



ESYLUX Light Control SmartDriver series

ELC SmartDriver x4

ELC SmartDriver x8

ELC SmartDriver x12

ELC SmartDriver x16

for

Ceiling lights with

a colour temperature of 3000 K and 4000 K

Detailed operating instructions

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1 Information about the document

1.1 Introduction

These operating instructions contain detailed information about device functions and the processes for commissioning and assembling the specified devices.

This document is also available online at www.esylux.com and can be printed in A4 format.

Navigating on screen

When you are reading the document on screen, you can use the following functions:

- **Linked table of contents:** Clicking on the chapter title opens the corresponding chapter.
- **List of bookmarks:** All chapters can be accessed from the list of bookmarks. You can usually open the list of bookmarks in the PDF software by clicking the symbol .
- **Linked references:** You can move to specified locations by clicking on the link. Many PDF programs highlight such links when you hover the mouse cursor over the link, or they change the shape of the mouse cursor. For example: .

Please read the operating instructions carefully and note all safety information and warnings.

1.2 Highlighted information within the text

To make these user instructions easier to read, certain information is highlighted using different formatting. The meaning of this formatting is explained below:

< > indicates remote control menu items

Grey indicates a function

➤ indicates a call for user action

✓ is used to highlight results of actions



indicates important and useful information



warns of high voltage

1.3 Manufacturer address

ESYLUX GmbH
 An der Strusbek 40
 22926 Ahrensburg, Germany
 Website: www.esylux.com
 Email: info@esylux.com

1.4 Product identification

These instructions apply to the following products:

Item number	Item designation
EC10430664	ELC SmartDriver x4
EC10430688	ELC SmartDriver x4 BT
EC10430671	ELC SmartDriver x4 KNX
EC10430763	ELC SmartDriver x8
EC10430787	ELC SmartDriver x8 BT
EC10430770	ELC SmartDriver x8 KNX
EC10431067	ELC SmartDriver x12
EC10431074	ELC SmartDriver x12 BT
EC10431081	ELC SmartDriver x12 KNX
EC10431098	ELC SmartDriver x16
EC10431104	ELC SmartDriver x16 BT
EC10431111	ELC SmartDriver x16 KNX

The item designation contains important information about the product:

Item designation information	Meaning
ELC SmartDriver	Series name of the ESYLUX Light Control SmartDriver
x4/x8/x12/x16	Number of lights that can be connected via RJ-45
BT	Can be operated via Bluetooth and app
KNX	KNX connection

1.5 Structure of these instructions

Chapters 2 to 4 include technical data and all information regarding safe installation and operation of the ESYLUX ELC SmartDrivers. The SmartDriver is also referred to as the Light Control Box in these instructions.

An overview of functions is provided in Chapter 3.2. Chapter 5 explains the operating modes. Understanding the sequence of the operating modes makes it easier to configure the device.

Each Light Control Box can be operated via remote control and buttons. Remote control makes it much more convenient to choose the settings and

DALI presence detector required

many settings are only possible via remote control. An ESYLUX DALI presence detector must be connected to the Box to ensure the Light Control Box can receive remote control signals (see Chapter 4.3.3).

Remote control

Chapters 6 to 8 cover the remote control menu. The remote control groups the functions according to whether they directly control the Light Control Box or are used to configure the Light Control Box:

- **Direct control:** The corresponding functions are found in the remote control sub-menu <Functions>. Direct controls adjust the lights to more unusual situations for which the basic settings are not ideal. Such adjustments to the programmed sequence, for example, changing brightness, are temporary. The adjustments are not saved.
- **Configuration:** Other than a few exceptions, the basic settings that are sufficient for most situations are made in the remote control menu <Programs>.

Operation via app

The Light Control Box with a Bluetooth radio module provides an additional and particularly convenient operating option: Users of Bluetooth-capable devices such as smartphones or tablets can control the Light Control Box via the free ESYLUX LIGHT CONTROL app. Operation via app is explained starting from Chapter 9.

1.6 Warnings

Warnings are listed at the start of the relevant chapter if a hazardous situation is likely to occur.

The preceding signal words have the following meanings:

DANGER!

This signal word denotes a hazard involving a high level of risk. Failure to observe the warning will lead to serious or fatal injury.

WARNING!

This signal word denotes a hazard involving a moderate level of risk. Failure to observe the warning may lead to serious or fatal injury.

CAUTION!

This signal word denotes a hazard involving a low level of risk. Failure to observe the warning may lead to minor or moderate injury.

CAUTION!

This signal word warns against situations that could lead to instances of property damage if the information is not observed.

2 Basic safety information

2.1 Intended use

The ESYLUX Light Control Box may only be used for the following purposes:

- Installation in indoor areas as an operating device for the ESYLUX CELINE Satellite recessed surface-mounted ceiling lights with a colour temperature of 3000 K/4000 K and ESYLUX NOVA Slave recessed surface-mounted ceiling lights with a colour temperature of 3000 K/4000 K.
- Each Light Control Box can control and power lights that are connected via RJ-45. The number of lights that can be connected varies depending on the model.
- Light Control Boxes are suitable for power supply routing. The maximum total current of the mains terminal is 10 A.

2.2 Liability and damages

The device must not be changed, modified or painted — doing so will void any warranty claims.

The manufacturer will not accept any liability for instances of personal injury or property damage caused by improper use.

Check the product for damage after unpacking. If the device is damaged in any way, return it to the relevant place of sale.

2.3 Safety instructions

Electrical devices connected to a 230-V mains supply may only be assembled and commissioned by electrical installation technicians or trained electricians, taking country-specific regulations into account.

Specialist personnel!



⚠ DANGER!

Risk of fatal injury from electric shock!

- The following five safety rules must always be observed:
 1. Disconnect the power supply
 2. Secure the power supply from being switched on again
 3. Check that the relevant components have been de-energised
 4. Set up the earthing and short-circuiting mechanisms as required
 5. Cover or isolate neighbouring live parts

PLEASE NOTE:**Reversing the polarity can cause the DALI devices to malfunction!**

- Note the DALI specifications (IEC 62386).
Use a cable (not supplied) that complies with the DALI specifications (IEC 62386) for all DALI connections.

3 Product description

3.1 Equipment

The ESYLUX Light Control Box is designed for indoor use as an operating device for the ESYLUX CELINE Satellite and ESYLUX NOVA Slave recessed surface-mounted ceiling lights with a colour temperature of 3000 K and 4000 K.

Each Light Control Box has a DALI connector, RJ-45 connectors and RJ-11 connectors.

The Light Control Box is also available with the following additional equipment:

- Bluetooth operating interface
- KNX module

Details of the item numbers of the Light Control Box variants can be found in Chapter “1.4 Product identification” on page 7.

Connectable devices

The RJ-45 interfaces and DALI interfaces can be used to connect the following devices:

- RJ-45: CELINE Satellite lights and NOVA Slave lights. The lights are powered and controlled by the ESYLUX Light Control Box
- DALI: additional Light Control Boxes, DALI presence detectors, DALI switches, ESYLUX CELINE DALI lights and NOVA DALI lights
- RJ-11: This connection is used to connect lighting groups via the ELC bus (see chapter 4.4 on page 30)

For more information on the connection options, see page 16.

Included in delivery: ELC SmartDriver, DALI-CO connection cable, ELC bus connection cable, wired terminal for connection to DALI C1–C4.

3.2 Functions

Prerequisite: DALI detector

To enable the Light Control Box to perform its functions, a DALI presence detector (not supplied) must be connected to the Light Control Box.

Product description

Constant light control

The Light Control Box controls the connected lighting. Constant lighting control occurs only if the presence detector detects the presence of people or animals and is dependent on the ambient lighting.

DALI

With the DALI system (Digital Addressable Lighting Interface), the Light Control Box receives the control telegrams via the electronic ballasts, and simultaneously controls all lights connected in the DALI group.

The table below provides a list of the Light Control Box functions. This overview is intended to serve as a decision-making aid for electrical installation technicians and users when configuring the settings at a later point.



Most settings can be only be adjusted via remote control or app.

Overview of functions

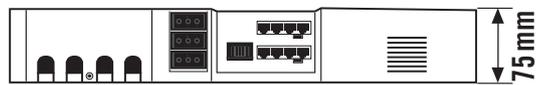
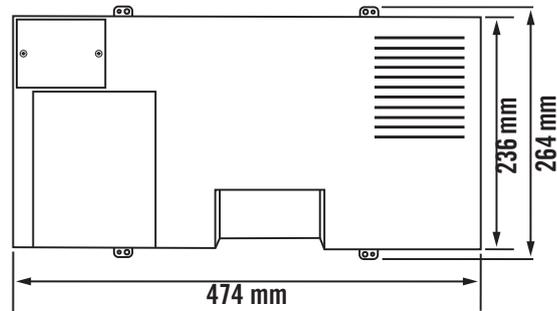
Function	Benefit
Dimming	Adjusts the illumination level.
Constant light control	Consistent lighting conditions by automatically adjusting the illumination level to the ambient light levels when people are detected.
Light measurement	The presence detector light sensor or an additional light sensor measures the ambient light level.
Switch-off delay time	Sets the off-delay following the last detected presence.
Off warning	Indicates that the off delay time has elapsed.
Orientation light	Activates or deactivates subtle lighting of rooms and corridors following expiry of the off delay time.
Orientation light duration	Sets the duration of the orientation light in hours or to a specific time
Fully automatic mode	Automatic control of the lighting when presence is detected.
Semi-automatic mode	Automatic control of the lighting when presence is detected must be activated manually via an external button.
Light scenes	Select from four configurable light configurations for room lighting.



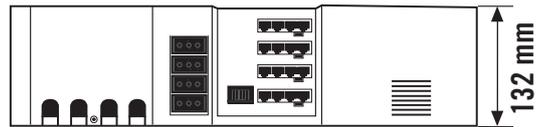
For detailed function descriptions, refer to the chapters on operation via remote control or app.

3.3 Dimensions diagrams

3.3.1 Dimensions



SmartDriver
x4
x8



SmartDriver
x12
x16

4 Installation and connection

4.1 Installation

The Light Control Box is intended for use in wall or ceiling mounting. To ensure that the device is adequately ventilated, the following clearances to walls and ceilings must be maintained:

- Clearance to the sides of the device: at least 5 cm.
- Clearance to the top or bottom (in case of ceiling mounting): at least 10 cm.

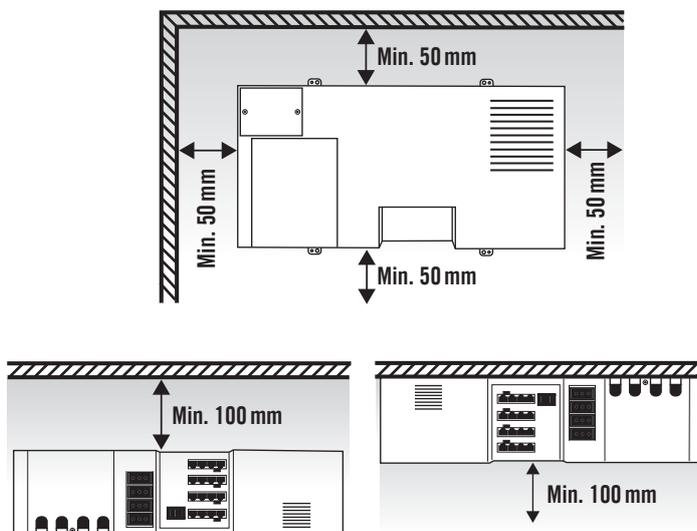
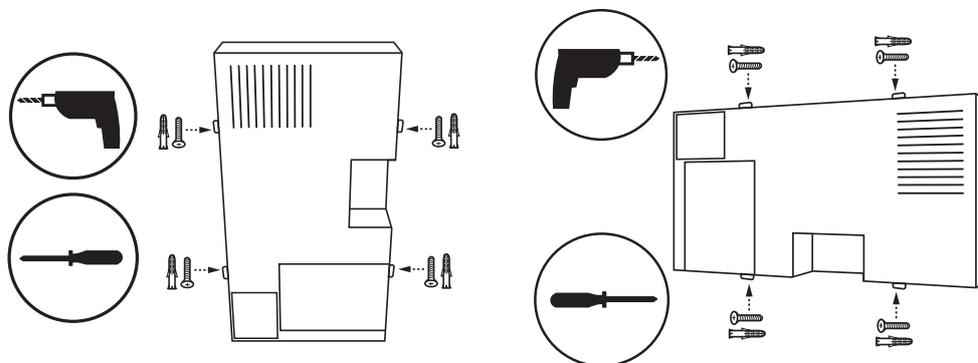


Illustration: Clearances to walls and ceilings

Installation:

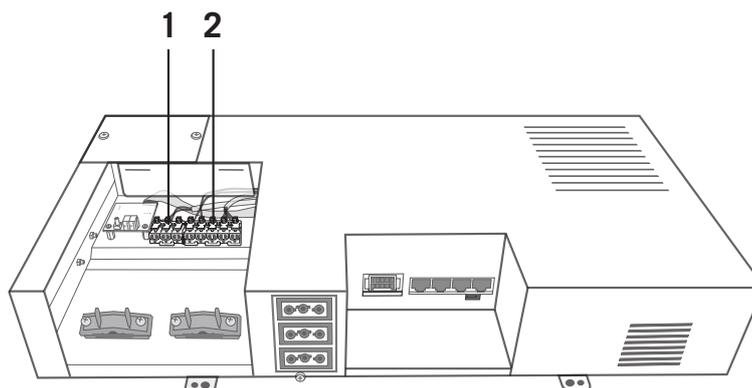
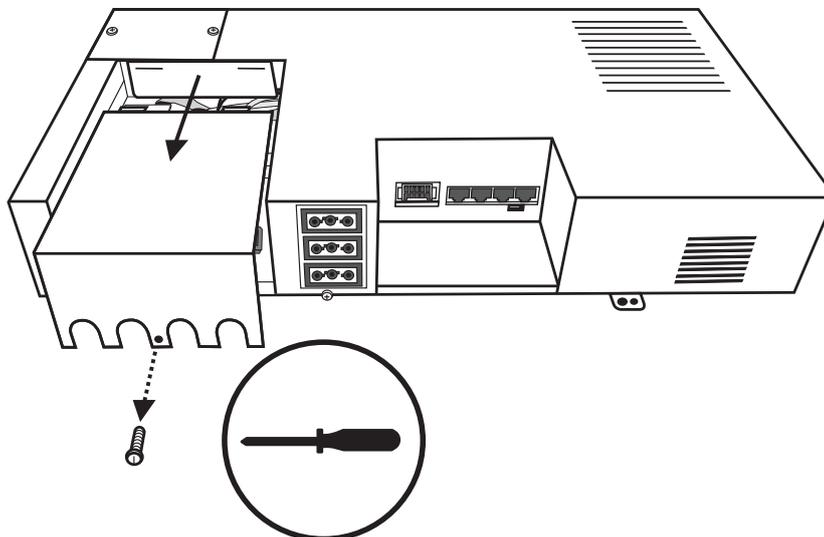
- Drill four fixing holes.
- Screw the Light Control Box securely into place.



Ceiling and wall mounting

4.2 Connecting the SmartDriver

- Unscrew the cover to access the connection terminals.



1. Connection terminal for buttons S1/S2
2. Mains terminal

DANGER!



Risk of fatal injury from electric shock!

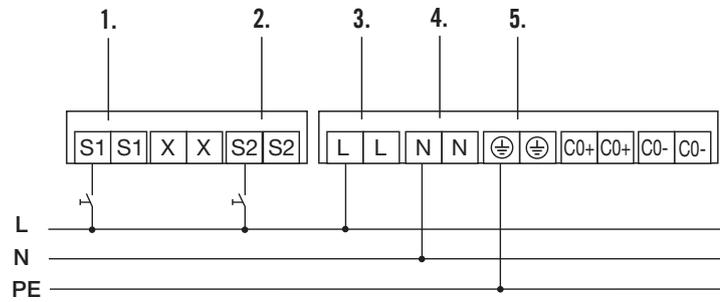
- Switch off the power to the cable.
- Check that the cable is de-energised.

Connection to the power supply:

- Connect the Box to the mains terminal and to the earth conductor terminal as shown in the wiring diagram.
 1. Button S1
 2. Button S2
 3. Phase 230 V AC

4. Neutral conductor
5. Earth conductor

Wiring diagram:



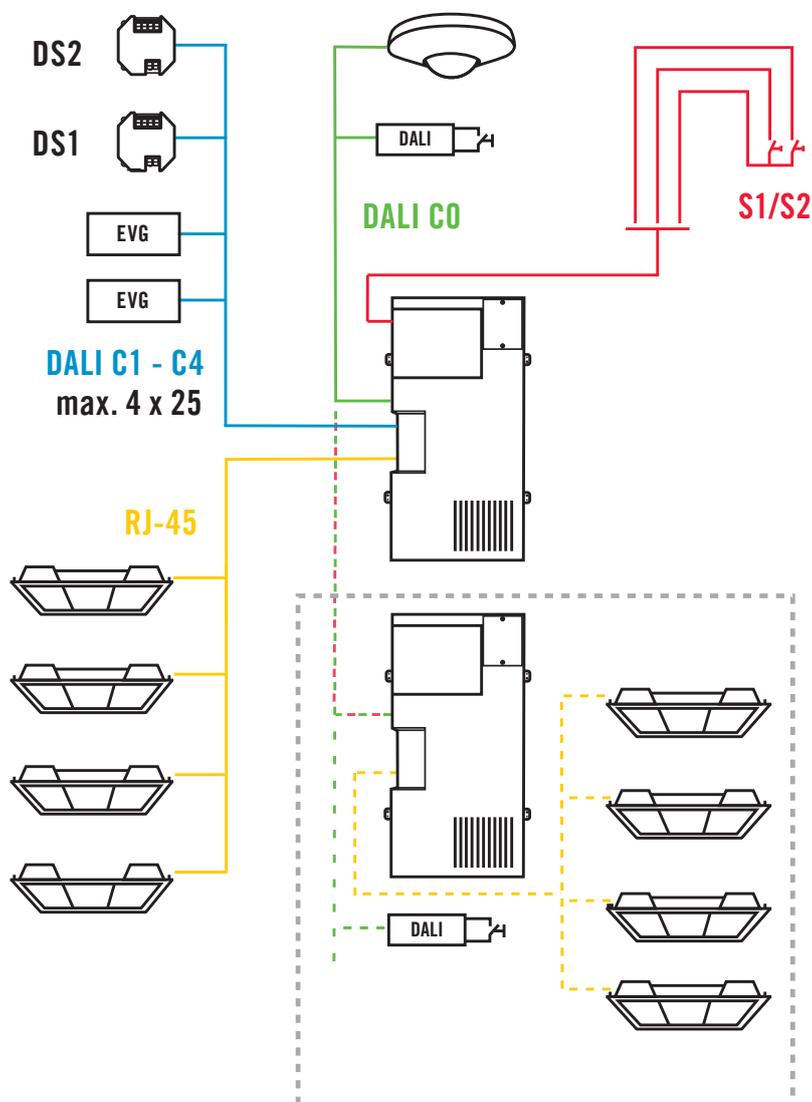
4.3 Connecting devices to the SmartDriver

4.3.1 Overview: Connectable devices

The Light Control Box is designed to be connected to lights and DALI devices via the following connections:

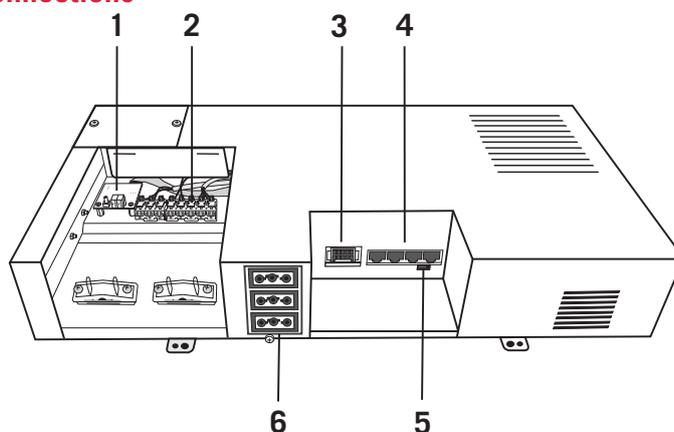
- RJ-45 sockets for connecting CELINE Satellites or NOVA slave lights
- DALI connections for connecting presence detectors, DALI switches and other Light Control Boxes (DALI C0), DALI lights and DALI devices (DALI C1 to C4)

i The RJ-11 sockets are for connecting lighting groups. See image page 30.

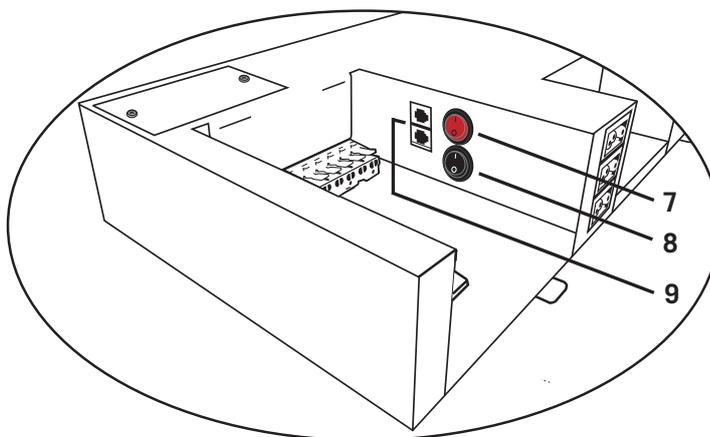


Overview: Connection possibilities

4.3.2 Connections



1. **KNX connection** (for ELC SmartDriver KNX model only)
2. **Mains terminal with DALI CO connections**
3. **DALI C1-C4 connection socket**
4. **RJ-45 sockets** for connecting specified ESYLUX lights
5. **USB connection**, exclusively for service purposes
6. **DALI CO connection sockets**



7. **"DALI Power" switch** for DALI bus voltage supply (see chapter 4.3.8.1 on page 24).
8. **"ELC bus configuration" switch**. Switch position "ON": Only devices at the beginning and end of an ELC bus connection.
9. **RJ-11 sockets** for connecting via the ELC bus (see chapter 4.4 on page 30).

4.3.3 Connecting the presence detector

To enable the Light Control Box to control the lighting according to your preferences, you need to connect a DALI presence detector. The following ESYLUX DALI ceiling-mounted presence detectors are suitable:

- PD-C360i/8 ELC (order number EP10427602)

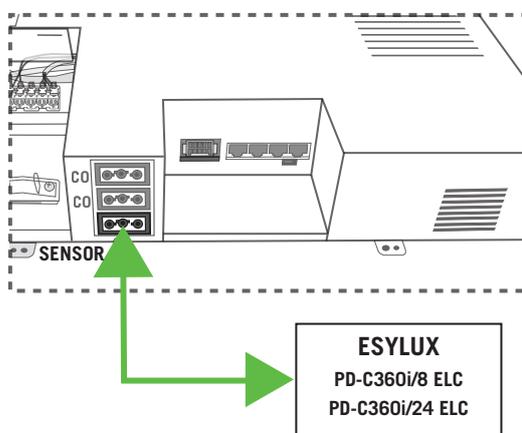
**DALI
presence
detector**

- PD-C360i/24 ELC (order number EP10427619)

These presence detectors have a 360° field of detection. The detectors also measure brightness and receive the infrared signals from the remote control. A DALI cable is included in the delivery of the detector with the right jack for connecting to the Light Control Box.

