B.IQ push button 2gang, Flush-mounted (Up)
# 7516209x

B.
Berker

The application module for pushing onto the flush-mounted bus coupling unit. Depending on the application software used to trigger switch actuators, dim actuators and shutter actuators, and as a value transmitter for transmitting brightness values, or extension operations of the light scene push button. Mixed applications (dimming/shutter control, switching/shutter control or switching/dimming) possible through separate applications. Up to 4 switching groups can be controlled with the help of the application "switching/pushing".

Product management
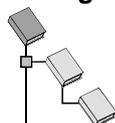
⇒ **Gebr. Berker**
⇒ **Push button**
⇒ **Push button 2gang**

⇒ **Gebr. Berker**
⇒ **Push button**
⇒ **B.IQ**
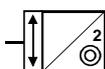
B.IQ push button 2gang, flush-mounted

Dimming 102A03
Shutter 102B03
Switching/pushing 103403
Switching, ackn. 100A03
Value transmitter 101C03
Dimming/shutter 103A03
Switching/shutter 103B03
Switching/dimming 103C03

Order data

Design	Colour	Order no.
B.IQ	**polar white**	751620**99**
	stainless steel	751620**93**
	glass, polar white	751620**91**

Technical data

Type of protection:	IP 20
Safety class:	III
Mark of approval:	EIB
Ambient temperature:	-5 °C ... +45 °C
Storage / transport temperature:	-25 °C ... +70 °C (storage above +45 °C reduces the service life)
Mounting position:	any
Minimum distances:	none
Type of fastening:	plug-in on flush-mounted bus coupling unit (BCU 1)
instabus EIB supply	
voltage:	21 – 32 V DC SELV
power consumption:	typically 150 mW
connection:	2 x 5 pole male connector strip
External supply	---
Response to mains failures	
bus voltage only:	Object values will be deleted, LED switches OFF
mains voltage only:	---
bus and mains voltage:	---
Response on return of voltage	
bus voltage only:	No reaction
mains voltage only:	---
bus and mains voltage:	---

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Connecting diagram:

C

A

D

instabus-Leitung

B

E

A: B.IQ push button 1gang standard

B: Application module interface

C: Bus coupling unit

D: 1 rocker or 2 push buttons
   with blue operating LED

E: White status LED
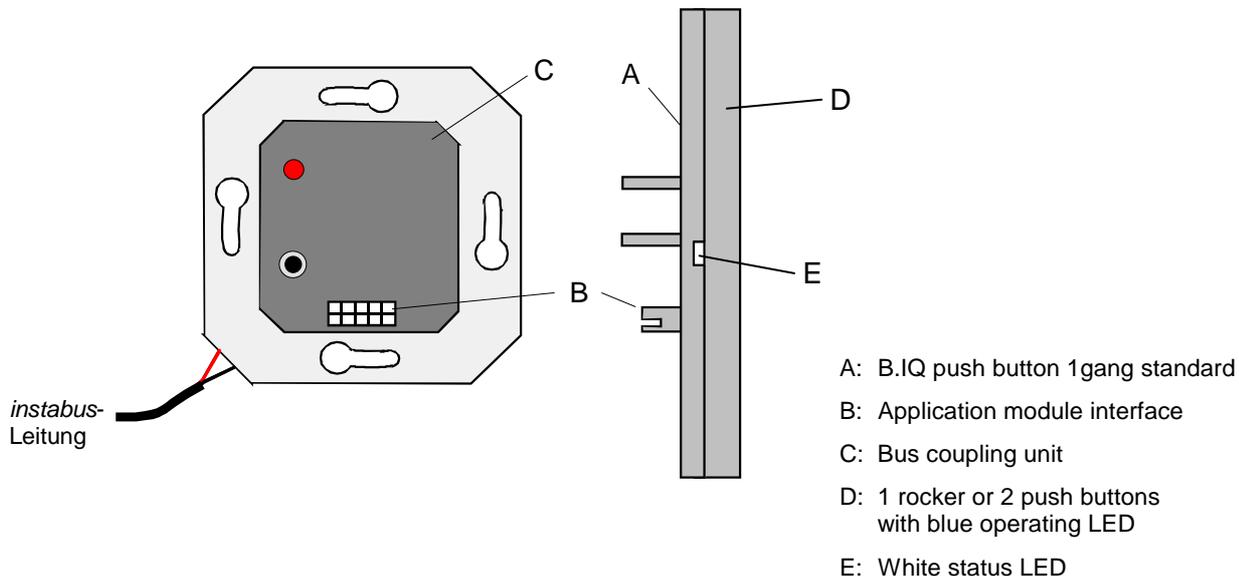
Application remarks:

The B.IQ push button 1gang standard may only be put on the bus coupling unit of the "new generation" with round programming push button (see picture bus coupling unit above)! If the push button is mounted on an older flush bus coupling unit there will be a failure!

