DALI Daylight

Manual control module

DALI Bluetooth interface for control and partial configuration of DALI systems with mobile devices

Art. Nr. 89453863 (DALI Daylight)



DALI Daylight Manual Control Module

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1. General

1.1. Function

The DALI-Daylight module is an interface module between mobile device (iOS/Android - Bluetooth low energy capable) and a DALI lighting system. An app is available for iOS and Android.

The addressing, grouping and further functions of the control units and their effective ranges can be set with the software tool DALI-Cockpit.

Device parameters of the connected DALI System (daylight curve, timer, schedules, brightness, color temperature, etc.) can be set with the app. Following devices are supported:

- DALI CDC (Circadian daily schedule) Art. Nr.: 89453853
- DALI RTC (Timer Module) Art. Nr.: 86459531
- DALI CS (light and presence sensor) Art. Nr.: 86458621 and Versions
- DALI LS (light sensor) Art. Nr.: 86458674

Only one mobile device can be connected to the interface module at any time.

1.2. Configuration

To integrate the DALI-Daylight module into a DALI system and then operate it, a certain configuration procedure is recommended. The DALI Cockpit software is used to address and configure the DALI system.

- a. Addressing of the entire DALI system including the DALI Daylight module.
- b. Configuration of the DALI system.
- c. Configuration of the DALI-Daylight module -> see chapter 2. Configuration with DALI Cockpit
 - Assign devices that can be set via the DALI-Daylight module and which luminaires / lighting groups can be controlled with it.
 - The automatic light control can be activated and deactivated (DALI CS) via the DALI cockpit as well as via the DALI Daylight app.
 - The CDCs, RTCs and CS can be activated and deactivated via the DALI cockpit as well as in the app.
- d. Operation and configuration via the app -> see chapter 3. Operation with mobile device

2. Configuration with DALI Cockpit

DALI Cockpit is the DALI configuration tool from Lunatone, it is available for free download from the Lunatone website (<u>http://www.lunatone.com/en/product/dali-cockpit/</u>). Make sure you always use the latest version to ensure all devices are recognised and all features are supported.

The Software can be used to address and configure DALI operating devices and Lunatone control units. All components found on the DALI bus are listed in the component tree after addressing (figure 1).

By clicking on the component, you will be taken to the device's configuration page.



The marked control units (yellow: figure 1) are supported by the DALI Daylight module. Furthermore: Tuneable White DT8 dimmers (red: figure 1) are required for color temperature control.

2.1. General settings

	Device Info Name DALI Daylight BLE	Artikelnummer 89453863	Update
MAGE	Hersteller Lunatone	Seriennummer 100	Firmware Ver 0.3
ILABLE	DALI Device Type N/A Geräte Daten (Type, Hersteller, Fir	Short Address eA5 ~ mwareversion,)	Set
	Allgemein Luminaires DALI CDCs DA	LI RTC Timers Motion Detectors	
	Enable PIN (4digits)	Enable Proximity	
	••••	Alle (DALI Broadcast) $ \lor $	
	PIN Code (Zugriffsschutz)	Annäherungsfunktion	

figure 2: Configuration tab "General"

The configuration page of the DALI Daylight module is divided into tabs, one for each functionality.

The header of the page contains general information about the device (manufacturer, article name, article number, serial number and firmware version).

"Enable PIN": Activate the access protection with a 4-digit pin code. If this is activated, you will be asked to enter this PIN the first time you use the app on a mobile device.

"Enable Proximity": function has to be enabled in the DALI Daylight module (DALI cockpit settings) as well as in the App on a mobile device: in the event the mobile device enters the Bluetooth reception area, the light can be automatically switched on and off after a certain hold time.

Note: The proximity feature is only supported on mobile devices with iOS operating system.

2.2. Device settings

In each tab (Luminaries, DALI CDCs, DALI RTC Timers, Motion Detectors) 5 devices can be added, these devices can be operated/partially configured in the app. The numbers 1-5 correlate with the app.