How to connect the presence detector:

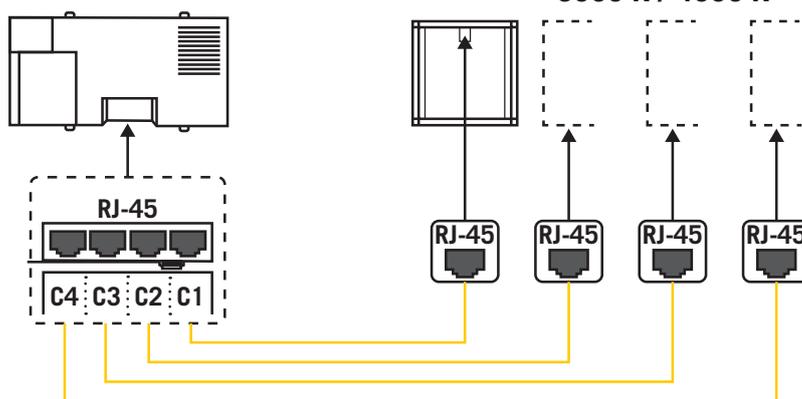
- Use the cable included with the presence detector to connect the Light Control Box and the presence detector.



4.3.4 Connecting CELINE/NOVA lights

ESYLUX ELC SmartDriver

ESYLUX NOVA Slave / CELINE Satellite 3000 K / 4000 K



RJ-45 jack

You can connect the following lights from the CELINE and NOVA series to the RJ-45 sockets on the Light Control Box:

- CELINE Satellite with colour temperature 3000 K and 4000 K

- NOVA Slave with colour temperature 3000 K and 4000 K

Lights are powered by the Light Control Box via the connection cable. The Light Control Box has RJ-45 interfaces for this connection. Each RJ-45 interface is a separate lighting channel (C1, C2, C3, C4), which the Light Control Box can control separately.



Any up-to-date network cable, type Cat5 or higher, can be used as the RJ-45 patch cable.

NOTE!

Note the maximum cable length!

The RJ-45 connection cable must not exceed 10 metres.

Connection to be used for ESYLUX lights only!

Only the above-mentioned ESYLUX lights may be connected to the RJ-45 interfaces. Other equipment such as Internet routers or lights designed to be powered via a LAN cable (power over Ethernet) could be irreparably damaged by connecting them to the RJ-45 jacks.

4.3.5 Connecting DALI lights and DALI switch devices

DALI lights and DALI switch devices can be connected to the DALI interfaces C1 to C4. DALI switch devices can be used to connect non-DALI-compatible equipment such as fans or screen controllers.

The DALI switch devices are available as accessories. By default, the model SW DALI Full Automation (item no. EP10427473) is set to fully automatic with a switch-off delay time of 30 minutes. By default, the model SW DALI Semi Automation (item no. EP10427480) is set to semi-automatic with a off delay time of six minutes. You can change these factory settings on both models via the remote control. For more information about these devices, see our website www.esylux.com.

A maximum of four DALI groups can be connected to the DALI interfaces C1 to C4. A maximum of 25 DALI devices can be connected in each group, with the groups being powered via the DALI bus. The parameters are automatically applied to the electronic ballasts via broadcast.

The DALI interfaces are numerically assigned to the lighting channels. For example, DALI interface C4 corresponds to the lighting channel C4.



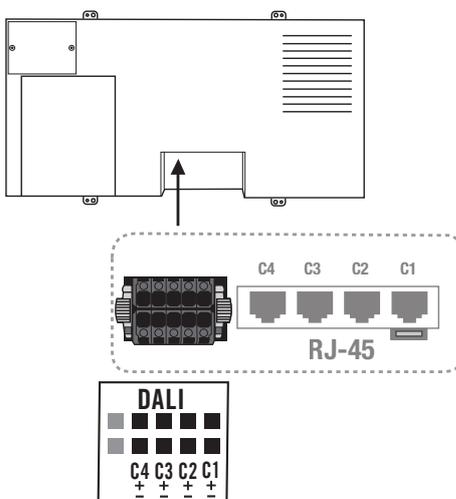
You can change the assignment of the DALI interfaces DALI C1–C4 to the lighting channels C1–C4 (RJ-45 connection). See Chapter **DALI Map** page 64.

NOTE!**Reversing the polarity can cause the DALI electronic ballast to malfunction!**

- Note the DALI specifications (IEC 62386).
Use a cable (not supplied) that complies with the DALI specifications (IEC 62386) for all DALI connections.

How to connect DALI lights and DALI switches:

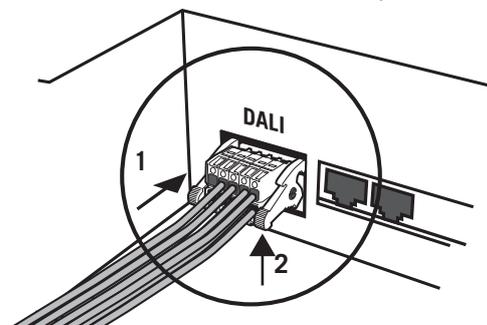
- The connection cables belonging to the required DALI channel are labelled on the terminal provided to help you identify them:



- Use the cables to connect the DALI connections of the device to the push terminal:



- Insert the terminal into the DALI C1-C4 pin connector:



- ✓ The device is now connected.

**External DALI
button**

4.3.6 Connecting DALI buttons

An external DALI button can be connected to the DALI interface CO. The DALI button is an external module that sends standard 16-bit commands (IEC 62386-102:2009). For example, you can switch on and dim the lighting using the DALI button. It is also possible to activate scenes using a DALI scene module. Chapter 15.1 on page 105 contains a list of the possible DALI commands.

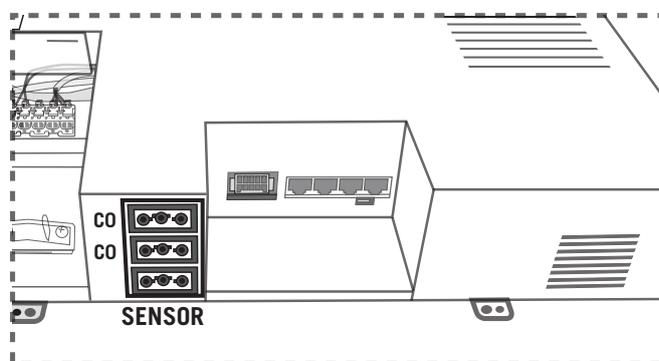
The Esylux DALI push button 8x DALI (item number EC10430923) is configured accordingly by default. This allows you to send the following commands without an additional scene module:

- Lighting on/off
- Dim brightness
- Scene 1-4 on
- Constant lighting control on

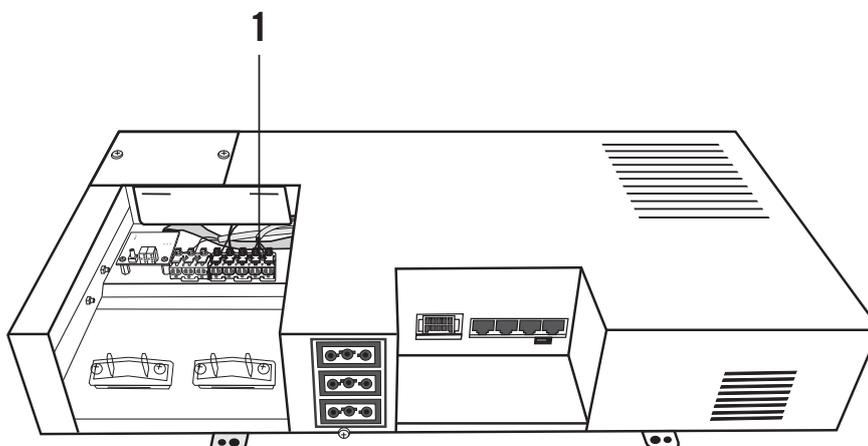
If Light Control Boxes are connected using DALI (see 4.3.8 on page 23) or ELC bus (see 4.4 on page 30), all lights attached to connected devices receive the button commands.

There are two connection options:

1. You can use one of the CO sockets. Suitable jacks are available from ESYLUX as an accessory.



2. You can use the CO connections on the mains terminal:



1: Mains terminal with DALI CO connections.

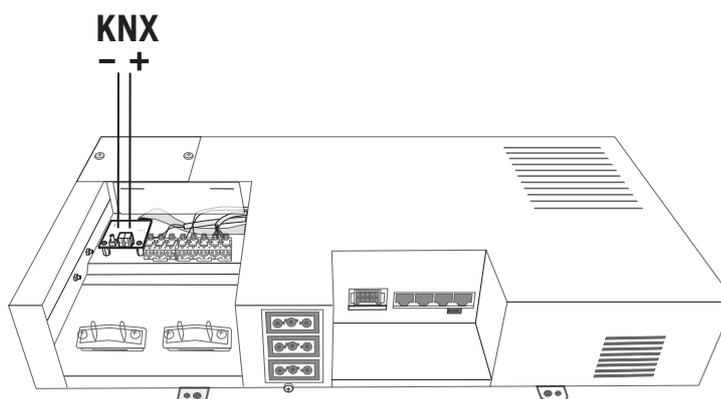
Position of the CO connections on the terminal:



1. DALI CO +
2. DALI CO -

4.3.7 Connecting to KNX bus

The SmartDriver KNX has a KNX module and can be connected with a KNX bus.



NOTE!

Reversing the polarity of the connections will lead to a loss of functionality in one or more participants.

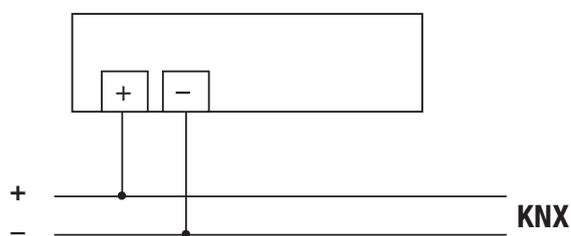
- Note the labels on the terminals.

The protection against reverse polarity integrated in the EIB devices will prevent damage.

Proceed as follows to connect the Light Control Box to the KNX bus:

- Use a pin connector to connect the KNX bus cable to the KNX connection on the Light Control Box, so that the polarity is correct.

Wiring diagram:



4.3.8 Connecting SmartDrivers in parallel

Lighting groups

If you connect SmartDrivers in parallel using DALI, all lights connected to the SmartDrivers form a single lighting group. Lights in a lighting group execute all commands issued using a remote control, an app or a button.

The number of SmartDrivers that can be connected in parallel and the number of lights that can be part of a lighting group depends on which SmartDriver models are used:

SmartDriver model	SmartDrivers connected in parallel (maximum)	Lights per lighting group (maximum)
ELC SmartDriver x4	20	80
ELC SmartDriver x8	10	80
ELC SmartDriver x12	6	72
ELC SmartDriver x16	5	80



You can control even more lights at once by connecting the lighting groups via ELC bus. See table page 31.

If you are connecting more than five SmartDrivers in parallel, you must configure the devices accordingly in advance.

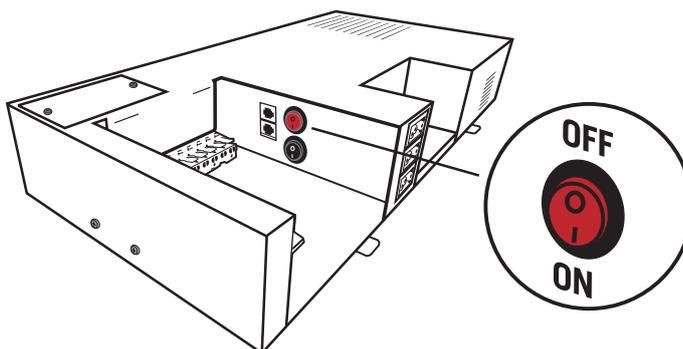
4.3.8.1 Configuring DALI bus voltage for parallel connection

On delivery, the switch for the DALI bus power supply on each Light Control Box is set to "ON". In this setting, all Light Control Boxes power the DALI bus with the necessary operating voltage.

If more than five boxes are connected, only five boxes may have active DALI power supplies. In this case, you must deactivate the DALI bus voltage supply for some devices before connecting in parallel.

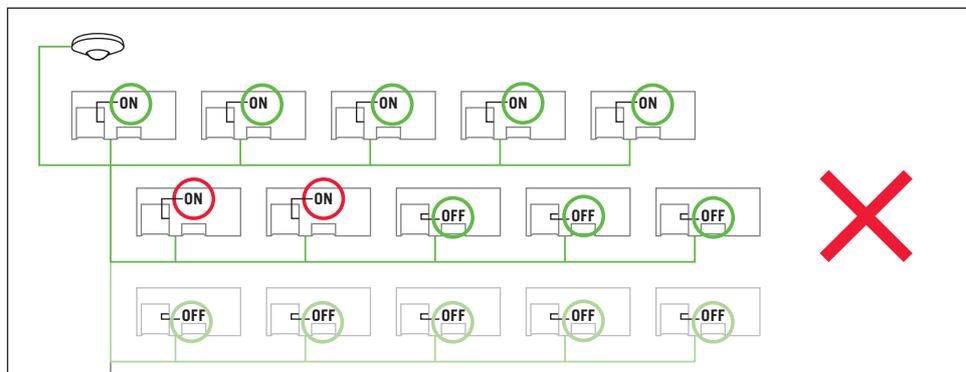
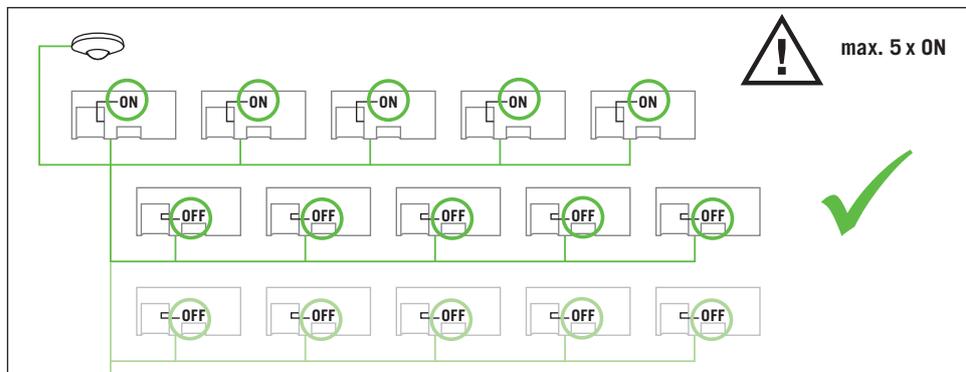
Caution, device damage!

Maximum of five "DALI Power" switches set to "ON"!



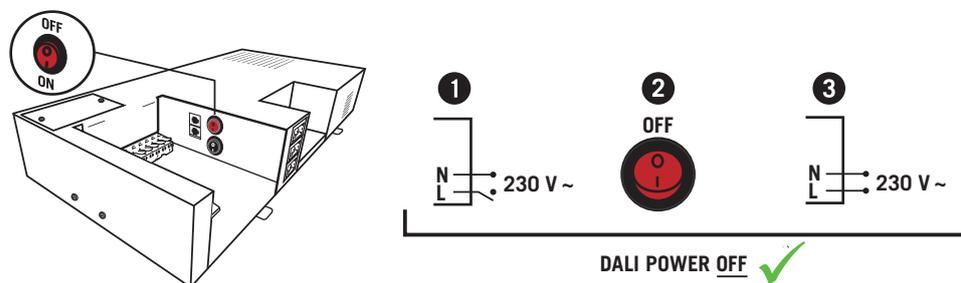
Default setting: DALI bus voltage supply is active.

For example, if 10 Light Control Boxes are connected, the DALI power supply must be deactivated for Boxes 6 to 10.



Parallel connection: The "DALI Power" switch may only be set to "ON" for five devices.

How to deactivate the DALI bus voltage supply:



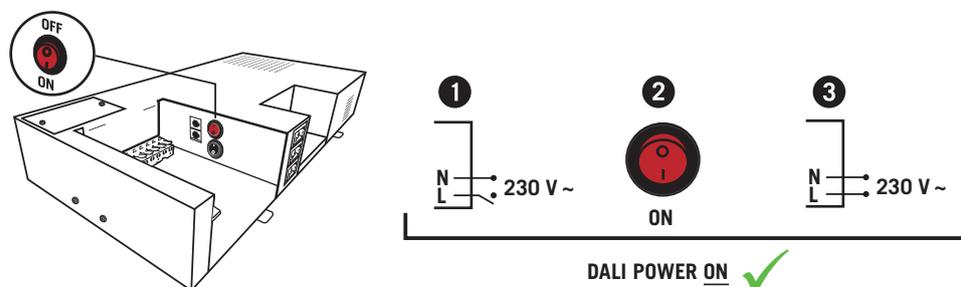
Procedure: Deactivating the DALI bus voltage supply.

- Disconnect the device from the supply voltage.
- Unscrew the cover to access the “DALI Power” switch.
- Set the “DALI Power” switch to “OFF”.
- Fasten the cover in place.
- Reconnect the device to the supply voltage.
 - ✓ During the initialisation phase that follows, the device reads the switch position.
 - ✓ The internal bus voltage supply is deactivated.

i Adjusting the switch during operation has no effect on the bus voltage supply, as the Light Control Box only reads the switch position during the initialisation phase. This is why you must always disconnect the device from the supply voltage before you change the switch position.

Follow a similar process to reactivate the DALI bus voltage supply to a device:

How to activate the DALI bus voltage supply:



Procedure: Activating the DALI bus voltage supply.

- Disconnect the device from the supply voltage.
- Unscrew the cover to access the “DALI Power” switch.
- Set the switch to “ON”.
- Fasten the cover in place.
- Reconnect the device to the supply voltage.
 - ✓ During the initialisation phase that follows, the device reads the switch position.
 - ✓ The bus voltage supply is activated.

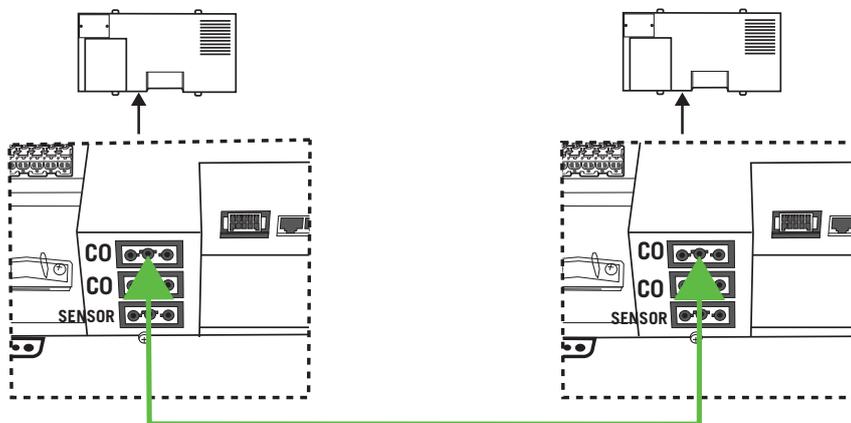
4.3.8.2 Connecting SmartDrivers in parallel

Before connecting, ensure that the DALI bus power supply settings are correct:

- For up to five boxes the “DALI Power” switch should be set to “ON”. If you connect fewer than five boxes in parallel, the “DALI Power” switch must be set to “ON” for all devices.

How to connect the Light Control Boxes:

- Insert the cable provided with both Light Control Boxes into one of the sockets labelled “CO”.



Connecting Light Control Boxes in parallel

Parallel connection after installation



If you subsequently connect a Light Control Box in parallel to a preset Light Control Box, the devices save different settings. If this is the case, reset the preset Box to factory settings and re-enter the settings for the connected Light Control Boxes. The Box can be restored to factory settings using the universal remote control (see Chapter 8.9 on page 70) and using the app (see Chapter 13.1.8 on page 94).

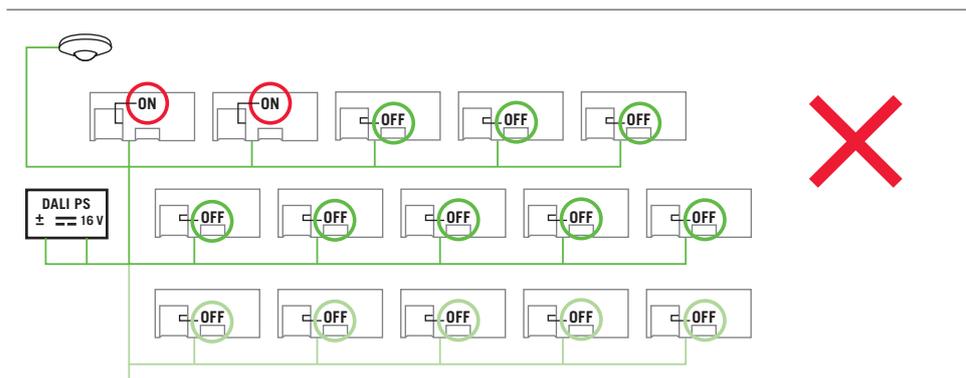
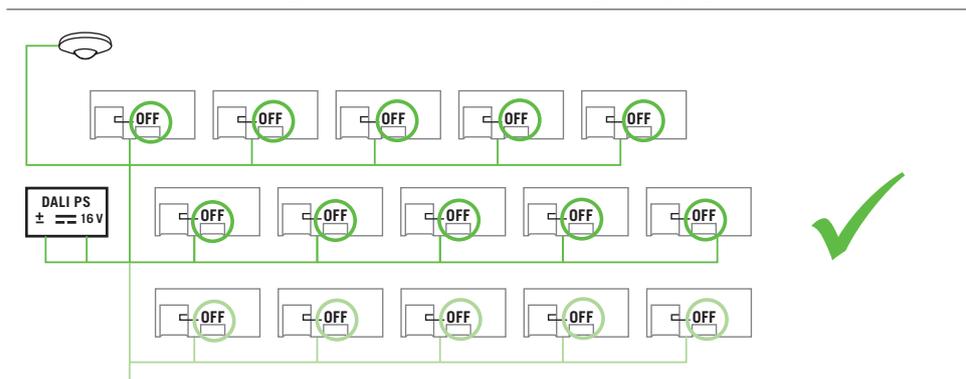
**Caution,
device damage:**

**All "DALI Power"
switches "OFF"!**

4.3.9 Alternative: External DALI power supply

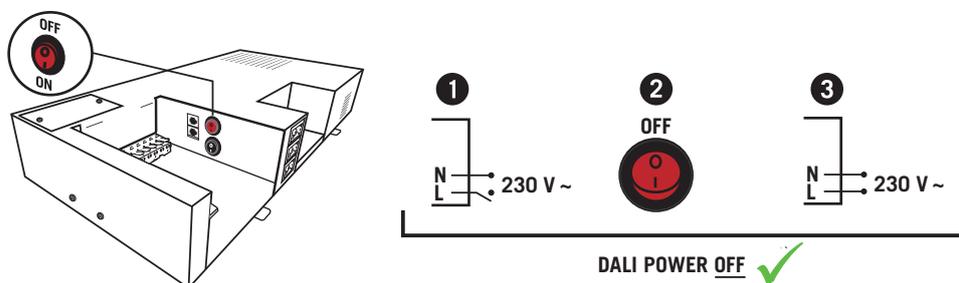
Alternatively, you can use an external DALI power supply to supply the DALI bus with power. To avoid damaging devices, in this scenario the bus voltage supply must be deactivated for all Light Control Boxes.

