

## Operating instructions

Dimming actuator, 4-gang Standard  
Order no. 2015 00



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## 1 Safety instructions



Electrical devices may only be mounted and connected by electrically skilled persons.

Serious injuries, fire or property damage possible. Please read and follow manual fully.

Danger of electric shock. Always disconnect before carrying out work on the device or load.

Danger of electric shock. Device is not suitable for disconnection from supply voltage because mains potential even is applied on the load when the output is switched off. Always disconnect before carrying out work on the device or load. To do so, switch off all associated circuit breakers.

Risk of destruction of the dimmer and load if the set operating mode and load type do not match. Set the correct dimming principle before connecting or exchanging the load.

Fire hazard. For operation with inductive transformers, each transformer must be fused on the primary side in accordance with the manufacturer's instructions. Only safety transformers according to EN 61558-2-6 may be used.

This manual is an integral part of the product, and must remain with the end customer.

## 2 Device components

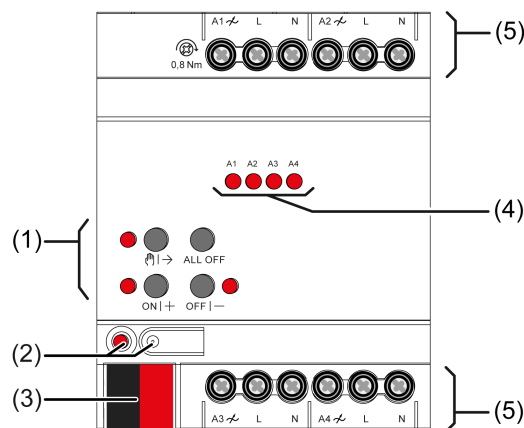


Image 1: Device components

- (1) Button field for manual operation
- (2) Programming button and LED
- (3) Bus connection
- (4) Status LEDs for outputs
- (5) Load connections

### 3 Function

#### System information

This device is a product for the Gira One Smart Home system. The Gira One system is commissioned easily and in a time-saving manner using the Gira Project Assistant.

The Gira One Smart Home system enables the control and automation of lighting, heating and shading, as well as connection to various third-party systems and much more. It can be operated via Gira One switches, by app from home or securely from a remote location. Electrically skilled persons can maintain the Gira One project remotely free of charge.

Data transmission between the Gira One devices is encrypted. This provides protection against third-party access and manipulation.

Commissioning is carried out with the free Gira Project Assistant (GPA), version 5 or higher. Free function and security updates are also transferred to the Gira One devices with the GPA.

The Gira One system is based on the globally proven KNX smart home standard.

#### Intended use

- Switching and dimming of incandescent lamps, HV halogen lamps, dimmable HV-LED lamps, dimmable compact fluorescent lamps, dimmable inductive transformers with LV halogen or LV LED lamps, dimmable electronic transformers with LV halogen or LV LED lamps
- Operation in KNX System or Gira One System
- Mounting on DIN rail according to EN 60715 in sub-distribution unit

**i** If inductive or electronic transformers are connected, observe the data of the transformer manufacturer on loads and the dimming principle.

**i** HV-LED and compact fluorescent lamps generate high pulsed currents, when they are operated in the leading edge phase control.

**i** Our dimmers take into account the different electronic characteristics of most LED lamps found on the market. However, it cannot be guaranteed that in individual cases the desired results may not be achieved.

#### Product characteristics

- Outputs can be operated manually, construction site mode
- Programming and commissioning with the Gira Project Assistant (GPA), version 5 or higher.
- Updating via the Gira Project Assistant (GPA).
- Encrypted data transmission between the Gira One devices.

### Dimming operation characteristics

- Minimum and maximum brightness can be set.
- Switching on to last brightness value or to permanently set switch-on brightness.
- Setting of a switch-on or switch-off delay.
- Staircase function for which a pre-warning time and a pre-warning brightness can optionally be set.

