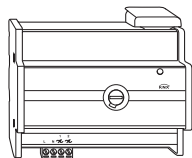


## Dimming actuator REG-K/2x230/300 W

Operating instructions



Art. no. MTN646630

### For your safety



#### **DANGER**

##### **Risk of fatal injury from electrical current.**

All work on the device should only be carried out by trained and skilled electricians. Observe the country-specific regulations as well as the valid KNX guidelines.



#### **CAUTION**

##### **Damage to the device.**

- Only operate the device according to the specifications stated in the Technical data.
- All devices that are installed next to the actuator must be equipped with at least basic insulation.



#### **CAUTION**

##### **Danger of device malfunctions.**

The dimmer requires a minimum load of 25 W/VA for operation. If this is not reached, malfunctions may arise.

### Dimming actuator introduction

The dimming actuator REG-K/2x230/300 W (referred to below as the **actuator**) can be used for switching and dimming the following ohmic and inductive loads on two channels:

- Incandescent lamps or halogen lamps
- Low-voltage halogen lamps with dimmable, inductive transformer

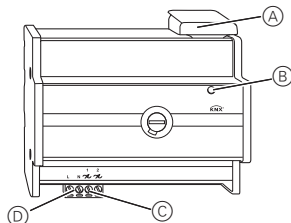
In case of overload, the green operating LED will indicate this by regular flashing (about once per second). If an overload occurs, the dimmer affected will be permanently switched off. The dimmer channel can be restarted as follows:

- by receiving an out telegram
- by briefly removing the mains voltage
- by a bus reset (approx. 20 seconds)

A short circuit on the output will affect both channels and protection is provided via the integrated fuse (T2.5H).

The actuator has a bus coupler. It is installed on a DIN rail acc. to EN 60715, with the bus connection made via a bus connecting terminal. A data rail is not required.

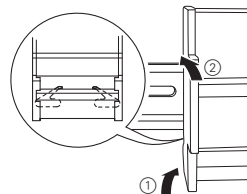
### Connections, displays and operating elements



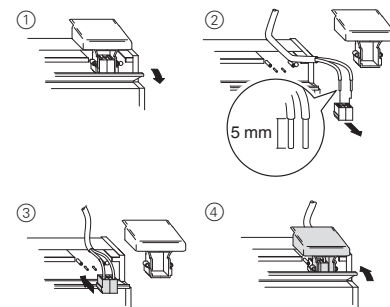
- (A) Under the cable cover: Bus connecting terminal, programming button and programming LED (red)  
 (B) Operating LED "RUN" (green)  
 (C) Channel terminals for loads  
 (D) Supply voltage

### Mounting the actuator

- (1) Set the actuator onto the DIN rail.



- (2) Connect KNX.



#### **DANGER**

##### **Risk of fatal injury from electrical current.**

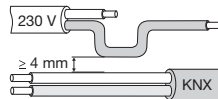
The outputs may carry an electrical voltage even when the dimmer is switched off. Always disconnect the fuse in the incoming circuit from the supply before working on connected loads.



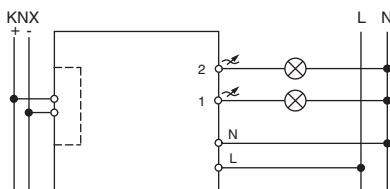
#### **WARNING**

##### **Risk of fatal injury from electrical current. The device could become damaged.**

Safety clearance must be guaranteed in accordance with IEC 60664-1. There must be at least 4 mm between the individual cores of the 230 V supply cable and the KNX line.



- (3) Connect the bus voltage.



- (4) Connect the load.  
 (5) Connect the load voltage.

### Putting the actuator into operation

- (1) Press the programming button.

The programming LED lights up.

- (2) Load the physical address and application into the device from the ETS.

The programming LED goes out.

The operating LED lights up: The application was loaded successfully, the device is ready for operation.

### Technical data

Supply from KNX:	DC 24 V / approx. 10 mA
Insulation voltage:	AC 4 kV bus/mains voltage
Nominal voltage:	AC 230 V / 50 Hz
Nominal power (per channel)	
Incandescent lamps:	25 – 300 W
HV halogen lamps:	25 – 300 W
Inductive loads:	25 – 300 VA

Minimum load per channel: 25 W/VA

Fuse:

Short circuit:	Fuse (T2.5H)
Overload:	Electronic fusing (per channel)

Ambient temperature

Operation:	-5 °C to +45 °C
Storage:	-25 °C to +55 °C
Transport:	-25 °C to +70 °C

Max. humidity: 93 %, no moisture condensation

Environment: can be used at up to 2000 m above sea level (MSL)

Operating elements: 1 programming button

Display elements: 1 red LED: programming check  
 1 green LED: Ready for operation "RUN" for running application and flashing to indicate overload

Connections

KNX: two 1 mm pins for bus connecting terminal

External cable connection:

4-gang pluggable screw terminal for max. 2.5 mm<sup>2</sup>

EC directives: corresponds to Low-Voltage Directive 73/23/EEC; corresponds to EMC Directive 89/336/EEC

Device width: 6 modules = approx. 108 mm

### Schneider Electric Industries SAS

If you have technical questions, please contact the Customer Care Center in your country.

[www.schneider-electric.com](http://www.schneider-electric.com)

This product must be installed, connected and used in compliance with prevailing standards and/or installation regulations. As standards, specifications and designs develop from time to time, always ask for confirmation of the information given in this publication.

