

Combio-868 LI

e l e r o

285630006



**Information for use**

Keep for future use.

181110703\_EN\_0319

**EN Translation from the original German version.**

All other documents in different languages are translations of the original version.

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# 1 Introduction

This user manual describes the functions and features of the Combio-868 LI system. Combio-868 LI enables appropriate illuminants to be switched and dimmed. Appropriate illuminants are as follows:

- standard light bulbs
- high-voltage halogen light bulbs
- low-voltage light bulbs with electronic transformer
- LED light bulbs with a suitable electronic dimmer (ECG, electronic control gear)

An elero handheld/wall-mounted transmitter (at least 1) is also required. The Combio-868 LI can be controlled by several transmitters.



Follow the instructions in these manuals to ensure proper and safe use.

Retain for future use.

## 1.1 Manufacturer contact details

elero GmbH

Maybachstr. 30

73278 Schlierbach - Germany

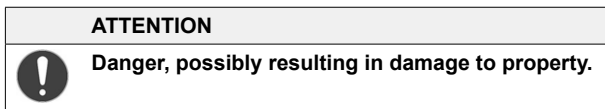
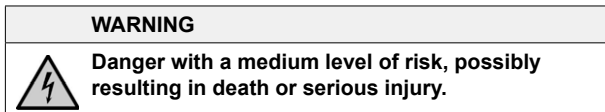
Telephone: +49 (0)7021 9539-0

Email: [info@elero.de](mailto:info@elero.de)

Website: [www.elero.de](http://www.elero.de)

## 1.2 Symbols and warnings

This user manual uses the following illustrations to display important warnings:



## 2 Safety instructions

### 2.1 Target group

This document is primarily intended for use by electricians, technicians and engineers with experience in the design, installation, commissioning and maintenance of building technology.

### 2.2 Intended use

This product is for private use only. It is intended only for the switching and/or dimming of suitable illuminants for use in dry rooms.

The Combio-868 LI is designed for installation in dry cavities in buildings. Do not perform any modifications to the device. The manufacturer will not assume liability for damage caused by the above.

Do not operate a programmed transmitter inadvertently or carelessly.

## **2.3 Warranty**

- The warranty period for Combio-868 LI is in accordance with the legal regulations. Damages caused due to improper use are excluded.
- Never open the device without authorisation. Opening the housing renders the warranty null and void.
- No warranty claims may be made for damage caused to the Combio-868 LI due to improper operation resulting from non-observance of the operating instructions or due to a disregard of these instructions.
- No liability shall be accepted for consequential damages.

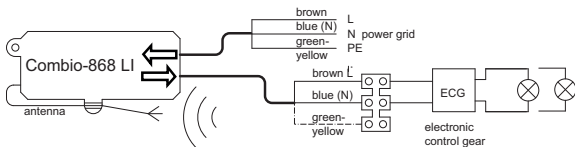
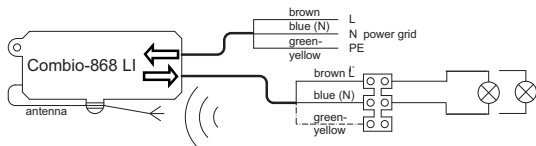
## **3 System description**

### **3.1 Application area**

Combio-868 LI enables the switching and dimming of suitable illuminants in combination with elero hand-held/wall-mounted transmitters.

## 3.2 Terminal connection diagram

### Connection diagram with/without ballast



The Combio-868 LI is supplied with 230V AC via spring clips.

Designation	Assignment
L	Exterior conductor (brown)
N	Neutral conductor (blue)
PE	Protective conductor (yellow/green)



The illuminants that are connected are powered and activated via suitable clips by means of same-coloured connections.


## 4 Technical data

Technical data	
Power supply	230 V, 50 Hz
Power (load designation R = ohmic load, C = capacitive load)	max. 100 W
Stand-by power consumption	< 0.5 W
Nominal current of lighting clamps	max. 0.5 A
Ingress protection	IP 56
Protection class	II
Software class	A
Operating temperature	-20 ... 65 °C
Relative air humidity	0 ... 95%
Max. usage altitude	2000 m over NHN
Network cable length	3 m
Number of maximum transmitters	16
Radio frequency	868 MHz (frequency band)
Resistance to short-circuiting	guaranteed
Soft start	maximum 1 s
Dimming time	maximum 5 s
Dimensions of housing (L x W x H)	98 x 41 x 16 mm
Weight with cable	approx. 350 g
Type of mounting	Screws / glued
Conformity	CE (FCC / IC)
Item number	285630006



## 5 Preparation

### 5.1 Product contents

Designation	Fig.
Combio-868 LI Article no. 285630006	
User manual Article no. 181110703	Retain for future use.

