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## Universal dim actuator 4gang RMD

Order no. 7531 40 24

## Universal dim actuator 4gang RMD, system-/easylink

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### Operation and installation instructions

#### 1. Safety instructions

Electrical equipment may only be installed and assembled by a qualified electrician in accordance with the relevant installation standards, guidelines, regulations, directives, safety and accident prevention regulations of the country.

Failure to comply with these instructions may result in damage to the device, fire or other hazards.

Hazard due to electric shock. Disconnect before working on the device or replacing illuminants. Take into account all circuit breakers that supply dangerous voltages to the device.

Hazard due to electric shock. The device is not suited for safe disconnection of the mains supply. Even when the device is switched off, the load is not galvanically separated from the mains supply.

Hazard due to electric shock on the SELV or PELV installation. Do not connect any loads for low voltage SELV, PELV or FELV together.

Do not connect any LED or compact fluorescent lamps that are not expressly suitable for dimming. The device can be damaged.

Do not connect lights with integrated dimmer.

Do not connect capacitive load and inductive loads together on the output.

The permissible maximum load per device must not be exceeded.

These instructions are an integral component of the product and must be retained by the end user.

## 2. Design and layout of the device

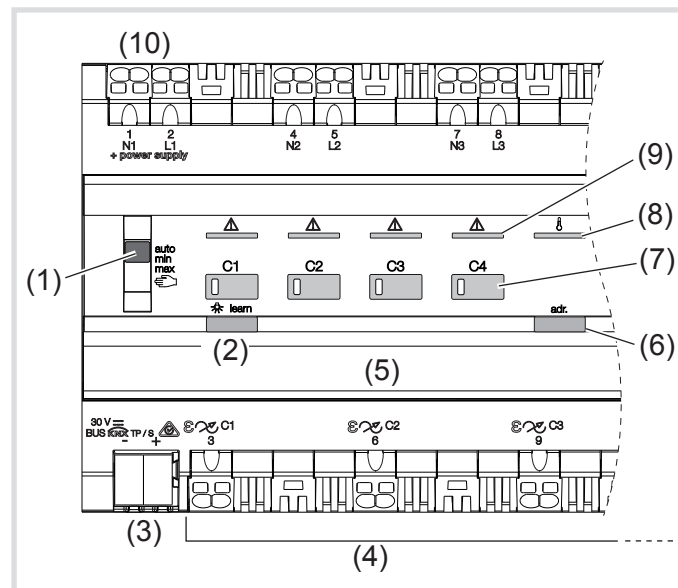


Figure 1: Device overview

- (1) Slide switch **auto/min/max**
- (2) Illuminated button for dimming mode
- (3) KNX bus connection terminal
- (4) Connection of load
- (5) Labelling field with cover
- (6) Illuminated programming button
- (7) Operation button for manual operation with status LED
- (8) Control LED overheating protection
- (9) Control LED short-circuit and overload protection per output
- (10) Mains connection

## 3. Function

### System information

This device is a product of the KNX system and corresponds to the KNX guidelines. Detailed specialised knowledge obtained from KNX training courses is required for understanding. The planning, installation and commissioning of the device is carried out with the help of KNX-certified software.

### system link commissioning:

The function of the device is software-dependent. The software is to be taken from the product database. You can find the latest version of the product database, technical descriptions as well as conversion and additional support programmes on our website.

### easy link commissioning:

The function of the device is configuration-dependent. The configuration can also be done using devices developed specially for simple setting and start-up.

This type of configuration is only possible with devices of the easy link system. easy link stands for easy, visually supported start-up. Preconfigured standard functions are assigned to the in/ outputs by means of a service module.

### Functional description

The device has four load outputs that can be connected to different phases. It works with automatic load detection depending on the connected load in the phase cut-on or phase cut-off and enables switching and dimming via the KNX bus of:

- Incandescent lamps and halogen lamps
- Low-voltage halogen lamps with conventional or electronic transformer
- dimmable LED and energy-saving lamps

Additionally, the device has a learn function for more efficient control of energy-saving lamps and 230 V LED lamps.

### Correct use

- Dimming of electric loads AC 230 V
- Installation on DIN rail according to DIN EN 60715 in distribution box

### Product characteristics

- Status display of the output on the device
- Manual activation of the output on the device possible, building site operation
- Automatic load detection
- Setting the minimum and maximum dimming value
- Timer functions
- Scene function
- Forced position by higher-level controller

### Short-circuit and overload protection

Short-circuit and overload are signalled via the control LED (9). The load is throttled (see Troubleshooting).


