) Art. Nr. 89453832 (16A) Art. Nr. 89453832-HS (16A, DIN rail)

DALI-2

LED Ch2 Ch1 Ch4 Ch3

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DALI 4Ch LED Dimmer CV Control Gear

Overview

- 4 channel DALI LED-Dimmer
- suitable for constant voltage LEDmodules with operating voltages from 12V to 48V
- Operating Mode DT6: individual channel control via 4 DALI addresses
- Operating Mode Colour&Dim: control by 2 DALI-addresses, one for adjusting the light level and one for adjusting the colour
- SwitchDim2: 2 switch-inputs offer control of light level and colour without DALI
- dimming range 0.1%-100%
- adjustable PWM-frequency (122Hz/ 244Hz/ 488Hz/ 976Hz from FW version 4.6 on changed PWM frequencies: 250Hz / 500Hz / 1kHz)
- compact types for integration in luminaires, remote ceiling and DIN rail mounting

- supply voltage 12V to 48V DC (according to the operating voltage of the LED modules)
- type dependent max. input currents of 8A, 10A or 16A
- the maximum input current can be freely distributed between the channels (max. 10A per channel)
- low standby power consumption
- high efficiency
- configuration via PC-software DALI-Cockpit and DALI USB-interface
- user-friendly factory default settings

From FW Version 4.6 onward:

- DALI-2 compatible
- LED calibration for light adjustment
- Configurable RESET behaviour



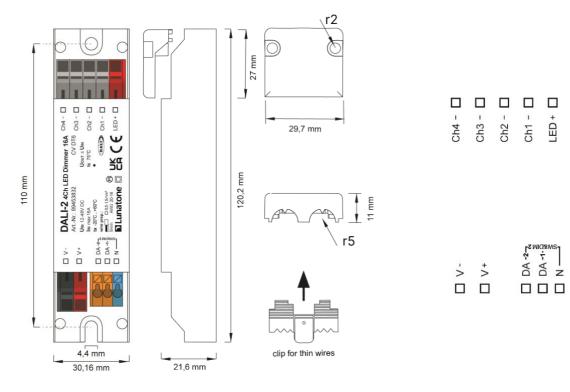
Specification, Characteristics

89453835	86459560	89453832	89453832-HS			
	12VDC-	-48VDC				
8A	10A	16A	16A			
DALI DALI Switch&Dim (48V) SwitchDim2 (mains voltage)						
2mA						
operating mode DT6: 4 operating mode Colour&Dim: 2						
~ 120mW						
,	DALI	8A 10A DALI itch&Dim (48V) Swi 2n operating m operating mode	8A 10A 16A DALI DALI itch&Dim (48V) SwitchDim2 (mains vo 2mA operating mode DT6: 4 operating mode Colour&Dim: 2			

technical data:

configurable: 0%-100% or last value

article number	89453835	86459560	89453832	89453832-HS				
storing- and transportation temperature	-20°C +75°C							
ambient temperature	-20°C to +60°C -20°C to +55°C							
expected lifetime (at Tc<=75°C)	>100000h							
protection class	IP20							
max. connecting wire cross section	1.5 mm ²	2.5 mm ² / DALI&SwD: 1.5 mm ² 2.5						
dimensions (LxWxH)	59x33x15 mm	120x30x22 mm 98x18x						
housing/mounting	back box	remote ceiling DIN r						



dimensions remote ceiling Version 16A Art.Nr.: 89453832 Version 10A Art.Nr.: 86459560

DA

DALI

GND

UIN max SW&D UIN max

4Ch LED Dimme

Lunatone

32,8 mm

DALD O

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В

Ch1 Ch2 Ch3 Ch3 Ch4

CV DT6

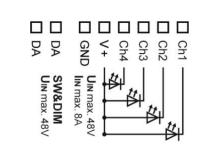
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dimensions back box

Version 8A Art.Nr.: 89453835

connection plan remote ceiling Version 16A Art.Nr.: 89453832 Version 10A Art.Nr.: 86459560