### 5.2 Packaging

Packaging is designed for protection of the Combio-868 LI during transport. After unpacking, please check all components delivered for completeness or damage.

### 5.3 Settings

The equipment is set via the elero handheld/wall-mounted transmitter following the electrical connection.

### 5.4 Connection and installation

#### WARNING



**Risk of injury, damage to the Combio-868 LI and its surrounding area due to improper electrical connections.**

### WARNING

- The electrical connection may only be conducted by qualified personnel.
  - Only perform work on the electrical connection if it has been disconnected from the power supply.
  - Note the technical data for the device.
  - Take care to ensure correct, securely affixed connections.
- 
- The Combio-868 LI must be installed in a dust-free and dry environment.
  - Screw the Combio-868 LI to the surface by means of the ring lug using a suitable screw.
  - Affix the Combio-868 LI using a self-adherent foam strip.
  - Do not kink, shorten or extend the external antenna of the Combio-868 LI, route it as free from obstruction as possible. Do not lay it against metal. Realign it in case of poor reception.

### ATTENTION



**Replacing components of the Combio-868 LI with third party components may damage these components or other connected systems.**

- Exchange components between different systems only after consultation with the manufacturer or your supplier.
- When replacing a component, check whether the type description of the new component matches the one being replaced.

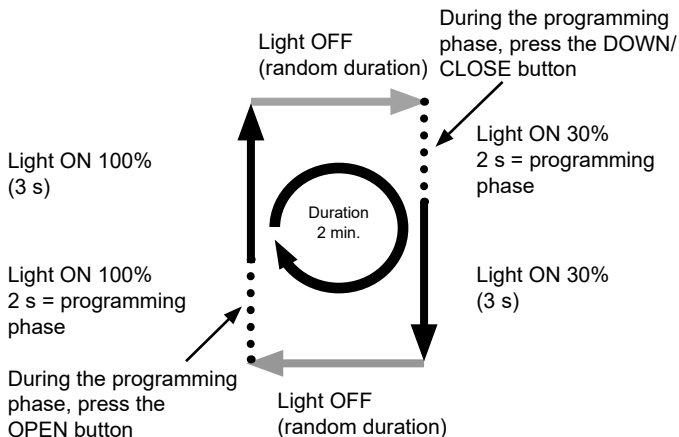
## 5.5 Commissioning

The elero handheld/wall-mounted transmitter has to be programmed to the Combio-868 LI radio receiver.

The functions of the Combio-868 LI are controlled using the buttons [OPEN ▲], [STOP ■], [DOWN/CLOSE ▼], programming button [P] and the slider of the handheld/wall-mounted transmitter.

The + sign in the text indicates pressing the buttons simultaneously.

## 5.6 Diagram of programming mode



## 5.7 Asynchronous programming mode (standard)

Asynchronous programming mode is the standard programming mode. In asynchronous programming mode, the switch-on duration of the ON times vary in case of several receivers. After a few ON/OFF cycles, the illuminants of the receivers will no longer light up synchronously. This will enable the hits for a certain receiver to be set better.

Asynchronous programming mode is suitable for

- programming the first transmitter
- programming an additional transmitter
- programming individual receivers in case of several receivers ready for programming (e.g. several receivers using one fuse).

### Asynchronous programming mode (standard)

	Operating procedure	Result
1	<u>Activate asynchronous programming standby:</u> Switch the mains voltage off and on again <b>or</b> press the buttons <b>[OPEN ▲]</b> + <b>[DOWN/CLOSE ▼]</b> + <b>[P]</b> simultaneously and hold them down for 3 seconds on a transmitter that has already been programmed.	The receiver changes to asynchronous programming standby for 5 minutes. Ready to receive the programming button <b>[P]</b> .