4.3.9.1 Deactivating the internal bus voltage supply



Voltage supply via an external DALI power supply: All "DALI Power" switches are set to "OFF".

How to deactivate the DALI bus voltage supply:



Procedure: Deactivating the DALI bus voltage supply.

- Disconnect the device from the supply voltage.

- Unscrew the cover to access the “DALI Power” switch.
- Set the switch to “OFF”.
- Fasten the cover in place.
- Reconnect the device to the supply voltage.
- Repeat the process for all other devices.
 - ✓ During the initialisation phase that follows, the device reads the switch position.
 - ✓ The internal bus voltage supply is deactivated.

i Adjusting the switch during operation has no effect on the bus voltage supply, as the Light Control Box only reads the switch position during the initialisation phase. This is why you must always disconnect the device from the supply voltage before you change the switch position.

You can then connect an external power supply.

4.3.9.2 Connecting an external DALI power supply

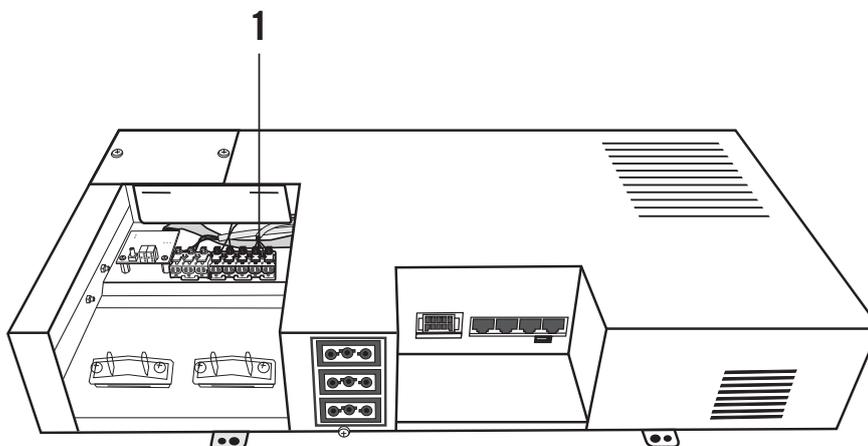
The external power supply is connected to a Light Control Box. A parallel connection makes the voltage supply available to all other Light Control Boxes.

NOTE!

Using an external DALI power supply and active internal bus voltage supply will destroy the Light Control Box!

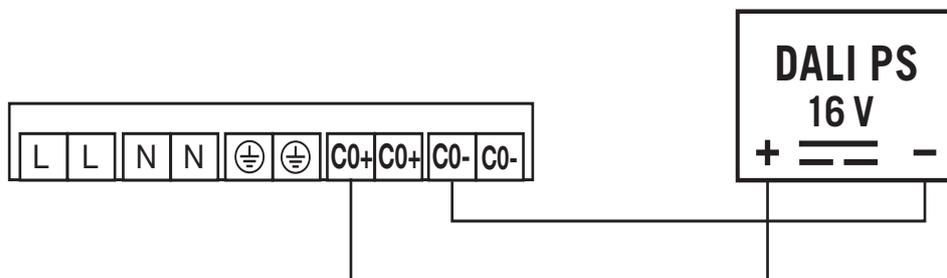
- Ensure that the “DALI Power” switch on all Light Control Boxes is “OFF” (see page 25)!

How to connect an external DALI power supply:



1: Mains terminal with DALI CO connections

- Disconnect the device from the supply voltage.
- Unscrew the cover to access the connection terminals.
- Connect the power supply to the mains terminal as shown on the wiring diagram:



- Fasten the cover in place.
- Reconnect the device to the supply voltage.
 - ✓ The DALI bus is now powered by the external power supply.

4.4 Connecting lighting groups using the ELC bus

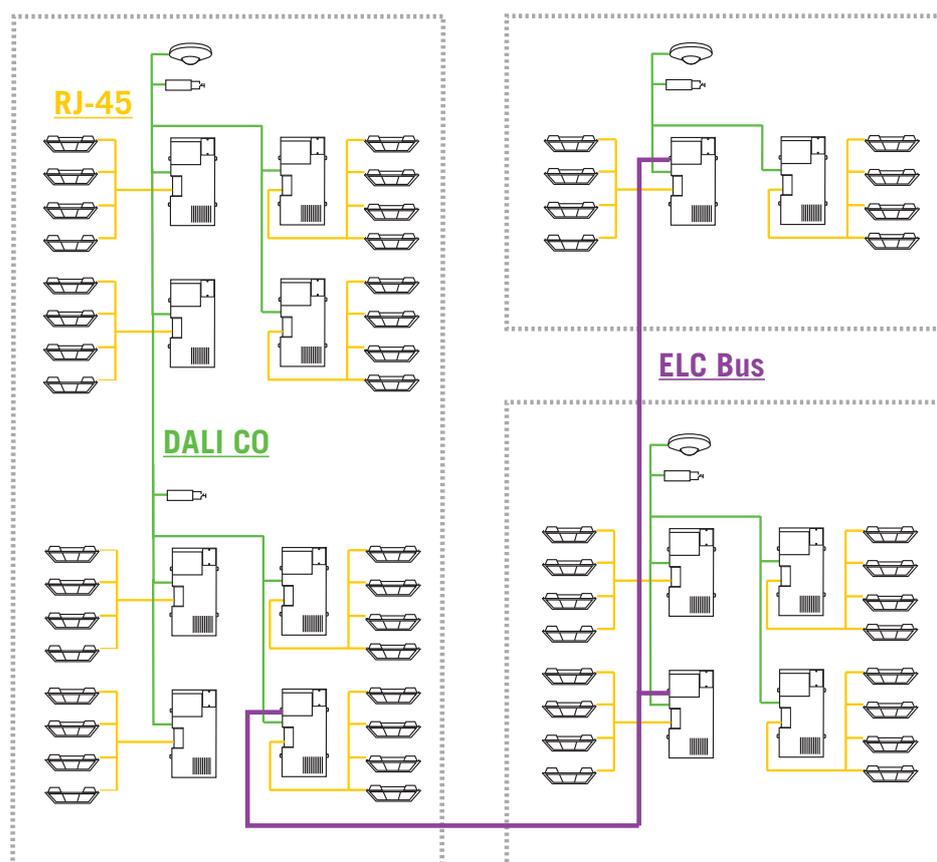
If SmartDrivers are connected using DALI CO, all connected lights form a lighting group. This means that all settings, such as light target values and switch-off delay time, apply to all lights, as does all instances of a presence detector being triggered.

This grouping is not ideal for many room configurations: If a presence detector detects a person in an open-plan office, it may be sufficient to illuminate only part of the room. A dimmer orientation light would be sufficient for the rest of the room.

This very option is provided by the connection of lighting groups using the ELC bus, which also increases the number of lights that can be controlled. The ELC bus does not enlarge a single lighting group, instead it networks up to 10 lighting groups.

Like other bus networks, the ELC bus also has a chain topology. To protect against malfunctions, both ends of the connection must be equipped with terminating resistances. This is done using the ELC bus configuration switch.

**ELC bus:
Max. 10 lighting
groups**



Connection between lighting groups using the ELC bus.

4.4.1 Differences between DALI and ELC connections

The DALI and ELC connections differ in two ways:

- Commands and signals that can be transmitted.
- Number of lights that can be controlled.

Differences in the transmission of commands and signals:

	Transmission via DALI bus	Transmission via ELC bus
Setting commands (light target value, switch-off delay time etc.)	All	All
Override commands (using a button, remote control, app)	All	On, off, scene selection
Detector signal: Light value		No transmission
Presence detector	All	Transmission, reaction to signal can be configured using the ESY-Pen app

Example: The presence detector from lighting group 1 measures that the light value is lower than the light target value and detects presence. Both signals are transmitted to the SmartDriver via DALI, which sends a switch-on command to all lights in lighting group 1.

The presence detector from lighting group 2 also reports a light value below the light target value, but does not detect presence. Lighting group 2 is therefore not switched on. Lighting group 2 activates either the lighting or the orientation light, depending on the settings, only if the ELC bus transmits the notification of a detected presence from lighting group 1 to lighting group 2.

Differences in the number of lights that can be controlled:

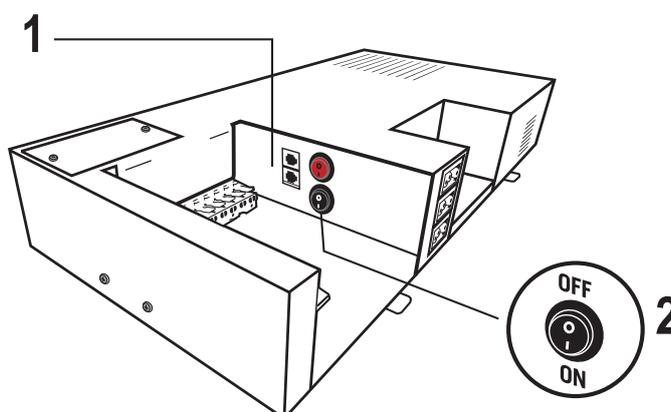
The ELC bus increases the number of lights that can be controlled because it can connect up to 10 lighting groups:

SmartDriver model	Lights per DALI lighting group (maximum)	Lights with lighting groups connected via ELC bus (maximum)
ELC SmartDriver x4	80	800
ELC SmartDriver x8	80	800
ELC SmartDriver x12	72	720
ELC SmartDriver x16	80	800

4.4.2 Establishing an ELC bus connection

The required cable with RJ-11 plugs is included in the scope of delivery. The RJ-11 sockets are wired in parallel, there are therefore no input or output sockets.

The ELC bus configuration switch does not switch the bus connection on or off, instead it configures the device for the bus connection. For this purpose, the switch activates terminating resistances that must be present at the start and the end of the ELC bus connection. If a switch is set incorrectly, the signal transmission is interrupted.



The ELC connection.

1: RJ-11 sockets for connection cable.

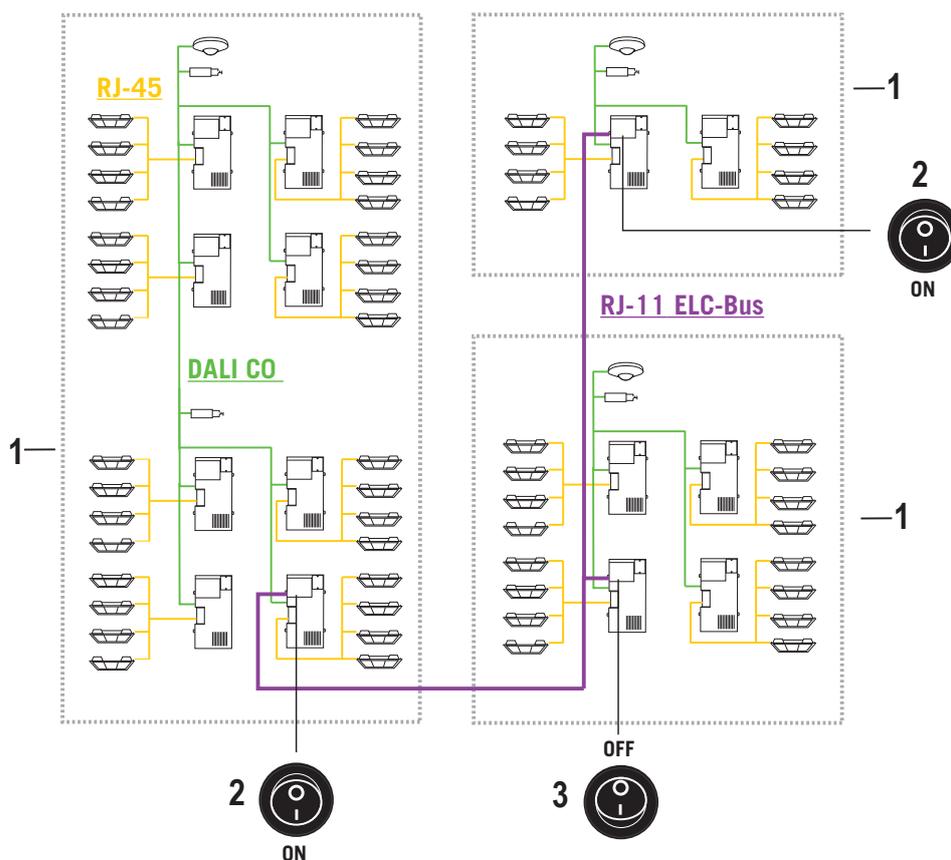
2: ELC bus connection switch.

How to connect lighting groups using the ELC bus:

- Remove the cover to gain access to the RJ-11 sockets and the ELC configuration switch.
- Connect a SmartDriver from one lighting group to be networked with a SmartDriver from another lighting group to be networked using the RJ-11 cable.
- Repeat the process until all lighting groups are connected as desired using RJ-11 cables.

- Set the ELC bus configuration switch:
 - The switch must be set to “ON” if only one RJ-11 cable is connected.
 - The switch must be set to “OFF” if two RJ-11 cables are plugged in, i.e. the device forwards the connection.
- Attach the cover again.
 - ✓ The lighting groups are connected via the ELC bus.

The following shows an example of a correct connection:



Correct connection using the ELC bus.

1: Lighting groups

2: ELC bus configuration switch for devices at the start and end of the connection. Switch position: ON.

3: ELC bus configuration switch for devices in the middle of the connection. Switch position: OFF.

4.5 Warm-up phase

The Light Control Box starts the warm-up phase each time the power is switched on.

Configuring the Light Control Box during the warm-up phase:

- Connected lights are on.
- Connected presence detector: During this phase, first the red LED flashes, then the blue LED flashes. Finally, the green LED flashes four times, after which point the detector is ready for use.
- After approx. 30 seconds, the Light Control Box is ready for operation and functions in line with the factory settings or the user-defined program.



Once the warm-up phase is complete, the LED signals on the presence detector mean the following:
 Red LED = remote control command is being received.
 Green LED = presence detected; blue LED = Light Control Box is in programming mode.

4.6 Factory settings

The Light Control Boxes are configured with factory settings. These defaults can be changed according to preference. ESYLUX recommends noting down the changed settings in the right-hand column of the table.

Settings	Default	Individual setting
Operating mode	fully automatic	
Brightness target value	500 lux	
Off delay time	5 minutes	
Orientation light	Brightness 10%	
Duration of orientation light	0 minutes	
Switch-off warning channel 1–4	60 seconds	
DALI channel 1 map	Master channel 1 (C1)	
DALI channel 2 map	Slave channel 2 (C2)	
DALI channel 3 map	Slave channel 3 (C3)	
DALI channel 4 map	Slave channel 4 (C4)	
DALI switch DS1	Active, mode: fully automatic	
Off delay time DS1	30 minutes	

Settings	Default	Individual setting
DALI switch DS2	Active, mode: Semi-automatic	
Off delay time DS2	30 minutes	

4.7 Initial steps

The easiest way to configure your lighting system is to make the following settings first:

- **Date and time:** The date and time must be entered correctly before functions such as time-controlled orientation light will work. The time setting should be checked once a year. The settings can be entered via the remote control (see Chapter 8.8) and via the app (see Chapter 13.1.1).
- **Activating light sensors:** To connect lights to the Light Control Box with an additional light sensor, you must activate the sensors. This is done by calibrating the sensors via the remote control (see Chapter 8.2) and via the app (see Chapter 13.2.2).

Lights with
light sensor

5 Overview of operating modes

The Light Control Box can control the energy-saving properties of the room lighting by taking into account the presence of people and the brightness of the ambient light. The following information is helpful to speed up access to the desired settings:

- The automatic sequence of the operating modes if the Light Control Box does not detect any presence.
- Operating modes that are triggered manually.
- The effect of detected presence on the individual operating modes.

Changes in the ambient light can cause the lighting to switch on or off automatically depending on the settings. However, changes in the ambient light do not cause the current operating mode to change.

5.1 Sequence of the operating modes

If the Light Control Box is switched on and no further presence is detected, it runs through the following operating modes in sequence:

Normal operation mode - Switch-off warning mode - Orientation light mode - Energy-saving mode.

Operating modes such as switch-off warning mode and orientation light mode may run unnoticed if their duration is set to 0 seconds.

Sequence
of operating
modes

Overview of operating modes

Normal operation mode

Action in normal operation mode	<ul style="list-style-type: none"> • Illuminates in accordance with the program/factory settings when presence is detected. <p>Note: Deactivation of the lighting may form part of normal operation mode if the Light Control Box has been programmed to a target light value that is exceeded by the ambient daylight.</p>
Trigger for normal operation mode	<ul style="list-style-type: none"> • When fully automatic is activated: <ul style="list-style-type: none"> - Presence is detected. - Manual activation via the button or remote control. • When semi-automatic is activated: <ul style="list-style-type: none"> - Manual activation via the button or remote control.
Trigger for normal operation mode	<ul style="list-style-type: none"> • Regardless of semi- or fully automatic: Normal operation mode can also be triggered by motion detection during the off warning time (see below) if override mode (see below) was previously active.
Duration	<ul style="list-style-type: none"> • For such time that motion is detected, plus the off delay time. <p>The off delay time can be set to a value of between one minute and 240 minutes.</p>
Subsequent operating mode	<ul style="list-style-type: none"> • Off warning mode.

Switch-off warning mode

Action in switch-off warning mode	<ul style="list-style-type: none"> • Illuminates in accordance with the settings for the orientation light.
Trigger for off warning mode	<ul style="list-style-type: none"> • Expiry of the off delay time in normal operation or override mode.
Duration	<ul style="list-style-type: none"> • Depending on the settings, 0 to 240 seconds.
Subsequent operating mode	<ul style="list-style-type: none"> • Orientation light mode.

Orientation light mode

Action in orientation light mode	<ul style="list-style-type: none"> • Illuminates in accordance with the settings for the orientation light.
Trigger for orientation light mode	<ul style="list-style-type: none"> • Expiry of the set time for off warning mode.
Duration	<ul style="list-style-type: none"> • Depending on the settings. 0 to 240 minutes or according to specific time interval.
Subsequent operating mode	<ul style="list-style-type: none"> • Energy-saving mode.

Energy-saving mode

Action in energy-saving mode	<ul style="list-style-type: none"> • Deactivates the lighting.
Trigger for energy-saving mode	<ul style="list-style-type: none"> • Expiry of the orientation light time.
Duration	<ul style="list-style-type: none"> • When fully automatic is activated: Until presence is detected or the ambient brightness falls below the set value. • When semi-automatic is activated: Until normal operation mode is started via the button or remote control.
Subsequent operating mode	<ul style="list-style-type: none"> • Normal operation mode or override mode.

5.2 Manually triggered operating modes

Other than these operating modes that the Light Control Box can automatically switch between, there are other operating modes that are triggered manually or by certain events:

Override mode

Action	<ul style="list-style-type: none"> • Illumination that differs from normal operation mode owing to manual interventions such as changes to brightness or activation of light scenes. Manual changes are temporary and are not stored. Note: Off delay time settings for normal operation mode also apply to override mode.
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Overview of operating modes

Trigger for override mode	<ul style="list-style-type: none"> • Command via the button, remote control or app during normal operation • Motion detection during the off warning time if override mode was active before the off warning.
Duration	<ul style="list-style-type: none"> • For such time that motion is detected, plus the set off delay time.
Subsequent operating mode	<ul style="list-style-type: none"> • Off warning mode, as after normal operation mode.

Programming mode

Trigger	<ul style="list-style-type: none"> • Remote control button or app command to start programming mode.
Action	<ul style="list-style-type: none"> • Saves the settings for lighting conditions, off delay time times, etc. transmitted by remote control or app.
Subsequent operating mode	<ul style="list-style-type: none"> • When fully automatic is activated: Energy-saving mode, transition to normal operation mode following presence detection. • When semi-automatic is activated: Energy-saving mode.
Trigger for subsequent operating mode	<ul style="list-style-type: none"> • Remote control button for ending programming mode or confirming a setting changed via app. • Five minutes of inactivity (programming mode then ends automatically).

Test mode

Trigger	<ul style="list-style-type: none"> • Remote control button for starting test mode.
Action	<ul style="list-style-type: none"> • All light channels work at 100%, blue notification LED flashes following detected movement.
Subsequent operating mode	<ul style="list-style-type: none"> • When fully automatic is activated: Energy-saving mode, transition to normal operation mode following presence detection. • When semi-automatic is activated: Energy-saving mode.
Trigger for subsequent operating mode	<ul style="list-style-type: none"> • Remote control button for ending test mode.

Error mode

Action	<ul style="list-style-type: none"> All light channels work at 100%.
Trigger	<ul style="list-style-type: none"> Defect in the presence detector or DALI power supply.
Subsequent operating mode	<ul style="list-style-type: none"> When fully automatic is activated: Energy-saving mode, transition to normal operation mode following presence detection. When semi-automatic is activated: Energy-saving mode.
Trigger for subsequent operating mode	<ul style="list-style-type: none"> Rectification of the error.

5.3 Operating modes and detected movements

To enable you to configure the Light Control Box according to your preferences, you also need to know what happens if movement is detected during an operating mode.

Normal operation mode

Effect of detected movement	<ul style="list-style-type: none"> Any movement detected during the off delay time causes the off delay time to re-start, which extends normal operation mode.
Subsequent operating mode	<ul style="list-style-type: none"> None, normal operation mode remains active owing to detected movement.

Switch-off warning mode

Effect of detected movement	<ul style="list-style-type: none"> Ends the off warning mode.
Subsequent operating mode	<ul style="list-style-type: none"> Switch to the previous operating mode, which is either normal operation mode or override mode.

Orientation light mode

Effect of detected movement	<ul style="list-style-type: none"> Ends the orientation light mode.
Subsequent operating mode	<ul style="list-style-type: none"> Normal operation mode.

Energy-saving mode

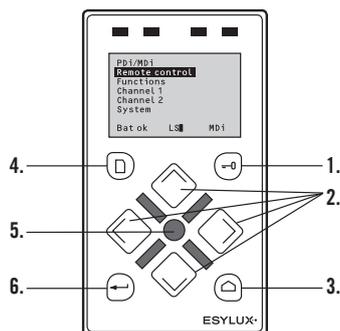
Effect of detected movement	<ul style="list-style-type: none">• Depends on the current settings.
Subsequent operating mode	<ul style="list-style-type: none">• When fully automatic is activated: Normal operation mode.• When semi-automatic is activated: Detected movement has no effect; normal operation mode or override mode must be started via the button, remote control or app.