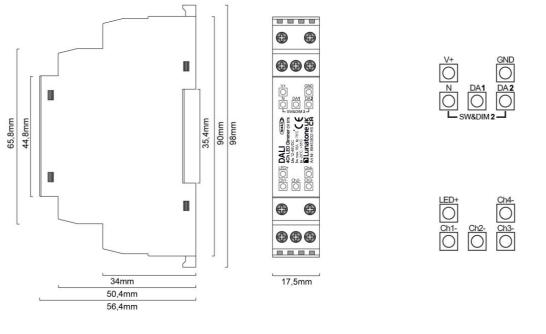
connection plan back box Version 8A Art.Nr.: 89453835



mm

59,7

15,2 mm

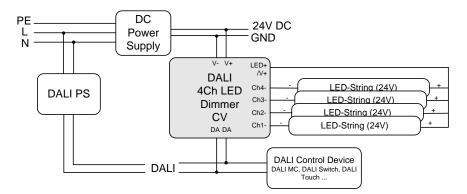


dimensions DIN rail Version 16A Art.Nr.: 89453832-HS

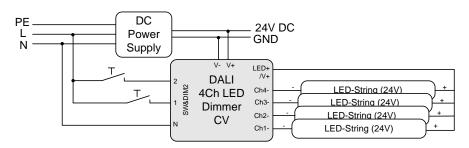
connection plan DIN rail Version 16A Art.Nr.: 89453832-HS

RECOMMENDATION: Care should be taken on keeping cable lengths between DC power supply and dimmer, as well as between dimmer and luminaires (Led-Strings), as short as possible. This kind of installation will minimize the influence of voltage drops.

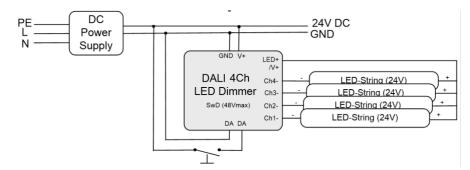
Control via DALI (all device versions):



Control via SwitchDim2 (Version 10A Art.Nr.: 86459560, Version 16A Art.Nr.: 89453832 Version 16A Art.Nr.: 89453832-HS):



Control via Switch&Dim max. 48V (Version 8A Art.Nr.: 89453835)



Operating Modes

The device offers two operating modes: DT6 and Colour&Dim.

DT6 (factory default)

In this operating mode each channel can be controlled by its own DALI address (Device Type 6).

Alternatively, the device can be controlled using 2 switch-inputs for mains voltage (SwitchDim2):

SwD1: light level short press: On/Off long press: dimming SwD2: scene selector (short press) scene pre-set see table 1, page 8.

From FW version 4.6 on Lunatone LED Dimmer are DALI 2 compatible and support DALI 2 commands.

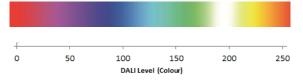
Colour&Dim

This operating mode is suitable for operating RGB—luminaires. Two DALI-addresses are used, the first address to control the light level and the second address to change the distribution on the output channels (e.g. for colour adjustments).

The Colour&Dim mode allows colour adjustments without affecting the light level and vice versa. For each channel DALIstandard commands like dim up/down and DAP are used. Thus, the device can be used with all common controls and gateways (e.g. KNX). The Colour&Dim mode provides an alternative to the DT8-RGBWAF device.

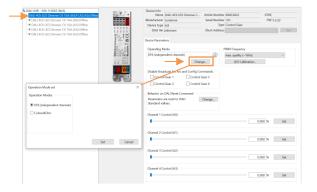
Can be operated via DALI or SwitchDim2:

DALI-address 1, SwD1: light level DALI-address 2, SwD2: colour



Selection of operating mode

With the PC-software tool DALI-Cockpit the operating mode can be easily set on the general settings page.



The operating mode can also be set with the DALI-command SET OPERATING MODE (IEC 62386-102 Ed.2). When changing the operating mode, the number of used DALI-addresses might change as well, which requires a new addressing process. In the DALI-Cockpit this address assignment is performed automatically.

Operating Mode:

Number	Operating Mode
0	DT6 (factory default)
0x90	DT6
0x93	Colour&Dim

Cockpit: General Settings

On the overview page, there are different control elements, depending on the operating mode (*DT6:* 4 sliders for the level of each channel, *Colour&Dim:* a slider for the light level and a slider for colour). Also, the following configuration options are available.