## Asynchronous programming mode (standard)

2	<p><u>Start programming mode:</u> Press the [P] programming button for approx. 1 second.</p>	Combio-868 LI changes to asynchronous programming mode and the light source begins to change intensity (between 100% and 30%) periodically.
3	<p><u>Set first hit:</u> <b>Immediately</b> after the light source lights up, push the [OPEN ▲] button or [DOWN/CLOSE ▼].</p> <ul style="list-style-type: none"><li>• If luminous intensity is high (100%) press the [OPEN ▲] button.</li><li>• If luminous intensity is low (30%) press the [DOWN/CLOSE ▼] button.</li></ul>	<p><u>Hit successful:</u> The light source <b>goes out briefly</b>.</p> <p><u>Hit failed:</u> The light source <b>does not go out</b>. → repeat action "Set first hit"!</p>
4	<p><u>Set second hit:</u> <b>Prerequisite:</b> First hit has been set. <b>Immediately</b> after the light source with the <b>opposite</b> intensity lights up, push the [OPEN ▲] button or [DOWN/CLOSE ▼].</p> <ul style="list-style-type: none"><li>• If luminous intensity is high (100%) press the [OPEN ▲] button.</li><li>• If luminous intensity is low (30%) press the [DOWN/CLOSE ▼] button.</li></ul>	<p><u>Hit successful:</u> The light source <b>goes out permanently</b> and indicates that the programming procedure is over.</p> <p><u>Hit failed:</u> The light source <b>does not go out</b>. → repeat action in "Set second hit"!</p>

- Programming can only ever be performed in one selected channel.
- When programming is complete or after 5 minutes has passed, the receiver will revert to normal operation.
- Programming mode can be stopped by pressing the **[STOP ■]** button for at least 6 seconds.
- Up to 16 transmitters can be programmed.
- Several receivers can be programmed to one channel.
- If more than 10 receivers at once are in programming mode, the transmitter changes to group programming mode. Once programming is complete, group programming mode has to be terminated manually in the transmitter by pressing the **[STOP ■]** button for at least 6 seconds.

## 5.8 Synchronous programming mode

Synchronous programming mode is a special programming mode. In synchronous programming mode, the switch-on duration of the ON times will be constant with several receivers. Even after a few ON/OFF cycles, the illuminants of the receivers will light up synchronously. As a result, the hits for all participating receivers can be set simultaneously.

Synchronous programming mode is suitable for

- programming an additional transmitter
- programming several receivers simultaneously to one transmitter or one channel.

## Synchronous programming mode

	Operating procedure	Result
1	<p><u>Activate synchronous programming standby:</u> Press the buttons [<b>DOWN/CLOSE ▼</b>] + [<b>P</b>] simultaneously on a transmitter that has already been programmed and hold them down for 3 seconds.</p>	<p>The receiver changes to synchronous programming standby for 5 minutes. Ready to receive the programming button [<b>P</b>].</p>
2	<p><u>Start programming mode:</u> Press the [<b>P</b>] programming button for approx. 1 second.</p>	<p>Combio-868 LI changes to synchronous programming mode and the light source begins to change intensity (between 100% and 30%) periodically.</p>
3	<p><u>Set first hit:</u> <b>Immediately</b> after the light source lights up, push the [<b>OPEN ▲</b>] button <u>or</u> [<b>DOWN/CLOSE ▼</b>].</p> <ul style="list-style-type: none"> <li>• If luminous intensity is high (100%), press the button [<b>OPEN ▲</b>].</li> <li>• If luminous intensity is low (30%), press the button [<b>DOWN/CLOSE ▼</b>].</li> </ul>	<p><u>Hit successful:</u> The light source <b>goes out briefly</b>.</p> <p><u>Hit failed:</u> The light source <b>does not go out</b>. → repeat action "Set first hit"!</p>