### Overheating protection

Overheating of the device is signalled by a permanent light of the control LED (8). The connected load is throttled (see Troubleshooting).

## 4. Operation

### Manual operation

Bus or mains power supply is present.

- Push switch (1) to position .

Manual operation is switched on, the output can be controlled using the operation button (7).

-  During manual operation, the controller is deactivated via the KNX bus.

-  system link commissioning:

Depending on the programming, the manual operation is activated permanently or for a time period configured via the application software. If the manual operation is disabled via the application software, no activation takes place.

Or:

- Move switch (1) to position **auto**.

The manual operation is switched off. Operation takes place solely via the KNX bus. The output adopts the brightness predefined by the bus controller.

### Operating output in manual operation

Operation takes place by a short or long press on the operation button (7) (table 1).

 If the integrated LED flashes when pressing the operation button, no load is connected.

Status	Performance when pressing the button
Load is switched off. Status LED of the button (7) is off.	Short press on button: Switch ON the connected load. LED lights up. Long press on button: Dim up to maximum brightness. Status LED of button (7) lights up.
Load is switched on. Status LED of the button (7) lights up.	Short press on button: Switch OFF the connected load. Status LED of button (7) goes out. Long press on button: Changes the current brightness. Dimming takes place in the opposite direction of the last dimming operation until maximum or minimum brightness.

Table 1: Manual operation

## 5. Information for electricians

### Installation and electrical connection



#### **DANGER!**

**Touching live parts can result in an electric shock!**

**An electric shock can be lethal!**

**Disconnect the connecting cables before working on the device and cover all live parts in the area!**




#### **CAUTION!**

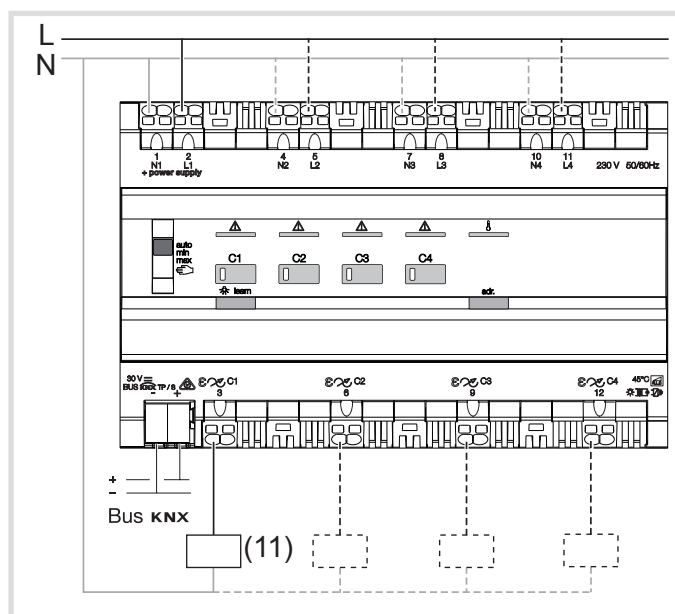
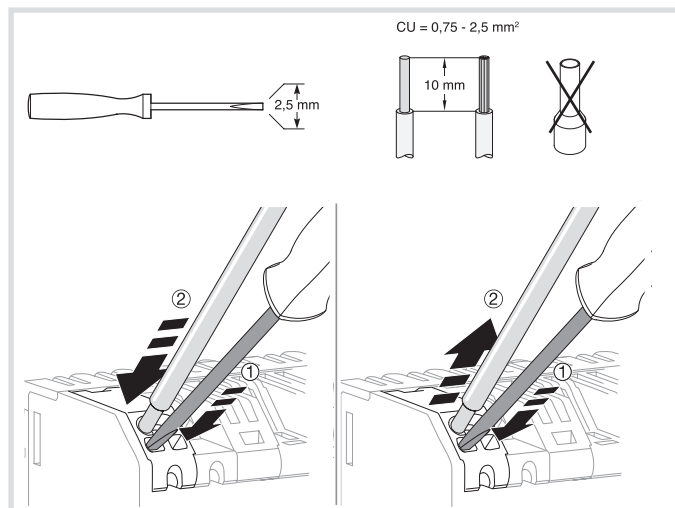
**Impermissible heating if the load of the device is too high!**

**The device and the connected cables may get damaged in the connection area!**

**Do not exceed the maximum current carrying capacity!**

-  Observe temperature range. Provide sufficient cooling.
- Mount device onto DIN rail in accordance with DIN EN 60715.

