

Product manual | 27.05.2022

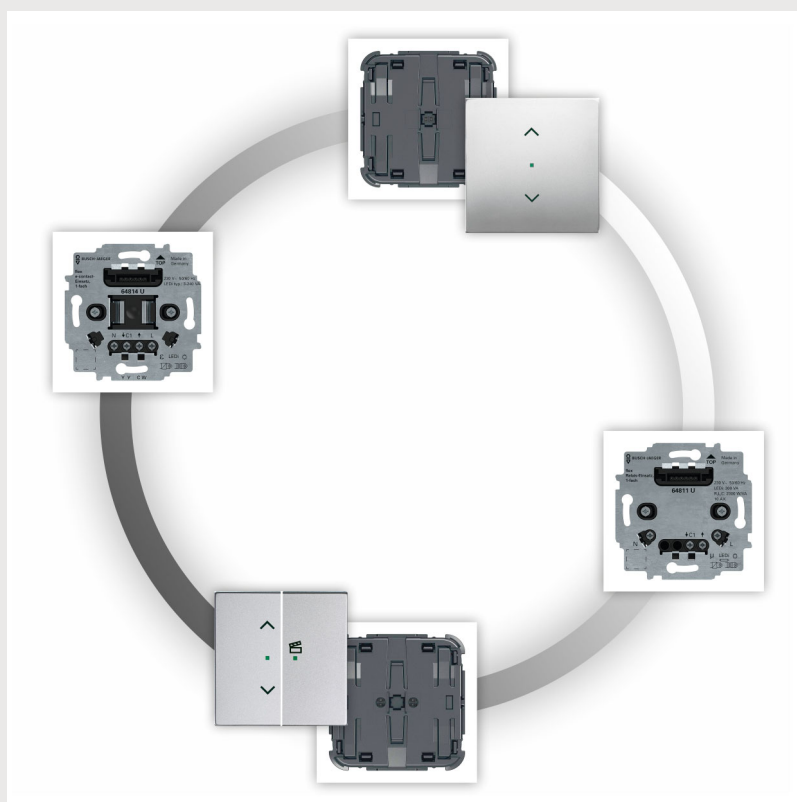
# **ABB flexTronics®**

Control element flex, 1gang

64711-xxx-500

Control element flex, 2gang

64721-xxx-500



1	Notes on the instruction manual.....	3
1.1	Design lines.....	3
2	Safety.....	4
2.1	Information and symbols used.....	4
2.2	Intended use .....	5
2.3	Improper use .....	5
2.4	Target group / Qualifications of personnel.....	6
2.4.1	Operation .....	6
2.4.2	Installation, commissioning and maintenance .....	6
2.5	Safety instructions.....	7
3	Information on protection of the environment .....	8
3.1	Environment .....	8
4	Setup and function.....	9
4.1	Possible combinations .....	10
4.2	Overview of types.....	11
5	Technical data .....	13
6	Connection, installation / mounting .....	14
6.1	Requirements for the electrician .....	14
6.2	Mounting / dismantling .....	15
6.2.1	Mounting possibilities .....	15
7	Commissioning .....	17
8	Operation .....	18
8.1	General control and display functions .....	18
8.2	Push-button procedures:.....	19
8.3	Procedures independent of the actuator .....	20
8.3.1	Switching LED light for orientation on/off.....	20
8.3.2	Restore factory settings.....	20
8.4	Procedures dependent on actuator with dimmer insert.....	21
8.4.1	Dimming with stored brightness (memory function).....	21
8.5	Procedures dependent on actuator with blind insert .....	22
8.5.1	Saving blind hanging positions (with Control element flex, 2gang).....	22
8.5.2	Saving the roller blind hanging positions (with Control element flex, 2gang .....	23
9	Maintenance .....	24
9.1	Cleaning .....	24
10	Notes.....	25
11	Index .....	26

# 1 Notes on the instruction manual

Please read through this manual carefully and observe the information it contains. This will assist you in preventing injuries and damage to property, and ensure both reliable operation and a long service life for the device.

Please keep this manual in a safe place.

If you pass the device on, also pass on this manual along with it.

ABB accepts no liability for any failure to observe the instructions in this manual.