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The application modules (AM) are equipped with a dismantling protection system*, which prevents the AM from being disconnected from the BCU. The Berker plug-in terminals of the socket outlet with earthing contact are shockproof and enable combinations of push buttons and 230 V socket outlets with earthing protectors under a single cover. A push button consists of an application module and BCU. These form 2 separate delivery units.

Application characteristics

☑ **Switching and dimming of 2 function groups**   ☑ **Status LED configurable**

☑ **Operating LED configurable**

Dimming 102A03

| No. of group addresses: | max. 6 |
| No. of associations: | max. 6 |

Communications objects:

Application: Dimming 102A03

	Obj	Function	Name	Type	Prio	Flag
	0	Switching	Push buttons 1 and 2	1 bit	Auto	CWT
	1	Switching	Push buttons 3 and 4	1 bit	Auto	CWT
	2	Dimming	Push buttons 1 and 2	4 bit	Auto	CWT
	3	Dimming	Push buttons 3 and 4	4 bit	Auto	CWT

Object description: The "Dimming" function (EIS 2) is formed from the sub-functions "Switching" and "Dimming". Both functions are equipped with separate objects whose target addressed (group addresses) are different. The sub-functions are controlled in dependence on the duration of activation: short periods of activation (approx. 40-400 ms) are processed as switching commands (1 bit). Longer activation times (>400 ms) are interpreted as dimming commands (4 bit). After activation ends, a "stop" telegram (4 bit) is sent and ends the dimming process.

Parameter description

General	
Function of operating LED	**ON**, OFF
Function of status LEDs	**ON**, OFF

Function of operating LED: The device is connected to the system, the system voltage is available.
Function of status LEDs: The status LED is switched on when the corresponding button is pressed.
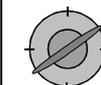
Application characteristics

☑ **Controls 2 function groups of motorized drives**   ☑ **Operating LED configurable**

Shutter 102B03

| No. of group addresses: | 8 |
| No. of associations: | 8 |

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Communications objects:

Application: Shutter 102B03						
	Obj	*Function*	*Name*	*Type*	*Prio*	*Flag*
⬜⇄	0	**Step operation**	**Push buttons 1 and 2**	1 bit	Auto	CWT
⬜⇄	1	**Step operation**	**Push buttons 3 and 4**	1 bit	Auto	CWT
⬜⇄	2	**Move operation**	**Push buttons 1 and 2**	1 bit	Auto	CWT
⬜⇄	3	**Move operation**	**Push buttons 3 and 4**	1 bit	Auto	CWT

Object description: the "shutter control" function is formed from the sub-functions "step operation" and "move operation". Both functions are equipped with separate objects whose target addressed (group addresses) are different. The sub-functions are controlled in dependence on the duration of activation. Pressing the buttons (<390 ms) triggers "step operation" commands in actuators with corresponding group addresses and switches into a brief self-holding period (approx. 400 ms). Holding the buttons triggers "move operation" commands. Actuators with the corresponding addresses switch into self-holding. The actuator determines the length of the self-holding period. Move operations are interrupted by activating **any button** (step object active). In contrast to switching lights, sending a telegram with the value 1 is set as movement down.

Parameter description

General	
Function of operating LED	**ON**, OFF

Function of operating LED: the device is connected to the system, the system voltage is available.

Application characteristics

☑ **Controlling 2 functions groups**   ☑ **Operations LED configurable**

☑ **Status LED configurable**

No. of group addresses: 10
No. of associations: 10

Communications objects:

Application: Switching,acknowledge 100A03						
	Obj	*Function*	*Name*	*Type*	*Prio*	*Flag*
⬜⇄	0	**Switching**	**Push buttons 1 and 2**	1 bit	Auto	CWT
⬜⇄	1	**Switching**	**Push buttons 3 and 4**	1 bit	Auto	CWT

Object description: The application "Switching,acknowledge" (transmission control) enables a switching command (ON/OFF) to be sent. Successful transmission (ON and OFF telegram) is displayed on the status LED in accordance with the time setting (period LED lit). Incoming telegrams have no effect on the LED display.