## 4 Operation

### Operating elements

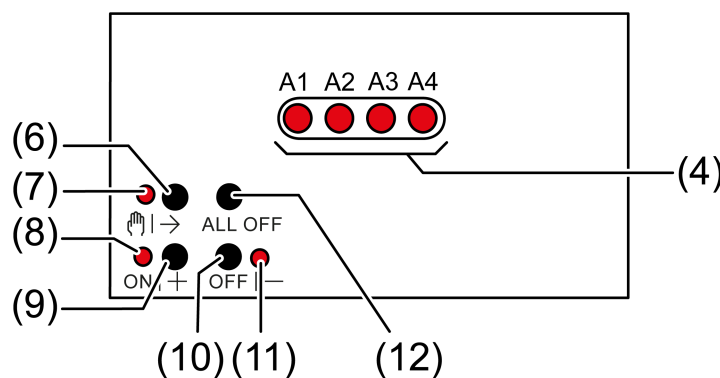


Image 2: Operating elements

- (4) Status LEDs for outputs
- on: output switched on, 1...100%
  - flashes at 1 Hz: short-circuit or manual mode
  - flashes at 2 Hz: overload, mains voltage failure or firmware update
- (6) Button →
- Manual operation
- (7) LED
- on: continuous manual mode
- (8) LED **ON|+**
- on: selected output on, 1...100%
  - flashes: Firmware update
- (9) Button **ON|+**
- Switch on/increase brightness
- (10) Button **OFF|–**
- Switch off/reduce brightness
- (11) LED **OFF|–**
- on: Selected output off
  - flashes: Firmware update
- (12) Button **ALL OFF**
- Switching off all outputs



### Operating modes

- Bus operation: operation via push-button sensors or other bus devices
- Temporary manual control: manual control locally with keypad, automatic return to bus control
- Continuous manual mode: Exclusively manual operation on the device

**i** No bus operation is possible in manual mode.

**i** After a bus failure and restoration the device switches to bus operation.


### Switching on temporary manual operation mode

- Press button  (6) briefly.  
LED  (7) flashes, LED A1... (4) of the first configured output flashes.  
Short-time manual operation is switched on.

**i** After 5 s without a button actuation, the actuator returns automatically to bus operation.



### Switching off temporary manual operation mode

The device is in short-term manual mode.

- No button-press for 5 s.  
- or -
- Press  (6) button briefly as many time as necessary until the actuator leaves the short-time manual mode.  
Status LED A1... (4) no longer flash, but rather indicate the output status.  
Short-time manual operation is switched off.



When switching off manual operation, the outputs, depending on the programming, switch to the active position.

### Switching on permanent manual operation mode

- Press the  (6) button for at least 5 s.  
LED  (7) lights, LED A1... (4) of the first configured output flashes.  
Continuous manual mode is switched on.

### Switching off permanent manual operation mode


The device is in continuous manual mode.

- Press the  (6) button for at least 5 s.  
LED  (7) is off.

Continuous manual mode is switched off. Bus operation is switched on.

When switching off manual operation, the outputs, depending on the programming, switch to the active position.

### Operating the outputs


- Press the button  (6) briefly as many times as necessary until the desired output is selected.

The LED of the selected output A1... (4) flashes.

The LEDs **ON|+** (8) and **OFF|–** (11) indicate the status.

- Operate output with **ON|+** (9) button or **OFF|–** (10) button.  
Short: switch on/off.  
Long: dim brighter/darker.  
Release: Stop dimming.

The LEDs **ON|+** (8) and **OFF|–** (11) indicate the status.

-  Short-term manual mode: After running through all of the outputs the device exits manual mode after another brief actuation.

### Switching off all outputs

The device is in continuous manual mode.

- Press the button **ALL OFF** (7).  
All outputs are shut off.

## 5 Information for electrically skilled persons

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### **DANGER!**

Mortal danger of electric shock.

Disconnect the device. Cover up live parts.

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### 5.1 Mounting and electrical connection

#### Mounting the device

- Enter or scan the device certificate and add it to the project. A high resolution camera should be used to scan the QR code.
- The device certificate should be removed from the device during mounting.
- Document all passwords and keep them safe.

Observe ambient temperature. Ensure adequate cooling.

- Maintain a distance of 18 mm, 1 HP when operating multiple dimmers or power units within the same control cabinet.
- Mount device on DIN rail.

### Connecting the device

- Connect bus line with device connection terminal observing the correct polarity.
- Attach the cover cap to the connection as protection against hazardous voltages.

**i** Delivery state: The outputs can be operated with manual control.

In the "Universal" operating mode, the dimming actuator only calibrates itself again after disconnection of the load and after commissioning.

**i** Capacitive-inductive mixed load is not permitted.

**i** For LED leading edge phase control: Connect a maximum of 2 electronic transformers per output.

**i** Connect 600 Watt LED lamps or compact fluorescent lamps at most per 16 ampere circuit breaker. When connecting transformers, observe the data of the transformer manufacturer.