If you require additional information or have questions about the device, please contact ABB or visit our Internet site at:

[www.BUSCH-JAEGER.com](http://www.BUSCH-JAEGER.com)

## 1.1 Design lines

This product manual serves, among others, for the technical planning of the simple to complex installations of flex touch control elements.

The different design lines of the device groups and devices are not listed in this system product manual. The sections for the design line are marked with a "xxx" at the article numbers of the respective devices.

Please obtain the desired current design versions and the corresponding complete article numbers as well as the order numbers from the respective product catalogues or the online catalogue at <https://busch-jaeger-catalogue.com>.

## 2 Safety

The device has been constructed according to the latest valid regulations governing technology and is operationally reliable. It has been tested and left the factory in a technically safe and reliable state.

However, residual hazards remain. Read and adhere to the safety instructions to prevent hazards of this kind.

ABB accepts no liability for any failure to observe the safety instructions.

### 2.1 Information and symbols used

The following Instructions point to particular hazards involved in the use of the device or provide practical instructions:



#### **Danger**

Risk of death / serious damage to health

- The respective warning symbol in connection with the signal word "Danger" indicates an imminently threatening danger which leads to death or serious (irreversible) injuries.



#### **Warning**

Serious damage to health

- The respective warning symbol in connection with the signal word "Warning" indicates a threatening danger which can lead to death or serious (irreversible) injuries.



#### **Caution**

Damage to health

- The respective warning symbol in connection with the signal word "Caution" indicates a danger which can lead to minor (reversible) injuries.



#### **Attention**

Damage to property

- This symbol in connection with the signal word "Attention" indicates a situation which could cause damage to the product itself or to objects in its surroundings.



#### **NOTE**

This symbol in connection with the word "Note" indicates useful tips and recommendations for the efficient handling of the product.

The following safety symbols are used in the operating manual:



This symbol alerts to electric voltage.

## 2.2 Intended use

The ABB flexTronics® touch control device is a combination of flex flush-mounted insert (actuator) and flex control element. The device elements must only be combined with each other within the product group of ABB flexTronics®. A combination with switch inserts or control elements of other manufacturers is not possible.

The following actuators or inserts can be combined with control elements 64711-xxx-500 and 64721-xxx-500:

- The switch actuators 64811 U-500 and 64821 U-500 serve for switching lighting systems.
- Switch actuator 64814 U-500 is intended for installation in systems without neutral conductors and serves for switching lighting systems.
- The extension insert 64891 U-500 serves for connecting a main device, e.g. to a Relay insert flex, 1 gang. Up to nine sub devices can be combined with a main device. The maximum total cable length amounts to 100 meters.
- Dimming actuator 64851 U-500 serves for dimming and switching of lighting.
- Blind actuator 64831 U-500 serves for the control of roller blinds, blinds or awnings.

The ABB flexTronics® control devices are designed for dry interior areas.

## 2.3 Improper use

Each use not listed in Chapter 2.2 “Intended use” on page 5 is deemed improper use and can lead to personal injury and damage to property.

ABB is not liable for damages caused by use deemed contrary to the intended use of the device. The associated risk is borne exclusively by the user/operator.

The device is not intended for the following:

- Unauthorized structural changes
- Repairs

## **2.4 Target group / Qualifications of personnel**

### **2.4.1 Operation**

No special qualifications are needed to operate the device.

### **2.4.2 Installation, commissioning and maintenance**

Installation, commissioning and maintenance of the device must only be carried out by trained and properly qualified electrical installers.

The electrical installer must have read and understood the manual and follow the instructions provided.

The electrical installer must adhere to the valid national regulations in his/her country governing the installation, functional test, repair and maintenance of electrical products.

The electrical installer must be familiar with and correctly apply the "five safety rules" (DIN VDE 0105, EN 50110):

1. Disconnect
2. Secure against being re-connected
3. Ensure there is no voltage
4. Connect to earth and short-circuit
5. Cover or barricade adjacent live parts

## 2.5 Safety instructions



### **Danger - Electric voltage!**

Electric voltage! Risk of death and fire due to electric voltage of 100 ... 240 V. Dangerous currents flow through the body when coming into direct or indirect contact with live components. This can result in electric shock, burns or even death.

