Lunatone

DALI CDC

Datasheet

Circadian Daylight Control Device

DALI Control Device for automatic colour temperature (Tc) adjustment of tunable white luminaires

Art. Nr. 89453853
Art. Nr. 89453853-HS

DALI CDC Circadian Daylight Control Device

Overview

- Control device for DALI DT8 luminaires (colour mode Tc)
- biorhythmic time-adjusted colour temperature (Tc) reference value
- DALI real time clock
- daylight saving time (DST)
- configurable scene behaviour (firmware 1.5+)
- light level curve (firmware 2.0+)
- the time and the colour temperature characteristics over time can be configured with the help of the DALI Cockpit software tool
- The DALI CDC module is supplied directly via the DALI line, no additional power supply is required.
- A battery is included, the clock is set to local time (GMT+1) as factory default
- Simple installation due to DALI double-clamp connector
- Types for backbox installation and DIN rail mounting, suitable for installation in protection class II devices

Specification, Characteristics

type	**DALI CDC**	
article number	89453853	89453853-HS

DALI-Interface, supply: DA, DA	
input type	DALI, supply
marking terminals	DA, DA
input voltage range	9,5Vdc … 22,5Vdc (acc. to IEC62386)
max. current consumption DALI	5mA
max. power consumption	<100mW
number of DALI addresses	1

insulation data:	
impulse voltage category	II
pollution degree	2
rated insulation voltage	250V
insulation DALI / housing	reinforced isolation
Insulation test voltage DALI / housing	3000Vac

environmental conditions::	
storing and transportation temperature	-20°C … +75°C
operational ambient temperature	0°C … +50°C
rel. humidity, none condensing	15% … 90%

general data:

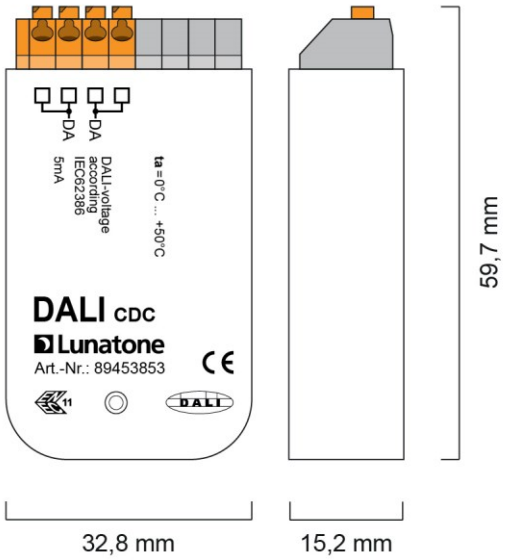
dimensions (l x w x h)	59mm x 33mm x 15mm	98mm x 17,5mm x 56mm
mounting	back box integration in class II devices	DIN rail mounting integration in class II devices
rated max. temperature tc	50°C	
expected life time @tc	50.000 h	
protection class	II in intended use	
protection degree housing	IP40	
protection degree terminals	IP20	
real time clock (accuracy)	quartz based (~20ppm)	

terminals:

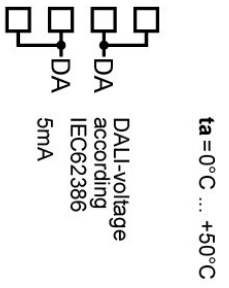
connection type	spring terminal connector	screw connector
wire size solid core	0,5 … 1,5 mm^2 (AWG20 … AWG16)	0,5 … 2,5 mm^2 (AWG20 … AWG14)
wire size fine wired	0,5 … 1,5 mm^2 (AWG20 …AWG16)	0,5 … 2,5 mm^2 (AWG20 …AWG14)
wire size using wire end ferrule	0,25 … 1 mm^2	0,25 … 1,5 mm^2
stripping length	8,5 … 9,5 mm / 0,33 … 0,37 inch	7 mm / 0,27 inch
locking torque	-	0,5Nm
release of wire	push button	open screw

standards:

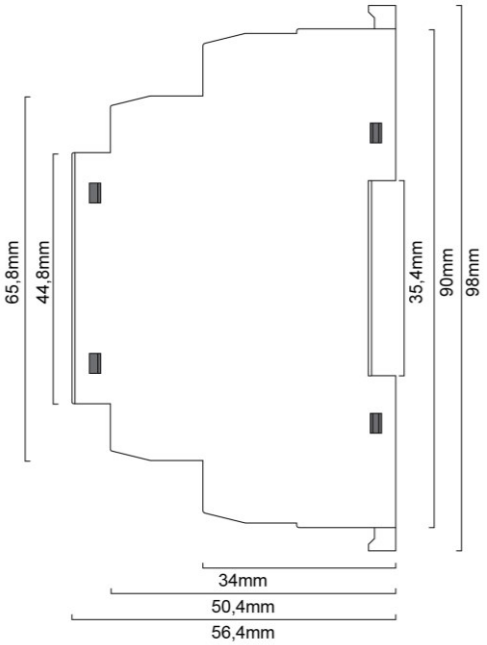
EMC	EN 61547 EN 50015 / IEC CISPR15	
safety	EN 61347-2-11 EN 61347-1	
markings	ENEC-11, CE	CE