Overview operating mode DT6:

evice Parameters	
Operating Mode	PWM Frequency
DT6 (independent channels)	max. quality (~1kHz) ~
Change	LED Calibration
Disable Broadcast for Arc and Config Commands	
Control Gear 1 Control Gear 3	
Control Gear 2 Control Gear 4	
Behavior on DALI Reset Command	
Parameters are reset to DALI Change Standard vallues.	
Channel 1 Control (A0)	
-	0.000 % Set
Channel 2 Control (A1)	
1	0.000 % Set
Channel 3 Control (A2)	
	0.000 % Set
Channel 4 Control (A3)	
	0.000 % Set

Overview operating mode Colour&Dim:

Operating Mode			PWM Frequency			
Colour&Dim		(i)	max. quality (~1k	:Hz)		\sim
	Change		LED Calibra	ation		
Disable Broadcast for Are	and Config Comman	ds				
Control Gear 1						
Control Gear 2						
Behavior on DALI Reset (Command					
Parameters are reset to E Standard vallues.	Chan	ge				
Intensity Control (A0)						
				0.00	0 %	Set
Colour Control (A1)						
•				0.0	0 %	Set

The **PWM frequency** can be selected: 122Hz / 244Hz / 488Hz / 976Hz. From FW version 4.6 changed PWM frequencies: 250Hz / 500Hz / 1kHz.

The **broadcast control** can be deactivated for each channel individually.

Adjustable RESET behaviour:

From FW version 4.6 up the response to a DALI reset command is configurable. The following options are available:

- Ignore command: the DALI reset command does not trigger any changes to the device settings.
- DALI standard: the selected device settings are reset to the values defined in the DALI standard (see table 1 below second column: DALI standard values)

Calibration - light adjustment:

The dimming range extends from 0.1% to 100%. From FW version 4.6 on, it is possible to calibrate different light sources, with the option: LED calibration. For each channel, the MIN level (default: 0.1%) an intermediate value (default: 33%) and the MAX level (default: 100%) can be adjusted and matched between light sources.

To do this, set the desired level with the upper slider. Apply the value and start the fine adjustment by pressing the button next to it.

The appropriate fine adjustments can now be made with the calibration slider below.

See also Figure 1 on page 7.

	Device Info Name DALI 4Ch LED Dimmer C Article Number 89453832 GTIN
	Manufacturer Lunatone Serial Number 100 FW 4.6
	Device Type 6,8 Type Control Gear
	DALI Ver unknown Short Address Set
	Device Parameters
ALI-2	Operating Mode PWM Frequency
	DT6 (independent channels) (i) max. quality (~1kHz) ~
	Change LED Calibration
9-0-9	Disable Broadcast for Arc and Config Commands
	Control Gear 1 Control Gear 3
	Control Gear 2 Control Gear 4
	Behavior on DALI Reset Command
When activated the	
device does not react	Parameters are reset to DALI Change Standard vallues.
to broadcast Arc (DAP)	
or configuration	Channel 1 Control (A0)
commands.	0.000 % Set
	Channel 2 Control (A1)
	0.000 % Set
	Channel & Control (A2)
Setting the light	0.000 % Set
value to be	
calibrated	Channel 4 Control (A3)
cambrated	0.000 Set
LED Calibration	X Relations DAV Part Comment
Set the light	Benavior on DALI Reset Command
value and start Min Level adjustment	12 Channel 3 Channel 4
the MIN Level	0.100 % on DALI Reset command: DALI Standard
adjustment. Calibration	Valid for (white balance) Scene Levels SEarle Time / Fade Rate
33% Level adjustmen 33% Level	Image: Second Levels Image: Second Levels Image: Second Levels Ima
Fine	MIN Level MAX Level Actual Level PowerOnLevel System Failure Level
adjustment of Max Level adjustment	nt 100 %
light value -	
direct feedback	
for comparison	Set Cancel
between lights	
between lights	Close

Figure 1 Cockpit Overview page - LED calibration and behaviour on DALI Reset Command

Additional Settings

Besides the settings on the general page each channel can be selected separately in the component tree for individual configuration.

Figure 2 on page 8 shows the available settings for each channel (these are the same for all operating modes). For each address: the group membership, scene values and DALIparameters can be set. In Colour&Dim operating mode, channel 2 sets colours.