## Synchronous programming mode

<p>4 <u>Set second hit:</u> <b>Prerequisite:</b> First hit has been set. <b>Immediately</b> after the light source with the <b>opposing</b> intensity lights up, push the <b>[OPEN ▲]</b> button or <b>[DOWN/CLOSE ▼]</b>.</p> <ul style="list-style-type: none"><li>• If luminous intensity is high (100%) press the <b>[OPEN ▲]</b> button.</li><li>• If luminous intensity is low (30%) press the <b>[DOWN/CLOSE ▼]</b> button.</li></ul>	<p><u>Hit successful:</u> The light source <b>goes out permanently</b> and indicates that the programming procedure is over.</p> <p><u>Hit failed:</u> The light source <b>does not go out</b>. → repeat action in "Set second hit"!</p>
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- Programming can only ever be performed in one selected channel.
- When programming is complete or after 5 minutes has passed, the receiver will revert to normal operation.
- Programming mode can be stopped by pressing the **[STOP ■]** button for at least 6 seconds.
- Up to 16 transmitters can be programmed.
- Several receivers can be programmed to one channel.
- If more than 10 receivers at once are in programming mode, the transmitter changes to group programming mode. Once programming is complete, group programming mode has to be terminated manually in the transmitter by pressing the **[STOP ■]** button for at least 6 seconds.



## 6 General control options

General control options		
Key combination	Press	Action
[OPEN ▲]	Short	<u>Light source is off:</u> Set the last brightness value <u>Light source is on:</u> Reduce dimming slightly
[OPEN ▲]	Long	Reduce dimming
[OPEN ▲]	2 x short	Set maximum user-defined brightness value (Standard: 100%)
[DOWN/CLOSE ▼]	Short	<u>Light source is off:</u> Set the last brightness value. <u>Light source is on:</u> Increase dimming slightly.
[DOWN/CLOSE ▼]	Long	Increase dimming
[DOWN/CLOSE ▼]	2 x short	Set lowest user-defined brightness value (Standard: 10%)
[STOP ■]	Short	Switch off light source
[UP ▲] + [STOP ■]	Short	Save current brightness value as the maximum user-defined brightness value
[UP ▲] + [STOP ■]	Longer than 6 seconds	Delete maximum user-defined brightness value and restore standard value

General control options		
[DOWN/ CLOSE ▼] + [STOP ■]	Short	Save current brightness value as the lowest user-defined brightness value
[DOWN/ CLOSE ▼] + [STOP ■]	Longer than 6 seconds	Lowest maximum user-defined brightness value and standard value

Operation with MonoCom Slide / VarioCom Slide	
Slider	Action
Swipe up and hold	Reduce dimming
Swipe down and hold	Increase dimming
Let go of slider	Dimming stops

## 6.1 Adapting an illuminant

The factory setting of the Combio-868 LI allows a power setting between 10% and 100%. The power cannot be set below 10%. Some illuminants require more than 10% of the power at the lowest operating limit. This could lead to the illuminant not lighting up yet a low level of current flowing regardless. In such cases the absolute lower dimming limit should be adapted to the illuminant.

When adapting an illuminant, the absolute lower dimming limit can be set or this can be reset to the factory setting (10%).

In addition the Combio-868 LI can also be configured as a light switch.

## Requirement for adapting an illuminant

Operating procedure	Result
<p><u>Activate adaptation of illuminant:</u> Switch the mains voltage off <b>and</b> on again or press the buttons <b>[STOP ■] + [OPEN ▲] + [P]</b> and hold them down for 6 seconds on a transmitter that has already been programmed.</p>	Combio-868 LI changes to illuminant adaptation mode for 5 minutes. Within this time, settings can be made for the absolute lower dimming limit.

## Setting the absolute lower dimming limit

	Operating procedure	Result
1	<p><u>Set lowest user-defined brightness value:</u> Using the <b>[OPEN ▲] + [DOWN/CLOSE ▼]</b> buttons, set the desired brightness value and then briefly press the <b>[DOWN/CLOSE ▼]</b> buttons + <b>[STOP ■]</b> button.</p>	The set brightness value is saved as the lowest user-defined brightness value.
2	<p><u>Set absolute lower dimming limit:</u> Press the buttons <b>[OPEN ▲] + [DOWN/CLOSE ▼]</b> briefly.</p>	The illuminant goes out. The lowest user-defined brightness value is set as the absolute lower dimming limit.

## Configuring the Combio-868 LI as a light switch

Operating procedure	Result
Press the buttons [OPEN ▲] + [DOWN/CLOSE ▼] for 3 seconds.	The illuminant lights up. The absolute lower dimming limit is set to 100%. Combio-868 LI now functions as a light switch. Dimming will no longer work.