**Universal
remote
control**

6 Setting via remote control

The Light Control Box settings can be input via remote control. If additional Light Control Boxes are connected to a Light Control Box, all of the Light Control Boxes assume the settings of the first Light Control Box.

The infrared remote control Mobil-PDi/MDi-universal (ep10433993) makes it simple for electricians and users to set parameters and special functions. This remote control is available as an accessory.



1. Key button 
2. Navigation buttons 
3. Home button 
4. SD button 
5. OK button 
6. Return button 

For optimum reception, point the remote control directly at the presence detector when programming the settings.



In direct sunlight, the standard remote control range of approximately 8 m may be reduced due to the infrared proportion of sunlight.

The Mobil-PDi/MDi-universal remote control offers functionality for virtually all ESYLUX remote controls. If ESYLUX makes improvements to the remote control menus or commands, you can update the universal remote control. Simply download the latest software version for one of the implemented remote controls from the ESYLUX website to an SD card. Unscrew the bottom cover on the rear of the remote control to insert the SD card into the universal remote control. Select the menu item <System/Software> on the universal remote control to update the device.

For the settings of the Light Control Box, select the X-Light Control remote control. Following selection, this remains the default remote control.

6.1 Selecting X-Light Control remote control

1. Switch on the remote control using the  button.
2. On activation, confirm the highlighted menu item <Remote controls> with the  button.
3. Press the  button to select the remote control <X-Light Control>, and confirm the selection with the  button.
 - ✓ The X-Light Control is now the active remote control.

Temporary settings can be made via the <Functions> menu item.

Permanent settings can be made via the <Programming> menu item. For the exceptions, see the start of Chapter 7.

Automatic switch-off



The remote control automatically switches off if it has been inactive for one minute.

Fast access to menus



If you change a setting or program multiple times, for example to try and find the optimum setting, you can set up quick access to this setting. To do so, activate the function <store navigation> in the <System> menu item. The remote control then shows the last used menu item every time it is switched on. You can undo this setting by selecting the function <Standard navigation> in the remote control menu item <System>. All instructions in this manual assume that the menu item <Standard navigation> is selected.

Home button: Navigation to the main menu

You can use the  button to return directly to the main menu at any time.

6.2 X-Light Control menu layout

The following tables provide an overview of the <Functions> and <Programming> menu items. The tables serve as an initial guide and may help you to find a required function more quickly.



The remote control does not show the most recently programmed values. Therefore, ESYLUX recommends noting down the settings you make using the template provided on page 34.

Layout of the <Functions> menu item

Functions
Channel 1
Channel 2
Channel 3
Channel 4
All Channels
Call scene
Bat ok LS ELC

Functions
Store scene
DALI Switch
Reset
Test start
Test stop
KNX Prog. On
Bat ok LS ELC

Functions	Channel 1	On
		Off
	Same sub-menu:	
	Channel 2	Dim start
	Channel 3	Dim stop
	Channel 4	Light value
		On
		Off
	All Channels	Dim start
		Dim stop
		Light value
		Scene 1
		Scene 2
	Call scene	Scene 3
		Scene 4
		Scene 1
		Scene 2
	Store scene	Scene 3
		Scene 4
		DS1 on
		DS1 off
	DALI switch	DS2 on
		DS2 off
	Reset	
	Test start	
	Test stop	
	KNX Prog. On	
	KNX Prog. Off	

Table 1: "Functions" menu with sub-menus

Layout of the <Programming> menu item

Programming
Calibration
All Channels
DALI Map
DALI Switch
Scene editor
Calender
Bat ok LS
ELC

Programming		Channel 1
		Channel 2
	Calibration	Channel 3
		Channel 4
		Store brightness
		Light set value
		Off delay time
		Off warning time
	All Channels	Orientation light
		Orient. light mode
		Orient. light in min.
		Orient. light from h
		Orient. light to h
		Full automatic
		Semi automatic
		C1
	Channel Map	C2
		C3
		C4
		DALI 1
	DALI map	DALI 2
		DALI 3
		DALI 4
		DS1 connected
		DS1 not connected
	DALI switch	DS1 off delay time
		DS1 Mode
		DS2 connected
		DS2 not connected
		DS2 off delay time
		DS2 Mode

Programming		CH1 %	
		CH2 %	
		CH3 %	
		CH4 %	
	Scene editor	DS 1	
		DS 2	
		Scene	
		Calendar	Years
			Months
			Days
	Hours		
	Minutes		
	Seconds		
	Factory reset		
	Reset editor		
	Sensitivity		
	Detector LEDs On		
	Detector LEDs Off		
	Light value on		
	Light value off		
	Detector Fact. reset		
	Detector Light Factor		

Table 2: "Programming" menu with sub-menus

7 The <Functions> remote control menu

Settings made in the <Functions> menu item are executed temporarily but not stored as a new basic setting. When settings are made in this menu, the Light Control Box is therefore in override mode.

In the <Functions> menu, there are two settings that are not temporary but stored permanently:

- Scene changes via the <Store scenes> command
- Activate/deactivate the KNX programming mode

7.1 Channel 1, 2, 3 and 4

The sub-menu items for <Channel 1>, <Channel 2>, <Channel 3> and <Channel 4> are identical. For each lighting channel, the following functions are possible in the sub-menus:

**Exceptions:
Permanent
settings**

The <Functions> remote control menu

Channel 1
On
Off
Dim start
Dim stop
Light value
Bat ok LS ELC

7.1.1 On/Off

The lighting for each channel is temporarily switched on or off using the <On> and <Off> menu items.

Switching a channel on:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Channel 1>, for example, and confirm the selection with the  button.
3. Select the <On> menu item and confirm the selection with the  button.
✓ The lighting is switched on.

Switching a channel off:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Channel 1>, for example, and confirm the selection with the  button.
3. Select the <Off> menu item and confirm the selection with the  button.
✓ The lighting is switched off.

7.1.2 Start/stop dimming

The **Start dimming/Stop dimming** functions are used to adjust the illumination level in both directions and stop the dimming process.

Dimming the illumination level:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Channel 1>, for example, and confirm the selection with the  button.
3. Select the <Dim start> menu item and confirm the selection with the  button.
✓ The lighting is adjusted in a specific direction, e.g. from dark to bright.

Changing the dimming direction:

- Press the  button to confirm the <Dim start> menu item again during the dimming process.
 - ✓ The lighting is adjusted in a different direction, e.g. from bright to dark.

Stopping the dimming process:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Press the  button to select the channel to be dimmed and confirm the selection with the  button.
3. Select the <Stop dimming> menu item and confirm the selection with the  button once the dimming process has reached the required brightness.
 - ✓ The dimming process stops.

7.1.3 Luminous efficiency

The function **Luminous efficiency** sets the illumination level to a percentage of the maximum brightness.

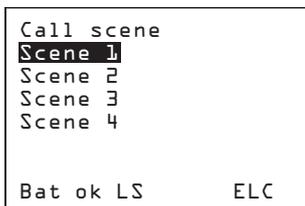
Changing the luminous efficiency:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Channel 1>, for example, and confirm the selection with the  button.
3. Select the  button to choose the menu item <Luminous efficiency> and confirm the selection with the  button.
4. Use the  or  buttons to set the required illumination level and confirm the selection with the  button.
 - ✓ The lighting is changed to the set percentage.

7.2 All channels

In the menu item <All Channels>, you can set general settings for all lighting channels. The menu sub-items are identical to those for the individual channels 1 to 4 as described in “Channel 1, 2, 3 and 4” page 45.

7.3 Call scene



The menu item <Call scene> activates one of the four light scenes. You can configure each scene according to your preferences.

A light scene consists of up to four lighting channels and two DALI switch devices. The DALI switch devices are connected to a DALI cable to control a non-DALI-compatible lighting channel. The scenes have default factory settings, as described in the following table.

i You can customise the light scenes for each lighting channel. See Chapter “Scene editor” page 67 for more information.

	Sc1	Sc2	Sc3	Sc4
CH1 %	10	100	30	70
CH2 %	10	100	30	70
CH3 %	10	100	30	70
CH4 %	10	100	30	70
DS 1	Off	On	Off	On
DS 2	Off	On	Off	On

Table 3 Default scene settings

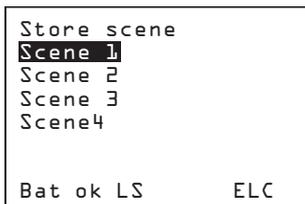
i A light scene can also be activated by an external button, see Chapter 14.2 on page 104.

Calling up a scene:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Call scene> and confirm the selection with the  button.
 - ✓ The sub-menu shows an overview with the four scenes <Scene 1>, <Scene 2>, <Scene 3> and <Scene 4>.
3. Select the  button to choose the menu item <Scene 2>, for example, and confirm the selection with the  button.
 - ✓ The selected scene is activated.

7.4 Store scene

You can customise the light scenes for each lighting channel. To do so, change the luminous efficiency of one or more channels as described in



Chapter “Luminous efficiency” page 47. You can store this setting as a scene for the respective channel. When you save the setting, the previous scene settings for the channel, for example the default factory settings, are deleted.

Saving a light scene:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Store scene> and confirm the selection with the  button.
 - ✓ The sub-menu shows an overview of the four scenes <Scene 1>.
3. Select a menu item, e.g. <Scene 4> and confirm the selection with the  button.
 - ✓ The setting is saved as <Scene 4>.
4. Press the Return button once to exit the <Store scene> menu.

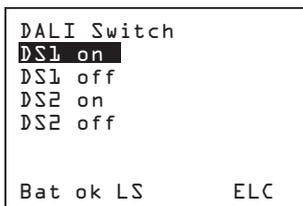
7.5 DALI switch

The <DALI switch> menu item allows you to control additional non-DALI compatible devices. For example, you can use the DALI switch to switch on non-DALI-compatible blackboard lighting in a classroom. The Light Control Boxes are configured in the factory to enable them to send commands to connected DALI switches. You can change this setting.

DALI switch devices are available as accessories including SW DALI Full Automation (item no. EP10427473) and SW DALI Semi Automation (item no. EP10427480).

7.5.1 DS1/DS2 on

The menu items <DS1 on> and <DS2 on> are identical.



How to switch on a lighting channel with DS1 or DS2:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <DALI switch> and confirm the selection with the  button.
3. Now select the  button to choose the menu item <DS 2 on>, for example, and confirm the selection with the  button.
 - ✓ The DALI switch device switches the lighting on.



The DALI switch can be activated and deactivated for any scene.

7.5.2 DS1/DS2 off

The menu items <DS1 off> and <DS2 off> are identical. You can switch on any non-DALI compatible lighting channel individually.

How to switch off a lighting channel with DS1 or DS2:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <DALI switch> and confirm the selection with the  button.
3. Select the  button to choose the menu item <DS1> for example, and confirm the selection with the  button.
 - ✓ The DALI switch device switches the lighting off.

7.6 Reset

The reset command has two purposes: It switches off the entire room lighting temporarily. It also deletes any commands that put the Light Control Box into override mode.

After a reset, the Light Control Box switches to energy-saving mode. The lighting remains off until the Light Control Box detects a presence or receives a command to switch the lighting back on. Once presence has been detected or a re-activation command has been received, the Light Control Box works in normal operation as per the programming.

Triggering a reset:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Reset> and confirm the selection with the  button.
 - ✓ The entire lighting switches off.

7.7 Test start/stop

The **Test start** function tests the detection range of the detector. During the test phase, the lighting is set to maximum brightness.

Activating the test function:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Test start> and confirm the selection with the  button.
 - ✓ The entire lighting is switched on.
 - ✓ The blue LED flashes in the sensor head when motion is detected.

Ending the test function:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Test stop> and confirm the selection with the  button.
 - ✓ The test lighting switches off.

7.8 KNX Prog. On/Off

These remote control commands are for Light Control Boxes with a KNX module. The command <KNX Prog. On> enables you to assign a physical address to the KNX module.

Activating the KNX program function:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Use the  button to select the menu item <KNX Prog. On> and confirm the selection with the  button.
 - ✓ The KNX module is in programming mode.

Ending the KNX program function:

1. Select the <Functions> menu item and confirm the selection with the  button.
2. Use the  button to select the menu item <KNX Prog. Off> and confirm the selection with the  button.
 - ✓ The KNX module is no longer in programming mode.

8 The remote control menu <Programming>

In the <Programming> menu item, you can set permanent settings.

i The settings are retained even when the device is not supplied with power — for example because the power supply in the building is switched off overnight.

8.1 Activate/deactivate programming mode

Activating programming mode via the remote control:

- Press the  button.
 - ✓ The blue LED on the presence detector lights up.
 - ✓ The lighting is switched to 100% luminous efficiency.
 - ✓ The red LED on the detector flashes twice to confirm each received command.

To exit programming mode, proceed as follows:

Prerequisites:

- The blue LED illuminates in the sensor head.
- Press the  button.
 - ✓ Your settings are saved and programming mode is closed.
 - ✓ The blue LED goes out and the Light Control Box switches the lighting off.

i If programming mode is not ended via the key button within five minutes of the last entry, the Light Control Box automatically switches back to normal operation mode. The settings are automatically saved.

8.2 Calibration

The **Calibration** function can be used when lights with in-built light sensors are connected to the Light Control Box. The light sensor is affected by light from reflective work surfaces, walls and floors. Calibration is essential for ensuring that surfaces at a specific height remain evenly lit.

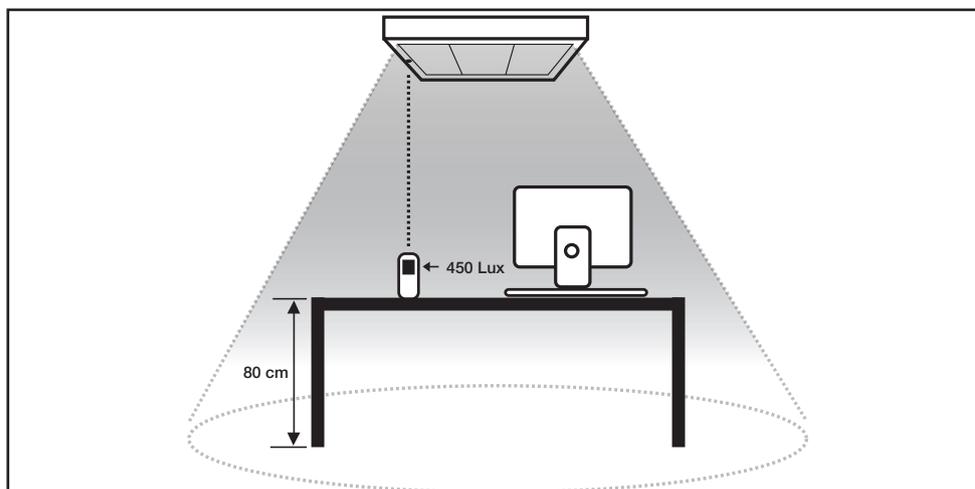
A lux meter is required for calibration. The light values measured with the lux meter can be transferred to the Light Control Box by remote control. The measured lux values are reference values used by the Light Control Box for precise comparisons. The calibration allows the Light Control Box to calculate more precisely which illumination level is required to retain a constant target brightness.

**Only lights
with light
sensor**

Lux meter



For more information on setting the target brightness, see Chapter “Light set value” page 56.



Greater precision through repetition

The light sensor must be calibrated with three measurements at least once per lighting channel. We recommend three measurements per channel for optimum illumination results.



If a lighting channel is extended with DALI louvre lights, position the light with the light sensor in the darkest area of the room. This is the only way to ensure even the darkest area is sufficiently lit.

The sub-menu items for <Channel 1>, <Channel 2>, <Channel 3> and <Channel 4> are identical. The calibration must be performed individually for each lighting channel. During the calibration, only the lighting channel that is being calibrated is illuminated.

Calibration procedure

Calibrating a light sensor:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Press the  button to activate programming mode.
3. Select the <Calibration> menu item and confirm the selection with the  button.
4. Select the  button to choose the menu item <Channel 1>, for example, and confirm the selection with the  button.
 - ✓ The lighting on channel 1 is switched on at maximum brightness. The other lighting channels are not active. The light sensor measures the brightness.

The remote control menu <Programming>

Measurement 1

5. Use a lux meter to measure the current light value at the desired location, e.g. at a desk. The reading is 600 lux, for example.
6. Enter the lux value using the  button and confirm the entry with the  button.
 - ✓ The Light Control Box receives the value and dims the luminous efficiency for the next measurement.

Measurement 2

7. Now measure the light value again using the lux meter. The value is now lower than the first measurement and reads 300 lux, for example.
8. Enter this lux value using the  or  button and confirm the entry with the  button.
 - ✓ The Light Control Box receives the value, and switches the lighting off.

Measurement 3

9. Now measure the current light value using the lux meter. The reading is 40 lux, for example.
10. Enter this lux value in the remote control using the  or  button and confirm the entry with the  button.
 - ✓ This completes the calibration process. The Light Control Box switches the lighting on at maximum brightness.
11. Press the  button to end calibration.
12. Press the  button to close programming mode.
 - ✓ The blue LED goes out in the sensor head.
 - ✓ The lighting goes out. If the brightness falls below the target brightness value, the light sensor brightens the lights on channel 1.
 - ✓ The channel is now calibrated.
13. Repeat this calibration for the rest of the channels.
 - ✓ Calibration is now complete.

8.3 All channels

The menu item <All Channels> implements settings for all lighting channels.

8.3.1 Store brightness

The **Store brightness function** saves the current channel light values as the target brightness value. The values act as a reference value for the automatic lighting when presence is detected. The current light values can be entered via the following sensors:

```
All Channels
Store brightness
Light set value
Off delay time
Off warning time
Orientation light
Orient. light mode
Bat ok LS      ELC
```

The remote control menu <Programming>

- Light Control Boxes capture the current light value using the connected DALI presence detector.
- Lights with an integrated light sensor send the current light value of their channel to the Light Control Box.



If a channel does not have a sensor because only one light without a light sensor is working on the channel, the value of the DALI presence detector is used for this channel.

The required reference value must be set manually before storing the brightness. This is performed in the Functions menu.

Setting the reference values for the read-in function:

1. Press the  button to activate programming mode.
 - ✓ The Light Control Box switches to programming mode and the lights produce maximum brightness.
2. Select the <Functions> main menu and confirm the selection with the  button.
3. Select a lighting channel, for example <Channel 1>, and confirm the selection with the  button.
4. Select the  button to choose the menu item <Luminous efficiency> and confirm the selection with the  button.
5. Enter the percentage value of the maximum luminous efficiency by pressing the  or  buttons. Confirm your selection with the  button.
 - ✓ The illumination level changes according to your input.
6. Select the other lighting channels of the room, and repeat steps 4 and 5 for these channels.
 - ✓ The desired brightness is set and can be read in.
7. Press the  button to return to the main menu for the other settings.

Adopting the reference value with the read-in function:

1. Select <Programming> from the main menu and confirm the selection with the  button.
2. Select the  button to choose the menu item <All Channels> and confirm the selection with the  button.

The remote control menu <Programming>

3. Select the <Store brightness> menu item and confirm the selection with the  button.
4. Close programming mode with the  button.
 - ✓ The reference value is now saved.

8.3.2 Light set value

The light set value is the target brightness value and acts as the threshold value for the lighting control. If the ambient light level is below the target brightness, the Light Control Box controls the illumination level when presence is detected. So, if the daylight exceeds the value, the Light Control Box automatically switches off the light.

The light set value function specifies the brightness in lux for all lighting channels in a room. You can send the desired or measured lux values to the Light Control Box by remote control.



This process gives the best results for lights with a calibrated light sensor.

Setting the light target value:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <All Channels> and confirm the selection with the  button.
4. Select the  button to choose the menu item <Light set value>, and confirm the selection with the  button.
5. Use the  or  buttons to set the required lux value and confirm the selection with the  button.
6. End programming mode by pressing the  button.
 - ✓ The light set value is set.



If you wish to assign different target brightness value to the channels, use the **Store brightness** function. For information, please see Chapter “Store brightness” page 54.

8.3.3 Off delay time

The **Off delay time** function determines for how long the connected lights remain switched on after the last detected movement. The off delay time applies to normal mode and override mode, which is a temporary change to normal mode. For more information on operating modes, see “Overview of operating modes” page 35.

The Light Control Box ends normal operation mode or override mode once the switch-off delay time has elapsed. Any movement detected during the off delay time causes the off delay time to re-start, which extends normal mode or override mode.

- The minimum off delay time is one minute.
- The maximum off delay time is 240 minutes.

Setting the delay time:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <All Channels> and confirm the selection with the  button.
4. Select the <Off delay time> menu item and confirm the selection with the  button.
5. Use the  or  buttons to set the required off delay time and confirm the selection with the  button.
6. End programming mode by pressing the  button.
 - ✓ The entered duration is now saved.

8.3.4 Off warning

The **off warning** indicates that the set off delay time has elapsed. In off warning mode, the lighting uses the brightness value that was set for the orientation light.

If movement is detected during the switch-off warning time, the detector returns to the most recent active operating mode. This may be normal operation mode or override mode.

The off warning time can be set to a duration of 0 to 240 seconds.



Switch-off warning is disabled if the time is set to 0 seconds.

Example: The illumination level was dimmed manually via an external button, and the Light Control Box is in override mode as a result. The set

off delay time has elapsed. The off warning time now starts, which is set to 60 seconds. During this time, the lighting uses the brightness that is set for the orientation light. If presence is detected during this time, the Light Control Box returns to override mode.

Setting the off warning:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <All Channels> and confirm the selection with the  button.
4. Select the <Off warning> menu item and confirm the selection with the  button.
5. Use the  or  buttons to set the required duration and confirm the selection with the  button.
6. End programming mode by pressing the  button.
 - ✓ The switch-off warning time is now set.

8.3.5 Orientation light

The **Orientation light** function provides subtle lighting. You can also set the brightness of the orientation light to values between 10% and 50% of the maximum illumination level. You can also set for how long or from when you want the orientation light to remain active.

Prerequisites

The orientation light only switches on once the set off delay time or a set off warning time have elapsed. The orientation light duration can also be set to zero minutes.

Brightness

Setting the orientation light brightness:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <All Channels> and confirm the selection with the  button.
4. Select the  button to choose the menu item <Orientation light> and confirm the selection with the  button.

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5. Use the  or  buttons to set the brightness as a percentage of the maximum brightness and confirm the selection with the  button.
6. End programming mode by pressing the  button.
 - ✓ The brightness for the orientation light is now set.

8.3.6 Orient. time mode

Mode duration

The menu item <Orient. time mode> specifies whether the duration for the orientation light is set in minutes or with a fixed start and end time. The following applies:

- If you enable the setting <in minutes>, the settings in the menu item <Orient. light from h> and <Orient. light to h> are disabled.
- If you enable the setting <From h to h>, the setting in the menu item <Orient. light in min.> is disabled.