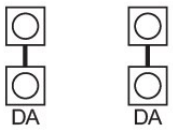
dimensions



connectors



dimensions HS-type



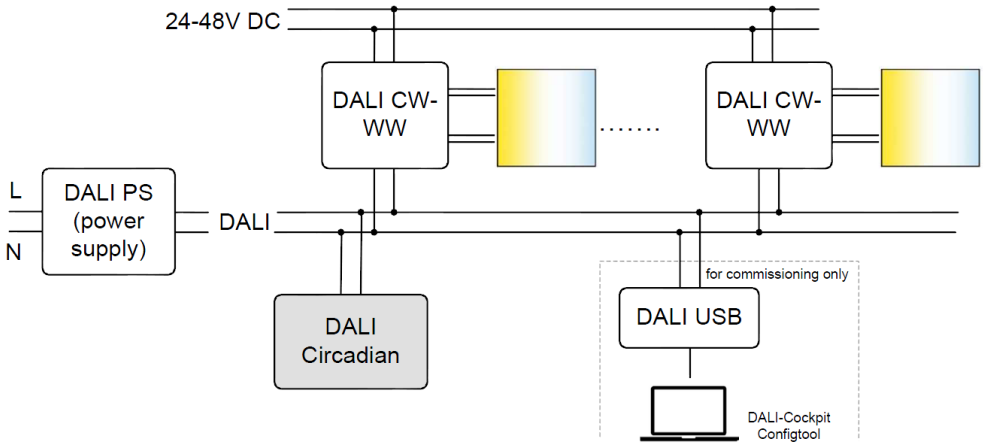
connectors HS-type

Installation

- The DALI RTC Timer is intended for back box installation or integration in protection class II devices, the HS-type is suited for DIN rail mounting, ensure protection against electric shock by an appropriate enclosure
- Wiring as fixed installation in a dry and clean environment
- Installation only by qualified person when no voltage is applied
- Attend regulations regarding electrical installations of national authorities
- The DALI RTC Timer is powered by the DALI line (typical current consumption 5 mA), no separate power supply needed
- the connection to the DALI-line is polarity free
- DALI-line wiring with standard low voltage installation material
- The DALI-interface can handle mains voltage, protecting the device in case of wrong wiring
- Wiring topology of the DALI-line: Line, Tree, Star
- Connect only one wire on each terminal, if twin ferrules are used take care to the maximum wire size

HINT: The DALI-signal is not classified as SELV circuit. Therefore the standards for installation in low voltage system apply.

The voltage drop on the DALI-line shall not exceed 2V.



typical application

Commissioning

- After installation the DALI CDC is ready for use
- The configuration can be done with the help of the DALI-Cockpit software (interface module to DALI-line required, e.g. DALI USB, DALI SCI RS232, DALI4Net)
- The DALI CDC is automatically detected during the addressing procedure and is then shown in the component tree
- The device can be selected – date and time can be set and the daylight curve can be configured.

Function

The DALI CDC module sends the configured colour temperature value (Tc-value) to the set effective range once every minute. As effective range a single address, group address or broadcast can be used.

