OT EASY 60 II

LED control unit
Operating instructions

Contents

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!

- 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 connectable components.
- Only use the intended infrared receiver types.

Intended use

The OT EASY 60 II 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 OT EASY 60 II control unit is not used as intended, there is no guarantee that it will operate safely.

Description

Function and application

The OT EASY 60 II LED control unit can be used to implement static and dynamic lighting concepts.

Function

The OT EASY 60 II LED control unit enables the manual and automatic control of up to four LED 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 LED colors to the outputs.

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 or the color resulting from the mixing of individual LED colors (red, green, blue).

Example 1: Coloured effect lighting

The LEDs have 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.

Example 2: Daylight simulation

White LED modules with different colour temperatures of 3300 K and 6500 K in conjunction with red and blue LED modules are suitable for daylight simulation in areas at a great distance from a window front, ceiling lights and task lighting with variable colour temperatures. Very slow cross fades are imperceptible to the human eye.

Sequence

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

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

OT EASY 60 II 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 modules 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 re-stored.
- Sequencer mode: After the power supply is switched back on, e.g. by a timer switch, the sequence restarts with scene 1.
- Daylight simulation: After the power supply is switched back on, e.g. by a timer switch, the simulation restarts with the scene 1.

Connections

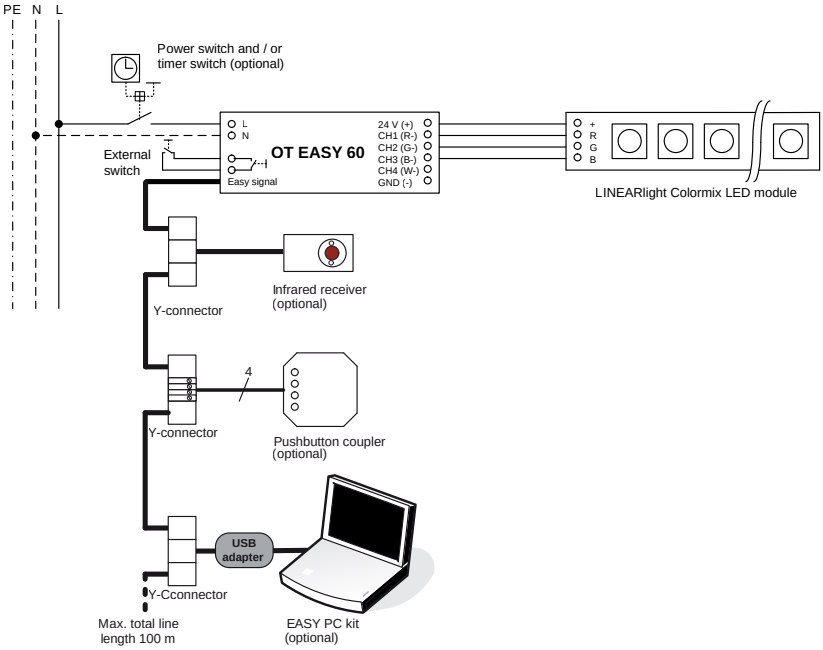
The control unit has the following connections:

- Mains connection (A)
- Input for external pushbutton (B)
- Input for EASY signal (C)
- Outputs for connecting LED modules (D)

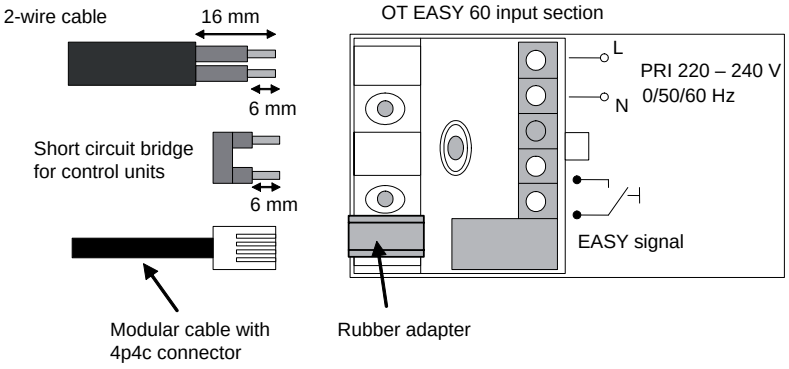
Installation

Connecting the control unit

Wiring diagram



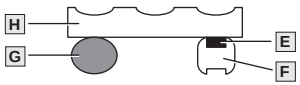
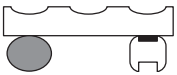
OT EASY 60 input connections



Connecting the inputs

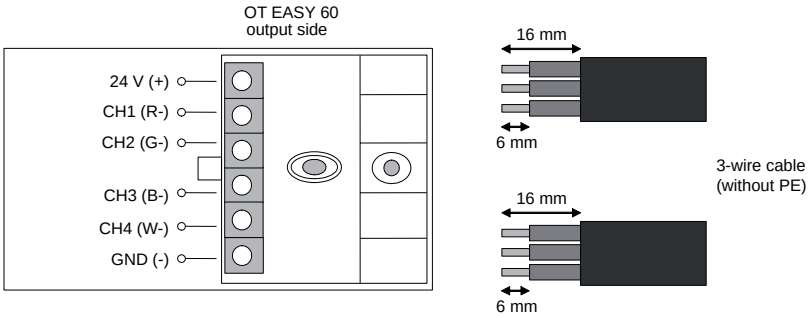
Proceed as follows:

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 screw terminals.
3	Connect the line of the external pushbutton to the screw terminals, if applicable.
4	Mount the cable strain relief: Use a rubber adapter and cable clamp that are suitable for the power cable diameter; see figure.
5	Insulate the PE conductor, if necessary.