## Restoring the absolute lower dimming limit

Operating procedure	Result
Press the buttons [OPEN ▲] + [DOWN/CLOSE ▼] for 6 seconds.	The illuminant goes out. The absolute lower dimming limit of 10% is restored.

## 6.2 Deleting the programmed handheld/wall-mounted transmitter

Deleting a transmitter does not effect the brightness values set. Deleting a transmitter will cause the factory setting to be restored.

### Deleting the handheld/wall-mounted transmitter

Operating procedure	Result
Press the [STOP ■] + [P] buttons for at least 6 seconds until the status LED lights up red.	<u>On the transmitter:</u> The selected channels are deleted entirely. <u>On the receiver:</u> The individual transmitter only is deleted from the Combio-868 LI.

## Deleting the handheld/wall-mounted transmitter

Operating procedure	Result
Press the [OPEN ▲] + [DOWN/CLOSE ▼] + [STOP ■] + [P] buttons for at least 6 seconds until the status LED lights up red.	<u>On the transmitter:</u> The selected channels are deleted entirely. <u>On the receiver:</u> All transmitters are deleted from the Combio-868 LI.

## 7 Servicing

### 7.1 Cleaning

The components of the Combio-868 LI do not require any special cleaning providing they are protected inside an installation box against dirt.

### 7.2 Maintenance

The Combio-868 LI is maintenance-free.

### 7.3 General notes on troubleshooting

Fault	Possible cause	Possible solution
Receiver not responding and status indicator of transmitter flashing orange	No transmitter programmed	Program the transmitter

<b>Fault</b>	<b>Possible cause</b>	<b>Possible solution</b>
Receiver cannot be programmed	Transmitter and receiver systems are configured differently (ProLine1 or ProLine 2)	Adapt the system configuration
Receiver not responding and status LED of transmitter flashing red	<ol style="list-style-type: none"> <li>1. No power supply</li> <li>2. Outside the radio range</li> <li>3. Radio receiver defective</li> </ol>	<ol style="list-style-type: none"> <li>1. Check mains voltage.</li> <li>2. Change unfavourable position of receiver. Change the position of the receiver's aerial</li> <li>3. Replace receiver.</li> </ol>
Receiver not responding and status LED of transmitter not lighting up	Battery in transmitter is used up	Replace batteries in transmitter
Receiver reacting only intermittently	<ol style="list-style-type: none"> <li>1. Poor radio reception</li> <li>2. Influence from faulty or non-approved radio systems</li> </ol>	<ol style="list-style-type: none"> <li>1. Change the transmitter's position. Change the position of the receiver's aerial</li> <li>2. Localise the source of the interference and rectify malfunction.</li> </ol>


Fault	Possible cause	Possible solution
Programming logic of [OPEN ▲] and [DOWN/CLOSE ▼] buttons is interchanged	[OPEN ▲] and [DOWN/CLOSE ▼] buttons incorrectly programmed	Delete transmitter and program correctly

## 7.4 Repairs

Damaged Combio-868 LI components may only be repaired by the manufacturer. If necessary, contact your supplier.

## 8 Decommissioning and disposal

### 8.1 Disassembly

<b>WARNING</b>	
	<b>Risk of injury and damage due to unconnected electrical cables.</b>
<ul style="list-style-type: none"> <li>• The electrical connection may only be modified by qualified personnel.</li> <li>• Only perform work on the electrical connection if it has been disconnected from the power supply.</li> <li>• Ensure that any connecting cables that have been removed are not left unprotected (insulate).</li> </ul>	

If intending to remove the Combio-868 LI, proceed as follows:

1. Switch off the power supply.
2. If the components have been installed in an installation box, remove them.
3. Disconnect all connected cables.

## 8.2 Disposal



The Combio-868 LI must be disposed of in accordance with the legal regulations for electronic devices.



The packaging must be disposed of separately in accordance with the applicable rules for cardboard and plastic.

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## 9 Certification and imprint

### 9.1 EU Declaration of Conformity

elero GmbH hereby declares that the Combio-868 LI is in compliance with Directive 2014/53/EU. The full text of the EU Declaration of Conformity is available at the following Internet address:

*[www.elero.com/downloads-service/downloads](http://www.elero.com/downloads-service/downloads)*

### 9.2 Legal Disclosure

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