Switching, acknowl. 100A03

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Parameter description

General	
Function of operating LED	**ON**, OFF
Light duration of the status LED at operation indication	0.75s, 1.5s, 2.25s, 2.7s , **3s**, 4.5s, 6s, 10s, 15s, 20s
Command at operation the left push buttons	**ON**, OFF
Command at operation the right push button	ON, **OFF**

Function of operating LED: The device is connected to the system, the system voltage is available. **LED lit for long period:** Successful transmission (ON and OFF) is indicated by the LED with variable lighting times. **Command at operating upper/lower push button :** Because of the neutral central position the standard setting can be varied, e.g. to realize an OFF push-button in a lighting controller.

Push buttons 1and 2	
Function of status LED	**ON**, OFF

Push buttons 3 and 4	
Function of status LED	**ON**, OFF

Function of status LED: When activated, a telegram is sent to the bus. The devices linked in a group send an acknowledgement. The status LED indicates successful transmission and receive status. This process applies to commands for switching both "ON" and "OFF". The statuses of other groups and transmissions from devices belonging to the same group are not displayed.

Application characteristics

☑ **Controls up to 4 values**　　　　☑ **Operating and status LEDs configurable**

☑ **Passive extension of a light scene**　　　　☑ **Active extension of a light scene**

No. of group addresses:　　　　**1**
No. of associations:　　　　**1**

Communications objects:

Application: Value transmitter 101C03						
	Obj	*Function*	*Name*	*Type*	*Prio*	*Flag*
	0	**Value/light scene**	**Push buttons**	1 byte	Auto	CT

Object description: The *value transmitter* application enables up to 4 8-bit values to the sent to the *instabus.* Optionally, **4 dimming values for controlling brightness or an active or passive extension function of the light scene push button for 4 light scenes** can be set. In this case, the group address of the object is identical with the group address of the extension object of the light scene push button.

Value transmitter 101C03

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Parameter description

General	
Function of operating LED	**ON**, OFF
Function of status LEDs	**ON**, OFF
Operating mode	Value transmitter Recall light scenes with memory funct. **Recall light scenes without memory f.**

Push buttons 1 and 2	
Command at operat. left push button value (0...255) / light scene (1...8)	**1**...8 or 0...255
Command at operat. right push button value (0...255) / light scene (1...8)	1.**2**..8 or 0...255

Push buttons 3 and 4	
Command at operat. left push button value (0...255) / light scene (1...8)	**1**...8 or 0...255
Command at operat. right push button value (0...255) / light scene (1...8)	1.**2**..8 or 0...255

Function of status LED: if a value (light scene command, dimming value) is transmitted when a button is pressed, the LED confirms the process by lighting for 1 second. Successful storage of the light scene is indicated by the LED lighting for 3 seconds. If the period the LED is lit during storage is clearly exceeded, this is an indication that the function could not be carried out correctly. For more information see "light scene push button. (T-Flag, R-Flag, transmitting group address)

Function of operating LED: the device is connected to the system, the system voltage is available.

Operating mode: Value transmitter: The value transmitter function of the push button 2gang can be described as a 4gang **touch dimmer with fixed value memory**, because an operating button can be assigned two different values. If either the upper or lower push button is pressed, this generates a telegram with an 8-bit value field. Dim actuators, controllers or analogue outputs can receive and evaluate this telegram because of the link to the object *dimming value*. The system moves to the dimming value, or the brightness is reduced, depending on the setting in the actuator. The complete dimming range (100%) is divided into 255 steps. An increase by one step increases the brightness by about 0.4 %.

Operating mode: Recall light scenes with memory funct.: The mode " Call light scenes with memory funct." enables a light scene push button to be operated as en extension, and is only possible in combination with a light scene push button.

Recall light scenes: If the upper/lower push button is pressed, a telegram with a group address and light scene identifier (1 - 8) with telegram function ("set") is sent. The light scene push button connected to the same group address (object extension mode) receives the telegram and transmits the brightness or switching values stored under the light scene identifier to the actuators (object output light scene push button).

