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Safety

General instructions

The control unit must only be installed and put into operation by a qualified electrician.

The applicable safety regulations and accident prevention regulations must be observed.

Safety instructions



WARNING!

Exposed, live cables.

Danger of electric shock!

- Only work on the control unit when it is de-energised.

CAUTION!

Destruction of the control unit and other devices through incorrect mounting!

- Do not operate any other control units on the DALI control line.
- Only control ballasts with a DALI interface.
- Ensure that the external pushbutton is designed for the mains voltage.
- Do not wire the control and pushbutton lines with an external voltage, especially not a mains voltage of 230 V.
- Do not exceed the maximum number of electronic ballasts and components.
- Only use the intended infrared receiver types.
- The control unit is designed for installation in luminaires. Use the LMS CI BOX mounting kit for an independent installation.

Intended use

The DALI EASY III control unit may only be operated in the operating modes described in the "Description" section. All other applications are considered to be inappropriate use.

If the DALI EASY III control unit is not used as intended, there is no guarantee that it will operate safely.

Description

Function and application

The DALI EASY III control unit can be used to implement static and dynamic lighting concepts.

Function

The DALI EASY III control unit enables the manual and automatic control of up to four luminaire groups on separate channels. Up to 4 x 16 lighting scenes can be programmed, called up individually or run through cyclically in up to 4 sequences (e.g. to simulate daylight).

A colored light mixing system can be set up by assigning bulb colors to the luminaire groups.

The functions can be executed via a remote control, pushbutton, switch, timer switch, motion detector or PC, depending on the installation.

Important definitions

Scene, lighting scene

A lighting scene defines the lighting situation in a room. This requires a number of luminaires or luminaire groups in a room whose brightness can be adjusted independently.

Example 1: Office lighting

Offices often have rows of luminaires running in parallel to the window front.

Lighting scene A: (in daylight)	The luminaires near the window front are set to minimum brightness. The luminaires furthest away from the window front are set to maximum brightness.
Lighting scene B: (in darkness)	All the luminaires are set to the same brightness.

Example 2: Colored effect lighting

The luminaires or luminaire groups are fitted with bulbs of different colors (red, green blue, white). They are set to different brightness levels according to the desired shade of color (mixed color of the room lighting). This mixing color is a lighting scene.

Sequence

A sequence is the automatic retrieval of stored lighting scenes and their cyclic playback.

Group, luminaire group

A group is a collection of luminaires connected to the same DALI output channel. This means that all luminaires in a group always have the same brightness.

Fade time

The fade time is the time in which the lighting system changes from one lighting scene to the next in sequencer mode.

Cycle time

The cycle time is the time in which the daylight simulation system runs through a complete daylight cycle.

Operating modes

DALI EASY III has three operating modes:

- Lighting control mode: Brightness is adjusted manually, and luminaire groups and lighting scenes are switched on and off manually.
- Sequencer mode: The stored lighting scenes are called up automatically one after the other. The fade time between the lighting scenes is adjustable.
- Daylight simulation: The lighting scenes are called up automatically to simulate light conditions as they change during the course of a day. Lighting scenes and cycle time (= duration of the "day") can be adjusted.

Behaviour after a power failure

The LED luminaires connected to the control unit behave as follows if there is a power failure:

- Lighting control mode
The last state prior to a power failure is automatically restored.
- Sequencer mode
After the power supply is switched back on, e.g. by a timer switch, the sequence restarts with the first active scene.
- Daylight simulation
After the power supply is switched back on, e.g. by a timer switch, the simulation restarts with the first active scene.

Connections

The control unit has the following connections:

- Input for external pushbutton (A)
- Outputs for DALI ECG (B)
- Input for EASY signal (C)
- Mains connection (D)



Connecting the inputs

Proceed as follows:

Step	Task
1	Connect the 4p4c modular connector of the EASY signal line.
2	Strip the power cable, remove the insulation from the phase and neutral wires and connect to the terminals.
3	Connect the line of the external pushbutton to the terminal, if applicable.
4	Insulate the PE conductor if not in use.

Connecting the outputs

Line diameter of connection lines between the control unit and DALI ECG: 1.5 mm²

Proceed as follows:

Step	Task
1	Strip the lines, remove the insulation and connect to the terminals.
2	Insulate the PE conductor if not in use.
3	Fasten the cable clamp.

Expanding the system

Master-slave circuit

In a master-slave circuit, up to 16 DALI EASY or OT EASY control units can be controlled simultaneously via a single remote control, a single pushbutton coupler or a single PC, and more than 32 DALI units are connectable.

