

Lumo-868
Lumo-915

e l e r o



EN

Operating instructions (translation)

Keep the operating instructions in a safe place!

181005106_EN_0515

EN **The German operating instructions are the original version.**

All other documents represent the language translations of the original text.

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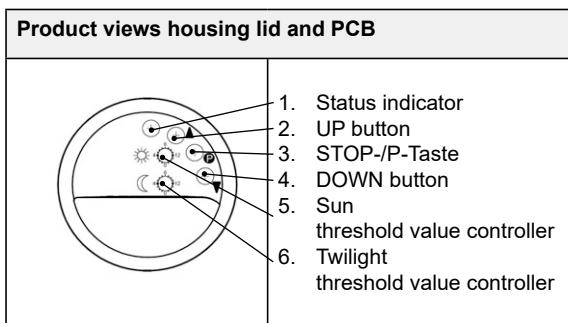
1 Product description

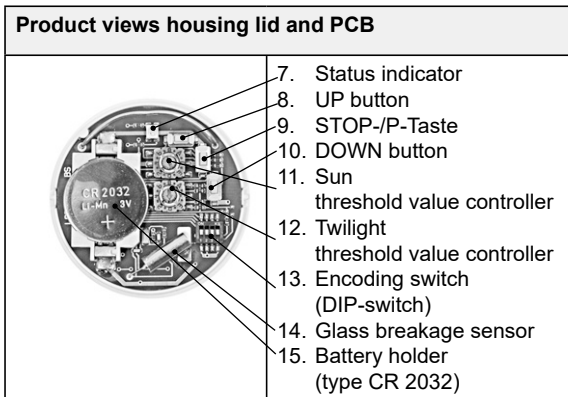
1.1 Description of the device

The Lumo-868 is a sensor for light, twilight and glass break-age as well as a radio sensor and serves to control roller shutters.

it offers you the option of automatically protecting your plants and inventory from too-strong solar radiation.

The Lumo-868 is attached indoors at a window that can be covered by a roller shutter. It can be used either for a unidirectional radio connection (downwards compatible with the **elero** ProLine-868 product range) or for a bidirectional radio connection (compatible with the **elero** ProLine 2 product range).





Not mapped:



There are a transparent suction cup and a light sensor on the rear of the housing.

1.2 Product features

- Light sensor, glass breakage sensor and radio sensor for uni- or bidirectional radio communication between radio transmitter and radio receiver(s) to attach to a window inside.
- UP**-button, **STOP-/P**-button, **DOWN**-button for manual operation
- Control of a programmed roller shutter according to set thresholds for sun and/or twilight
- Display of radio signals through the status display
- Glass breakage sensor can be switched off.

1.3 Product versions



The Lumo-868 can be purchased as an 868-MHz version or as a 915-MHz-version.

1.4 Scope of supply

- Lumo-868 (battery contained in the device)
- Small screwdriver
(to adjust the threshold controllers)
- Gebrauchsanleitung

1.5 Specifications

Specifications Lumo-868	
Rated voltage [V]	3 (DC)
Battery type	CR 2032 (Lithium)
Protection type	IP20
Permissible ambient temperature [°C]	0 to 55
Radio frequency [MHz]	869,525 (or 915 bande)
Transmission power [mW]	≤ 500
Dimensions [mm]	Ø 48 x 15
Weight (incl. battery) [g]	22

2 Explanation of functions

2.1 Functions of the Lumo-868

- Sun function
When the value set at the sun threshold controller is exceeded, the roller shutter moves until the Lumo-868 is completely shaded and then moves back until the Lumo-868 is exposed entirely again.

- **Twilight function:**
The twilight function causes the roller shutter to move down either at commencement of twilight or only at darkness.
Interim steps can be set at the twilight threshold controller and the function can be switched off entirely.
- **Glass breakage function:**
The glass breakage sensor, which can be deactivated, recognises glass breakage on request at vibrations of the Lumo-868 and will then move the roller shutter all the way down.

2.2 Bidirectional radio system

A bidirectional radio system transmits radio signals to a radio receiver and enables feedback from the radio receiver to the radio transmitter. The radio signal can be sent directly to the target receiver. If this is not possible, the radio signal will be routed via other bidirectional participants until it reaches the target receiver. The target receiver executes the command and then sends a confirmation back to the radio transmitter - at programming and deletion processes. The prerequisite for the bidirectional radio operation is a radio-transmitter and a radio-receiver capacity for all products involved. The system thus only works unidirectionally.

2.3 Unidirectional radio system

A unidirectional radio system transmits radio signals to radio receivers. However, unlike in a bidirectional radio system, the radio receiver cannot send any message back to the radio transmitter. It is also not possible to transmit radio signals from one radio receiver to another radio receiver.