Duration in minutes

Activating minutes mode:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <All Channels> and confirm the selection with the  button.
4. Select the <Orient. time mode> menu item and confirm your selection with the  button.
5. Confirm the menu item <in minutes> with the  button.
6. End programming mode by pressing the  button.
 - ✓ The duration of the orientation light can now be set in the menu item <Orient. min.>.

For more information about entering the desired number of minutes, see the following section “Orient. light in min.” page 60.

Duration according to times

Activating time mode:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <All Channels> and

The remote control menu <Programming>

- confirm the selection with the  button.
4. Select the <Orient. time mode> menu item and confirm your selection with the  button.
 5. Select the  button to choose the menu item <Until time> and confirm the selection with the  button.
 6. End programming mode by pressing the  button.
 - ✓ The duration of the orientation light can now be set with the menu items <Orient. light from h> and <Orient. light to h>.

For information on setting the desired start and end time, see page 61 onwards.

8.3.7 Orient. light in min.

The <Orient. in min.> menu item sets the orientation light duration to a value of between 0 to 240 minutes.



If the orientation light duration is set to zero minutes, the orientation light is disabled.

Prerequisites:

- The setting <in minutes> is enabled in the menu item <Orient. time mode>. For more information, see Chapter “Orient. time mode” page 59.

Setting the orientation light duration in minutes:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <All Channels> and confirm the selection with the  button.
4. Select the  button to choose the menu item <Orient. light in min.> and confirm the selection with the  button.
5. Use the  or  buttons to set the required time in minutes and confirm the selection with the  button.
6. End programming mode by pressing the  button.
 - ✓ The duration for the orientation light is now set in minutes.

```
All Channels
Orient. light in min
Orient. light from h
Orient. light to h
Full automatic
Semi automatic
Bat ok LS      ELC
```

Enter number
of minutes

8.3.8 Orient. light from h/Orient. light to h

The menu items <Orient. light from h> and <Orient. light to h> specify the duration of the orientation light using fixed start and end times.



Thanks to the built-in battery, the configured times are also retained in the event of a power failure.

Enter times

Prerequisites:

- The correct time must be set in the <Calendar> menu. See Section “8.8 Calendar” on page 68.
- The setting <Until time> in the <Orient. time mode> menu item must be enabled. For more information, see Chapter **Orient.. time mode**.

Setting the start and end time:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <All Channels> and confirm the selection with the  button.
4. Use the  button to select the <Orient. light from h> menu item and confirm the selection with the  button.
5. Use the  or  buttons to set the start time and confirm the selection with the  button.
✓ The start time is now set.
6. Press the  button once.
7. Use the  button to select the <Orient. light to h> menu item and confirm the selection with the  button.
8. Use the  or  buttons to set the end time and confirm the selection with the  button.
9. End programming mode by pressing the  button.
✓ The duration of the orientation light is now set with a start and end time.



Setting a start and end time is not the same as timer control. If the switch-off delay time in normal mode and the switch-off

Difference from time switching control

warning time elapse before the orientation light is due to start, the Light Control Box switches to energy-saving mode without illumination. The time-controlled orientation light is then not activated. If you want to be sure that the orientation light remains lit overnight, set the start time to a time when movement will still be detected. After the off delay time has elapsed, the light then switches to orientation light mode.

8.3.9 Fully automatic

Behaviour of the Light Control Box when **Fully automatic** is enabled:

The lighting automatically switches on if

- The ambient light is below the set target brightness
and
- the detector detects presence.

The lighting automatically switches off if

- the ambient light is brighter than the set target brightness
or:
- no movement is detected
and
- the set off delay time has elapsed.

Activating fully automatic:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <All Channels> and confirm the selection with the  button.
4. Select the  button to choose the menu item <Fully automatic>, for example, and confirm the selection with the  button.
5. End programming mode by pressing the  button.
✓ Fully automatic mode is now active.

8.3.10 Semi-automatic

If the **Semi-automatic** function is active, the lighting can only be activated via an external button. The lighting automatically switches off if the detector does not detect movement during the off delay time.

The remote control menu <Programming>

The lighting automatically switches off if

- the ambient light is brighter than the set target brightness
- or:**
- no movement is detected
- and**
- the preset off delay time for the light has elapsed.

Activating semi-automatic:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <All Channels> and confirm the selection with the  button.
4. Select the <Semi-automatic> menu item and confirm the selection with the  button.
5. End programming mode by pressing the  button.
 - ✓ Semi-automatic mode is now active.

8.4 Channel Map

This function enables you to assign a different channel number to a light. The new channel number must not be assigned to a different light. The remote control helps you to re-sort the channel numbers by preventing any invalid assignments.



What if you want to use multiple Light Control Boxes? Execute the Channel Map function before you connect the Light Control Boxes via DALI.

Assigning a new channel to a light:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <Channel map>, and confirm the selection with the  button.
4. Press the  button again.

The remote control menu <Programming>

5. Assign the required channel number to the first channel. To do this, press the  button to select the channel number and confirm the selection with the  button.
6. Return to the channel selection by pressing the  button.
7. Use the  button to select the next channel and confirm the selection with the  button.
8. Assign the required channel number to the channel. To do this, press the  button to select the channel number and confirm the selection with the  button.
9. Follow the same process for the two remaining channels.
10. Once each channel has a channel number, return to the channel selection by pressing the  button.
11. Use the  button to select the <OK> command and confirm the selection with the  button.
12. End programming mode by pressing the  button.
 - ✓ The channel numbers are reassigned.

8.5 DALI map

The four DALI interfaces of the Light Control Box are initially assigned to the lighting channels numerically. For example, DALI interface C2 corresponds to the lighting channel C2.

This allocation can be changed to suit your preferences using the **DALI map** function. You can also assign several DALI interfaces to one lighting channel.

Assigning a different lighting channel to a DALI interface:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <DALI map> and confirm the selection with the  button.
4. Press the  button to select the desired DALI interface and confirm the selection with the  button.

- ✓ The DALI interface is displayed with the current light channel number.
- 5. Use the  or  button to choose the light channel to which you wish to assign the DALI interface. Confirm the selection with the  button.
- 6. End programming mode by pressing the  button.
 - ✓ The DALI interface is now assigned to the desired light channel.

8.6 DALI switch

You can configure DALI switches 1 and 2 under the DALI switch menu item. The settings options for DALI switch 1 and 2 are identical.

```
DALI Switch
DS1 connected
DS1 not connected
DS1 off delay time
DS1 Mode
DS2 connected
DS2 not connected
Bat ok LS      ELC
```

8.6.1 DS1/DS2 connected

This function allows the Light Control Box to send control commands. By default, **DS1/DS2 connected** is active. As such, you only need this function if you have disabled the command output using the function **DS1/DS2 not connected**.

Activating the output of control commands to DALI switch 1 or 2:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <DALI switch> and confirm the selection with the  button.
4. Press the  button to select the DALI switch that you wish to register as connected. Confirm the selection with the  button.
5. End programming mode by pressing the  button.
 - ✓ The selected DALI switch is now registered as connected.

8.6.2 DS1/DS2 not connected

This function disables the output of control commands to a DALI switch. If this setting is enabled, you can no longer temporarily switch the DALI switch on or off in the functions menu.

Disabling DALI switch 1 or 2:

1. Select the <Programming> menu item and confirm the selection with the  button.

The remote control menu <Programming>

2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <DALI switch> and confirm the selection with the  button.
4. Press the  button to select the DALI switch that you wish to register as disconnected. Confirm the selection with the  button.
5. End programming mode by pressing the  button.
 - ✓ The selected DALI switch is now disconnected.

8.6.3 DS1/DS2 switch-off delay

This function sets how long the DALI switches keep the connected devices activated following the last detected movement. You can choose a time of one to 255 minutes.

Setting the off delay time for DALI switch 1 or 2:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <DALI switch> and confirm the selection with the  button.
4. Select the  button to choose the menu item <DS1 switch-off delay> or <DS2 switch-off delay> and confirm the selection with the  button.
5. Use the  or  buttons to set the required duration and confirm the selection with the  button.
6. End programming mode by pressing the  button.
 - ✓ The off delay time is set for the selected DALI switch.

8.6.4 DS1/DS2 mode

This function enables more precise configuration of the DALI switches. The following settings are possible:

Fully automatic: When this function is active, the DALI switch switches the connected device on when a presence is detected. This function can then also be activated if the Light Control Box is operating in semi-automatic mode.

Semi-automatic: If this function is active, the DALI switch must be activated manually if the off delay time in normal operation or override mode has elapsed.

Pulse mode k: If this function is enabled, the DALI switch switches devices such as automatic stairwell timers or current impulse relays on with an impulse. The impulse is repeated regularly for as long as movement is detected.

Setting the mode for DALI switch 1 or 2:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <DALI switch> and confirm the selection with the  button.
4. Select the  button to choose the menu item <DS1 mode> or <DS2 mode> and confirm the selection with the  button.
5. Select the  or  button to choose the desired mode and confirm the selection with the  button.
6. End programming mode by pressing the  button.
 - ✓ The selected DALI switch now operates in the set mode.

8.7 Scene editor

The <Scene editor> menu item saves the brightness as a percentage of the maximum brightness for a light scene. You can also set whether a DALI switch should be switched on or off with the scene.

	Sc1	Sc2	Sc3	Sc4
CH1 %	10	100	50	70
CH2 %	10	100	30	70
CH3 %	10	100	30	70
CH4 %	10	100	30	70
DS1	off	on	off	on
DS2	off	on	off	on
Bat	ok	LS		ELC

Setting a scene:

The change is made using an example from scene 3 on channel 2.

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Scene editor> and confirm the selection with the  button.
 - ✓ The sub-menu shows a matrix with the default light values for each channel and scene. You can customise these values.
3. In the matrix, use the  button to navigate to the column <Sc3>

The remote control menu <Programming>

- and the  button to choose line <C2>. Confirm your selection with the  button.
4. Change the luminous efficiency value to 60 % using the  button. Confirm your selection with the  button.
 5. Press the  button once.
 6. To change the switch status of DALI switch 1 or 2, use the  button to navigate to the matrix point DSw1 or DSw2 and confirm the selection with the  button.
 7. Use the  or  buttons to set the required switching status and confirm the selection with the  button.
 8. Press the  button once.
 - ✓ You are now in the matrix again at the previous position. The set values must now be transmitted to the Light Control Box:
 9. Use the  button to navigate to the line <Scene>.
 - ✓ The matrix point <OK> is highlighted.
 10. Press the  button once.
 - ✓ <Send scene...> appears in the display. The remote control sends the new values to the Light Control Box.

 The scene editor saves the last set values. Therefore, if you want to set the same scene in a different room, simply enter programming mode, and send the required scene to the Light Control Box by clicking on <OK>.

8.8 Calendar

In the <Calendar> menu, you can enter the date and time. It is important to set the time if you want the orientation light to start and end at fixed times.

The time should be checked once a year.

 Thanks to the built-in battery, the settings are also retained in the event of a power failure.

Setting the date:

1. Select the <Programming> menu item and confirm the selection with the  button.

The remote control menu <Programming>

2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <Calendar> and confirm the selection with the  button.
4. The menu item <Years> is highlighted. Confirm your selection with the  button.
5. The input mask is configured for values from the year 2000. Use the  or  buttons to set the year and confirm the setting with the  button.
 - ✓ The year is now set.
6. Return to the Calendar menu with the  button.
7. Select the  button to choose the menu item <Months> and confirm the selection with the  button.
8. Use the  or  buttons to set the month and confirm the setting with the  button.
 - ✓ The month is now set.
9. Return to the Calendar menu with the  button.
10. Select the  button to choose the menu item <Days> and confirm the selection with the  button.
11. Use the  or  buttons to set the day and confirm the setting with the  button.
 - ✓ The day is now set.
12. Press the  button to save your changes and exit programming mode.

Setting the time:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <Calendar> and confirm the selection with the  button.

The remote control menu <Programming>

4. Select the  button to choose the menu item <Hours> and confirm the selection with the  button.
5. Use the  or  buttons to set the hour and confirm the setting with the  button.
6. Return to the Calendar menu with the  button.
7. Select the  button to choose the menu item <Minutes> and confirm the selection with the  button.
8. Use the  or  buttons to set the minute and confirm the setting with the  button.
9. Return to the Calendar menu with the  button.
10. Select the  button to choose the menu item <Seconds> and confirm the selection with the  button.
11. Use the  or  buttons to set the seconds and confirm the setting with the  button.
✓ The time is now set.
12. Press the  button to save your changes and exit programming mode.

8.9 Factory reset

The **Factory reset** function restores the Light Control Box to its default program settings. For more information on the default factory settings, see Section “Factory settings” page 34.

Performing a factory reset:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <Factory reset> and confirm the selection with the  button.
4. End programming mode by pressing the  button.
✓ The Light Control Box is reset to the factory settings.

8.10 Reset editor

If you change settings in the scene editor, you can undo these changes using the **Reset editor** function. The values in the scene editor are then reset to the default settings.



The **Reset editor** function does not change the Light Control Box settings. The function simply restores the default scene editor values locally in the remote control.

Restoring the original scene editor values:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Select the  button to choose the menu item <Reset editor> and confirm the selection with the  button.
 - ✓ The values in the scene matrix are reset to the default values.

8.11 Sensitivity

The DALI detectors connected to the Light Control Box are precise and highly sensitive presence detectors. In rare cases, interferences such as hot air currents may cause erroneous presence detection. The **Sensitivity** function adjusts the sensitivity of the presence detector.

You can set the sensitivity to:

<sensitive>, <normal>, <reduced> and <sharply reduced>.

By default, the presence detector is set to <sensitive>.

Setting the sensitivity of the presence detector:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <Sensitivity> and confirm the selection with the  button.
4. Use the  or  buttons to set the required sensitivity and confirm the selection with the  button.
5. End programming mode by pressing the  button.
 - ✓ The sensitivity of the presence detector is based on the set value.

8.12 Detector LED on/Detector LED off

The LEDs in the presence detector sensor head show the status of the presence detector. This function is activated by default. It can be switched on and off via the remote control. The LED signals are:

- The red LED flashes when commands are received from the remote control.
- The blue LED lights up when the Light Control Box is in programming mode.
- The green LED flashes when the detector detects movement.

You can deactivate the green LED to stop it flashing every time motion is detected.

Deactivating the green LED in the sensor head:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <Detector LEDs off> and confirm the selection with the  button.
4. End programming mode by pressing the  button.
 - ✓ The green LED switches off.

Activating the green LED in the sensor head:

1. Select the <Programming> menu item and confirm the selection with the  button.
2. Enable programming mode by pressing the  button.
3. Select the  button to choose the menu item <Detector LEDs on> and confirm the selection with the  button.
4. End programming mode by pressing the  button.
 - ✓ The green LED switches on.

8.13 Light value off/light value on

In order to function correctly, constant lighting control relies on information about the current level of brightness. If lights with additional light sensors are connected, the light sensors transmit the levels of brightness to the Light Control Box. The external DALI detector then acts as a presence detector and as a receiver for infrared commands from the remote control.

If the connected lights do not have a light sensor, the DALI detector can

assume the task of measuring the light value.

Lights with light sensor



To achieve the most precise lighting with constant brightness, you need to connect lights with an integrated light sensor. The light sensor can be further calibrated. For more information about calibrating the light sensor, see Section “Calibration” page 52.

In the default factory setting, the DALI detector measures the brightness. If the detector receives too much ambient light due to its installation position, this may impair the constant lighting control. In this case, you can deactivate light measurement through the detector.

Deactivating light measurement using a DALI detector:

Prerequisites:

- Chose a position as close as possible to being directly underneath the presence detector.
 - Aim the remote control directly at the detector so that only this device receives the remote control signal.
1. Select the <Programming> menu item and confirm the selection with the  button.
 2. Enable programming mode by pressing the  button.
 3. Select the  button to choose the menu item <Light value off> and confirm the selection with the  button.
 - ✓ The red LED flashes three times in the sensor head.
 4. End programming mode by pressing the  button.
 - ✓ Light measurement is deactivated.

Re-activate light measurement using the <Light value on> menu item.

8.14 Detector factory reset

The **Detector Fact. reset** function enables you to reset the following settings to the factory settings:

- Send light value
- Sensitivity of the presence detector
- Detector LEDs

The detector factory reset does not change any other settings, such as for the switch-off delay time.

Performing a detector factory reset:

1. Select the <Programming> menu item and confirm the selection with the  button.

2. Enable programming mode by pressing the  button.
3. Use the  button to select the menu item <Detector Fact. reset> and confirm the selection with the  button.
4. End programming mode by pressing the  button.
 - ✓ The values stored in the detector are reset to the factory settings.

8.15 Detector Light Factor

**For:
Light meas-
urement by
the detector**

The presence detector performs the brightness measurement at a certain distance from the surface of the desk. If the brightness at the location of the detector and the brightness at the surface of the desk differ too greatly, constant lighting control does not generate the required brightness. If this is the case, it helps to adjust the sensitivity of the detector. The adjustment can be made using the "Detector Light Factor" function.

The light value factor is set to a value of 2.5 ex works. If the light measurement shows that the brightness at the desk is less than the specified light target value, a factor of 2.5 is too high and the light value factor must be reduced. If the measured brightness is greater than the specified light target value, you must set a higher light value factor.

Setting the light value factor:

1. Use a lux meter to measure the brightness at the desired location, e.g. at the surface of a desk.
2. Compare the measured value with your specified light target value. The comparison indicates whether you need to reduce or increase the light factor.
3. Select the <Programming> menu item and confirm the selection with the  button.
4. Enable programming mode by pressing the  button.
5. Use the  button to select the menu item <Detector Light Factor> and confirm the selection with the  button.
6. Use the  or  buttons to set the required sensitivity and confirm the selection with the  button.
7. End programming mode by pressing the  button.
8. Use a lux meter to compare the brightness at the desired location with the specified light target value once again.
9. Repeat steps 3 to 7 until the measured brightness and the light target value are almost the same.
 - ✓ The light value measurement is adjusted.

9 Operation via Bluetooth App

9.1 SmartDriver with Bluetooth

Light Control Boxes with an integrated Bluetooth module can be operated using the app and Bluetooth wireless connection, in addition to the infrared remote control.

Bluetooth enables convenient configuration of the Light Control Boxes using your smartphone or tablet, even in locations in which Wi-Fi is not available.

Bluetooth Light Control Boxes work with the energy-saving standard “Bluetooth low energy”, also known as “Bluetooth Smart” or “Bluetooth 4 LE”. This wireless connection has a range of up to 10 metres.

Prerequisites

To control the Light Control Box via Bluetooth, you need:

- A device that can send via Bluetooth and that supports the “Bluetooth low energy” standard. This is usually the case for current Smartphones, Notebooks and tablets. Some manufacturers identify these devices with the logo “Bluetooth Smart Ready”. Devices on which the ESYLUX app can be installed are usually also compatible with this Bluetooth standard.
- The free app ESYLUX LIGHT CONTROL must be installed on the Bluetooth device.

Remote control required!

In rare cases, users of the Bluetooth box must use the universal remote control: If the detector sensitivity must be adjusted (see chapter 8.15 on page 74).

9.2 The ESYLUX LIGHT CONTROL app

The free ESYLUX LIGHT CONTROL app provides virtually all remote control functions required to configure and control the Light Control Boxes.



The app is currently available for the following mobile devices:

- Apple devices with operating system iOS 9 or above
- Android devices with Android version 5.0 or above

The app is available in the Apple Store and Google Playstore.

9.2.1 Using the app

The app is primarily based on traditional operating conventions.

Version 1.17.2 is the exception to this rule: If you use this version of the app to open a menu screen on which functions were activated previously, the app resends the last function selection to the Light Control Box as a new command. Accessing a menu screen can therefore lead to inadvertent changes to the brightness.

Example: You have accessed Scene 1 in the Profiles menu. You then started

up SymbiLogic, whereby the scene is deactivated. If you then navigate to the Profiles menu again, the app automatically sends the command to start scene 1.

The following operating actions are possible:

Control element	Example	Operating action	Effect (example)
Simple button		Tap	Navigate to higher menu; Confirm input
Slide switch		Slide	Switch between values such as 'on' and 'off'
Slide control		Slide	Set values
Text or value field		Tap	Activate fields for input; display keypad or drop-down list for selection
Selection field		Swipe, scroll through a list of values	Select values

In the following operating steps, buttons are indicated in pointed brackets < >.

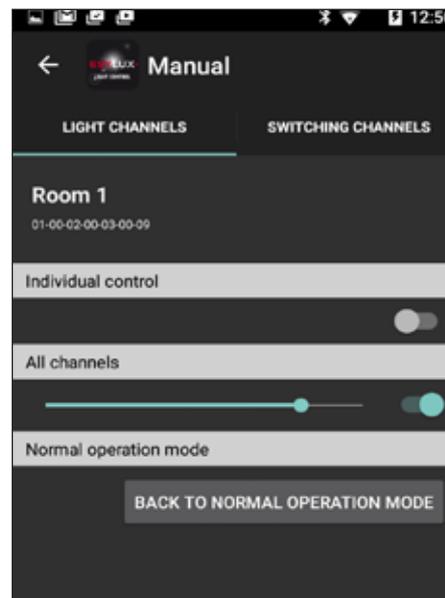
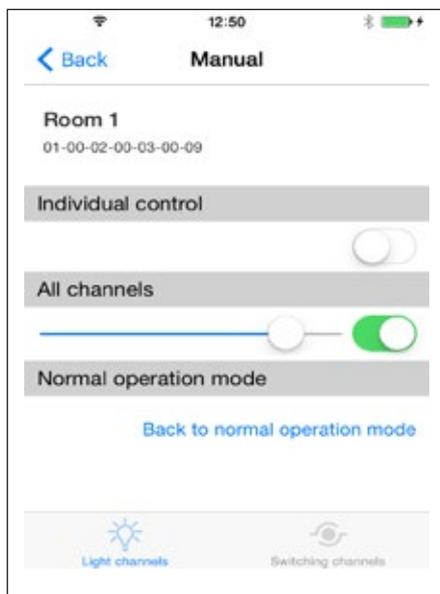
9.2.2 Differences between the Android and iOS app

The app has the same functions under both operating systems. However, the names of the buttons may differ in some cases. For example, the confirmation button in the Android app is often labelled <OK>, while the button in the Apple app is often labelled <Done>.

There may be further minor differences in the form of icons and buttons. In individual cases, the buttons may be in different places. The Android app also has a different background colour to the iOS app. The background colours may also differ between Android apps that are installed on different devices. The reason: The Android app adapts to the colour scheme of the device on which it is installed.

The differences between the app versions are shown on this settings screen:

Differences between Android apps



Background colours and button colours are different. In addition, the <Light channels>/<Switching channels> buttons appear at the bottom in the Apple app (left) and at the top in the Android app (right).