- Work on the 100 ... 240 V supply system may only be performed by authorised and qualified electricians.
- Disconnect the mains power supply before installation / disassembly.
- Never use the device with damaged connecting cables.
- Do not open covers firmly bolted to the housing of the device.
- Use the device only in a technically faultless state.
- Do not make changes to or perform repairs on the device, on its components or its accessories.
- Keep the device away from water and wet surroundings.



### **Caution! - Risk of damaging the device due to external factors!**

Moisture and contamination can damage the device.

- Protect the device against humidity, dirt and damage during transport, storage and operation.

## 3 Information on protection of the environment

### 3.1 Environment



#### **Consider the protection of the environment!**

Used electric and electronic devices must not be disposed of with domestic waste.

- The device contains valuable raw materials which can be recycled.  
Therefore, dispose of the device at the appropriate collecting depot.

All packaging materials and devices bear the markings and test seals for proper disposal. Always dispose of the packaging material and electric devices and their components via the authorized collecting depots and disposal companies.

The products meet the legal requirements, in particular the laws governing electronic and electrical devices and the REACH ordinance.

(EU Directive 2012/19/EU WEEE and 2011/65/EU RoHS)

(EU REACH ordinance and law for the implementation of the ordinance (EC) No.1907/2006).



## 4 Setup and function

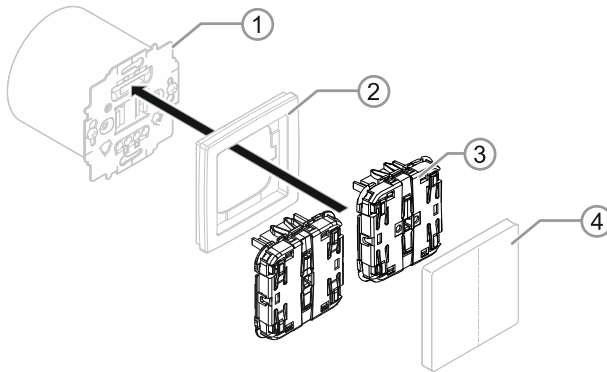


Fig. 1: Setup of ABB flexTronics® touch control device

- [1] Flush-mounted flex insert
- [2] Cover frame
- [3] ABB flexTronics® Touch control element (1gang or 2gang)
- [4] Rocker (1gang or 2gang, with or without icons)

ABB flexTronics® touch control devices are of modular design. The ABB flexTronics® control element is attached to the flex insert (actuator).

Additional features of the ABB flexTronics®:

- Flat actuators (FM inserts 25 mm)
- Group control via extension unit operation
- Values can be called up with a press of a button
- Flexibly expandable

The functions of the mounted device are determined by the combination of the touch control element and the actuator. The selection of the correct device combination is determined by the desired use.

Areas of application:

- Dimming
- Roller blind/blind control
- Switching
- Switching (e-contact)
- Extension unit operation