Save light scenes: The mode enables a light scene to be stored/altered through the extension operation. If the top/bottom button is held longer than 5 seconds, a telegram is sent with a group address and the preselectable identifier of the light scene and telegram function ("save"). The corresponding light scene push button (**object extension operation**) connected to the same group address receives the telegram and sends the transmission request for the current switching and brightness status to the actuators. The actuators transmit the values that are saved in the light scene push button.

Operating mode: Recall light scenes without memory funct.: This mode does **not** enable a light scene to be saved/altered and is always practical where unwanted storage is to be avoided (functions description see above).

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Application characteristics

☑ **Switching up to 4 function groups through "TOGGLE" function**

☑ **Status LED carried out through separate objects and configurable**

Switch. / pushing 103403

| No. of group addresses: | max. 11 |
| No. of associations: | max. 11 |

Communications objects:

Application: Switching/pushing 103403

	Obj	Function	Name	Type	Prio	Flag
	0	**Switching**	**Left upper push button**	1 bit	Auto	CRWT
	1	**Switching**	**Right upper push button**	1 bit	Auto	CRWT
	2	**Switching**	**Left lower push button**	1 bit	Auto	CRWT
	3	**Switching**	**Right lower push button**	1 bit	Auto	CRWT
	4	**Triggering LED**	**Upper status LED**	1 bit	Auto	CRWT
	5	**Triggering LED**	**Lower status LED**	1 bit	Auto	CRWT

Object description: The "switching/pushing" application enables the optional assignment of the rocker switch to generate switching commands in dependence on different activation forms. Each part of the rocker is realized separately through an object: upper button, lower button and status LED.
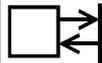
Parameter description

General	
Function of operating LED	**ON**, OFF

Function of operating LED: The device is connected to the system, the system voltage is available.
Status LED ON: the status LED can be linked directly with group addresses through the separately realized object "triggering LED". The group addresses are received and evaluated for controlling the LED in accordance with the contents of the telegram.
If several group addresses are linked, please note that the contents of the last telegram received are always displayed.

Upper push buttons (1 – 2)	
Function of status LED	**ON**, LED permanently ON, LED permanently OFF
Command at operation the left/right push button	**push = ON; release = --- (left button)**
	push = OFF; release = --- (right button)
	push = TOG; release = ---
	push = ON; release = ---
	push = ---; release = ON
	push = ---; release = OFF
	push = ---; release = TOG
	push = ON; release = OFF
	push = OFF; release = ON
	push = ON; release = ON
	push = OFF; release = OFF
	push = ---; release = ---

Lower push buttons (3 – 4)	
Function of status LED	**ON**, LED permanently ON, LED permanently OFF
Command at operation the left/right push button	**push = ON; release = --- (left button)**
	push = OFF; release = --- (right button)

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push = TOG;	release = ---
push = ON;	release = ---
push = ---;	release = ON
push = ---;	release = OFF
push = ---;	release = TOG
push = ON;	release = OFF
push = OFF;	release = ON
push = ON;	release = ON
push = OFF;	release = OFF
push = ---;	release = ---

Command at operating the left/right push button: Activation forms (push, release) and type of switching command (ON, OFF, TOGGLE) can be distributed in many variants to the individual buttons (left, right) of the push button. This enables flexible, cost-saving solutions for new systems and for extensions.
The "TOG" function enables a push button 4gang to be realized (e.g. for subsequent extension of a push button 2gang by two functions without affecting the hardware).
Select the parameters push = ON, release = OFF to simulate a classical push-button function.

Application characteristics

☑ **Switching/dimming and controlling motorized drives through a single control position**

☑ **Freely configurable rocker assignment**

☑ **Touch dimmer principle or area dimmer**

☑ **Variable touch and latching operations for the shutter control controls**

☑ **Variable status or operating LED in dimming mode**

No. of group addresses: max. 5
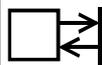No. of associations: max. 5

Dimming / shutter 103A03

Communications objects:

Application: Dimming / shutter control 103A03						
	Obj	**Function**	**Name**	**Type**	**Prio**	**Flag**
	0	**Switching**	**Push buttons**	**1 bit**	**Auto**	**CRT**
	1	**Dimming**	**Push buttons**	**4 bit**	**Auto**	**CT**
	2	**Step operation**	**Push buttons**	**1 bit**	**Auto**	**CWT**
	3	**Move operation**	**Push buttons**	**1 bit**	**Auto**	**CWT**