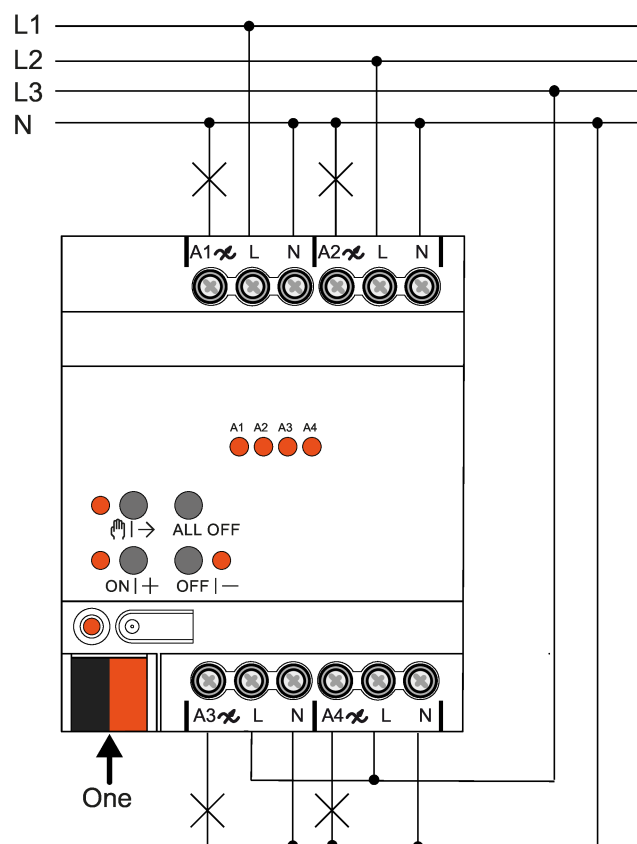


Image 3: Device connection (connection example)



- Connect the lamp loads according to the connection example.

## 5.2 Commissioning

### Commissioning the device

The device is commissioned with the Gira Project Assistant (GPA) version 5 or higher.

### Safe-state mode

The safe-state mode stops the execution of the program.

Only the system software of the device is still functional. Diagnosis functions and programming of the device are possible. Manual operation is not possible.

### Activating safe-state mode

- Switch off the bus voltage or remove the device connection terminal.
- Wait about 15 s.
- Press and hold down the programming button.
- Switch on the bus voltage or attach the device connection terminal. Release the programming button only after the programming LED starts flashing slowly.

The safe-state mode is activated.

### Deactivating safe-state mode

- Switch off the bus voltage (wait approx. 15 s) or carry out programming.

### Master reset

The master reset restores the basic device settings (firmware remains in place). The device must then be recommissioned with the GPA. Manual operation is possible.

### Performing a master reset

Precondition: The safe-state mode is activated.

- Press and hold down the programming button for > 5 s.  
The programming LED flashes quickly.





The device performs a master reset, restarts and is ready for operation again after approx. 5 s.

## 6 Technical data

Rated voltage	DC 21 ... 32 V SELV
Current consumption	6 ... 15 mA
Dimming outputs	

Rated voltage	AC 110 ... 230 V ~
Mains frequency	50 / 60 Hz
Power loss	max. 7 W
Standby power	approx. 0.16 W per channel
Ambient temperature	-5 ... +45 °C
Storage/transport temperature	-25 ... +70 °C

Connected load per channel depends on the connected lamps and the set load type:  
(see figure 4), (see figure 5)

	Load type parameter
<b>UNI</b>	universal (with automatic calibration procedure)
	conv. transformer (inductive / leading edge phase control)
<b>LED</b> 	LED (leading edge phase control)
	electr. transformer (capacitive / trailing edge phase control)
<b>LED</b> 	LED (trailing edge phase control)












	 LED	 LED	 LED
<b>230V</b>			
	W	W	VA
UNI	1 ... 35	20 ... 100	20 ... 100
	—	—	20 ... 100
<b>LED</b> 	1 ... 35	20 ... 100	—
	1 ... 200	20 ... 200	—
<b>LED</b> 	1 ... 200	20 ... 200	—
<b>110V</b>			
	W	W	VA
UNI	1 ... 18	20 ... 50	20 ... 50
	—	—	20 ... 50
<b>LED</b> 	1 ... 18	20 ... 50	—
	1 ... 100	20 ... 100	—
<b>LED</b> 	1 ... 100	20 ... 100	—