#### 4.1 Possible combinations

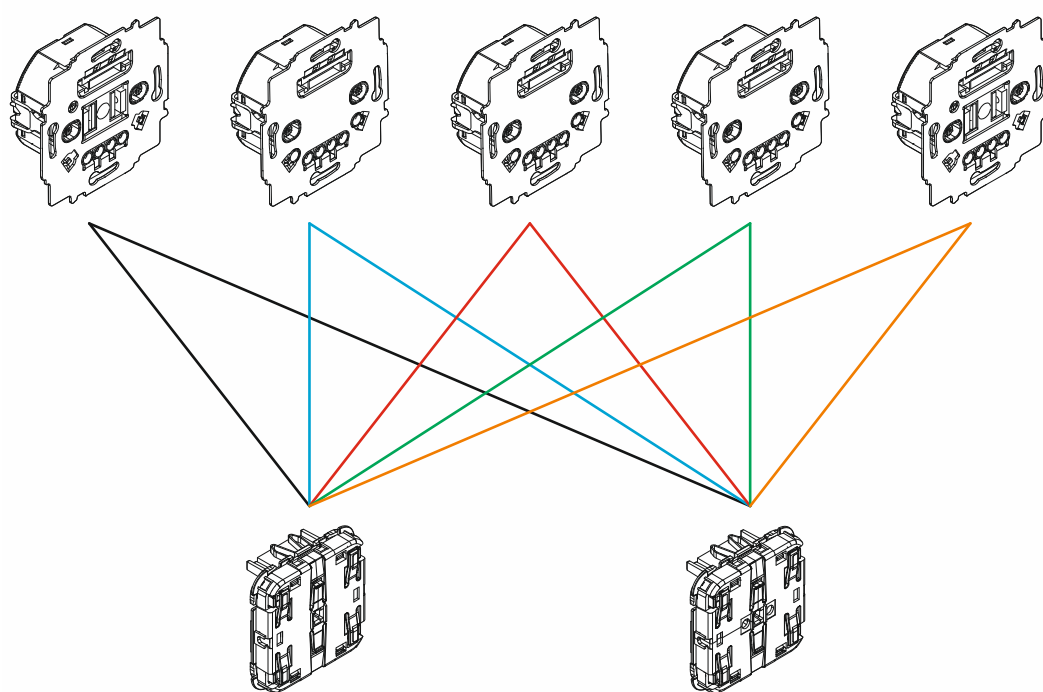
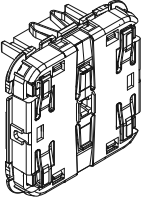
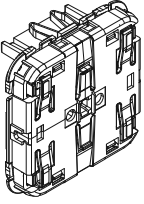


Fig. 2: ABB flexTronics® Possible combinations

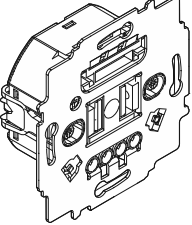
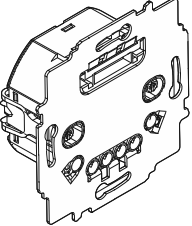
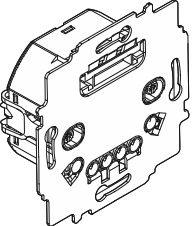
The interfaces between the ABB flexTronics® touch control elements and the actuators are standardised. All touch control elements can be combined with all actuators. This allows the desired switching and touch functions to be implemented. However, not all combinations are practical.

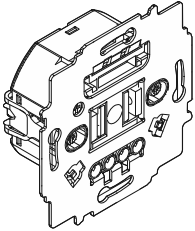
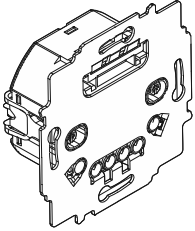
## 4.2 Overview of types

The following ABB flexTronics® control elements are available for implementing a control with push-buttons:

Device	Article number / Product name	Application
	64711-xxx-500 Control element flex, 1gang	Control of actuators
	64721-xxx-500 Control element flex, 2gang	Control of actuators: <ul style="list-style-type: none"> <li>– In the state of delivery, the left rocker always controls the actuator.</li> <li>– The right rocker can be freely configured if it is not allocated at the factory to a second actuator channel e.g. the Relay insert flex, 2 gang</li> <li>– The right rocker in combination with a dimmer or blind insert can call up light values or hanging positions. Programming is carried out via push-button procedure.</li> </ul>

The following flex inserts (actuators) can be combined with the ABB flexTronics® control elements:

Device	Article number / Product name	Application
	64814 U-500 e-contact insert flex, 1-gang	Residential areas and in old installations at locations where an N-busbar is not available. <ul style="list-style-type: none"> <li>– Noiseless switching of lighting systems</li> <li>– 2-wire connection (neutral busbar is not required, but can be connected as an option)</li> </ul>
	64811 U-500 Relay insert flex, 1 gang	Switching of lighting systems
	64821 U-500 Relay insert flex, 2 gang	
	64891 U-500 Sub-insert flex	Control of actuator groups via extension unit communication

	<p>64851 U-500 LED dimmer insert flex, 1gang</p>	<p>Switching and dimming of lighting systems</p>
	<p>64831 U-500 Blind insert flex, 1 gang</p>	<p>Control of roller blinds, blinds and awnings</p>

## 5 Technical data

### ABB flexTronics®Touch control element

Designation	Value
Degree of protection	IP20
Temperature range	-5 °C - +45 °C
Storage temperature	-25 °C - +70 °C

Table 1: Technical data 64711-xxx-500 / 64721-xxx-500

## 6 Connection, installation / mounting

### 6.1 Requirements for the electrician



#### **Danger - Electric voltage!**

Install the device only if you have the necessary electrical engineering knowledge and experience.