Object description: The object pairs 0/1 or 2/3 form the basis of the functions "Dimming/shutter control". The "dimming" function (EIS 2) is formed from the sub-functions "switching" and "dimming". Both functions are equipped with separate objects whose target addresses (group addresses) are different. The sub- functions are controlled in dependence of the duration of activation: Short activation (approx. 40-400 ms) is processed as a switching command (1 bit). Longer activation (>400 ms) is interpreted as a dimming command (4 bit). After activation is ended, a "stop" telegram (4 bit) is sent and ends the dimming process.
Object description: The "Shutter control" function is formed from the sub-functions "step operation" and "move operation". Both functions are equipped with separate objects whose target addressed (group addresses) are different. The sub-functions are controlled in dependence on the duration of activation. Pressing the buttons (<390 ms) triggers "step" commands in actuators with corresponding group addresses and switches into a brief self-holding period (approx. 400 ms). Holding the buttons triggers "move" commands. Actuators with the corresponding addresses switch into self-holding. The actuator determines the length of the self-holding period. Move operations are interrupted by activating any button (step operation object active). In contrast to switching lights, sending a telegram with the value 1 is set as movement down.

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Parameter description

General	
Function of operating LED	**ON**, OFF
Configuration of push buttons	**Left push b.: dimming; right push b.: shutter**
	Left push b.: shutter control; right push b.: dimming

Function of operating LED: The device is connected to the system, the system voltage is available.
Configuration of push buttons: The push button function can be selected in accordance with the application.

Function: dimming	
Function of status LED	**as status indication,** as operation indication, always OFF, always ON
Light duration of the status LED	0.75s, 1.5s, 2.25s, 2.7s , **3s**, 4.5s, 6s, 10s, 15s, 20s
Function of the push buttons	**left = brighter (ON), right = darker (OFF)** left = darker (OFF), right = brighter (ON)
Time between switching and dimming base	**130 ms**, 200 ms, 300 ms, 400 ms, 500 ms, 750 ms, 1 s, 1.5 s, 2 s
Time between switching and dimming factor (2...127)	**3**
Dimming brighter by	**100%,** 50%, 25%, 12.5%, 6%, 3%, 1.5%
Dimming darker by	**100%,** 50%, 25%, 12.5%, 6%, 3%, 1.5%
Send a stop telegram ?	**Yes, no**

Function of status LED: The *dimming* function enables the display of the group status through the status LED. The mode of the status LED can be set in accordance with requirements: as a status display the status of the group addresses linked with the object 0 (switching) is displayed. If the object is assigned two group addresses, this can lead to overlapping. The "send" function of the dimming actuators / control units or the answer-back objects can be used to display the real status of the lighting. To confirm the transmission, the successful transmission of telegrams for both ON/brighter and OFF/darker functions is displayed briefly.
Function of the push buttons: In general, with manual functions in the instabus activating the top half of the rocker is set as ON, BRIGHTER. The function OFF, DARKER has proved successful for the bottom half. The parameter setting permits customized solutions.
**Time between switching and dimming: basis/factor:** In the instabus the "dimming" function consists of the sub-functions *switching* and *dimming*. Two different telegrams are generated in dependence on the duration of activation. If the push button is activated for less than the selected time, only a switching telegram is sent. Longer activation generates a "dim" telegram, so that the actuators can be dimmed, for example.
Dimming brighter/darker by: The "dimming" function can be divided into two different operating concepts by means of parameter settings: a function similar to the conventional touch dimmer and an area dimming function. The touch dimming function is prepared in the standard settings (100%). Other settings lead to dimming by the preset dimming ranges.
Send a stop telegram?: In the standard setting *Send a stop telegram ON* means, after the button is released a "stop" telegram is sent and the dimming process is stopped immediately.
The setting **OFF** should only be used in combination with the control concept "range dimming" (line-overlapping dimming). This means that after the button is released the current subdomain (e.g.: 2nd subdomain 6%) is set to the limit value of the next (12% limit to the 3rd subdomain 6%)t.

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Function: shutter	
Function of the push buttons	**left = UP, right = DOWN** left = DOWN, right = UP
Number of steps before move operation (1...30)	**1**... 30
Time between two telegrams, base	**8 ms,** 130 ms, 2.1 s, 33 s
Time between two telegrams, factor (2...255)	2...**46**..255

Function of the push buttons: In general, with manual functions in the instabus activating the top half of the rocker is set as ON, UP. The function OFF, DOWN has proved successful for the bottom half. The parameter setting permits customized solutions.