## Dimming application 3243/1.0 version 1

### ● General information on the application

With this software application you can program the dimming actuator REG-K/2x230/300 W. The dimming actuator controls the brightness of the connected light. You can configure the control function separately for each dimming actuator output channel.

All the settings described refer to KNX Tool Software version 3, but you can use all the settings and functions with ETS version 2 as well.

The maximum number of group addresses is: 16.

The device limit for the rate of telegrams is set to 127 telegrams per 17 second interval.



#### Note:

If you switch back to the preset values in the ETS2 or ETS3, then all of the changes that you have made up to then will be reset.

### ● Function

The device has the following basic functions:

Switching the dimmer and optional feedback (1 bit for switching and reporting the switching state), relative dimming (4 bits for dimming brighter or darker in various steps, stop and switching on) as well as absolute dimming (1 byte for 256 different brightness values). The following are programmable: behaviour on bus voltage failure and recovery, starting behaviour, memory function, variable dimming speed, adaptation of the basic brightness to the luminaire, the lamp type, switching off via a dimming telegram and behaviour on reception of a brightness value.

If the application is loaded, the following functions are possible:

### ● Adaptation of the basic brightness to the luminaire

Setting the basic brightness to adapt the dimming actuator to the connected luminaire. The basic brightness can be set to be brighter or darker via the parameter. The basic brightness should be set so that the light is just visibly illuminated.

### ● Behaviour on bus voltage failure

When the bus voltage drops below 18 V, the output can adopt the state defined by the parameter. With the "Switch on" parameter, the maximum brightness is set.

### ● Behaviour on bus voltage recovery

When applying/restoring the bus voltage, the output will adopt the state defined by the parameter. With the "Switch on" parameter, the brightness defined in the parameter is set.

### ● Switching

Conversion of binary bus telegrams ("0" or "1" telegrams) into switching states (switching off / parameterised switching on behaviour).

### ● Switching on behaviour and memory function

When switching on, separate brightness values can be set. Options: 10%, 20%, 30%, ..., 90%, max. brightness as well as last brightness value. After initialisation (first use after a reset), the memory function (last brightness value) is not available.

### ● Feedback

The status of the output (on/off) can either be transmitted via the feedback object (object no. 0) or via the switching object (object no. 1, group address of transmitter) to a display element (e.g. status LED), depending on how the parameters are set. Whatever the previous state, when an on/off telegram is received, the status will be transmitted. When receiving a dimming or a value telegram, the status can only be transmitted if the switching state has changed.

If the status feedback function has been selected via the switching object, the group address of the switching object which is to be used for the feedback must be set to "transmitting".



#### Note:

If the status feedback function is active via the switching object, the "T flag" (transmission) must only be activated for one participant in a group. Otherwise, it can lead to the failure of the line.

### ● Dimming

Dimming objects receive telegrams with 4 bits of dimming information. The value of the telegram contains a step width (1/32 lighter/darker, 1/16 lighter/darker, ... to max./min. brightness) or a "STOP" command. Dimming telegrams like this are interpreted by the dimming actuator and the control unit as relative dimming commands, i.e. the setpoint is calculated depending on the current value. Switching on is possible as a result of a dimming telegram. A parameter can be set to enable switching off via a dimming telegram. The value reached is stored in a value object and can be read, if the L flag is set.

### ● Dimming speed

Dimming times from approx. 100 ms to 100 min can be set. The dimming time refers to the time between 0% and 100% brightness. Soft start requires about 500 ms.

## Dimming application 3243/1.0 version 1

### ● Brightness value

1 byte telegrams enable a resolution of 1/255, or about 0.4%. If a telegram is received containing a brightness value, this value (setpoint) is adopted directly. It is possible to switch off as a result of a brightness value ("0" telegram) You can set whether to "jump" or to "dim" to the received brightness value.

### ● Communication objects

You can select the following communication objects:

Function	Object name	Type	Prio	Flags	Behaviour
Status feedback	Status feedback object	1 bit	Auto	CT	Transmit
Switching (feedback possible)	Switch object	1 bit	Auto	WCT	Receive (transmission selectable)
Dimming	Dimming object	4 bit	Auto	WC	Receive
Set value	Value object	1 byte	Auto	WC	Receive

Maximum number of group addresses: 16

### ● Parameters

General	
Parameter	Setting
Background brightness: [%]	5; 10; <b>15</b> ; 20; 25; 30; 35; 40; 45; 50
Behaviour on bus voltage failure:	<b>switch off</b> switch on
Behaviour on bus voltage recovery:	<b>switch off</b> switch on

Status feedback	
Parameter	Setting
Status feedback:	<b>none</b> from status feedback object from switch object

Switching	
Parameter	Setting
Initial brightness:	<b>Max. brightness</b> 10%; 20%; 30%; 40%; 50%; 60%; 70%; 80%; 90% Last brightness value

Dimming	
Parameter	Setting
Dimming base: [between 0% and 100%]	100 ms; <b>1 s</b> ; 1 min
Dimming factor [0...100] Dimming base x dimming factor = time	<b>5</b>
Above 50% brightness, the dimming speed is:	<b>doubled</b> retained
Switching off via a dimming telegram:	yes <b>no</b>

Set value	
Parameter	Setting
Behaviour on receipt of a value:	<b>jump to brightness value</b> dim to brightness value

Lamp type	
Parameter	Setting
Lamp type:	<b>Ohmic load</b> Inductive load