Component Tree:



ADALI USB - S/N 112663		Device Info			-			eye					
E DALI 4Ch LED Dimmer CV 16A (A0,A1,A2,A3)	0-0-0		DALI 4Ch LEI	D Dimmer				32			STIN		
PALI 4Ch LED Dimmer CV 16A (A0)		Manufacturer			Serial N			20101			FW 5.2	.22	
OALI 4Ch LED Dimmer CV 16A (A1) OALI 4Ch LED Dimmer CV 16A (A2)		Device Type					Control					1.	
DALI 4Ch LED Dimmer CV 16A (A2) DALI 4Ch LED Dimmer CV 16A (A3)	8888	DALI Ver u	Inknown		Short A	ddress	(A0) DAI	I 4Ch LEI	D Dimm	her CV	16A ·	 Set 	1
• DAG 4GI LED DINING CY TOA (AS)		Device Parameter	ers										
	-2 4Ch	Group memb	bership										
	Addi-2 4ch t Martine 2 4ch t M								-	-	àn c	-	
	5 5 5 5 Z	0 1	2 3	4 5	6 7	8	9 10	11	12	13	14 1	.5	
		Scenes											
	0-0-0												
	99	0 1	00 %	4 💡	0.000 %	8	1	90 %	12	8	100	96	
	Actual Level:	and a second				9	-	-	13	- 1			
	ON (MAX) OFF		900 %		0.000 %		0.00	96	15		0.000		
	MIN	2 💡 0.0	00 %	6	100 %	10	1	90 %	14	3	100	96	
		3 🥛 0.0	00 %	7 🦞 🗍	100 %	11	1	0 %	15	8	0.000	96	
	Set Act Level		and the second	-				and a second					
		DALI Parame											
	0.000 %	MIN	Level								0.100	%	
	Set	MAX	(Level						-		100	96	
		Power On	Level						-		MASK	96	
		System Fail	Level						-	-	MASK	96	
			Time							-	1.0 s		
		Fade	e Rate							-	44.7 ste	ep/s	

Figure 2 Cockpit Settings for each channel / address

Factory Default Settings

Before the initial addressing is performed, the device can already be controlled by group addresses. This predefined grouping will be deleted during the first addressing procedure. Afterwards groups can be assigned as usual (e.g. with the DALI Cockpit). By sending a DALI-Reset command the device is set to DALI default values as defined in the standard.

The factory default values as well as DALI Standard values are summarised in table 1 below

	Factory default	DALI Standard
operating mode	DT6	
switchDim2	SwD1: light level	
	SwD2: scene selector	
Min Level	0.1%	0.1%
Max Level	100%	100%
Power On Level	MASK (last value)	100%
System Failure Level	100%	100%
Fade Time	1s	None
Fade Rate	89.4 steps/s	44.7 steps/s
PWM-Frequency	122Hz or 1kHz for FW 4.6 and up	
Groups before initial addressing	G0 – channel1	None
	G1 – channel2	
	G2 – channel3	
	G3 – channel4	

Summary of the factory default settings (delivery state):

	Factory d	efault				DALI Standard
Scene values	Scene	Ch1	Ch2	Ch3	Ch4	all scenes: MASK
	0	100%	0%	0%	0%	
	1	0%	100%	0%	0%	
	2	0%	0%	100%	0%	
	3	0%	0%	0%	100%	
	4	0%	0%	100%	100%	
	5	0%	100%	0%	100%	
	6	100%	0%	0%	100%	
	7	100%	0%	100%	0%	
	8	100%	100%	0%	0%	
	9	0%	100%	100%	0%	
	10	100%	0%	100%	100%	
	11	100%	100%	0%	100%	
	12	100%	100%	100%	0%	
	13	0%	100%	100%	100%	
	14	100%	100%	100%	100%	
	15	0%	0%	0%	0%	
Behaviour at DALI RESET	set DALI St	andard val	ues, see	column 2		
command						

Table 1 factory default settings column 1, DALI Standard settings column 2

Purchase Order Information

Art.Nr. 89453835: 4-channel LED Dimmer, CV, max. input current 8A, 12V-48V DC, back box

Art.Nr. 86459560: 4-channel LED Dimmer, CV, max. input current 10A, 12V-48V DC, SwitchDim2, remote ceiling & integration in luminaires

Art.Nr. 89453832: 4-channel LED Dimmer, CV, max. input current 16A, 12V-48V DC, SwitchDim2, remote ceiling & integration in luminaires

Art.Nr. 89453832-HS: 4-channel LED Dimmer, CV, max. input current 16A, 12V-48V DC, SwitchDim2, din rail mounting

Additional Information and Equipment

Lunatone DALI Cockpit https://www.lunatone.com/en/product/dalicockpit/

Lunatone datasheets and manuals https://www.lunatone.com/en/downloads-a-z/

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



Disclaimer

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

The compatibility with other devices must be tested in advance to the installation.

Contact

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www.lunatone.com