Notes:

To return the control units to their original state, perform a reset; see "Operation".

Configuration via a PC: see the operating instructions of the EASY Color Control Software.

Procedure

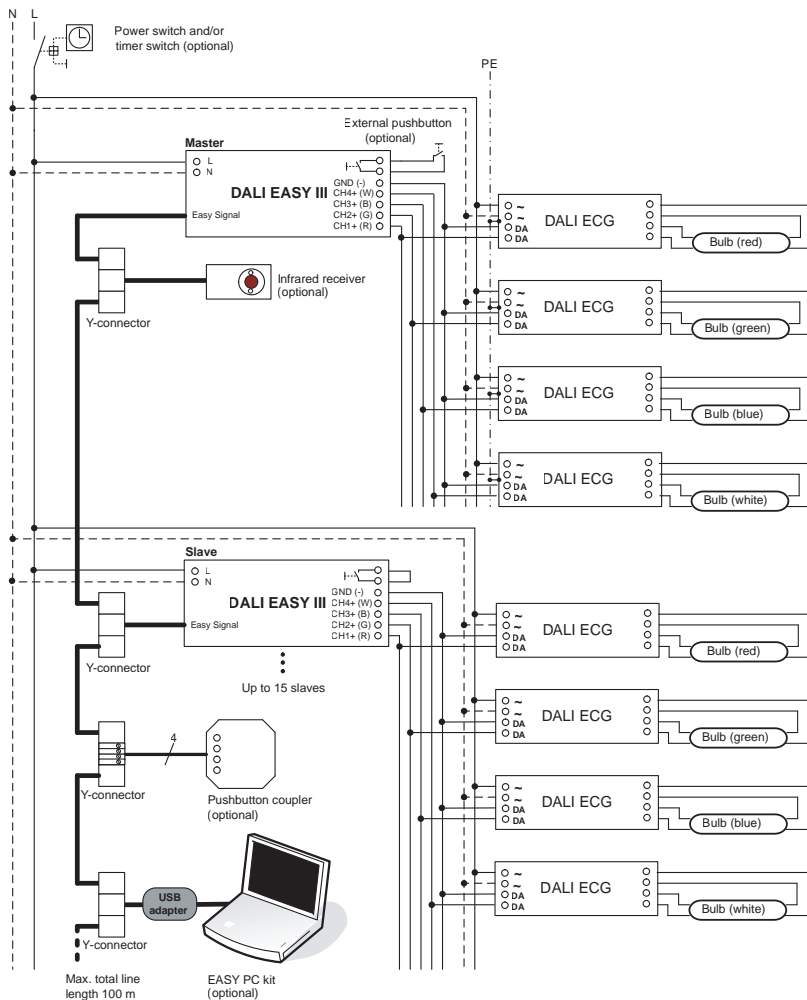
Proceed as follows to set up a master-slave circuit:

Step	Task
1	Disconnect all control units from the mains supply.
2	Connect an external pushbutton to the control unit that is to serve as the master, or leave the input vacant.
3	For the remaining control units, which operate as slaves, fit a wire bridge to short-circuit the input terminals for the external pushbutton.
4	Connect the control units via Y-connectors and connect the connection lines with each other.
5	Connect the infrared receiver and pushbutton coupler via the Y-connectors (optional). <div data-bbox="344 869 1034 965" style="background-color: #f0f0f0; padding: 5px; margin-top: 5px;"> <p>Note: Connect a maximum of four infrared receivers and two pushbutton couplers.</p> </div>
6	Reconnect all control units with the mains supply.

Wiring diagram (example of a master-slave circuit)

CAUTION!

- Master-slave connection lines conduct protective extra-low voltage signals; do not route together with power supply or lamp lines.
- Ensure that the master-slave connection lines are sufficiently insulated against the power supply or lamp lines.