2.4 Group control unit

A group is understood to mean the control of several radio receivers at the same time. The selected group is controlled by a travel command.

You can program any number of radio receivers in each radio transmitter.

2.5 Commissioning

- The prerequisite for commissioning of the Lumo-868 is an inserted functional battery (as in the delivery condition). When the battery is discharged, replace it with a model of the same type as described in chapter 2.11.
- Attaching to a suitable window position. For this, moisten the location a little if required.
- Activate the Lumo-868 with any button; the status display lights up.



Important:

Do not push the **STOP-/P**-button before the radio receiver is ready for programming. In learning mode, the Lumo-868 chooses a radio system (uni- or bidirectional). When the radio receiver is not in learning mode, the Lumo-868 switches to unidirectional mode.

To reach the starting condition again, push the 3 operating buttons **UP**, **STOP-/P** and **DOWN** at the same time for 6 seconds until the status display lights up briefly.

2.5.1 Meanings of the status display

A radio signal is indicated by lighting up of the status display. The various colours of the status display mean:

Status indicator	Meaning
Flashing orange	Lumo-868 not programmed at any radio receiver
Flashing orange quickly	Lumo-868 in bidirectional programming mode Operation of already programmed radio receivers is not possible.
Orange	Lumo-868 works bidirectionally: Transmit signal is being sent
Green	Lumo-868 works unidirectionally: Transmit signal is being sent

The maximum sending range within a building is up to 10 metres. Reducing battery output reduces the transmission output and thus the transmitter range.

If the performance of the battery drops, the status display slowly loses its illuminative capacity.

If the status display no longer lights up when you press a button, the battery must be replaced (cf. chapter 2.11).

2.5.2 Opening and closing the Lumo-868

- Turn housing lid (upper housing shell) approx. 2 mm clockwise and lift it off.
- When closing the housing lid, observe the correct position of the inner latching hooks and the intended cut-outs: Put on the housing lid and turn it approx. 2 mm *counter* clockwise.

2.6 Programming Lumo-868

Requirements:

The radio receiver is installed.

- For bidirectional use, the device version of the installed radio receiver is relevant:
 - elero** Combio from version 75 onwards,
 - elero** RevoLine from version 21 onwards or
 - elero** radio receiver from manufacturing date May 2012.

Check whether the channel is deleted or in the correct mode according to the status display.

Stand in front of the roller shutter to be programmed while programming.

1. With electrical, previously installed drives, turn the safety of the drive off and then on again after a few seconds. The drive is now in programming mode for about 5 minutes.
2. Push the button **STOP-/P** for more than 2 seconds. The status indicator is lit briefly. The roller shutter moves up and down automatically briefly and continually for approx. 2 minutes to show that the drive is in programming mode.
3. To define the button assignment for moving the roller shutter up and down, push the button **UP** of the Lumo-868 right after an upwards movement starts (1 second). The status indicator is lit briefly. The roller shutter stops briefly and then moves up.
4. Push the button **DOWN** of the Lumo-868 at once after a movement down starts. The status indicator is lit briefly. The roller shutter will stop.

The Lumo-868 is now programmed.



Important:

Programming will have to be repeated if the roller shutter does not stop.

When programming is complete or after 5 minutes has passed, the receiver will revert to normal operation.

A bidirectional programming process in the Lumo-868 can be cancelled by pressing the **STOP** button for 6 seconds.

2.7 Settings of the encoding switches

In the delivery condition (factory settings), all 4 encoding switches are in the position "Off".

Settings of the 4 encoding switches	
<p>Encoding switch 1: ON</p>	<p>Setting mode for threshold "Sun" Upper position (ON): Setting mode sun on Lower position (OFF): Setting mode sun off</p>
<p>Encoding switch 2: ON</p>	<p>Setting mode for threshold "Twilight" Upper position (ON): Setting mode twilight on Lower position (OFF): Setting mode twilight off</p>
<p>Encoding switch 3: ON</p>	<p>Setting mode for threshold "Glass breakage" Upper position (ON): Glass breakage function on Lower position (OFF): Glass breakage function off</p>
<p>Encoding switch 4: OFF</p>	<p>No function Upper position (ON): No function Lower position (OFF): No function</p>

2.8 Function light sensor

With the settings of the encoding switches, the automatic travel commands (for example sun protection function, twilight function) cannot be turned on or off.