- Incorrect installation endangers your life and that of the user of the electrical system.
- Incorrect installation can cause serious damage to property, e.g. due to fire.

The minimum necessary expert knowledge and requirements for the installation are as follows:

- Apply the "five safety rules" (DIN VDE 0105, EN 50110):
  1. Disconnect
  2. Secure against being re-connected
  3. Ensure there is no voltage
  4. Connect to earth and short-circuit
  5. Cover or barricade adjacent live parts.
- Use suitable personal protective clothing.
- Use only suitable tools and measuring devices.
- Check the type of supply network (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective earthing, necessary additional measures, etc.).

## 6.2 Mounting / dismantling



**Caution! The device can sustain damage when coming into contact with hard objects!**

The plastic parts of the device are sensitive.

- Pull the attachment off only with your hands.
- Do not lever parts off with screwdrivers or similar hard objects.

### 6.2.1 Mounting possibilities

The wall mounting / ceiling mounting of the flush-mounted inserts takes place in a standard flush-mounted box or device box. The following mounting situations are possible, for example:

Wall mounting

- Stone walls
- Plaster walls
- Hollow walls
- Insulated walls

The devices are not suitable for:

- Purely surface mounting

If a flush-mounted installation is not desired or not possible, the flush-mounted inserts can also be mounted in surface-mounted housings for flush-mounted inserts.

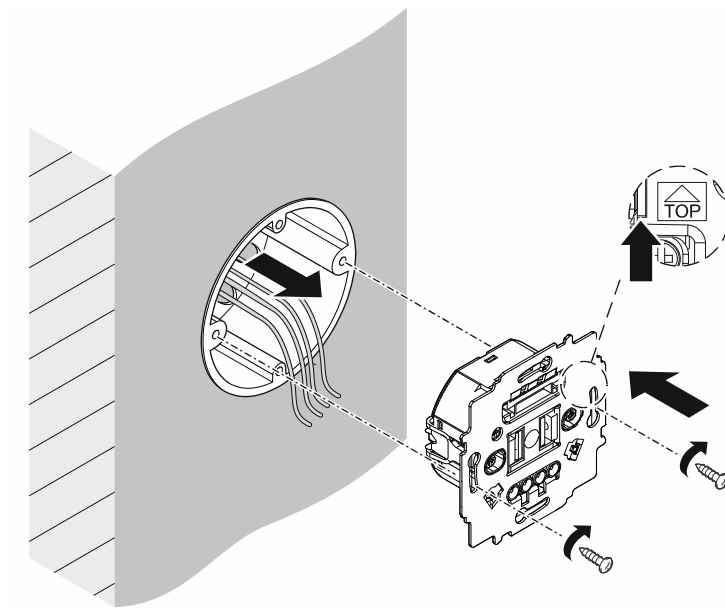
All ABB flexTronics® / ABB-free@home® flex devices are mounted or disassembled the same way.

To install the device combination, perform the following steps:

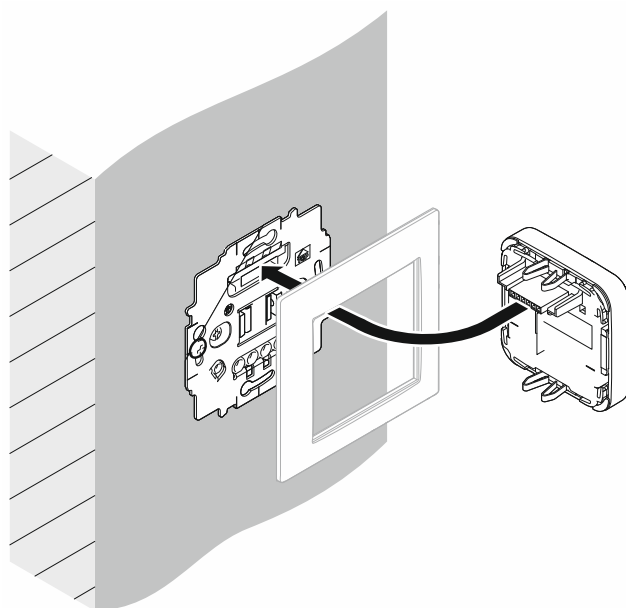


**Attention! – Malfunction**

Do not attach or change the control element when the insert is under voltage. This can lead to malfunctions.