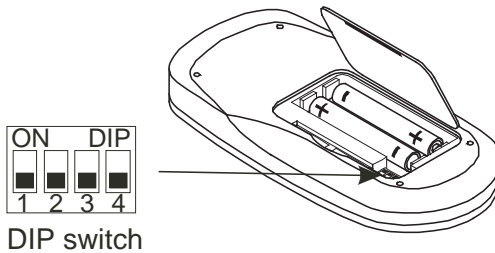
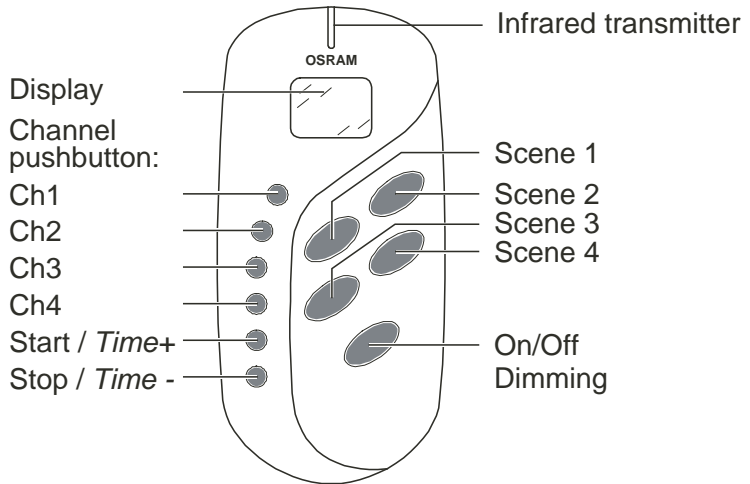


Operation

Remote control

Note:

These instructions primarily describe the operation via the DALI EASY RMC remote control. To operate via an EASY PB Coupler, see the separate instructions for the EASY PB Coupler.






Note:

Additional information on the remote control can be found in the separate operating instructions of the DALI EASY RMC.

Activating the operating modes

The lighting control mode is always active. The sequencer mode and daylight simulation are activated via the DIP switches in the battery compartment of the remote control.

Activated operating modes	DIP switch setting	
Lighting control mode only	DIP switch 3 = OFF DIP switch 4 = OFF	ON 
Sequencer mode (incl. lighting control mode)	DIP switch 3 = OFF DIP switch 4 = ON	ON 
Daylight simulation (incl. lighting control mode)	DIP switch 3 = ON DIP switch 4 = OFF	ON 

Switching on and off the luminaires



Via short press.

- All luminaires: "On/Off dimming" button.
- Luminaire groups (channels 1 to 4): "Ch1" to "Ch4" buttons.

Changing the brightness manually



Via long press. Each repeated long key press causes a toggle between increased brightness and decreased brightness.

- All luminaires: "On/Off dimming" button.
- Luminaire groups (channels 1 to 4): "Ch1" to "Ch4" buttons.

Note:

The luminaires of a luminaire group are all connected to the same output channel and therefore have the same brightness.

Storing and calling up a lighting scene

"Scene 1" to "Scene 4" buttons.

Proceed as follows to store lighting scenes:

Step	Task
1	Set the brightness of the luminaire group; see "Changing the brightness manually".
2	Press the desired button for at least 3 seconds.
3	Confirmation: luminaires flash.





To call up a lighting scene:



Via short press.

Disabling scene storage

Storing of scenes can be disabled by means of the DIP switches in the remote control or in the pushbutton coupler.

Storing scenes	Remote control	Pushbutton coupler
Disabled	DIP switch 2 = OFF 	DIP switch 1 = OFF 
Enabled	DIP switch 2 = ON 	DIP switch 1 = ON 

Starting and ending the sequencer mode



Via short press.

- To start and continue the sequencer mode: "Start/time+" button
- To stop the sequencer mode: "Stop/time-" button
- To end the sequencer mode: "Ch1" to "Ch4", "Scene 1" to "Scene 4" or "On/Off dimming".

Setting the fade and cycle time

Set the fade time for the sequencer mode and the cycle time for the daylight simulation.

To increase the time: "Start/time+" button

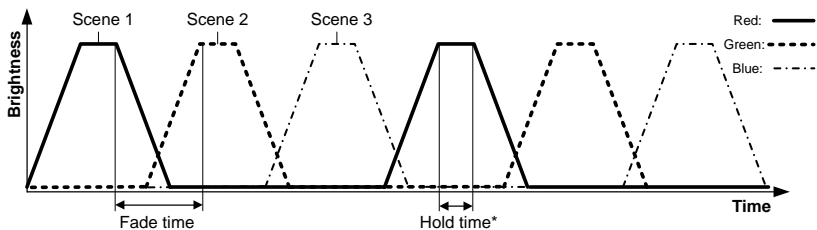
To decrease the time: Stop/time-" button

Proceed as follows:

Step	Task
1	Press the button for at least 3 seconds. The time is shown on the display; see below.
2	Single steps: Short press Fast forward: Long press

Operating mode	Display	Interval
Sequencer mode (fade time)		
Effect Lighting	0.1 ... 0.9	Tenths of a second
Wellness	01 ... 59	Seconds
Long Time	01 ... 99	Minutes
Daylight simulation (cycle time)	01 ... 24	Hours

Example of a sequence



*The hold time is automatically set to 25 % of the set fade time.