Number of steps before move opeartion (1…30), Time between two telegrams: base/factor: The overall function of the shutter control function differentiates between "step" commands (step = inching mode) and continuous commands (move = latching mode). Both 1 bit switching telegrams are generated separately in dependence on the activation time (time between step and move = time between inching and latching mode). Depending on the duration of activation several step commands can be triggered consecutively to extend the overall time for latching mode (example of application: sunshades). The start of each activation always triggers a step command initially which starts the step function of the actuators.

Function sequences "**shutter control**" with the parameter settings:
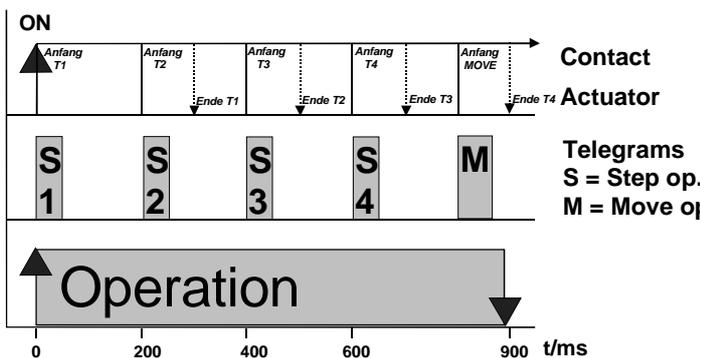
Number of step commands: **4**

Time between commands: **200 msec**

Step operation time in the actuator: **300 msec**
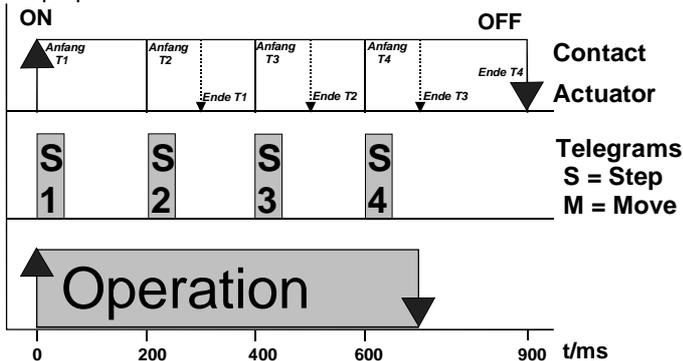
Activation for approx. 700 msec. Four step commands are sent. After the 4th step command (t = 600 msec) the total short-operations time runs through in the actuator, so that the actuator releases the drive after about 900 msec.

Activation here is longer than 800 msec = 4 step commands, so that the touch sensor sends the permanent ops. command.

After release, the drive remains in the latch mode and is only disconnected from the mains by limit switches or expiry of the lath time (actuator parameters).

Important: In order to achieve a smooth transition from step to permanent mode the time limit in the sensors (time between two telegrams) should be set at a value slightly **less** than the short-time controller (step) of the actuators!

Long-time operations are interrupted by activating **any button**. **Precondition is the allocation of the short-time object.**

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Technical Documentation

B. Berker

Switch./ Shutter control 103B03

Application characteristics

☑ **Switching and controlling motorized drives through a single operating point**

☑ **Freely configurable rocker assignment**

☑ **Status or operations LED adjustable in switching mode**

☑ **Touch and latch mode of Shutter control controller adjustable**

No. of group addresses: max. 9
No. of associations: max. 11

Communications objects:

Application: Switching / Shutter control 103B03						
	Obj	**Function**	**Name**	**Type**	**Prio**	**Flag**
	0	**Switching**	**Left push button**	**1 bit**	**Auto**	**CWT**
	1	**Switching**	**Right push button**	**1 bit**	**Auto**	**CWT**
	2	**Step operation**	**Push buttons**	**1 bit**	**Auto**	**CWT**
	3	**Move operation**	**Push buttons**	**1 bit**	**Auto**	**CWT**