**Screenshots:
Apple left,
Android right**



The screenshots are taken from an iPhone with iOS 9 and a smartphone with Android 5. On a tablet, the distances between the buttons are much greater.

In the following, the iOS screenshots are always on the left and the Android screenshots on the right.

9.3 Setting up a Bluetooth connection

Before you can control a Light Control Box using the app, you first need to register the Light Control Box in the app using the ID code. You only need to do this once.

Prerequisites:

- Light Control Box is connected to Bluetooth
- Bluetooth is activated on the end device
- The ID code on the type plate is available.

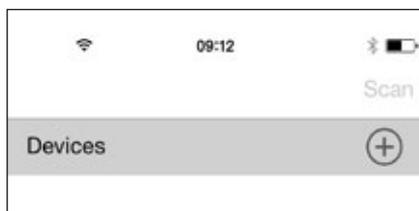
Setting up the Bluetooth connection:

1. Start the ESYLUX LIGHT CONTROL app.
 - ✓ The device selection screen appears:

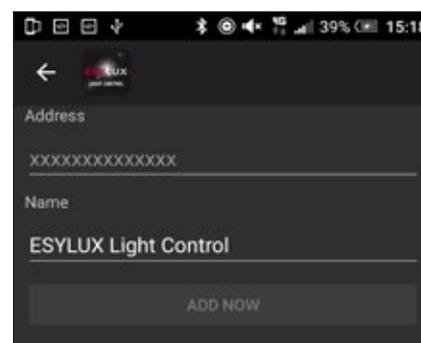
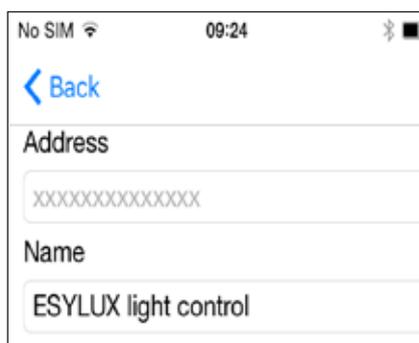
**Device
selection
screen**

Operation via Bluetooth App

Device registration screen

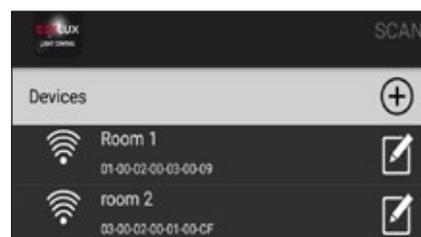
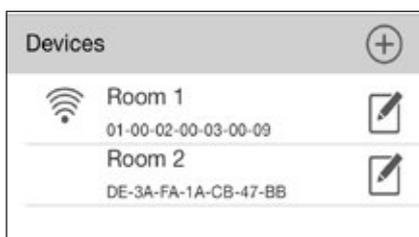


2. Tap on the button .
- ✓ The device registration screen appears:



3. Tap in the input field below “Address” to enter the ID of the Light Control Box.
 - ✓ The keypad of your end device appears.
4. Enter the ID code for the Light Control Box without hyphens or blank spaces and tap <Add Now> to confirm your entry.
 - ✓ The Light Control Box is now registered on your Bluetooth device. The app is ready to control the Light Control Box.

Once registered, the Light Control Box is always displayed in the device selection screen of the app. Multiple registered Light Control Boxes are displayed in a list, for example:



Scan function

Each time the app is started, it automatically searches for the Bluetooth devices in the list. Therefore, the button cannot be used immediately after start-up, as the scan process is already active. If a connection to a Light Control Box exists, this is indicated by the symbol in front of the device name.

After the first scan, you can trigger further scans by tapping on the button. So, if you want to operate Light Control Boxes in a different room, it is quick to update the connections using the scan function.

The app main menu

Number of Bluetooth connections

i Only one current Bluetooth connection to the Light Control Box is possible at any one time. If a different person is operating the Light Control Box via Bluetooth at the same time, the app cannot establish a connection.

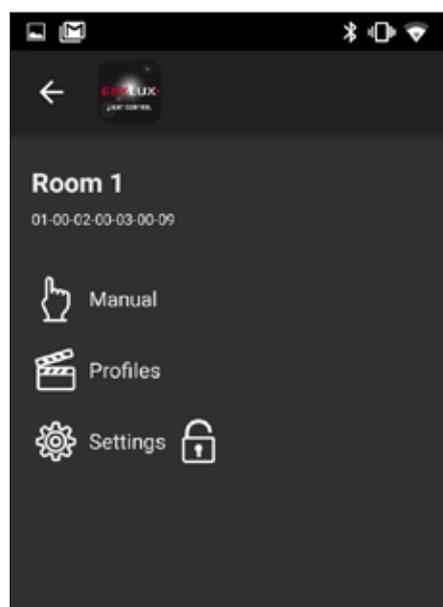
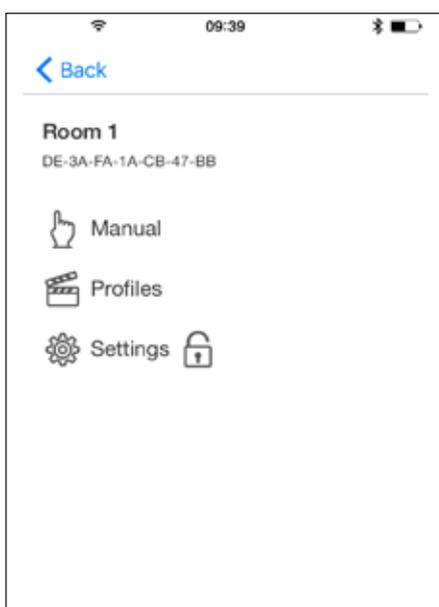
Delete Light Control Box from list

To remove a Light Control Box from the list, open the Edit menu for the Light Control Box. The Delete option can be found here. To access the Edit menu, click on the  button next to the Light Control Box in the device selection screen.

Rename Light Control Box

In the Edit menu, you can assign a different name to the Light Control Box, such as the name of a room. To do this, tap in the input field below <Name>, enter the new name and confirm the entry.

10 The app main menu

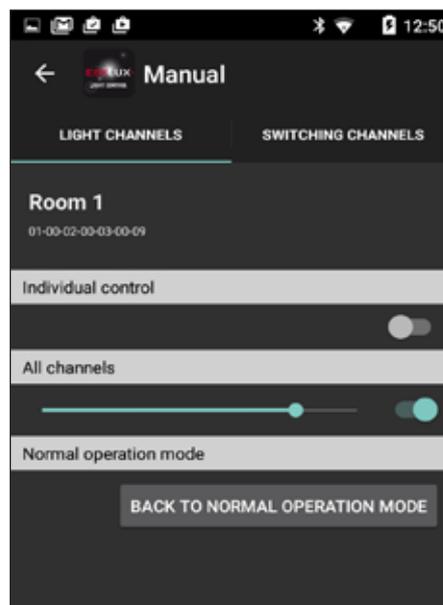
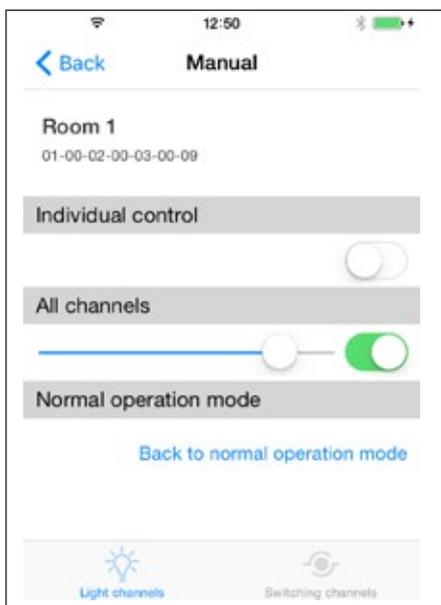


As soon as you have selected a connected Light Control Box in the device selection screen, the main menu of the app is displayed with the following submenus:

-  Manual >: Here you will find functions with which you can deactivate the programmed settings for a limited time.
-  Profiles >: In this submenu you can call and edit light profiles.
-  Settings  >: The first time the Light Control Boxes are switched on, they use the factory settings described in Chapter 4.6. You can adjust the settings as required in this menu item.

All menus and functions are explained in the following chapters.

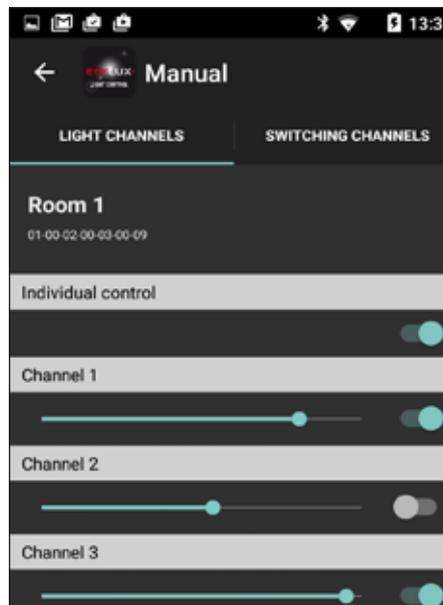
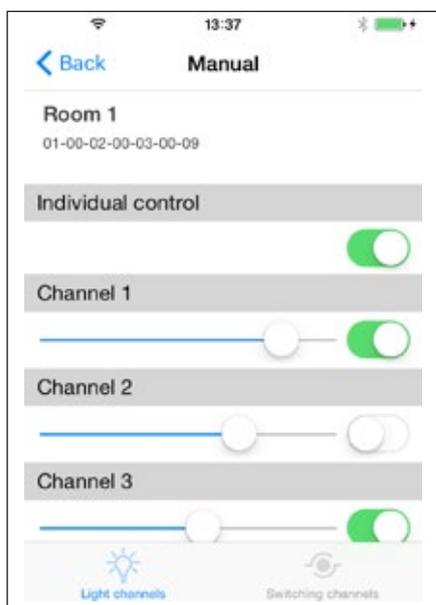
11 The app menu <Manual>



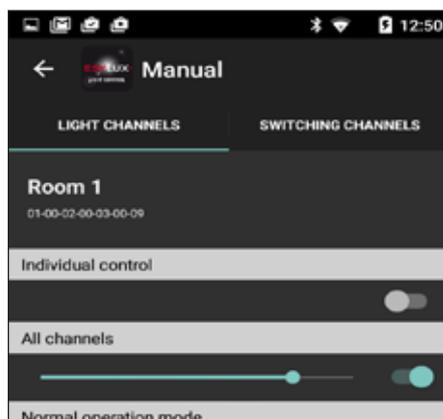
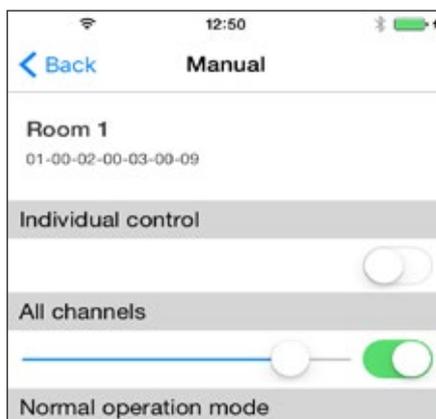
The Light Control Box can be controlled directly using the functions found under the menu item <  Manual >. Doing so temporarily deactivates the programmed settings. Commands from this menu instruct the Light Control Box to work in override mode. For more information on the operating modes, see Chapter 5.

11.1 Switching channels on and off

You can switch the channels on and off individually or switch all channels together. To select between individual control or all channels, activate () or deactivate () the individual control switch. The screen changes according to the selected setting.

Switching the channels on and off individually:

- Activate individual control ()
- Slide the switch belonging to the required channel to on () or off ()
- ✓ The channels are switched on or off as required.

Switching all channels on and off together:

- Deactivate individual control ()
- Slide the switch under **All channels** to on () or off ()
- ✓ The channels are switched on or off as required.

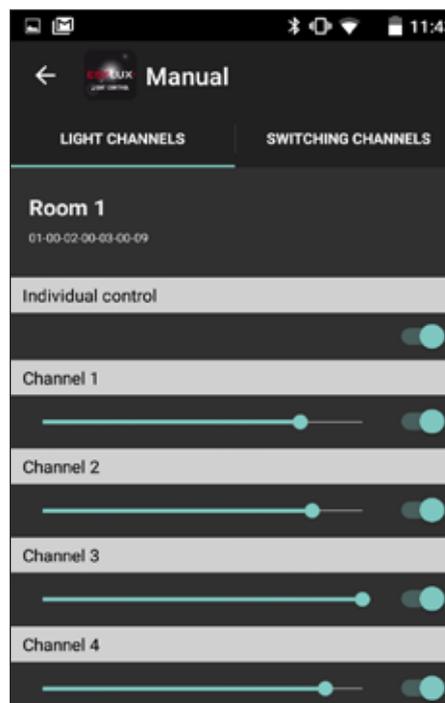
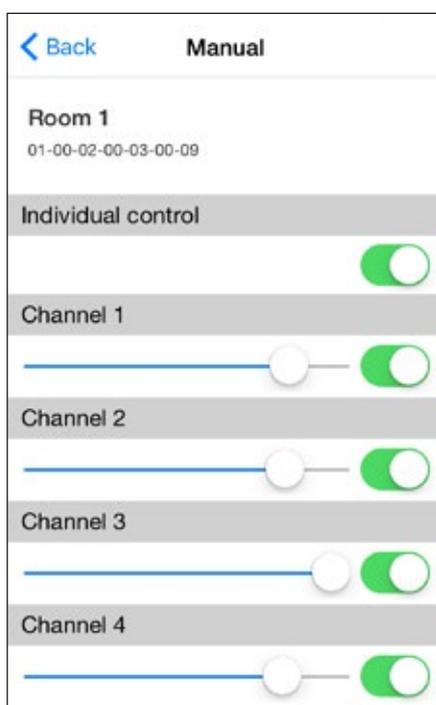
11.2 Adjust brightness

You can set the brightness for all channels individually or for all channels together. To select between individual or collective control, activate () or deactivate () the individual control switch. The screen changes according to the selected setting.

Use the slide controllers to adjust brightness:

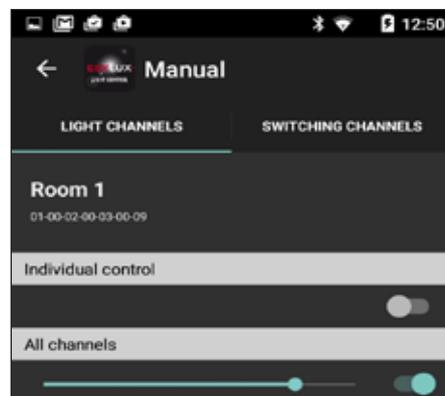
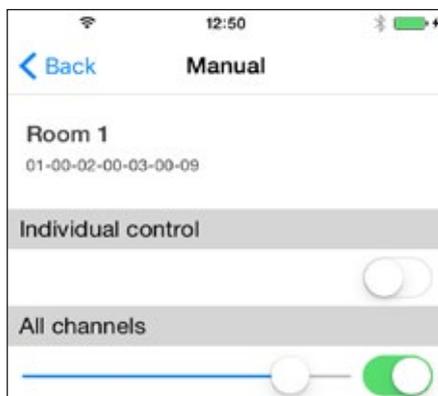
- Moving the brightness slide controller to the right increases the brightness; moving it to the left reduces the brightness.

Adjusting brightness for each channel individually:



- Activate individual control ()
- Slide the brightness slide controller belonging to the selected channel in the required direction.
 - ✓ The brightness is now set.

Setting the brightness for all channels:



- Deactivate individual control ().
- Slide the brightness slide controller in the required direction.
 - ✓ The brightness changes on all channels; all channels produce the same brightness.

11.3 Back to normal operation mode

Below the channel control, you will see the heading **Normal operation mode**. If you actuate the button <Back to normal operation mode> below this, the temporary settings you have made will be deleted. The Light Control Box switches back to normal operation mode and uses the programmed settings.

11.4 Switching the switching channels on and off

You can also turn the switching channels on and off temporarily in the  menu.

Switching channel and DALI switch

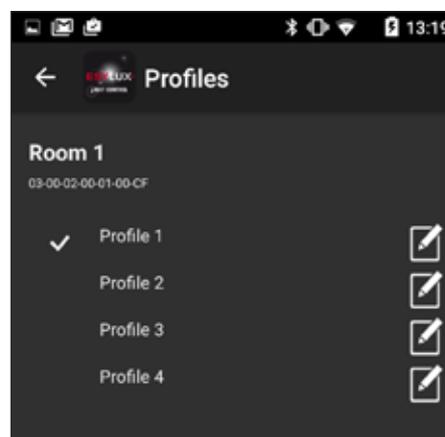
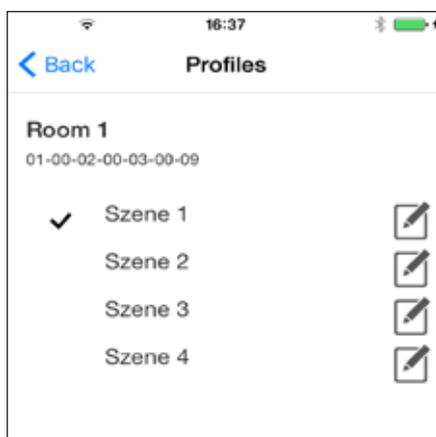
Switching channels control DALI switch devices that are connected to the C1 and C2 DALI interfaces of the Light Control Box. Non-DALI-compatible devices can be connected to the DALI switch devices. For example, you can use the switching channel to switch on non-DALI-compatible blackboard lighting in a classroom. Light Control Boxes are factoryconfigured to enable them to send commands to connected DALI switches via the switching channels.

DALI switch devices are available as accessories including SW DALI Full Automation (item no. EP10427473) and SW DALI Semi Automation (item no. EP10427480).

To open the switching channel control screen, tap on the <Switching channels> button on the  screen. On Android devices, this is found at the top of the screen and on iOS devices, at the bottom.

Switching the switching channels on and off:**Prerequisites:**

- The  Manual menu screen is open.
- Tap on the <Switching channels> button.
 - ✓ The switching channels screen is displayed.
- Turn the switching channels on () or off () as required.
 - ✓ Switching channel settings are now complete.

12 The app menu <Profiles>

Under the main menu item , you can select and edit scenes. You can also give the scenes informative names.

Profile components

A light scene consists of up to four lighting channels with a distinct brightness. A scene can also switch up to two switching channels. Scenes are temporary settings in the same way as the functions in the <Manual> menu.

Activating and deactivating scenes:

- In the main menu, tap on the menu item  <Profiles>.
 - ✓ The Profiles menu screen appears.
- Tap on the name of the scene that you wish to activate.
 - ✓ The scene is activated and marked with the symbol .
- To deactivate the active scene, tap on its name.
 - ✓ The Light Control Box ends the scene and continues in normal operation mode.
 - ✓ The scene is no longer marked as active.

Changing scene settings:

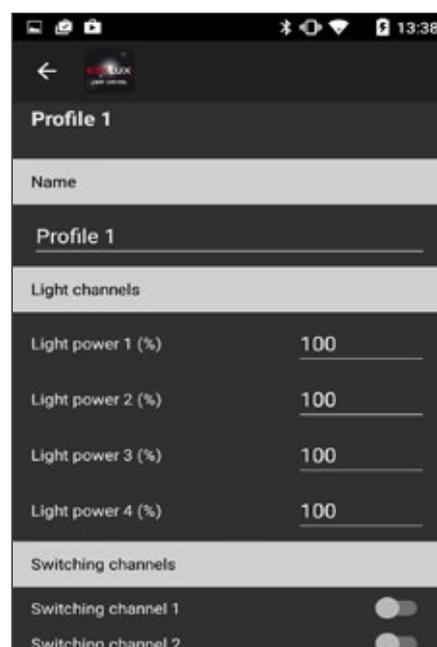
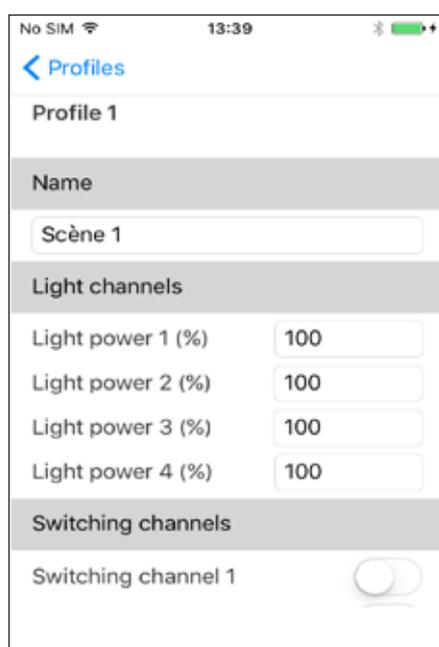
For each scene, the luminous efficiency can be adjusted and switching channels turned on or off.

You can adjust the following values:

Light power: 0 to 100%

Switching channels 1 and 2: on () and off ()

- In the Profile menu, tap on the Edit symbol  for the scene you wish to change.
 - ✓ The Profiles settings screen is opened and shows these settings, for example:

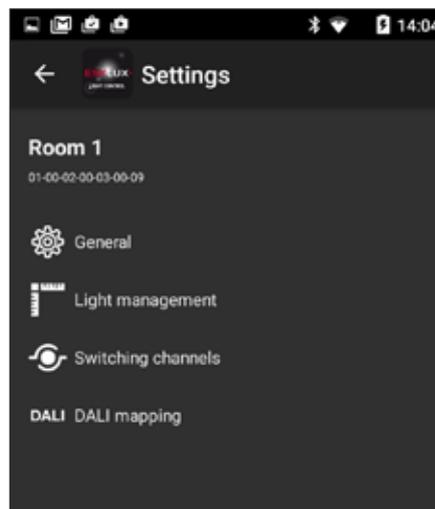
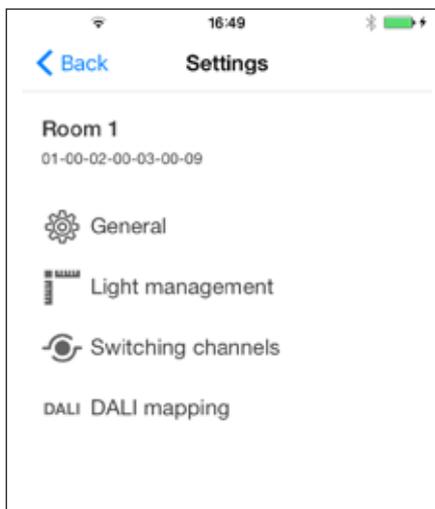


- Tap the input fields whose values you wish to change.
- Change the required value and confirm your input.
 - ✓ Scene settings are now complete.

Changing profile names:

- Open the Profile menu and tap on the Edit symbol  of the scene whose name you wish to change.
 - ✓ The scene settings screen opens.
- Tap the name field of the scene whose name you wish to change.
 - ✓ The operating device keypad is activated.
- Type in the desired name and confirm your entry.
 - ✓ The scene now has the required name.