1. Mount and connect flush-mounted device inserts.



2. Plug the sensor or control element together with the cover frame onto the flush-mounted device insert.

The device combination is mounted.



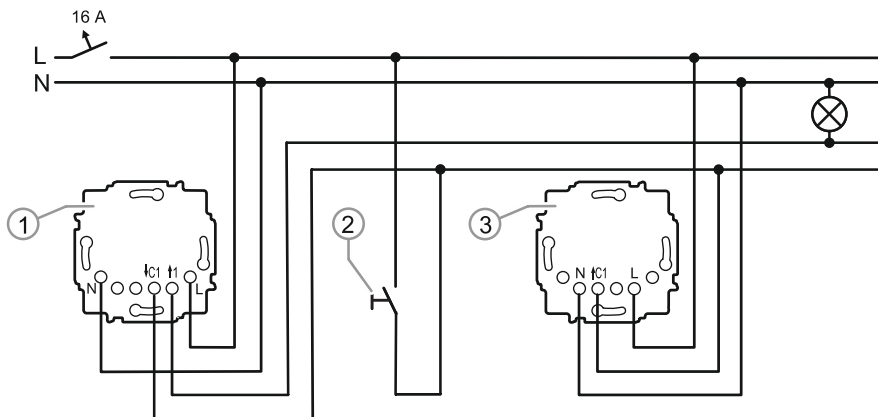
**Lighting circuit with sub device**

Fig. 3: Connection example: Main device with sub device and extension unit

[1] Main device:

Relay insert flex, 1 gang with Control element flex, 1gang

[2] Option: extension unit

– E.g.: 2020 US/500

[3] Sub device:

Sub-insert flex with Control element flex, 1gang

– The detection range can be extended with additional sub devices [3] (maximum of 9 sub devices).

## 7 Commissioning

Special measures for commissioning are not required. The ABB flexTronics® device is ready for operation directly after connection and assembly.

The function of the respective device depends on the combination of flex insert and ABB flexTronics® control element.

Extended functions are programmed via push-button procedures, e.g. for blind control, see chapter 8 “Operation” on page 18.

## 8 Operation

### 8.1 General control and display functions

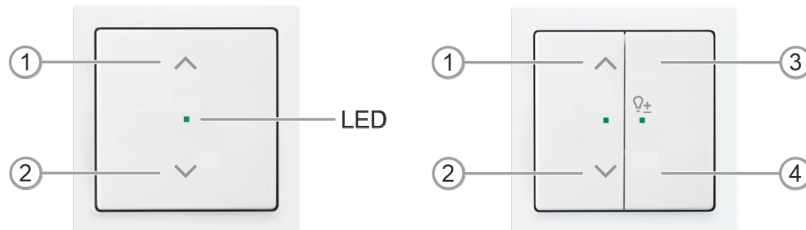


Fig. 4: Control element flex, 1gang and Control element flex, 2gang

- [1] Rocker; button contact 1, top (left)
  - [2] Rocker; button contact 2, bottom (left)
  - [3] Rocker; button contact 3, top right
  - [4] Rocker; button contact 4, bottom right
- LED: Light for orientation (green)



#### Notice

The function of the rockers depends on the flex insert used.

#### On-site operation

Rocker button top [1] and bottom [2]:

- Brief press of the button:  
Lighting on/off.  
The LED lights up permanent and serves as light for orientation.
- Long press of the button (in combination with the dimmer insert:  
Reducing/raising the brightness.
- Long press of the button (in combination with the blind insert:  
The blind/roller blind moves up/down.