Object description: The object pairs 0/1 and 2/3 form the basis for the functions "Switching/Shutter control". In the "Switching" function the activating rocker is triggered in the components top button and bottom button with separate objects. This means that with the help of the "UM" function 2 switch commands can be triggered.
The "Shutter control" function is formed from the sub-functions "short-time" and "long-time operations". Both functions are equipped with separate objects whose target addresses (group addresses) must be different. The sub-functions are controlled in dependence on the duration of activation. Pressing the buttons (<390 ms) triggers "step" commands in actuators with corresponding group addresses and switches into a brief self-holding period (e.g. 400 ms in accordance with the actuator parameters). Holding the buttons triggers "move" commands. Actuators with the corresponding addresses switch into self-holding. The actuator also determines the length of the self-holding period. Move operations are interrupted by activating any button (step operation object active). Sending a telegram with the value 1 is set as movement down.
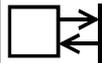
Parameter description

General	
Function of operating LED	**ON**, OFF
Configuration of push buttons	**Upper push b.: switching; lower push b.: shutter**
	Upper push b.: shutter; lower push b.: switching

Function of operating LED: The device is connected to the system, the system voltage is available.
Configuration of push buttons: The push button function can be selected in accordance with the function.

Function: Switching	
Function of status LED	**Status indication,** Operation indication, Permanently OFF, Permanently ON
Light duration of the status LED	0.75s, 1.5s, 2.25s, 2.7s , **3s**, 4.5s, 6s, 10s, 15s, 20s
Command at operation the left/right push button	**push = ON; release = --- (left button)** **push = OFF; release = --- (right button)** push = TOG; release = --- push = ON; release = --- push = ---; release = ON

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	push = ---; release = OFF
	push = ---; release = TOG
	push = ON; release = OFF
	push = OFF; release = ON
	push = ON; release = ON
	push = OFF; release = OFF
	push = ---; release = ---

Command at operating the left/right push button: Activation forms (push, release) and type of switching command (ON, OFF, TOG) can be distributed in many variants to the individual buttons (upper, lower) of the operating key. This enables flexible, cost-saving solutions for new systems and for extensions.

The "TOGGLE" function enables the realization of a switching function through a push-button. This means that 2 switch commands can be generated for each rocker.

Function: Shutter	
Function of push buttons	**upper = UP, lower = DOWN,** upper = DOWN, lower = UP,
Number of steps before move operation (1…30)	**1**... 30
Time between two telegrams, base	**8 ms,** 130 ms, 2.1 s, 33 s
Time between two telegrams, factor (2...255)	2...**46**..255

Function of push buttons: In general, with manual functions in the instabus activating the top half of the rocker is set as ON, BRIGHTER, UP. The function OFF, DARKER, DOWN has proved successful for the bottom half. The parameter setting permits customized solutions.
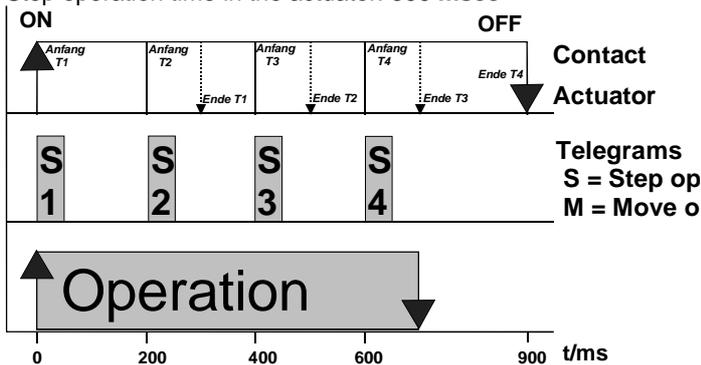
Number of steps before move operation (1…30), Time between two telegrams: base/factor: The overall function of the shutter control function differentiates between "step" commands (step = inching mode) and continuous commands (move = latching mode). Both 1 bit switching telegrams are generated separately in dependence on the activation time (time between step and move = time between inching and latching mode). Depending on the duration of activation several step commands can be triggered consecutively to extend the overall time for latching mode (example of application: sunshades). The start of each activation always triggers a step command initially which starts the step operation function of the actuators.

Function sequences "**Shutter control** " with the parameter settings:

Number of step commands: **4**

Time between commands: **200 msec**

Step operation time in the actuator: **300 msec**

Activation for approx. 700 msec. Four step commands are sent. After the 4th step command (t = 600 msec) the total short-operations time runs through in the actuator, so that the actuator releases the drive after about 900 msec.

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(Subject to prior change)

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Part 2