13 The app menu <Settings>



Password

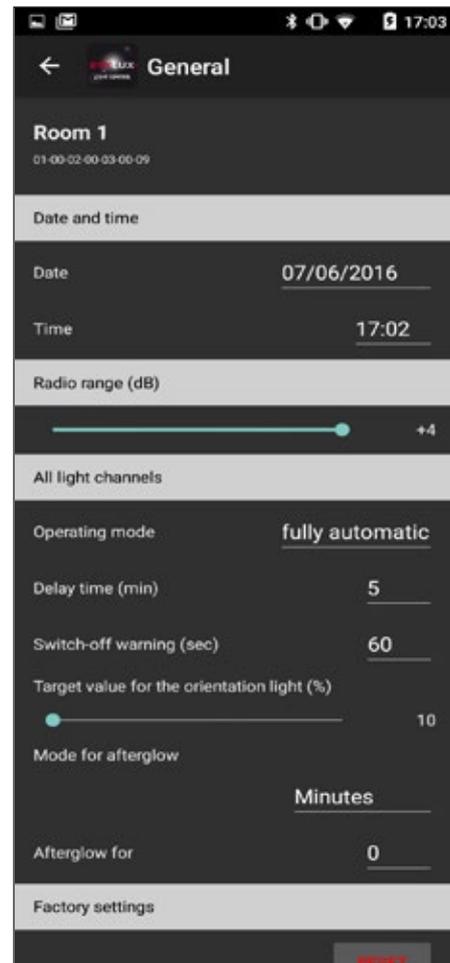
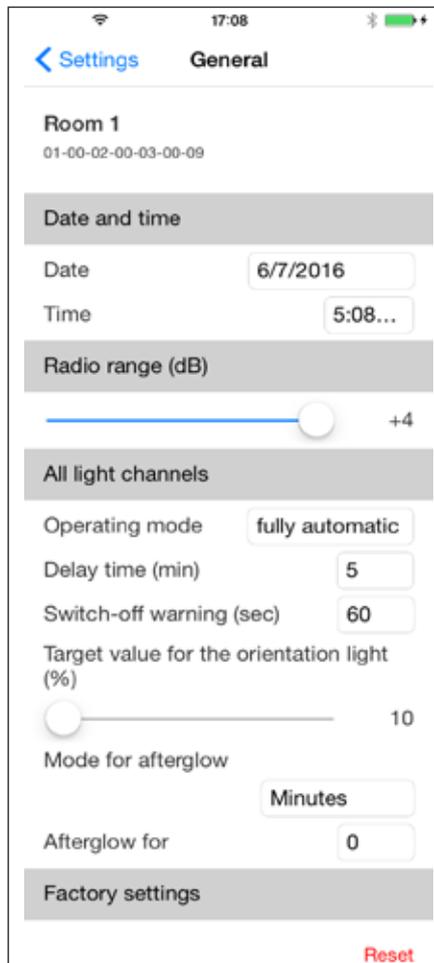
The **Settings** menu is used to configure the Light Control Box, for example, by adjusting factory settings to suit your requirements. To prevent unauthorised persons from altering the programming, this menu requires you to enter a password. The password is the PIN code. You will find this on the type plate of the Light Control Box. After you enter the password, the menu symbol changes. An open padlock is shown (🔓), which means that settings can now be adjusted.

The settings menu remains accessible without requiring a new password. If you want this menu to be accessible only with a password, reactivate password protection. To do this, tap on the open padlock in the main menu and then tap on <Lock>.

The menu contains the following submenus:

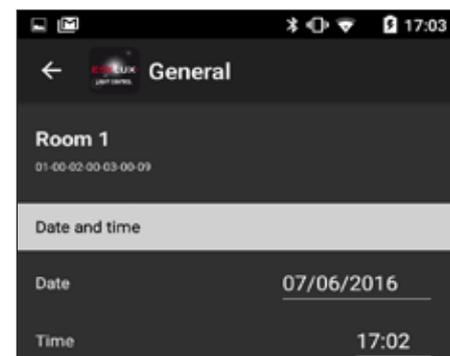
- <General>: General settings for all light channels.
- <Light management>: Functions for setting constant light management and for calibrating the lights with a light sensor.
- <Switching channels>: Switching channel configuration
- <DALI mapping>: Assignment of DALI channels to light channels.

13.1 The General submenu



The screenshots show an overview of settings.

13.1.1 Setting the date and time



The time must be set correctly if you want the orientation light to start and end at fixed times.

The time should be checked once a year.

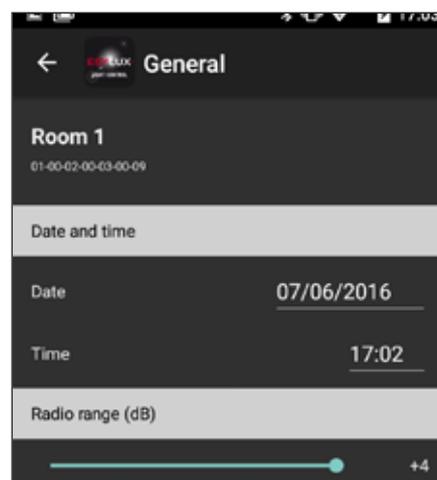
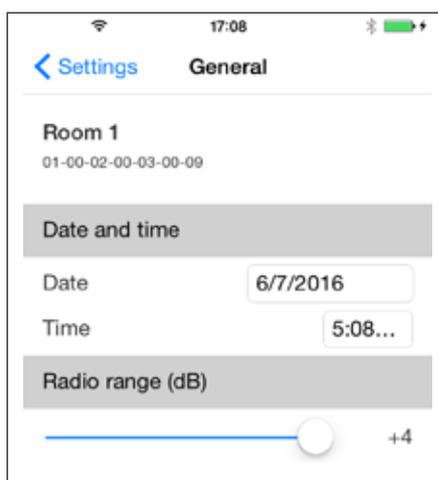


Thanks to the built-in battery, the configured times are also retained in the event of a power failure.

Setting the date and time:

- Tap in the field displaying the date.
 - ✓ The date settings appear.
- Set the current date and confirm your entry.
- Tap in the field containing the time.
 - ✓ The time settings appear.
- Set the current time and confirm your entry.
 - ✓ The date and time of the Light Control Box are set.

13.1.2 Adjusting the radio range



The Bluetooth Light Control Boxes have a maximum radio range of approx. ten metres if no obstacles obstruct the radio path. This range may be too large: For example, if a smartphone is connected to a Light Control Box and the smartphone owner takes their device into the next room, the connection may remain established unintentionally. However, an existing connection prevents another device from connecting to the Light Control Box.

The **Radio range** function can be used to reduce the range, so that only persons in the immediate vicinity can operate the Light Control Box. The range can be reduced to around two metres.

Do not stand too close to the Light Control Box when reducing the radio range. This is because if you accidentally reduce the radio range too far, you will need to move into even closer proximity to re-establish the connection and correct the radio range.

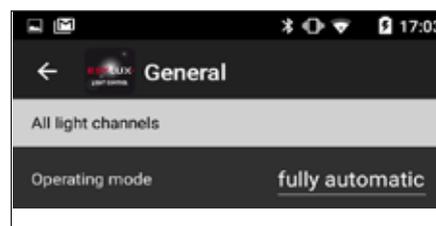
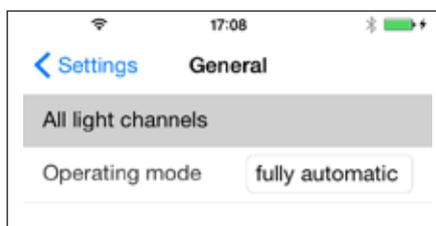
Note the starting position

i Range reduction does not always restrict the connection to the room in which the Light Control Box is located: Persons in the room directly above may sometimes also be able to establish a radio connection to the Light Control Box.

Adjusting the radio range:

- Position yourself at the distance from the Light Control Box to which you wish to restrict the radio connection and then move approximately one metre further away from the Light Control Box.
 - Move the slide controller to the left in stages.
 - After each movement of the slide controller, send commands to the Light Control Box to check whether a connection to the Light Control Box still exists.
 - If the connection is interrupted, move to the desired distance and check whether the Light Control Box and the Bluetooth device can connect. To do this, you can switch to the device registration screen and use the <Scan> button.
 - If a connection is not made, move closer until the app can re-establish the connection.
 - When the connection to the Light Control Box is re-established, increase the radio range slightly by moving the slide controller to the right.
 - Move back to the desired distance and check whether the Light Control Box and the Bluetooth device can connect. If this is not the case, repeat the two steps above until connection is successful at the desired distance.
- ✓ The radio range is now adjusted.

13.1.3 Adjusting automatic mode



You can operate the Light Control Box in **fully automatic** and **semi-automatic** mode.

fully automatic

Behaviour of the Light Control Box when **Fully automatic** is enabled:

The lighting automatically switches on if

- The ambient light is below the set target brightness
and
- the detector detects presence.

The lighting automatically switches off if

- the ambient light is brighter than the set target brightness
or:
- no movement is detected
and

The off delay time has expired

Semi-automatic

Behaviour of the Light Control Box when **fully automatic** is enabled:

The lighting switches on if

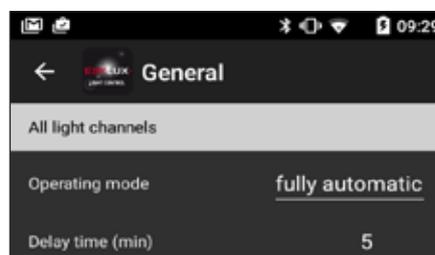
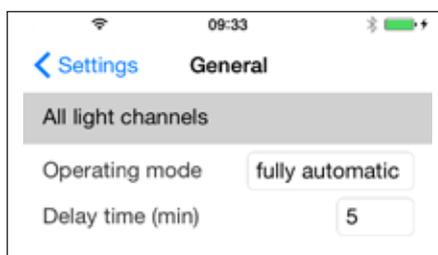
- an external button is actuated.

The lighting automatically switches off if

- the ambient light is brighter than the set target brightness
or:
- no movement is detected
and
- The off delay time has expired

Setting fully automatic or semi-automatic mode:

- Tap in the selection field that displays either **fully automatic** or **semi-automatic**.
- Select the required automation level and confirm your selection.
 - ✓ The required automatic mode is set.

13.1.4 Setting the switch-off delay time

The **Delay time** function determines for how long the connected lights remain switched on after the last detected movement. The delay time starts again every time a movement is detected.

- The minimum off delay time is one minute.

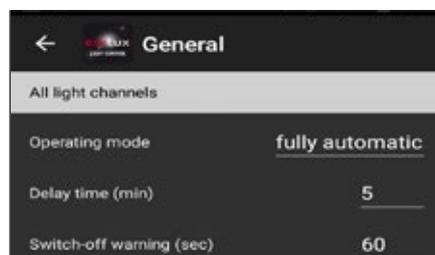
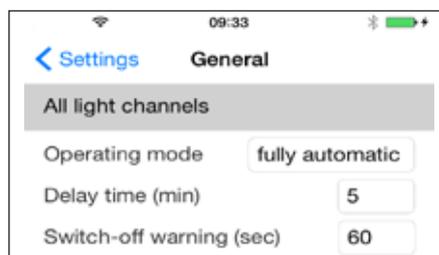
- The maximum off delay time is 240 minutes.

The off delay time applies to normal operating mode and to override mode. For more information on operating modes, see “Overview of operating modes” page 35.

Setting the delay time:

- Tap in the time selection field.
- Set the required time and confirm your selection.
 - ✓ The delay time is now set.

13.1.5 Setting the off warning



The **Off warning** indicates that the set off delay time has elapsed. In off warning mode, the lighting uses the brightness value that was set for the orientation light.

If movement is detected during the switch-off warning time, the detector returns to the most recent active operating mode. This may be normal operation mode or override mode.

The off warning time can be set to a duration of 0 to 240 seconds.



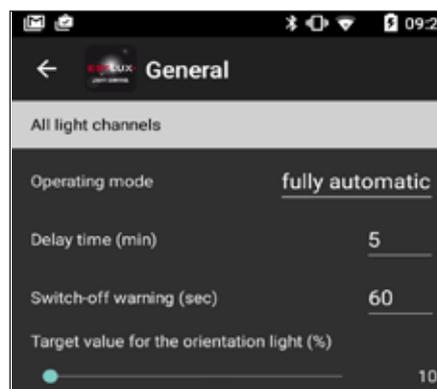
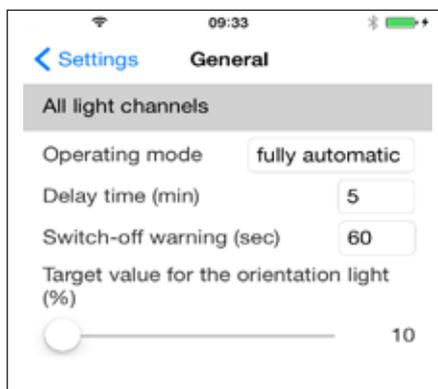
Off warning is disabled if the time is set to 0 seconds.

Example: The illumination level was dimmed manually via an external button, and the Light Control Box is in override mode as a result. The set off delay time has elapsed. The off warning time now starts, which is set to 60 seconds. During this time, the lighting uses the brightness that is set for the orientation light. If presence is detected during this time, the Light Control Box returns to override mode.

Setting the off warning time:

- Tap in the time selection field.
- Set the required time and confirm your selection.
 - ✓ The off warning time is now set.

13.1.6 Changing orientation light brightness



The **Orientation light** function provides subtle lighting. You can use the slide controller to set orientation light brightness to values between 10% and 50% of the maximum illumination level.

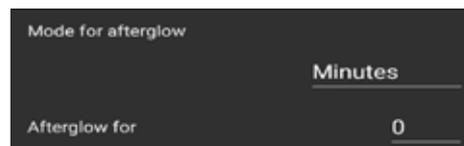
Prerequisites

The orientation light only switches on once the set off delay time or a set off warning time have elapsed. The orientation light duration can also be set to zero minutes.

Setting orientation light brightness:

- Move the slide controller until the required percentage value is reached.
- ✓ The target brightness is now set.

13.1.7 Setting orientation light afterglow



The length of time for which the orientation light should be lit is referred to as the “afterglow”. There are two ways to set the afterglow:

- Enter the duration in minutes. Possible values: 0 - 240 minutes.
- Enter the start and end times. Only full hours can be entered as the times.



Thanks to the built-in battery, the configured times are also retained in the event of a power failure.

Select which type of time setting to use in the menu item **Mode for afterglow**. Appropriate input fields are displayed after selection.

Setting the afterglow in minutes:

- Tap on the button for the menu item **Mode for afterglow**.
 - ✓ A selection menu appears.
- Choose the <Minutes> setting and confirm your selection.
- Tap on the button for the menu item **Afterglow for**
 - ✓ A settings menu appears.
- Set the required duration and confirm your selection.
 - ✓ The afterglow is now set in minutes.

Adjusting the afterglow using a start and end time:

- Tap on the button for the menu item **Mode for afterglow**.
 - ✓ A selection menu appears.
- Choose the <Time> setting and confirm your selection.
- Tap on the button for the menu item **From time**.
 - ✓ A settings menu appears.
- Set the required start time and confirm your selection.
- Tap on the button for the menu item **To time**.
 - ✓ A settings menu appears.
- Set the required end time for the orientation light and confirm your selection.
 - ✓ The afterglow is now set with a start and end time.

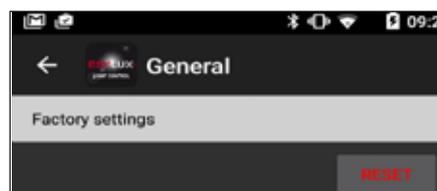
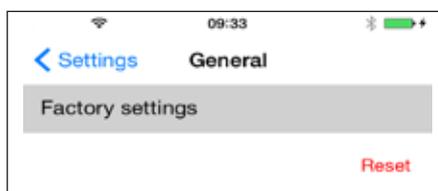
Difference from time switching control

Setting a start and end time is not the same as timer control.

If the switch-off delay time in normal operation mode and the switch-off warning time elapse before the orientation light is due to start, the Light Control Box switches to energy-saving mode without illumination. The time-controlled orientation light is then not activated.

If you want to be sure that the orientation light remains lit overnight, set the start time to a time when movement will still be detected. After the off delay time has elapsed, the light then switches to orientation light mode.

13.1.8 Resetting the SmartDriver to factory settings

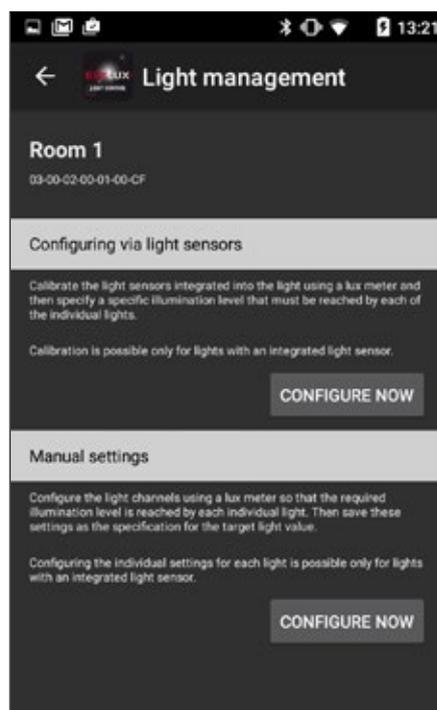
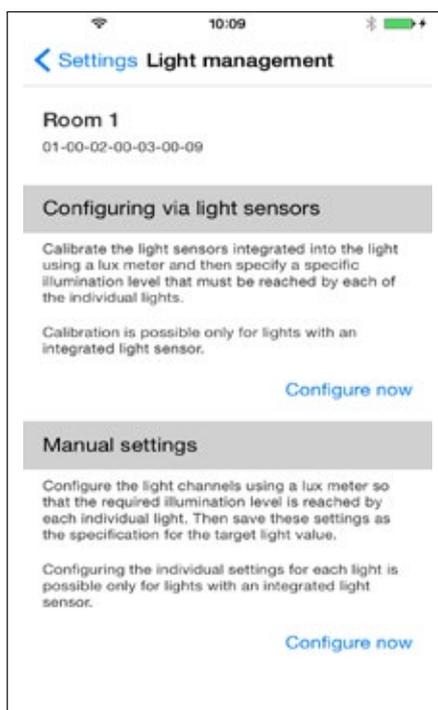


The **Factory settings** function restores the Light Control Box to its default program settings. For more information on the default factory settings, see Section 4.6.

Restoring factory settings:

- Tap on the <RESET> button and answer the confirmation prompt with <Yes>.
 - ✓ The lighting goes out and the Light Control Box subsequently uses default factory settings.

13.2 Light management submenu



Settings for constant light management are made in the Light management submenu. The type of setting differs depending on whether lights with light sensors or without light sensors are connected.

The **Configuring via light sensors** submenu is intended for Light Control Boxes connected to lights with light sensors. Here, you can calibrate the light sensors and then set the target light value.

The submenu **Manual settings** can be used for connected lights with or without light sensors. Both types of setting and their differences are explained in the following chapters. See the background information above for information on the constant light regulation function.

13.2.1 Constant light management, light target value and light measurement

Constant light management uses the light target value to determine whether, for example, the light power increases in daylight and if a presence is detected, as the daylight is lower than the light target value. It can also determine whether the light switches off because daylight exceeds the light target value. By default, the light target value is set to 500 lux per channel. This can be changed in the two submenus **Configuring via light sensors** and **Manual settings**.

Apart from the light target value, constant light management also requires the current light value in order to compare both values. The way in which the Light Control Boxes receive the current light value depends on the connected devices:

- **Connected lights without a light sensor:** The light value is transmitted to the Light Control Box from the connected DALI detector.
- **Lights with an integrated light sensor** report the light value to the Light Control Box that performs constant lighting control. The light sensor can be calibrated.



If a channel does not have a sensor because only one light without a light sensor is working on the channel, the value of the DALI presence detector is used for this channel.

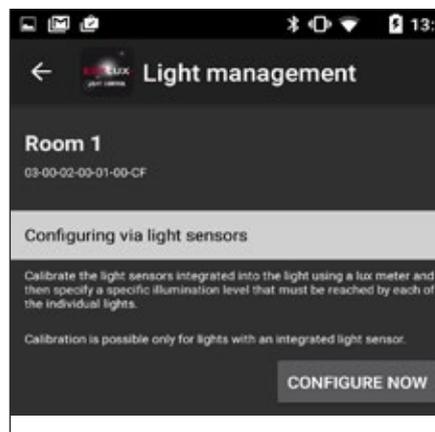
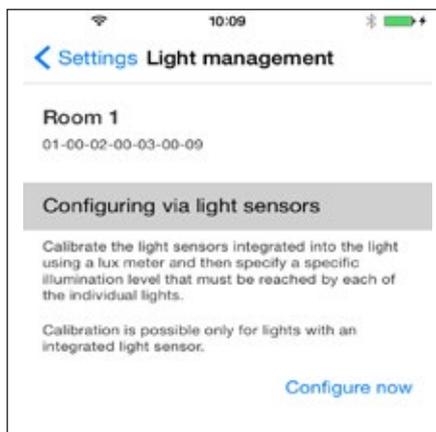
Channels and management of individual lights

Light target values always apply to one channel. However, constant light management can control different lights on one channel in different ways if these lights have light sensors. If a channel only has lights without light sensors, all lights are regulated to the same brightness value.

13.2.2 Configuring via light sensors

Prerequisites:

- Lux meter
- Lights with light sensors are connected



The setting is made in two stages: First, calibrate the light sensors. Then set the light target value in lux for each light channel.

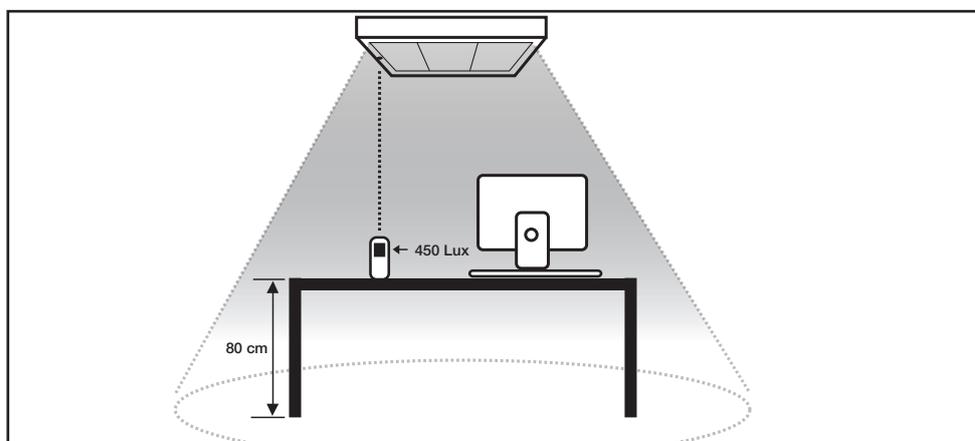
Lux meter

A lux meter is required for calibration. The light values measured with the lux meter can be transferred to the Light Control Box via the app. The Light Control Box compares the lux values at the location of the sensor with the lux values at the location of the lux meter and uses these values to calculate a conversion factor. Calibration allows the Light Control Box to calculate, with greater precision, the illumination level required to maintain a constant target light value in the required location.