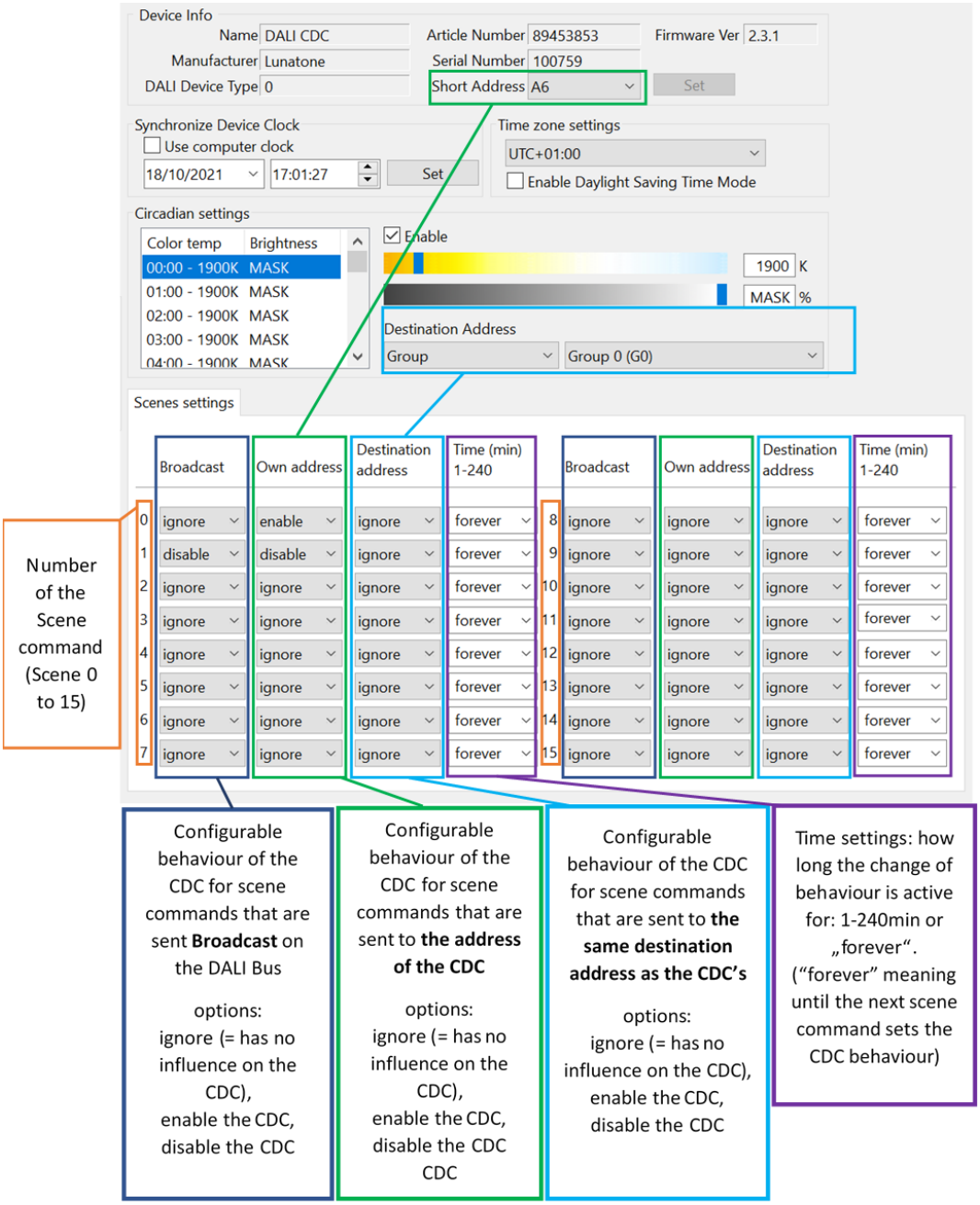
The colour temperature (Tc) characteristics are based on 24 support points (one for each hour). Between these support points the value is interpolated.

Colour Temperature table - Factory Default Settings:

Time	Tc[K]	Time	Tc[K]
0h	2700K	12h	5800K
1h	2700K	13h	5685K
2h	2700K	14h	5318K
3h	2700K	15h	4767K
4h	2700K	16h	4101K
5h	2700K	17h	3412K
6h	2700K	18h	2700K
7h	3412K	19h	2700K
8h	4101K	20h	2700K
9h	4767K	21h	2700K
10h	5318K	22h	2700K
11h	5685K	23h	2700K

Configurable Behaviour of the DALI CDC on Scene Commands

Firmware Version 1.5 and later, the reaction of the CDC to a GOTO SCENE X command on the DALI Bus can be configured. The DALI CDC can be activated and deactivated by a scene recall or the command can be ignored. This behaviour can be set up separately for scene commands sent directly to the device address, to the effective range or sent broadcast



Cockpit Settings , CDC behaviour on Scene Commands

Example 1.: *When manually controlling the effective range with a pushbutton, the CDC should be deactivated for 1 hour.*

Button settings: sends Scene 0 to the same effective range as CDC before sending other control commands.
CDC settings: for Scene 0

	Broadcast	Own address	Destination address	Time (min) 1-240
0	ignore	ignore	disable	60

Example 2.: *When manually controlling the light in general, the CDC should be deactivated until it is restarted manually.*
Button settings: Button 1: Scene 0 broadcast to control the light manually and deactivate the CDC - Button 2, scene 1 to the address of the CDC to activate it.
CDC Settings:

	Broadcast	Own address	Destination address	Time (min) 1-240
0	disable	ignore	ignore	forever
1	ignore	enable	ignore	forever

When the CDC is activated with a Scene command, it immediately sends the colour temperature for the current time.

Adjustable Brightness

Firmware Version 2.0 and later: a brightness value of 0% -100% can also be defined for each support point. There is no interpolation between the brightness values of each support point. The selected brightness value for each time range is sent to the destination address, every minute alongside the colour temperature.

With the setting “MASK”, sending the brightness value can be deactivated for each support point. With this, no brightness value is sent for the following hour, and the brightness value set last (or manually selected) is retained.

Delivery default: “MASK” for all support points, i.e.: as delivery default the CDC has no influence on the brightness.

Date and time

Date and time can be read using QUERY SCENE commands:

QUERY SCENE 0 LEVEL: seconds

QUERY SCENE 1 LEVEL: minutes

QUERY SCENE 2 LEVEL: hours

QUERY SCENE 3 LEVEL: day of month

QUERY SCENE 4 LEVEL: month

QUERY SCENE 5 LEVEL: year-2000

Purchase Information

Art.Nr. 89453853: DALI CDC, DALI control device for automatic adjustment of tunable white luminaires, back box installation and class II device integration

Art.Nr. 89453853-HS: DALI CDC, DALI control device for automatic adjustment of tunable white luminaires, DIN rail mounting

Additional Information and Equipment

Lunatone DALI Cockpit
https://www.lunatone.com/en/product/dali-cockpit/

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

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

Contact

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www.lunatone.com

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.