## LED status display

Display	Function
Continuous on or off	Light for orientation or off
Flashes fast for 10 seconds, then fast for 5 seconds.	During the restoration of factory settings (master reset)
Dims repeatedly between 0% and 100% brightness with a duration period of 1 second.	At call-up of setting mode for blind calibration, light for orientation or memory function
Dims up to 100% brightness, then to 0% brightness, once within 2 seconds	When saving the settings in different modes and situations (also for scenes and default settings)

Table 2: LED status display

## 8.2 Push-button procedures:

A differentiation is made between procedures that are dependent or not dependent on the actuator or flex insert.

- Procedures independent of the actuator:
  - Switch LED light for orientation on/off
  - Restore factory settings (master reset)
- Procedures dependent on actuator with dimmer insert:
  - Switching on with last brightness (memory function)
  - Dimming with stored brightness (with Control element flex, 2gang)
    - Saving /call-up of a brightness value on the right rocker half.
- Procedures dependent on actuator with blind insert:
  - Roller blinds and awnings: saving of two hanging positions (with Control element flex, 2gang)
  - Blinds: saving of hanging and slat positions (with Control element flex, 2gang)
    - Saving /call-up of a hanging / slat position on the right rocker half.

### 8.3 Procedures independent of the actuator

#### 8.3.1 Switching LED light for orientation on/off

1. Change to the setting mode. Press the rocker button [1] longer than ten seconds.
  - The LED dims repeatedly between 0% and 100% brightness with a duration period of one second.
2. Press the rocker button [2] long (>400 milliseconds).
  - The current setting of the light for orientation will be displayed.
    - Light for orientation off: LED off
    - Light for orientation on: LED on
3. To switch the light for orientation on or off, press the rocker button [1] briefly.
  - The light for orientation is switched on or off (LED on or off).
  - Step 3 can be repeated freely.
4. Press the rocker button [1] long (>400 milliseconds).
  - The LED dims once up to 100% brightness, then to 0% brightness within two seconds.
  - The adjustment of the light for orientation is stored.

**Notice**

Step 2 must occur within five seconds and steps 3 and 4 each within ten seconds, otherwise the control element changes back into the operating mode. Ex factory the light for orientation is switched on.

#### 8.3.2 Restore factory settings

Restoring factory settings:

1. Press the rocker button [2] for ten seconds.
  - The LED flashes slowly for ten seconds, then fast for five seconds.
  - All settings are reset.
2. To confirm, press the rocker button [2] briefly.
  - The status LED lights up.
3. Press the rocker button [2] again briefly.
  - The status LED goes out.

The factory settings are restored.

**Notice**

The own settings are retained during a power failure. To reset the factory settings after the return of voltage, only step 1 needs to be carried out.

## 8.4 Procedures dependent on actuator with dimmer insert

### 8.4.1 Dimming with stored brightness (memory function)

#### Activating/deactivating the memory function of the dimmer

1. Change to the setting mode. Press the rocker button [1] longer than ten seconds.
  - The LED dims repeatedly between 0% and 100% brightness with a duration period of one second.
2. Press the rocker button [1] long (>400 milliseconds).
  - The current setting of the memory function will be displayed.
    - Memory function off: LED off
    - Memory function on: LED on
3. To switch the memory function on or off, press the rocker button [1] briefly.
  - The memory function is switched on or off (LED on or off).
  - Step 3 can be repeated freely.
4. Press the rocker button [1] long (>400 milliseconds).
  - The LED dims once up to 100% brightness, then to 0% brightness within two seconds.
  - The adjustment of the memory function is stored.



#### Notice

Step 2 must occur within five seconds and steps 3 and 4 within ten seconds, otherwise the control element changes back into the operating mode.

#### Saving brightness values (with Control element flex, 2gang)

Two different brightness values can be saved.

1. Setting the desired brightness with rocker buttons [1] and [2].
2. Saving brightness 1. Press the rocker button [3] for five seconds.
3. Saving brightness 2. Press the rocker button [4] for five seconds.

#### Calling up the saved brightness

1. Setting brightness 1. Briefly press the rocker button [3].
2. Setting brightness 2. Briefly press the rocker button [4].