Scene 1: Ch1 (red) = max.; Ch2,Ch3,Ch4 = min.

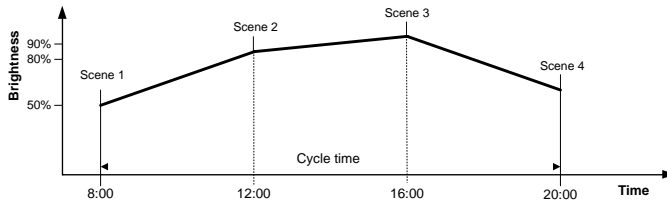
Scene 2: Ch2 (green) = max; Ch1,Ch3,Ch4 = min.

Scene 3: Ch3 (blue) = max.; Ch1,Ch2,Ch4 = min.

Scene 4: Ch1...Ch4 = off (is skipped)

Example of a daylight simulation

Cycle time 12h. Clock-controlled switch-on at 8 a.m.



Troubleshooting

If you cannot remedy the fault, please contact the Customer Service department of the luminaire manufacturer.

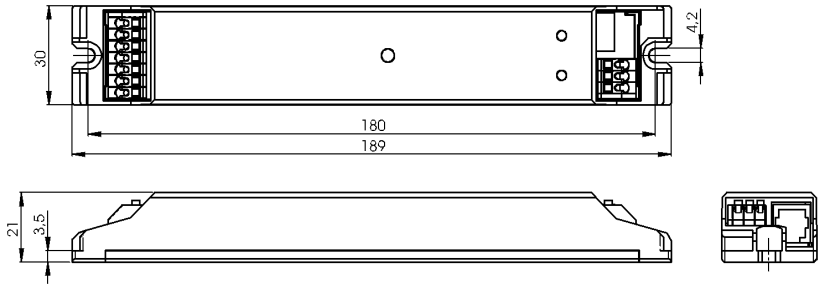
Fault	Cause	Remedy
Luminaire does not function	No mains voltage present.	Check the mains supply fuses.
	Illuminant defective.	Replace illuminant.
Control unit does not respond to the remote control	No mains voltage present.	Check the mains supply fuses.
	Illuminant defective.	Replace illuminant.
	Remote control batteries are too weak.	Check the display. Replace the batteries if necessary.
	Remove control is outside the range of the infrared receiver.	Reduce the distance.
	Wrong IR coding.	Check the IR coding.
	Infrared receiver is exposed to direct light.	Shade the receiver or select another installation location.
Control unit does not respond to the external pushbutton	No mains voltage present.	Check the mains supply fuses.
	Illuminant defective.	Replace illuminant.
Luminaire does not react as expected to the press of a button	Button was pressed too long or too short.	See "Operation".
	No mains voltage present.	Check the mains supply fuses.
Sequence in the master-slave mode is not synchronous	Slaves have already been programmed and have their own scenes.	Perform a reset and create the sequence again.
	Slave bridges are missing.	Insert the bridges.

Appendix

Technical data

Operating voltage	100-240 V / 50-60 Hz (DC operation permissible)
Supply connection	L, N
Inputs	<p>EASY signal input, SELV equivalent</p> <ul style="list-style-type: none"> Maximum of 4 infrared receivers and two pushbutton couplers are connectable <p>Potential-free pushbutton input, basis insulation as per IEC 664</p>
Outputs	<p>DALI broadcast channels, basic insulation as per IEC 664</p> <ul style="list-style-type: none"> Max. 32 DALI devices are connectable (total of 64 mA across all channels) Max. 300 m DALI total line length (total across all channels)
Master-slave connection	<ul style="list-style-type: none"> Max. total line length: 100 m Max. 50 m to pushbutton coupler Max. 1 master and 15 slaves are connectable Do not route the master-slave connections together with the power supply or luminaire lines.
Power consumption	Max. 3.5 W
Operating temperature	0 °C ... +50 °C
Protection type	IP 20
Protection class	II
Dimensions (L x W x H)	189 x 30 x 21 mm

Dimensions



Conformity with the relevant EU directives is confirmed by the CE symbol.

IV 2009

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