Each tab also has a Sync button, which will read the settings from the specified devices and display them in the app. If no sync is performed, default values will be displayed the first time the app is opened.

[5]

If device settings are changed via DALI Cockpit (for example DALI CDC settings), a new sync for the DALI Daylight module may be necessary to refresh the device status in the app.

De	vice Info Name DALL Davligh	t RIF Art	ikelnumm	er 89453863	Undate	
	Hersteller Lunatone	Sei	riennumm	er 100	- Firmware Ve	er 0.3
DA	LI Device Type N/A	SI	hort Addre	ss eA5	✓ Set	
Allg	emein Luminaires DALI C	DCs DALI RTC	Timers	Motion Detector	5	
	Sync Luminaries	Synchro	nisations	staste	Stat	tus CLC
	Control	Zieladresse			(Au	to Bright
1:	O Manual Control Only	Gruppe	~	(G0)Gruppe 0	~	
	Sensor Control			(eA0) DALI CS	~	On
2:	Manual Control Only	Gruppe	~	(G1)Gruppe 1	~	
	 Sensor Control 			(eA1) DALI LS	~	On
3:	Manual Control Only	Einzeladress	e v	(A0) DALI CW-W	/W LED Dirr 🗸	
	O Sensor Control				~	Off
4:	Manual Control Only	keine	~	1	~	
	O Sensor Control				~	Off
5:	Manual Control Only	keine	~		~	
	O Sensor Control				~	Off
	Stouorupgovarianto	Wirkhoroi	ch / Song	orauswahl		CL

2.2.1. "Luminaires" settings

figure 3: Configuration tab "Luminaires"

In the tab "Luminaires" you can choose between two control options:

- "Manual Control Only": This option is suited for manual control of brightness and color temperature, without automatic control. A destination address is set for the DALI Daylight module as an effective range that can be controlled via the app.
- "Sensor Control": If this mode is selected, DALI LS / CS¹ can be selected for automatic light control (marked yellow in figure 3). The effective range of the selected sensor is automatically taken over in the upper dropdown (marked red in figure 3). In this dropdown you may select which of the 4 possible target addresses of the DALI CS can be manually controlled with the app. If only one target address has been selected on the DALI CS/LS setting page, only this single address will be shown in the dropdown. The app can be used to activate and deactivate the automatic light control of the sensor. The status is displayed on the right.

DALI CS has to be operated in one of the two master modes: "Motion-controlled and manually activated constant light control" or "constant light control"

2.2.2. "DALI CDCs" settings

	vice Info Name DALL Davlight BLF	Artikelnummer 89453863	Update
	Hersteller Lunatone	Seriennummer 100	Firmware Ver 0.3
LABLE D	ALI Device Type N/A	Short Address eA5 🗸 🗸	Set
All	gemein Luminaires DALI CDCs DA	ALI RTC Timers Motion Detectors	
[Sync CDC Svi	nchronisationstaste	
	CDC Geräte	in the state of th	Status
ſ			
1	(A10) DALI CDC	~	Enabled
2	(A11) DALI CDC	~	Disabled
	keine	~	Disabled
3			Provident
4	keine	~	Disabled

figure 4: Configuration tab "CDCs"

In this tab DALI CDC modules can be added to the DALI Daylight app. The status display indicates whether the respective device is activated or deactivated in the app (see chapter 3.3).

Please note that only devices connected to the DALI installation, hence displayed in the DALI Cockpit component tree, can be selected.

2.2.3. "DALI RTC Timers" settings

	Device Info				
	Name	DALI Daylight BLE	Artikelnummer	89453863	Update
O IMAGE	Hersteller	Lunatone	Seriennummer	100	Firmware Ver 0.3
VAILABLE	DALI Device Type	N/A	Short Address	eA5 \checkmark	Set
	Allgemein Lumin Sync RTC	aires DALI CDCs D. Sy	ALI RTC Timers M	otion Detectors	
	RTC Geräte				Status
	1: (A5) RTC T	mer	~		Enabled
	2: (A6) RTC T	mer	~		Disabled
	3: keine		~		Disabled
					Disabled
	4: keine		~		

figure 5: Configuration tab "DALI RTC Timers"

In this tab DALI RTC Timer modules can be added to the DALI Daylight app. The status display indicates whether the respective device is activated or deactivated in the app (see chapter 3.4).