2.8.1 Selection and display of the operating mode

- **Operating mode "Light sensor on/light sensor off":**
Concurrent brief pushing of the **UP** button and the **DOWN** button:
The operating mode is requested.
The status display is lit
green: Light sensor on
red: Light sensor off
Concurrent activation of the **UP** button and the **DOWN** button for 2 seconds: Switching between "Light sensor on" and "Light sensor off"
- **Operating mode "Test"**
Pushing the **UP** button for at least 6 seconds:
The settings of the Lumo-868 can be reviewed. The test mode is active for a duration of 5 minutes and then ended automatically.



Important:

In the operating mode "test", the times of the sun protection function and the twilight function are reduced from minutes to seconds and permit inspection of the settings in time lapse mode.

2.8.2 Settings within an operating mode

Adjusting the sun threshold and the twilight threshold adjusts the respective sensitivity.

Overview of the setting options for sun and twilight threshold controllers	
	<ol style="list-style-type: none">1. Sun threshold value controller2. Twilight threshold value controller



In setting mode "Sun" or in setting mode "Twilight", the measured brightnesses of the light sensor in relation to the respective pre-selected threshold are displayed as follows by the status display.

Status indicator	Sun protection function or twilight function
Green	activated (threshold exceeded)
Red	deactivated (threshold undercut)
Yellow	threshold corresponds to actual value

Important:

The setting is slightly influenced by the brightness value in the room and the housing lid.

Adjust the encoding switch as follows:

2.8.3 Setting sun threshold (encoding switch 1)



Important:

During active setting mode, the encoding switch **1** must be set to "ON" and the other encoding switches must be set to "OFF".

Encoding switch setting for the setting mode	
	Upper position (ON): Setting mode sun on
Encoding switch 1: ON	Switches 2 to 4 OFF

The sun threshold controller is pre-set to position 7 in the factory. It can be set with the enclosed screwdriver from "very cloudy" (position 1) to "direct solar radiation" (position 15).

Position 0 deactivates the sun protection function.

Sun thresholds	
Level 0	The light function is switched off
Level 1	Moving down the roller shutter when there is little light already
Level 7	Factory settings
Level 15	Moving down the roller shutter only when there is lots of light



The procedure for determination of the desired sun threshold is done by setting, observing and, if required, correcting a selected setting.

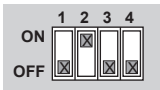
- If the brightness measured by the light sensor is exceeded for more than 3 minutes in relation to the chosen sun threshold, the roller shutter moves down.
- If the brightness measured by the light sensor is undercut for more than 15 minutes in relations to the sun threshold, the roller shutter moves up.

2.8.4 Setting twilight threshold (encoding switch 2)



Important:

During setting of the twilight function, the encoding switch 2 must be set to "ON" and the other encoding switches must be set to "OFF".

Encoding switch setting for the setting mode	
	Upper position (ON): Setting mode twilight on
Encoding switch 2: ON	Switches 1, 3 to 4 OFF

The twilight threshold controller is pre-set to position 0 in the factory.

It can be set with the enclosed screwdriver from "darkness" (position 1) to "early twilight" (position 15).

Position 0 deactivates the twilight function.

Setting twilight threshold	
Level 0	The twilight function is switched off Factory settings
Level 1	Moving down at darkness
Level 15	Moving down at the start of twilight



The procedure for determination of the desired twilight threshold is done by setting, observing and, if required, correcting a selected setting.

- If the brightness measured by the light sensor is undercut for more than 10 minutes in relations to the chosen twilight threshold, the roller shutter moves down all the way to the lower end position.

The roller shutter will not automatically move back to the top end position - via the Lumo-868.

The roller shutter must be manually opened with the **UP** button at the Lumo-868, a timer or another programmed radio transmitter.

2.8.5 Encoding switch setting for regular operation



Important:

For regular operation (outside of any setting mode), the **encoding switches 1 and 2 must be set to OFF!**

Encoding switch setting in regular operation																
<table border="1"> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>ON</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>OFF</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>		1	2	3	4	ON	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	OFF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Lower position (OFF): Setting mode off</p>
	1	2	3	4												
ON	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>												
OFF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>												

Encoding switch setting in regular operation	
Encoding switches 1 and 2 OFF	Switches 1 and 2 OFF

2.8.6 Glass breakage mode (encoding switch 3)



Important:

The glass breakage function on the code switch 3 is turned off at the factory.

Encoding switch setting for the glass breakage function	
	Upper position (ON): Setting glass breakage function on Lower position (OFF): Setting glass breakage function off
Encoding switch 3: ON	Switches 1, 2 to 4 OFF

Through the positioning, you can adjust the sensitivity of the glass breakage sensor.

Sensitivity setting of the glass breakage function depending on alignment	
High	Low

In order to achieve a high sensitivity of the glass breakage sensor, mount the Lumo-868 so that the script is horizontal (in parallel with the window sill).