Ø (G) mm	Cable strain relief
6 - 7.5	
7.5 - 8.5	
8.5 - 9	

E Modular cable
F Rubber adapter for modular cable
G Power cable
H Cable clamps

OT EASY 60 output connections



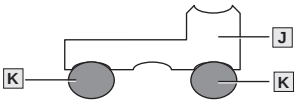
Connecting the outputs

Connection lines between the control unit and LED modules:

- Two 3-wire lines (without PE) with the same external diameter
- Max. length: 10 m
- Recommended line diameter:
  1.5 mm² (line length < 5 m) or 2.5 mm² (line length > 5 m)

Proceed as follows:

Step	Task
1	Strip the 3-wire lines, remove the insulation and connect to the screw terminals.
2	If the GND wire is unused, insulate it on the side of the LED module.
3	Use cable clamps.



J Cable clamp

K 3-wire line (2 x)

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, up to two pushbutton couplers or a single PC.

Note:
Configuration of the master-slave circuit via a PC: see the operating instructions of the EASY Color Control Software.

Procedure

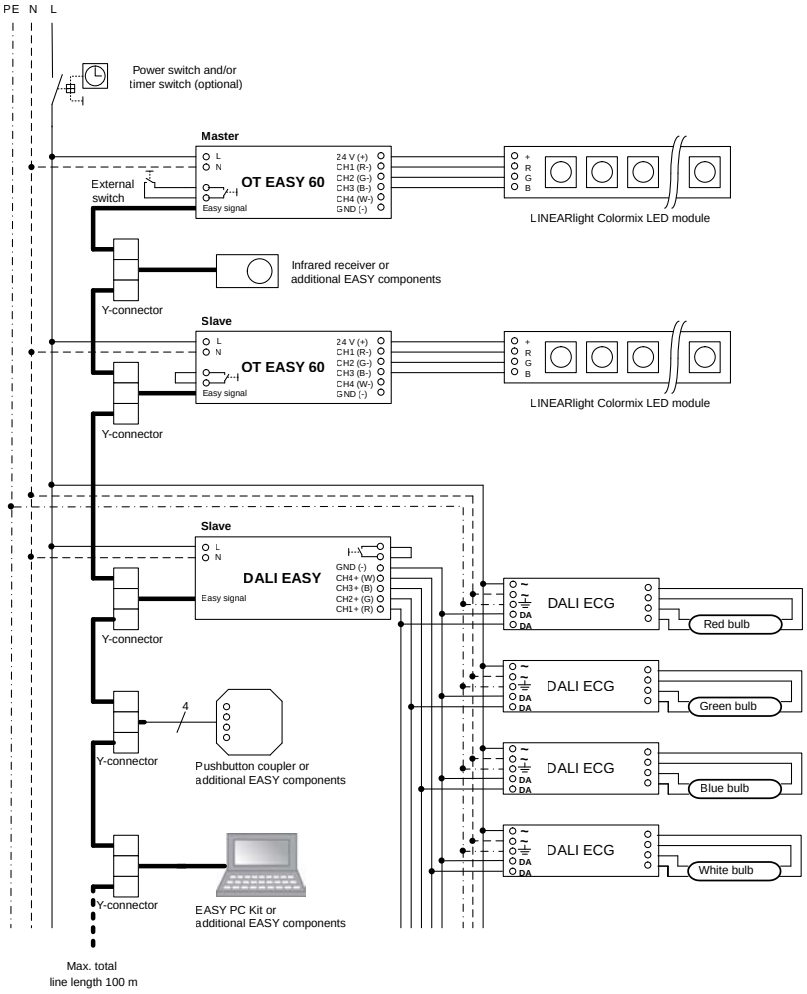
Proceed as follows to set up a master-slave circuit:

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, use the bridge at the input 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 to one of the Y-connectors (optional). Note: Connect a maximum of four infrared receivers and two pushbutton couplers.
6	Reconnect all control units with the mains supply.

Wiring diagram (example of a master-slave circuit)

CAUTION!
Destruction of the control unit and other devices!