## 8.5 Procedures dependent on actuator with blind insert

### 8.5.1 Saving blind hanging positions (with Control element flex, 2gang)

1. Change to the setting mode. Press the rocker button [1] longer than ten seconds.
  - The LED dims repeatedly between 0% and 100% brightness with a duration period of one second.
2. Press the rocker button [1] long (>400 milliseconds).
  - The calibration of the blind starts. The blind travels to the top end position.
  - The status LED is switched off.
3. When the blind has reached the top end position, briefly press rocker button [1] or [2].
  - The start position is being saved.
  - The blind travels down.
4. When the blind has fully reached the bottom, briefly press rocker button [1] or [2].
  - The travel time of the blind to the bottom is saved.
  - The blind travels up.
5. When the blind has fully reached the top, briefly press rocker button [1] or [2].
  - The travel time of the blind to the top is saved.
6. Briefly press the rocker button [2].
  - The blind travels half way down (50% closed).
  - The slats are being closed.
7. Briefly press rocker button [1] or [2].
  - Opening the slats (one step).
8. Repeat step 7 until the slats have fully turned.
9. Press the rocker button [1] long (>400 milliseconds).
  - The turning of the slats is saved.
  - The blind travels up.
10. Press the rocker button [1] long (>400 milliseconds).
  - The LED dims once up to 100% brightness, then to 0% brightness within two seconds.
  - The calibration of the blind is saved.



#### Notice

Steps 2, 6, 7 and 8 must each occur within five seconds and step 10 within ten seconds, otherwise the control element changes back into the operating mode.

### 8.5.2 Saving the roller blind hanging positions (with Control element flex, 2gang)

1. Change to the setting mode. Press the rocker button [1] longer than ten seconds.
  - The LED dims repeatedly between 0% and 100% brightness with a duration period of one second.
2. Press the rocker button [1] long (>400 milliseconds).
  - The calibration of the roller blind starts. The roller blind travels up.
  - The status LED is switched off.
3. When the roller blind has fully reached the top, briefly press rocker button [1] or [2].
  - The start position is being saved.
  - The roller blind travels down.
4. When the roller blind has fully reached the bottom, briefly press rocker button [1] or [2].
  - The travel time of the roller blind to the bottom is saved.
  - The roller blind travels up.
5. When the roller blind has fully reached the top, briefly press rocker button [1] or [2].
  - The travel time of the roller blind to the top is saved.
6. Press the rocker button [1] long (>400 milliseconds).
  - The LED dims once up to 100% brightness, then to 0% brightness within two seconds.
  - The calibration of the roller blind is saved.



#### Notice

Step 2 must occur within five seconds and step 10 within ten seconds, otherwise the control element changes back into the operating mode.

## 9 Maintenance

### 9.1 Cleaning

**Caution! - Risk of damaging the device!**

- When spraying on cleaning agents, these can enter the device through crevices.
  - Do not spray cleaning agents directly onto the device.
- Aggressive cleaning agents can damage the surface of the device.
  - Never use caustic agents, abrasive agents or solvents.

Clean dirty devices with a soft dry cloth.

- If this is insufficient, the cloth can be moistened slightly with a soap solution.



## 10 Notes

# 11 Index

## C

Cleaning .....	25
Commissioning .....	18
Connection, installation / mounting .....	15

## D

Design lines .....	4
Dimming with stored brightness .....	22
dismantling .....	16

## E

Environment .....	9
-------------------	---

## G

General control and display functions .....	19
---	----

## I

Improper use .....	6
Information and symbols used .....	5
Information on protection of the environment .....	9
Intended use .....	6

## M

Maintenance .....	25
Memory function .....	22
Mounting .....	16
Mounting possibilities .....	16

## N

Notes .....	26
Notes on the instruction manual .....	4

## O

Operation .....	7, 18, 19
Overview of types .....	12

## P

Possible combinations .....	11
Procedures dependent on actuator with blind insert .....	23
Procedures dependent on actuator with dimmer insert .....	22
Procedures independent of the actuator .....	21
Push-button procedures .....	20

## Q

Qualification of personnel .....	7
----------------------------------	---

## R

Requirements for the electrician .....	15
Restore factory settings .....	21

## S

Safety .....	5
Safety instructions .....	8
Saving blind hanging positions .....	23
Saving the roller blind hanging positions .....	24
Setup and function .....	10
Switching LED light for orientation on/off .....	21

## T

Target group .....	7
Technical data .....	14



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