Advantage of calibration



The light sensor is affected by light from reflective work surfaces, walls and floors. Calibration is essential for ensuring that surfaces at a specific height remain evenly lit.



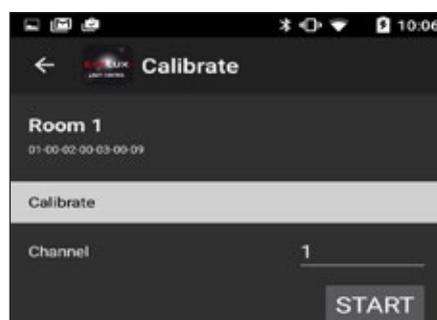


If a lighting channel is extended with DALI louvre lights, position the light with the light sensor in the darkest area of the room. This is the only way to ensure even the darkest area is sufficiently lit.

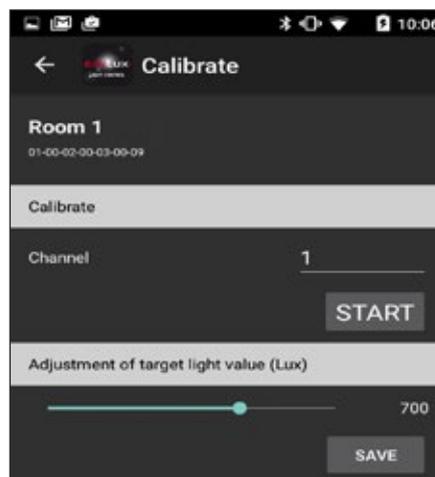
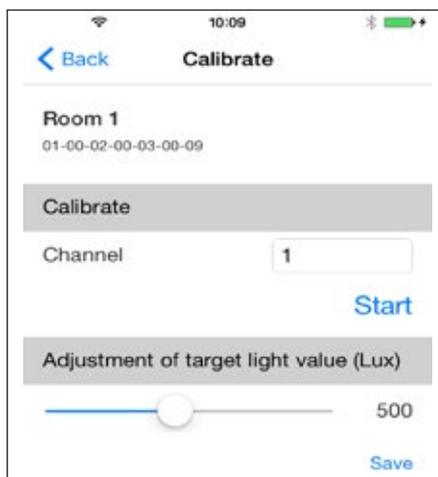
Calibration is performed individually for each lighting channel. During calibration, only the light channel that is being calibrated is active.

Calibrating light sensors:

- Start the calibration process by tapping on <Configure now> under **Configuring via light sensors**.
- ✓ The calibration menu is displayed:



- In the selection field, choose the channel for which you wish to calibrate the light sensors and confirm your selection.
 - Tap on <Start>
- Measurement 1**
- Use a lux meter to measure the current light value at the required location, e.g. at a desk. The reading is 600 lux, for example.
 - Enter the lux value in the field for value 1 and confirm your entry.
 - ✓ The Light Control Box receives the value and dims the luminous efficiency for the next measurement.
- Measurement 2**
- Now measure the light value again using the lux meter. The value is now lower than the first measurement and reads 550 lux, for example.
 - Enter this lux value in the field for value 2 and confirm your entry.
 - ✓ The Light Control Box receives the value and dims the luminous efficiency for the next measurement.
- Measurement 3**
- Now measure the current light value using the lux meter. The reading is 450 lux, for example.
 - Enter this lux value in the field for value 3 and confirm your entry.
 - ✓ The calibration process for the selected channel is now complete. The Light Control Box switches the lighting off for a short time.
 - To exit the calibration menu, confirm the message informing you of successful calibration. You can then set the light target value for this channel:

Setting the light target value in lux:

- Move the slide controller until the required lux value is shown in the number field.
- Tap <Save> to save the setting.
 - ✓ The light set value is set.
Repeat the calibration and setting process for the remaining channels.

13.2.3 Manual settings**Prerequisites:**

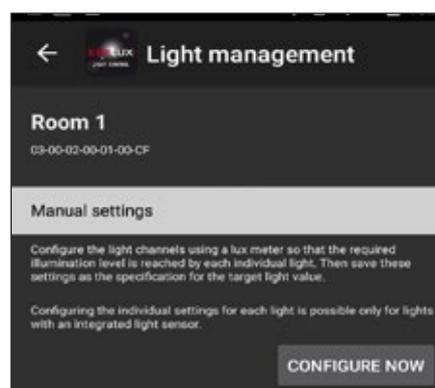
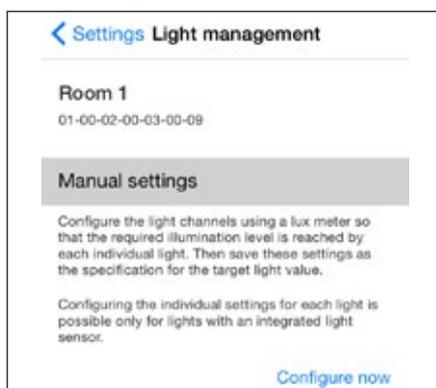
- The ambient light is below the required brightness at the time of setting.

Manual settings can be made for lights with and without light sensors. If lights with light sensors are connected to the Light Control Box, ESYLUX recommends making settings after calibration.

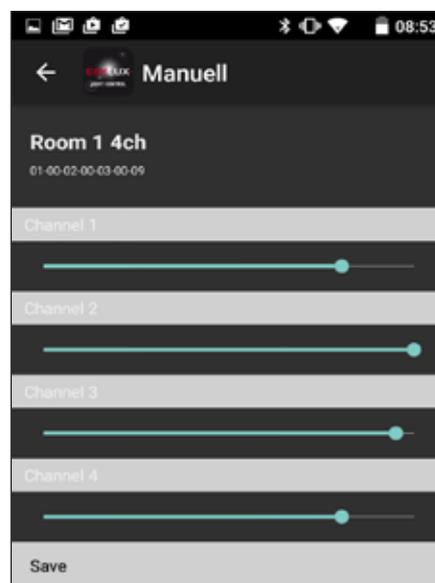
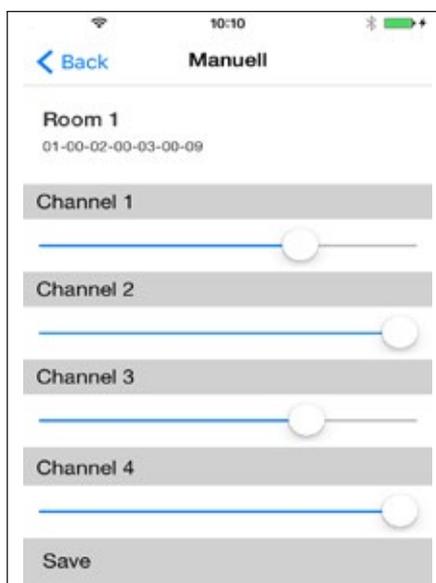
To set the light target value manually, use the slide controller to set the light value to the required value. The set brightness is then saved as the light target value. No lux value is entered when setting manually. However, you can use a lux meter to check the set brightness.

The app menu <Settings>

Setting the light target value:



- Start configuration of the light target value in the app by tapping on <Configure now>. under **Manual settings**.
- ✓ The settings menu is displayed:



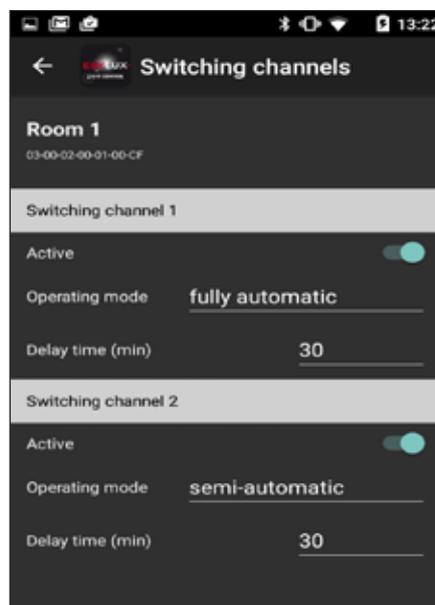
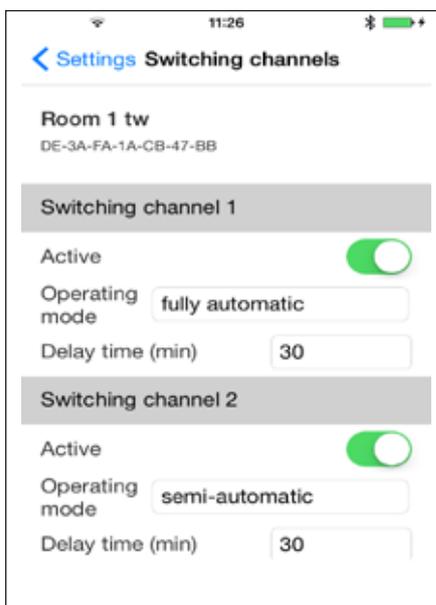
- Position yourself in the area of the room that will be illuminated by the lights assigned to channel 1.
- Slide the top slide controller until the required brightness is reached. If you are unsure whether the set brightness is too low, check the brightness using a lux meter.
- Position yourself in the area of the room that will be illuminated by the lights assigned to channel 2.
- Slide the top slide controller until the required brightness is reached. If you are unsure whether the set brightness is too low, check the brightness using a lux meter.
- Tap <Save>.
 - ✓ After the light target values have been received, the lights will go off briefly. The target light values are now saved.

Limitation for lights without light sensors



If lights without light sensors are in use on one channel, the **manual setting** process has one restriction: Although you can still use the slide controllers to set and save different brightnesses for each channel, the lights will still produce the same brightness. The reason: For lights without light sensors, brightness measurement is only performed by the DALI detector. This means there is only one measured brightness value that constant light management uses for all channels.

13.3 Switching channels submenu



Switching channels control DALI switch devices that are connected to the C1 and C2 DALI interfaces of the Light Control Box. Non-DALI-compatible devices can be connected to the DALI switch devices. For example, you can use the switching channel to switch on non-DALI-compatible blackboard lighting in a classroom. The Light Control Boxes are configured in the factory to enable them to send commands via switching channels to connected DALI switches. In the Switching channels settings submenu, you can change this setting and other settings.



For information on how to temporarily activate and deactivate the switching channels, see Chapter “11.4 Switching the switching channels on and off” on page 83.

The setting options are identical for both switching channels. You can make the following settings:

13.3.1 Switching channel - Active



On. The Light Control Box sends control commands.



Off. The Light Control Box does not send control commands.

Activating or deactivating the switching channel:

- Slide the switch to the right or left.
 - ✓ The switching channel is activated or deactivated as required.

13.3.2 Switching channel - Operating mode

You can choose from the following operating modes:

Fully automatic: If this function is active, the DALI switch switches the connected device on when a presence is detected. This function can then also be activated if the Light Control Box is operating in semi-automatic mode.

Semi-automatic: If this function is active, the DALI switch must be activated manually if the off delay time has elapsed in normal operation or override mode.

Pulse mode: If this function is active, the DALI switch switches devices such as automatic stairwell timers or current impulse relays on with an impulse. The impulse is repeated regularly for as long as movement is detected.

Setting the operating mode:

- Tap to activate the selection field.
- In the selection field that appears, select the required operating mode and confirm your selection.
 - ✓ The required operating mode is now set.

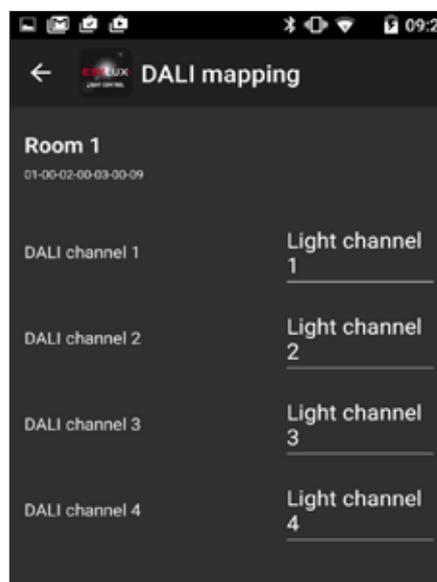
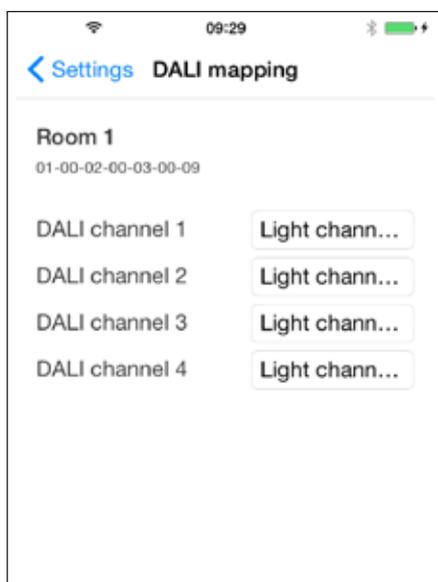
13.3.3 Switching channel - Delay time

This function sets how long the DALI switches keep the connected devices activated following the last detected movement. You can choose a time of one to 240 minutes.

Setting the switching channel delay time:

- Tap to activate the field containing the current delay time.
- In the selection field that appears, select the required time and confirm your selection.
 - ✓ The delay time is now set.

13.4 DALI mapping submenu



The two C1 and C2 DALI interfaces of the Light Control Box are initially assigned to the lighting channels numerically. For example, DALI interface C2 corresponds to the lighting channel C2.

You can change this assignment in the DALI mapping submenu. You can also assign both DALI interfaces to one lighting channel.

Assigning a different lighting channel to a DALI interface:

- Tap to activate the light channel field of the DALI channel to which another light channel is to be assigned.
- In the selection field that appears, select the required light channel and confirm your selection.
 - ✓ The light channel is now assigned to the DALI channel.

14 Settings via the 230 V button

Switch actuations are transmitted to other Light Control Boxes via DALI. However, they are only applicable to the respective lighting group (see page 30) and are not transmitted to other lighting groups by the ELC bus.

Sole exception: Scene commands are also transmitted via the ELC bus.

14.1 Button S1

The lighting can be switched on or off or dimmed using the S1 button.

14.1.1 Switching the lighting on/off

Switching the light on or off:

Prerequisites:

- The brightness is below the set target brightness
- Press the S1 button.
 - ✓ Depending on the previous status, the lighting switches on or off.



The Light Control Box switches to normal operation mode when the button is pressed. If the brightness is above the target brightness, the light switches off again shortly after pressing the button.

14.1.2 Dim lighting

Adjusting the dimmer in one direction:

Prerequisites:

- The lighting is switched on.
- Press and hold the S1 button.
 - ✓ Lighting is dimmed.



The dimming process is interrupted as soon as you release the button.



The Light Control Box enters override mode during the dimming process, which means the setting is not permanently saved.

Adjusting the dimmer in the other direction:

Prerequisites:

- The lighting is switched on
- Press and hold the S1 button.

- ✓ The adjustment process starts, for example by increasing the brightness.
- Briefly release the S1 button and then press and hold it again.
- ✓ The adjustment process switches direction, for example, the brightness is reduced.

14.2 Button S2: Call up profiles

Tapping the S2 button retrieves the four stored light scenes. The scene that is activated depends on how often you press the button within ten seconds: The number of times you press the button corresponds to the scene number. Scene commands are transmitted to all lighting groups via the ELC bus (see page 31).



If you press the S2 button more than four times within 10 seconds, the scene count starts again. In other words, pressing the button once or five times within 10 seconds activates scene 1. After 10 seconds, previous button presses are reset, and the count starts again.

15 Settings via DALI button

All Light Control Boxes can be controlled via external DALI buttons. The DALI button is an external module that sends standard 16-bit commands (IEC 62386-102:2009).

For example, you can switch on and dim the lighting using the DALI button. It is also possible to activate scenes using a DALI scene module. Chapter page 105 contains a list of the possible DALI commands.

The Esylux DALI push button 8x DALI (item number EC10430923) is configured accordingly by default. This allows you to send the following commands without an additional scene module:

- Lighting on/off
- Dim brightness
- Scene 1-4 on
- Constant lighting control on

The DALI button commands are sent to all lights via DALI and ELC bus.

15.1 List of DALI commands

DALI commands (16 bits)	Address	Description
UP	Broadcast	All lighting channels adjust the brightness upwards. No command to DALI switches.
UP	Group 0	Channel 1 adjusts the brightness upwards. No command to other lighting channels or DALI switches.
UP	Group 1	Channel 2 adjusts the brightness upwards. No command to other lighting channels or DALI switches.
UP	Group 2	Channel 3 adjusts the brightness upwards. No command to other lighting channels or DALI switches.
UP	Group 3	Channel 4 adjusts the brightness upwards. No command to other lighting channels or DALI switches.
DOWN	Broadcast	All lighting channels dim the brightness. No command to DALI switches.
DOWN	Group 0	Channel 1 dims the brightness. No command to other lighting channels or DALI switches.
DOWN	Group 1	Channel 2 dims the brightness. No command to other lighting channels or DALI switches.
DOWN	Group 2	Channel 3 dims the brightness. No command to other lighting channels or DALI switches.
DOWN	Group 3	Channel 4 dims the brightness. No command to other lighting channels or DALI switches.
OFF	Broadcast	All lighting channels and DALI switches are switched off.
OFF	Group 0	Channel 1 is switched off. No command to other lighting channels or DALI switches.

DALI commands (16 bits)	Address	Description
OFF	Group 1	Channel 2 is switched off. No command to other lighting channels or DALI switches.
OFF	Group 2	Channel 3 is switched off. No command to other lighting channels or DALI switches.
OFF	Group 3	Channel 4 is switched off. No command to other lighting channels or DALI switches.
OFF	Group 4	DALI switch full automation is switched off. No command to other lighting channels or DALI switches with semi-automation.
OFF	Group 5	DALI switch semi-automation is switched off. No command to other lighting channels or DALI switches with full automation.
RECALL MAX LEVEL	Broadcast	All lighting channels and DALI switches are switched on.
RECALL MAX LEVEL	Group 0	Channel 1 is switched on. No command to other lighting channels or DALI switches.
RECALL MAX LEVEL	Group 1	Channel 2 is switched on. No command to other lighting channels or DALI switches.
RECALL MAX LEVEL	Group 2	Channel 3 is switched on. No command to other lighting channels or DALI switches.
RECALL MAX LEVEL	Group 3	Channel 4 is switched on. No command to other lighting channels or DALI switches.
RECALL MAX LEVEL	Group 4	DALI switch full automation is switched on. No command to other lighting channels or DALI switches with semi-automation.
RECALL MAX LEVEL	Group 5	DALI switch semi-automation is switched on. No command to other lighting channels or DALI switches with full automation.
Only for DALI button modules for scenes:		
GO TO SCENE 0 / Command 16	Broadcast	Activate scene 1

DALI commands (16 bits)	Address	Description
GO TO SCENE 1 / Command 17	Broadcast	Activate scene 2
GO TO SCENE 2 / Command 18	Broadcast	Activate scene 3
GO TO SCENE 3 / Command 19	Broadcast	Activate scene 4

16 Maintenance

The Light Control Box does not contain any components that require maintenance. The device can only be replaced as a complete unit.

16.1 Cleaning

CAUTION!

Using the wrong cleaning products will damage the device!

- Use a lint-free cloth that is either dry or dampened with water.

16.2 Troubleshooting

Fault	Cause/solution
Lighting is off	<ul style="list-style-type: none"> • Ambient light level is above the preset twilight switch value • Lighting has been switched off manually • The switch-off delay time has been set too short
Lighting is switched off during the hours of darkness despite the presence of persons	<ul style="list-style-type: none"> • Ambient light level is above the preset twilight switch value • Lighting has been switched off manually
Lighting does not switch off or lighting switches on spontaneously when no persons are present.	<ul style="list-style-type: none"> • The switch-off delay time has not yet elapsed • Fault display due to animals. • There are moving objects within the field of detection, such as curtains next to an open window. • There are sources of thermal interference within the field of detection, e.g. heating or air-conditioning.

Fault	Cause/solution
Detector does not respond.	<ul style="list-style-type: none"> Lack of power supply; check the mains voltage.
The controlled brightness does not match the specified light target value	<ul style="list-style-type: none"> The interior design (e.g. darker carpet) can result in the detector or light sensors receiving too much or too little reflected light. Solution: <ol style="list-style-type: none"> If you use lights with light sensors, calibrate the light sensors. The light sensors can be calibrated using the remote control (see Chapter "Calibration" page 52) or using the app (see Chapter "Configuring via light sensors" page 96). If light measurement is performed by the DALI detector: <ol style="list-style-type: none"> Use a lux meter to measure the brightness in the area around the light. Compare the brightness value with the specified light target value. Adjust the sensitivity of the detector using the remote control function "Detector Light Factor" (Chapter 8.15). If the controlled brightness is too low, the light factor must be reduced.

17 Technical data

Operating voltage	230 V ~/50 Hz
Rated output	
SmartDriver x4	10 W–130 W (130 W when four lights are connected)
SmartDriver x8	20 W–240 W (240 W when eight lights are connected)
SmartDriver x12	30 W–360 W (360 W when twelve lights are connected)
SmartDriver x16	40 W–130 W (480 W when sixteen lights are connected)
Standby consumption	< 4 W
Permissible ambient temperature	0°C to +40°C
Approx. dimensions	
ELC SmartDriver x4	474 x 255 x 75 mm
ELC SmartDriver x8	474 x 255 x 75 mm
ELC SmartDriver x12	474 x 255 x 132 mm
ELC SmartDriver x16	474 x 255 x 132 mm
Installation type	Ceiling mounting, wall mounting
Terminal	2.5 mm ² /1.5 mm ²
Interfaces	ESYLUX light control, DALI. Only SmartDriver ... KNX models: ESYLUX Light Control, DALI, KNX
Operating interfaces	All models: Infrared, connection for button SmartDriver ... BT models: Infrared, connection for push button, Bluetooth
Interface for connecting presence detectors	DALI
Housing material	Galvanised steel, powder coated
Weight	
ELC SmartDriver x4	3.30 kg
ELC SmartDriver x8	3.30 kg
ELC SmartDriver x12	4.15 kg
ELC SmartDriver x16	4.50 kg
Protection type	IP 20
Protection class	I
Connectable lights: Colour temperature	3000 K, 4000 K
Energy efficiency class	A++ to A

Conformity	CE, RoHS, WEEE
Technical and design features may be subject to change. The power output may deviate from the specified value by +/- 10%.	



18 Disposal

As the owner, you are required by law to correctly dispose of used devices. Contact your local town council for more information.

19 EC-declaration of conformity

We hereby declare that the design and construction of the devices listed under 1.4 and the way in which we have brought them onto the market comply with the relevant fundamental health and safety requirements determined by the EU Directive. This declaration shall cease to have effect in the case of any change made to the devices without our agreement.