A low sensitivity can be reached by attaching it swapped by 180° (**elero** script upside-down).

When the glass breakage sensor is shaken (e.g. because window pane breaks), the glass breakage sensor is activated and causes the roller shutter to move to the lower end position.

In this case, all automatic switching commands of a radio transmitter programmed for the roller shutter (hand-held transmitter, wall-mounted transmitter or timer) are blocked. Manual operation is possible at any time, however.



The block of the automatic running commands is revoked by a manual running command at a radio transmitter programmed for the roller shutter.

2.8.7 No function (encoding switch 4)

Encoding switch 4 is without function, any position.

2.9 Deleting the programmed sensor

The communication of the Lumo-868 with a radio receiver (e.g. drive) is permanently deleted.

- Push the buttons **UP**, **DOWN**; **STOP** and **P** concurrently for at least 6 seconds

The status display flashes briefly.

The Lumo-868 is deleted from the radio receiver/s.

2.10 Replacing the battery

The Lumo-868 is supplied with power via a lithium button cell of type CR-2032 with 3 V. When the battery is flat, the Lumo-868 switches off automatically. A weak battery is indicated by a weaker status display.

**Important:**

Replace battery only with batteries of the identical type.

1. Open the housing as described in chapter 2.5.2 and loosen the lid.
2. Remove the battery.
3. Enter the new battery (of type CR2032) in the correct orientation (observe polarity).
4. Close the housing.

2.11 Cleaning and maintaining the Lumo-868

- Clean the device surface only with a soft, clean, and dry cloth.
- Do not use any cleaning agents and solvents.
- Keep the Lumo-868 dry.
- Do not use the Lumo-868 in dusty or dirty environments or keep it there.
- Do not store the Lumo-868 at high temperatures.
- Do not store the Lumo-868 at low temperatures.
- Do not try to open the Lumo-868 other than described in the operating instructions.
- Unauthorised changes may damage the Lumo-868 and violate the provisions applicable to radio devices.
- Do not drop the Lumo-868, do not expose it to impacts or shock and do not shake it. Rough handling may damage the electronic circuits and mechanical parts in the Lumo-868.
- Keep the Lumo-868 away from magnets or magnetic fields.

3 Notes on the EC declaration of conformity

elero GmbH hereby declares that the Lumo-868 complies with the basic prerequisites and the other relevant provisions of the EC directives (2014/53/EU). The complete declaration of conformity can be found in the download area of our website www.elero.com/downloads-service/

4 Troubleshooting

Fault	Cause	Remedy
Drive does not run; status display does not light up	The battery is flat. The battery is incorrectly installed.	Install a new battery. Insert the battery correctly.
Drive does not run; Status display is lit	1. The radio receiver is outside radio range. 2. The Lumo-868 is not programmed in the radio receiver.	1. Reduce distance to the radio receiver. 2. Programme the Lumo-868.
The status display flashes continually.	Encoding switch setting mode "Sun" and/or "Twilight" activated	Check the encoding switch settings.

Fault	Cause	Remedy
The roller shutter doesn't move down when sun is shone on the sensor.	<ol style="list-style-type: none"> 1. The Lumo-868 is in manual mode (sensor off). 2. The sun threshold has not been exceeded. 3. Sun threshold controller set to 0. 4. Automatic in the radio receiver is "Off" 5. The sensor is not active due to manual operation. 	<ol style="list-style-type: none"> 1. Concurrent operation of the UP and DOWN buttons until the status display lights up green. 2. Adjust the threshold for sunshine. 3. Set a position between 1 and 15. 4. Switch the radio receiver into automatic mode via the programmed radio transmitter. 5. Use the UP-button to trigger manual opening.
The roller shutter doesn't move to the Lumo-868 with the sun protection function on.	Interim position programmed	Delete interim position in the radio receiver.

5 Repair

If you have any questions, please refer to your specialised company.

Please always state the following information:

- Item number and item designation on the nameplate
- Error type
- Previous and unusual events
- Surrounding circumstances
- Own assumption

6 Manufacturer's address

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Should you require a point of contact for outside of Germany, please visit our website.

7 Disposal /

notes on environmental protection



Since implementation of the European directives 2002/96/EC and 2006/66/EC in national law, the following applies: Electrical and electronic devices as well as batteries must not be disposed of in the household waste. The consumer is required by law to return electrical and electronic devices as well as batteries to the public collection points provided for this or the point of sales at the end of their service lives. Details on this are provided for by the respective national law.



The icon on the product, the operating instructions or the packaging refers to these provisions. Reuse, recycling or other forms of use of old devices or batteries make an important contribution to protect our environment.