## Connect device



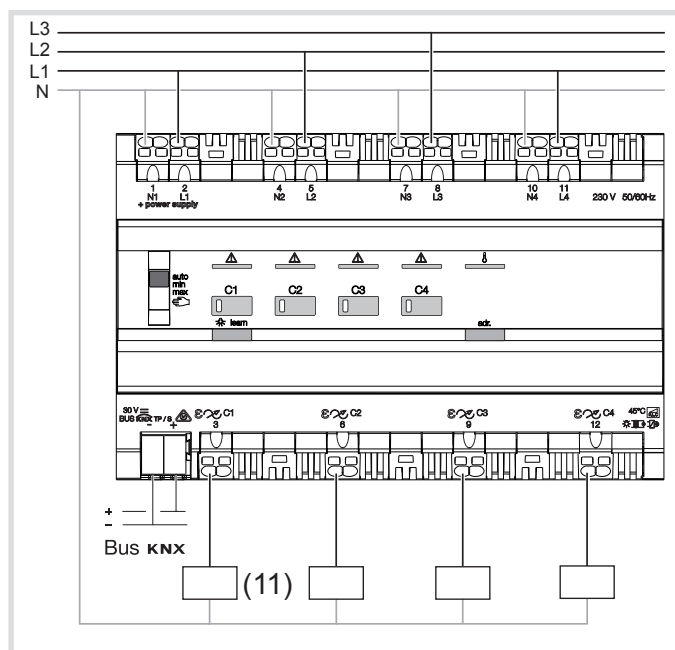


Figure 4: Device connection multi-phase

### (11) Load

- Connect bus cable via connecting terminal (3).
- Connect load (11) on the lower terminal strip (4) of the device.
- i** To ensure proper functioning of the device a load must be connected to output 1.

## 5.1 Start-up

### system link: Loading physical address and application software

The switch for manual operation (1) is in position auto.

- Switch on mains voltage.
- Switch on bus voltage
- Press programming button (5).  
The button lights up.
- i** If the button does not light up, no bus voltage is present.
- Load the physical address into the device.  
Status LED of the button goes out.
- Load application software.
- Note down the physical address on the labelling field (5).

### easy link:

Information on the system configuration can be taken from the extensive description of the service module easy link.

### Start up the device.

- Switch on mains supply.

## Functional test

The functionality of the outputs is displayed via the status LED of the operation button (7).

LED status	Meaning of the signal
LED lights up permanently	Load is activated
LED flashes	No load connected

## Setting minimum and maximum dimming value on the device

The device is ready for operation.

- Setting brightness value

**i** The brightness value can be set by manual operation on the device or by the programmed dimming button of an operating unit.

- Set switch (1) to max. in order to apply the set brightness as maximum dimming value.

Or:

- Set switch (1) to min. in order to apply the set brightness as minimum dimming value.
- Keep the operation button (7) pressed for more than 3 s.

The status LED flashes twice. The set brightness value is saved.

**i** If the minimum or maximum dimming value are outside the setting range, the status LED (7) flashes permanently after the save operation.

## Setting dimming mode on the device

In the factory setting, the device performs an automatic load detection for ohmic, inductive and capacitive loads and selects the suitable dimming performance. If the load type is known, this can be specified on the device without performing an automatic load detection.

The device is ready for operation.

- Keep the dimming mode button (2) pressed until the status LED of the operation button (7) flashes.
- Select the channel for which you wish to change the dimmer mode by pressing on button (7).
- Briefly press the dimming mode button (2) repeatedly until the coloured lighting of the button (2) displays the desired operating mode (Table 2).
- Keep the dimming mode button (2) pressed until the lighting of the button (2) flashes quickly.

While the button is flashing quickly, the selected operating mode is set. After that, the operating mode is displayed for approx. 3 s before the button goes out.

**i** If the setting is not confirmed by holding down the button, the device will revert to its previous dimming mode after 2 minutes.

**i** If the operating mode selected is not suitable for the connected load, the dimming channel will reset to "factory setting" automatically.