Please note that only devices connected to the DALI installation, hence displayed in the DALI Cockpit component tree, can be selected.

Devi	ce Info			
	Name DALI Daylight BLE	Artikelnummer	89453863	Update
	Hersteller Lunatone	Seriennummer	100	Firmware Ver 0.3
DAL	l Device Type N/A	Short Address	eA5 ~	Set
Allge	mein Luminaires DALI CDCs	DALI RTC Timers M	otion Detectors	
	Sync Bewegungsmelder	Curahan instination		
		Synchronisationst	aste	
_	Bewegungsmelder			Status
1:	(eA0) DALI CS	~		Enabled
	10.07.00.00.00			
	(-A1) DALLOS			Enabled
2:	(EAT) DALI CS	~		
2:	(EAT) DALICS	~		
2: 3:	(eA2) DALI CS	~		Disabled
2: 3:	(eA2) DALI CS	~		Disabled
2: 3: 4:	(eA2) DALI CS (eA3) DALI CS	~		Disabled Disabled
2: 3: 4: 5:	(eA2) DALI CS (eA3) DALI CS (eA4) DALI CS	~ ~		Disabled Disabled Disabled

2.2.4. "Motion Detector" DALI CS settings

figure 6: Configuration tab "Motion Detector"

In this tab DALI CS modules can be added to the DALI Daylight app. The status display indicates whether the respective device is activated or deactivated in the app (see chapter 3.5).

Please note that DALI CS can only be added if operated in one of the master modes supporting motion detection -> to change DALI CS master mode go to DALI CS product page in DALI Cockpit

Please note that only devices connected to the DALI installation, hence displayed in the DALI Cockpit component tree, can be selected

3. Operation with mobile device

3.1. Installation and connection

The "DALI Daylight" app for mobile devices can be downloaded via:

AppStore: https://itunes.apple.com/us/app/dalidaylight/id1097883849?mt=8

Google Play: <u>https://play.google.com/store/apps/details?id=com.lunatone.dalidaylight</u>

After the app has been installed and the DALI Daylight module has been connected to the DALI circuit (installation see chapter 4), the app will be able to connect to the module.

In the "App overview", all DALI Daylight modules found are displayed with the corresponding device name (default setting: serial number) (see figure 7).

If one of the existing modules is selected from the "App overview", the user interface shown in Figure 8 appears. The DALI circuit can be controlled via the functions stored in the module. In addition, it can also be used to adjust certain settings.

Note: Destination addresses or effective ranges cannot be changed via the Daylight app; these must be set via the DALI Cockpit (the module's settings page).

st Device 54CA0-2E89-4D53-D40F-7C4ABF340BF8	С	< [[]] >
st Device 2 43748-F581-8DAC-0058-040D45A03BAA		- lin.

- a) The magnifying glass symbol (left top) is used to search for DALI Daylight modules within range. The devices found are displayed in the list below.
- b) The menu symbol (right top) gives access to the demo mode and app information.

Menu	
Demo Mode	
About DALI Daylight	
Cancel	

c) List of Luminaries: For each device name, serial number and reception quality will be displayed.

To connect to a DALI Daylight module click on the corresponding device, you will be forwarded to the control page "manual", as shown in figure 8.

13:51			\$ 47% ■
Test Device			
			$\overline{17}$
off.		5	
		0	Save ()
0%			bright
2000K			cool
off			\overline{V}
011.		0	÷
			Save O
0%			bright
20005			cool
		-	17
\odot	6.3	103	
	075 7 Test Device 075 2000K 075 2000K	13-53 Test Device off. 2000к off. 0% 2000к	1333 Test Device off. 2000K

In the bottom area you can switch between the control pages.