Image 4: LED lamp loads

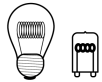











				
230V				
	W	W	VA	W
UNI	20 ... 225	20 ... 210	20 ... 210	20 ... 80
	20 ... 210	—	20 ... 210	—
LED 	20 ... 210	20 ... 210	—	20 ... 80
	20 ... 225	20 ... 225	—	20 ... 150
LED 	20 ... 225	20 ... 225	—	20 ... 150
110V				
	W	W	VA	W
UNI	20 ... 120	20 ... 110	20 ... 110	20 ... 40
	20 ... 110	—	20 ... 110	—
LED 	20 ... 110	20 ... 110	—	20 ... 40
	20 ... 120	20 ... 120	—	20 ... 75
LED 	20 ... 120	20 ... 120	—	20 ... 75

Image 5: conventional lamp loads

**i** Capacitive-inductive mixed load is not permitted.

Power boosters

See power booster instructions

Connection

Single stranded

0.5 ... 4 mm<sup>2</sup>

Finely stranded without conductor sleeve

0.5 ... 4 mm<sup>2</sup>

Finely stranded with conductor sleeve

0.5 ... 2.5 mm<sup>2</sup>

Connection torque, screw terminals

max. 0.8 Nm

Installation width

72 mm / 4 HP

## 7 Troubleshooting

**Connected LED lamps or compact fluorescent lamps switch off in the lowest dimming position or flicker**

The set minimum brightness is too low.

Increase minimum brightness.

**Connected LED lamps or compact fluorescent lamps flicker**

Cause 1: Lamps are not dimmable.

Check manufacturer's instructions.

Exchange lamps for another type.

Cause 2: Dimming principle and lamps do not optimally match.

For HV-LED: Check operation in another dimming principle, reduce connected load as well if necessary.

For LV-LED: Check the lamp operating device and replace as necessary.

With the "Universal" setting: Define the dimming principle manually.

### **Connected HV-LED lamps or compact fluorescent lamps in the lowest dimming position are too bright; dimming range is too small**

Cause 1: The set minimum brightness is too high.

Reduce minimum brightness.

Cause 2: LED dimming principle (trailing edge phase control) does not optimally match the connected lamps.

Check operation in the "LED (leading edge phase control)" setting, reduce connected load as well if necessary.

Exchange lamps for another type.

### **Output has switched off.**

Cause 1: Overheating protection has tripped.

Disconnect all outputs from the mains, switch-off the corresponding circuit breakers.

LED (trailing edge phase control): Reduce the connected load. Exchange lamps for another type.

LED (leading edge phase control): Reduce the connected load. Check operation in the setting "LED (trailing edge phase control)". Exchange lamps for another type.

Let device cool down for at least 15 minutes. Check installation situation, ensure cooling, e.g. provide distance from surrounding devices.

Cause 2: Overvoltage protection has tripped.

LED (trailing edge phase control): Check operation in the setting "LED (leading edge phase control)", reduce connected load as well if necessary.

Exchange lamps for another type.

Cause 3: short-circuit in output circuit

Disconnect all outputs from the mains.

Eliminate short-circuit.

Switch on mains voltage to the outputs again. Switch the affected output off and on again.

**i** When a short-circuit occurs the affected output switches off. Automatic restart when short-circuit is eliminated within 100 ms (inductive load) or 7 seconds (capacitive or ohmic load). After that lasting switch-off.

**i** .When a short-circuit occurs during the calibration process, the load calibrates itself again after the short-circuit is eliminated.

Cause 4: load failure.

Check load, replace lamp. For inductive transformers, check primary fuse and replace if necessary.

**None of the outputs can be operated.**

Cause: Manual mode active.

Deactivate manual mode (switch off continuous manual mode).

**All outputs off and not possible to switch on**

Cause 1: bus voltage failure.

Check bus voltage.

**Luminaires flicker or buzz, proper dimming not possible, device buzzes**

Cause: wrong dimming principle set.

Installation or commissioning error. Disconnect device and luminaire, switch off circuit breaker.

Check installation and correct.

If the wrong dimming principle has been preselected: Set correct dimming principle.

If dimming actuator calibrates itself incorrectly, e.g. with highly inductive mains or long load cables: preselect correct dimming principle with commissioning.

**LED lamp is dimly lit when dimmer is switched off**

Cause: LED lamp is not optimally suited for this dimmer.

Use a compensation module, see accessories.

Use another type of LED lamp or an LED lamp of another manufacturer.

## **8 Accessories**

Compensation module LED

Order no. 2375 00

## **9 Parameter list**

Parameters that can be set via the GPA:

Load type	universal (with automatic calibration procedure) electr. transformer (capacitive / trailing edge phase control) conv. transformer (inductive / leading edge phase control) LED (trailing edge phase control) LED (leading edge phase control)
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The dimming principle of the dimming channel is specified here.