Lighting button (2)	Dimming mode
yellow	Energy-saving lamps <sup>1)</sup>
purple	Capacitive load
blue	Inductive load
red	LED load
green	taught-in load <sup>1)</sup>
white	automatic load setting (factory setting)

1) The load for the selected dimming mode is only taught in for approx. 30 s. This can lead to temporary impairment of the lighting.

Table 2

### Displaying dimming mode

- Briefly press the dimming mode button (2).

The coloured lighting of the button will display the current operating mode for approx. 3 s (Table 2).

### Teach in the load of an operating unit via the button

When teaching in the connected load, the dimming performance for compact fluorescent lamps and LED lamps is optimised.

The device is ready for operation. The dimming button of an operating unit has been programmed with the taught-in output.

- Press the dimming button 5 times briefly, then keep the button pressed until the load switches off.

**i** The short press is independent of the configured operating performance on the operating unit ( 5 x On, 5 x Off or 5 x On/Off).

- Press button once briefly.

The teach-in procedure lasts approx. 30 s. To optimise the dimming performance, a dimming operation is performed. After teaching in, the connected load lights up at maximum brightness and flashes once. The teach-in process is complete.

**i** Depending on the connected load, the minimum brightness may change due to the teach-in process.

### Resetting taught-in loads in the device

The device can be reset to automatic load detection, e.g. after replacing illuminants.

**i** Automatic load detection is particularly suitable for loads that can be dimmed clearly in the phase cut-on or phase cut-off ("conventional loads").

The device is ready for operation. The dimming button of an operating unit has been programmed with the taught-in output.

- Press the dimming button 5 times briefly, then keep the button pressed until the load switches off.

**i** The short press is independent of the configured operating performance on the operating unit ( 5 x On, 5 x Off or 5 x On/Off).

**i** If the dimming button is no longer pressed within the next 10 seconds, the learned dimming principle is retained.

- Press button 2 times briefly.

The load flashes twice. The automatic load detection is enabled again.

## 6. Appendix

### Technical data


supply voltage	230 V AC, + 10 % .. - 15 %
via mains	240 V AC, + 6 % .. - 6%
Supply voltage KNX/EIB	DC 21 ... 32 V SELV
Current consumption KNX/EIB	2.3 mA
Consumption without load	600 mW
Operating altitude	2000 m. max
Pollution degree	2
Power dissipation per output	2 W
Surge voltage	4 kV
Degree of protection of housing	IP 20



Degree of protection of housing under front panel	IP30
IK (impact protection)	04
Overvoltage class	III
Dimension	8 modules, 4 x 17.5 mm
Connection capacity	0.75 mm <sup>2</sup> ...2.5 mm <sup>2</sup>
Operating temperature	-5 ...+ 45°C
Storage temperature	- 20 ...+ 70°C
Standards	EN50491-3 EN60669-2-1 EN50428


#### Load that can be connected per output

230 V incandescent lamps, halogen lamps	300 W
12 V / 24 V halogen lamps with conventional transformer	300 VA
12 V / 24 V halogen lamps with electronic transformer	300 W
Dimmable energy-saving lamps (CFL)/LED lamps	60 W (a max. of 8 lamps)

 Conventional or electronic transformers should not be operated with less than 75% of their nominal load.

## 6.1 Troubleshooting

### Manual operation not possible

Cause 1: Switch (1) not moved to .

Move switch to .

Cause 2: Manual operation has not been enabled (system link)

Enable manual operation via application software.

### Connected loads to not light up

Cause1 : Electronic short-circuit and overload protection has triggered, control LED (9) lights up/ flashes.

Reduce connected load, check wiring and repair if necessary.

Cause 2 : Overheating protection has triggered, control LED (8) lights up.

Reduce connected load, provide sufficient cooling, increase distance to adjacent devices.

### Bus operation is not possible

Cause 1 : Bus voltage is not present.

Check bus connection terminals for correct polarity.

Check bus voltage by briefly pressing the programming button (6), red LED lights up if bus voltage is present. If mains voltage is present without bus voltage, the red LED is lit up permanently.

Cause 2 : Manual operation is active. Switch (1) is in position .

Move switch (1) to position **auto**.

## 6.2 Warranty

We reserve the right to make technical and formal changes to the product in the interest of technical progress.

Our products are under guarantee within the scope of the statutory provisions.

If you have a warranty claim, please contact the point of sale or ship the device postage free with a description of the fault to the appropriate regional representative.

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### **6.3 Address of manufacturer**

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