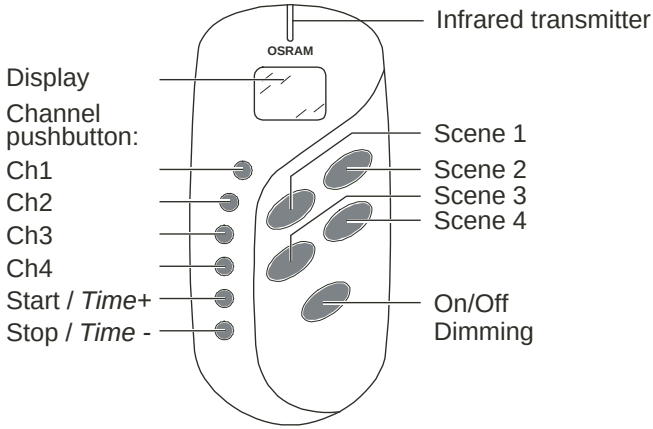
- Master-slave connection lines conduct protective extra-low voltage signals; do not route together with power supply or LED lines.
- Ensure that the master-slave connection lines are sufficiently insulated against the power supply or lamp lines.

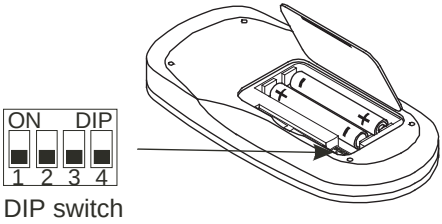


Operation

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.

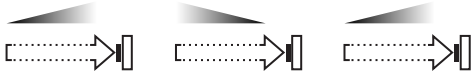
Activated operating modes	DIP switch setting	
Lighting control mode only	DIP switch 3 = OFF DIP switch 4 = OFF	ON 
Sequencer mode (incl. lighting control mode)	DIP switch 3 = OFF DIP switch 4 = ON	ON 
Daylight simulation (incl. lighting control mode)	DIP switch 3 = ON DIP switch 4 = OFF	ON 

Switching on and off the luminaires

Via short press.

- All LEDs: „On/Off dimming“ button.“.
- LEDs (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 LEDs: „On/Off dimming“ button.“.
- LEDs (channels 1 to 4): „Ch1“ to „Ch4“ buttons.

Note:
The LEDs of a 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

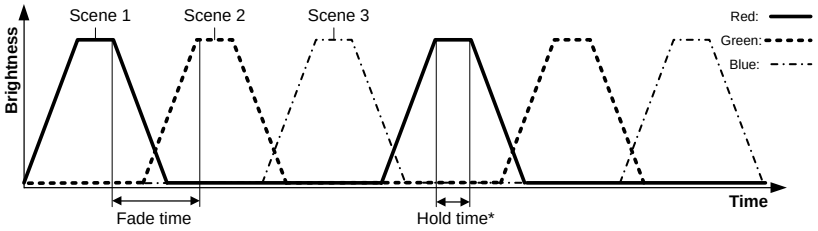
To decrease the time: „Stop/Time–“ button

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.

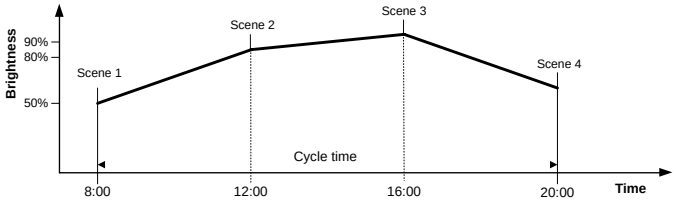
Scene 2: Ch2 (green) = max; Ch1,Ch3,Ch4 = min.

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

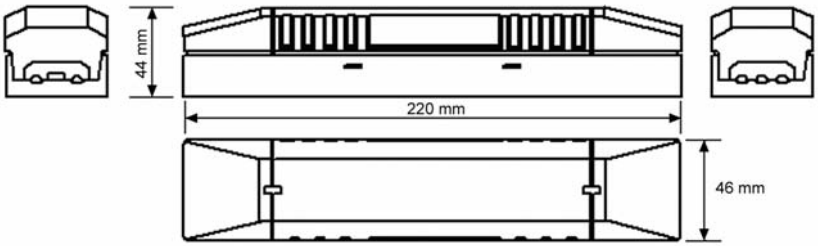
Technical data

For LED modules	With respect to the output conditions: 1 x LINEARlight Colormix Flex (4m), 7 x LINEARlight Colormix, etc.
Operating voltage	220-240 V_{AC} / 50-60 Hz
Permissible voltage fluctuations	198-264 V_{AC}
Line current, nominal	0.33 A @ 230 V
Output voltage	24 V_{DC}
Max. module wattage	60 W, distributed over all outputs (60 W on only one output is also possible)
Power factor	PF > 0.95
Max. losses	8 W @ 230 V
Control signal	Digital EASY signal via 4-pin RJ-11 modular connection (4p4c)
Master-slave connection	• Max. 100 m total line length • 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 LED lines.
Max. number of connectable components	• 4 EASY IR sensors • 1 EASY pushbutton coupler • 1 EASY USB adapter
Dimming mode	PWM (300 Hz)
Dimming range	0-100 %
Operating temperature	-20 °C … +50 °C
EASY interface	4-pin modular connection
Secondary side	Screw terminals
Max. secondary line length	10 m
Dimensions (L x W x H)	220 x 46.2 x 43.6 mm

Applicable standards

Safety	UIEC 61347
Performance	IEC 62384
Radio interference	EN 55015, EN 55022
Harmonic content	IEC 61000-3-2
Immunity	IEC 61547

Dimensions



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

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