- universal (with automatic calibration procedure):  
The dimming channel automatically sets the connected load type. After programming, after bus voltage return (without mains voltage) or after switching on the mains voltage supply of a load output, the actuator calibrates itself automatically to the connected load. The calibration procedure becomes noticeable during ohmic loads by a brief flicker and lasts up to 10 seconds depending on the network conditions.
- electr. transformer (capacitive / trailing edge phase control):  
The dimming channel is set to the trailing edge phase control principle. Ohmic loads or electronic transformers can be connected to the output.
- conv. transformer (inductive / leading edge phase control):  
The dimming channel is set to the leading edge phase control principle. Conventional transformers can be connected to the output.
- LED (trailing edge phase control):  
The dimming channel is set to an optimised trailing edge phase control principle. HV LED or compact fluorescent lamps optimised for this dimming principle can be connected to the output.
- LED (leading edge phase control):  
The dimming channel is set to an optimised leading edge phase control principle. HV LED or compact fluorescent lamps optimized for this dimming principle can be connected to the output.

Minimum brightness	Level 1 (darker) Level 2 ... Level 7 Level 8 (brighter)
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The step value set here is a gauge for the minimum adjustable residual phase angle of the output signal.

The value set here cannot be undershot in any switched-on operating state of the dimming channel, i.e. under no circumstances can the light be dimmed darker than the value set here.

Switch-on brightness	Fixed switch-on brightness Last brightness value
<p>Here you can specify the brightness value with which the lamp is to be switched on by pressing the button briefly:</p> <ul style="list-style-type: none"> <li>- Fixed switch-on brightness In this case, you can select a fixed value (1 - 100%) in the "Switch-on brightness value" field that opens.</li> <li>- Last brightness value The lamp is switched on with the brightness value that was active and saved internally before it was last switched off.</li> </ul>	
Switch-on brightness value	1 5 ... 100
<p>Here you can specify the switch-on brightness.</p> <p>This parameter is only available if the setting "Fixed switch-on brightness" has been selected for the parameter "Switch-on brightness".</p>	
Maximum brightness value	1 5 ... 100
<p>The value set here cannot be overshoot in any switched-on operating state of the dimming channel, i.e. under no circumstances can the light be dimmed brighter than the value set here.</p>	
Switch-on delay	0 ... 3599 s (0 ... 59:59 min)
<p>This parameter is used for setting the duration of the switch-on delay.</p> <p>After receipt of an ON-telegram, the time that can be configured here is started. The lamp is switched on after the set time has elapsed.</p> <p>A further ON-telegram during the switch-on delay time re-triggers the time, i.e. the time set here is started again.</p> <p>An OFF-telegram received during the ON-delay will end the delay and sets the switching status to "OFF".</p>	
Switch-off delay	0 ... 3599 s (0 ... 59:59 min)
<p>This parameter is used for setting the duration of the switch-off delay.</p> <p>After receipt of an OFF-telegram, the time that can be configured here is started. The lamp is switched off after the set time has elapsed.</p> <p>A further OFF-telegram during the switch-off delay time re-triggers the time, i.e. the time set here is started again.</p> <p>An ON-telegram received during the OFF-delay will end the delay and sets the switching status to "ON".</p>	

Staircase switch switch-off delay	0 ... 65535 s (0 ... 18:12:15 h)
<p>The duration of the switch-on time for the staircase function is configured here. Once the time set here has elapsed, the lighting is switched off or (if configured) the pre-warning time is started.</p> <p>The staircase function is only active if the function "Staircase" has been selected for the push-button of this dimming channel.</p>	
Pre-warning time	0 ... 3599 s (0 ... 59:59 min)
<p>In accordance with DIN 18015-2, the pre-warning is intended to warn persons still on the staircase that the light will soon be switched off automatically.</p> <p>The pre-warning time set here is added to the time set in the parameter "Staircase switch switch-off delay".</p> <p>As a pre-warning, a pre-warning brightness that is to apply before the channel switches off permanently can be set using the parameter "Dimming brightness value". The pre-warning brightness is normally reduced in the brightness value compared to the switch-on brightness.</p>	
Dimming brightness value	1 5 ... 100
<p>Here you can set the brightness value that is to apply during the pre-warning time. During the pre-warning time, the dimming channel is set to the configured brightness value.</p> <p>This parameter is only available if a time has been entered for the parameter "Pre-warning time".</p>	

## 10 Warranty

The warranty is provided in accordance with statutory requirements via the specialist trade. Please submit or send faulty devices postage paid together with an error description to your responsible salesperson (specialist trade/installation company/electrical specialist trade). They will forward the devices to the Gira Service Center.

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