3.2. Manual Control

Pad 주	13:52			\$ 47% 💷
<	Test Device			
Light Control 1				
Olici, the bulk to tree the luminoire on an off	u		d	\mathbb{R}^{n}
Click the build to turn the luminaire on or of	IL.			
Auto brightness			b/1	Save
dark	62%			bright
	С	•		
warm	4030K			cool
-	d			
	_			
Light Control 2				
				\overline{V}
Click the bulb to turn the luminaire on or of	ff.			Ш.
Auto brightness			h/2	
dark	0%		NIL	bright
warm	2000K			cool
Light Control 3			1	
				77
B* So	O Tima Auto	C. Andrew Andrew	<0}	
figure 0				
figure 9: cont	гог ра	age ivi	anual	

The control page "Manual" is used to control up to 5 lights or light groups that are set via the DALI Cockpit. Only devices specified with DALI Cockpit are displayed in this list.

Control Options:

- a) ON / OFF (ON -> switches to the value set on the slider)
- b) Toggle between "manual control" and "automatic light control":

toggle in position b/1: manual control on -> automatic light control is turned off

Save

<u>clicking "save"-></u> automatic light control will be activated and the currently measured light value will be used as reference value to set DALI CS / LS.

toggle in position b/2: automatic light control is activated (without saving light values).



- c) Slider to manually adjust the brightness
- d) Slider to manually adjust the color temperature

Note: automatic color curves, created with the "Color Auto" function (see next chapter), will not be influenced.

Please note, if "automatic light control" is turned on and the brightness control (slider c)

is used the "automatic light control" will be automatically turned off to enable manual control. If you want to switch from the manual control back to the automatic light control, set the toggle to position b/2 and the brightness control (c) jumps back to the previously stored value.

3.3. Color Auto

iPad 🐨	10:37	-7 \$ 53 % 💷 +
	Test Device	
Auto Color Temperature 1		
Start time		06:00
warm	3190K	cool
\diamond		
Peak Time		13:00
warm	6410K	cool
		\mathbf{Q}
Co End time		19:00
warm	3690K	cool
9		
Auto Color Temperature 2		D
Start time		00:00
warm	2000K	cool
ф.		
Peak Time		00:00
warm	2000K	cool
ф.		
e End time		00:00
warm	2000K	cool
•		
8* 63	0	ø
Manuel Color Aut	Time Auto Mation Auto	settings
figure 10: co	ntrol page "Col	or Auto"

The control page "Color Auto" is used to control the color curve of up to 5 DALI CDC modules. The color gradient is defined in the app by 3 parameters each with color temperature and the associated time. Using these 3 parameters a daylight curve is being calculated and executed accordingly. After the color temperature has run through to the "end time", the final color temperature is maintained until the "start time" has been reached again.

Using the toggle switch on the right top of each section, the color curves can be activated and deactivated.

Note:

By changing the color curve in the Daylight app the parameters in the respective CDC are adjusted and existing color curves are overwritten.

Monday 04:00-09:00	>
Tuesday	>
Wednesday	>
Thursday	>
Friday	>
Saturday	>
Sunday	>
Time Automatic 2	\bigcirc
Time Automatic 2 Monday Tuesday	© >
Time Automatic 2 Monday Tuesday Wednesday	>
Time Automatic 2 Monday Tuesday Wednesday Thursday	
Time Automatic 2 Monday Tuesday Wednesday Thursday Friday	
Time Automatic 2 Monday Tuesday Wednesday Thursday Friday Saturday	
Time Automatic 2 Monday Tuesday Wednesday Thursday Friday Saturday Sunday	
Time Automatic 2 Monday Tuesday Wednesday Thursday Friday Saturday Saturday	

3.4. Time Auto

The control page "Time Auto" is used to control up to 5 DALI RTC modules.

For each of the DALI RTC modules, two intervals can be set for each of the 7 days of the week. By clicking on the day (figure 10) you can activate or deactivate the intervals, set start time, end time and brightness value. At "start time" the defined brightness is automatically set and held until the"end time" (DALI command: DAP 0%).



figure 12: control page "Time Auto" -"Monday"

3.5. Motion Auto

Note: The entries added via the app overwrite existing entries in the DALI RTC module. The app occupies the 28 entries as follows:

1-4: Su 5-8: Mo 9-12: Tu 13-16: We 17-20: Th 21-24: Fr 25-28: Sa

Motion Automatic 1 Ambient light threshold 200 lux Turn on for 10 min Before turning off, dimm for 1 min Motion Automatic 2 mbient light threshold 0 lux a off, dimm fo 0 min bright **Motion Automatic 3** Ambient light threshold 0 lux 0 min 60

figure 13: control page "Motion Auto"

The control page "Motion Auto" is used to control up to 5 DALI CS modules.

The individual sensors can be activated / deactivated, a light threshold can be set and also the switch-off behavior can be configured.

Motion detection process

The motion detection process follows these parameters:



States:

- 1: Fade In Time
- P: Presence detected
- 2: Hold On Time -> set with "Turn on for ...min" + slider
- for brightness level
- 3: Fade Time

4: Hold on Time (2nd Light Level) -> set with "before turning off dim for ...min" + slider for brightness level 5: Fade Out Time

Pad 🗢	13:54	\$ 46% 📼
<	Test Device	
Before turning off, dimm for		0 min
dark	10%	bright
Motion Automatic 3		\bigcirc
Ambient light threshold		500 lux
Turn on for		10 min
dark	100%	bright
Before turning off, dimm for		0 min
dark	10%	bright
ϕ		
Motion Automatic 🚷		
Turn on for		10 min.
dark	100%	bright
		Q
Before turning off, dimm for		1 min
dark	10%	bright
B ¹⁰ Color A	to Time Auto Motion Auto	C) Settions

figure 15: "Motion Automatic" - Bluetooth

In addition to the motion detection area (DALI CS), the DALI Daylight module offers the option to use Bluetooth to detect movement. Please note, the Bluetooth option does not support "Ambient light threshold".

When "Motion Automatic" is triggered by approach, the sequence is run through, as displayed in figure 14. Manual control stops the process.

Note:

This feature is only supported on mobile devices with iOS operating system.

On the page "Settings" the serial number can be viewed and the display name for the device can be changed.

3.6. Settings



figure 16: page "Settings"

3.7. Additional notes

<	10:06 Test Device	÷ 100%
Light Control 1		
Click the bulb to turn the luminaire on	or off.	302
Auto brightness		Save
dark	0%	bright
•		
warm	2000K	cool
Light Control 2 Click the bulb to turn the luminaire on	or off.	
Auto brightness		Save
dark	0%	bright
•		
warm	2000К	cool
•		
Light Control 3		

This Symbol (figure 17) indicates that the Bluetooth connection is being established or the connection has been interrupted.

iPad 후	14:0	\$ 45% 💷			
<	Test D	Test Device			
Light Control 1					
Click the bulb to turn the lu	minaire on or off.				
Auto brightness			Save		
dark					
	Enter	Enter PIN			
	This device is protect PIN	ted and requires a			
warm	enter a 4 digit numb	er	cool		
	Cancel	Ok			
Light Control 2					
			\overline{V}		
Click the bulb to turn the lu	Ę				
Auto brightness			Save		
figure 10, Enter DIN					

If a PIN has been assigned via the DALI Cockpit, the PIN has to be entered when clicking on the corresponding DALI Daylight module in the app (only first time).

figure 18: Enter PIN

4. Installation

The DALI Daylight module is connected directly to the DALI line and supplied by the DALI line. The connection to the DALI line can be made without regard to the polarity.

The DALI Daylight module is designed to fit a flush-mounted installation box.

For wiring, solid or fine wire with cross-section of 0.5mm2 to 1.5mm2 can be used.

The DALI Daylight module is multi-master capable, which means that several control modules can be installed parallel in a DALI system.

The DALI Daylight module does not occupy any of the 64 DALI addresses, these are all available for ballasts.