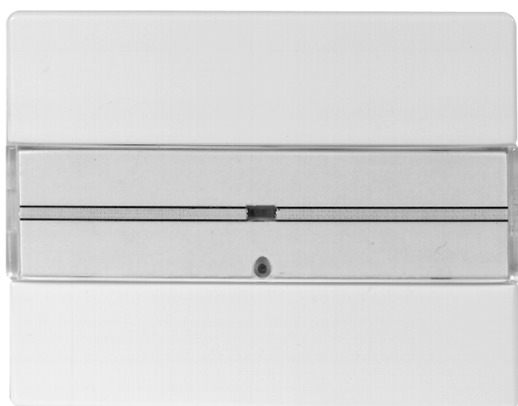# Push button 1gang, Flush-mounted (Up) 751610xx, 751611xx

Technical Documentation

B. Berker

(Fig: ARSYS pw with labelling field)

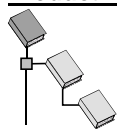(Fig.: ARSYS pw without labelling field)

The application module for pushing onto the flush-mounting bus coupling unit/flush-mounting mains coupling unit and the bus coupling unit and actuator modules of the flush-mounting concept. Depending on the user software can trigger switch actuators, or dim actuators or shutter actuators, and can also be used as a value transmitter for transmitting brightness values, or for extension operations of the light scene push button.

Supply *instabus* **EIB**   via BCU (24V; +6V/-4V) from internal 5V supply
Terminal: to BCU 2 x 5-pole AS

Productmanagement   **Gebr. Berker**   Push button 1gang
                          ⊠ **Berker**
                          ⊠ **Push button**   Dimming   100C12
                          ⊠ **Push button 1gang**   Shutter   100D12
                                                                   Switching/push. 103301
                                                                   Value transm.   101B01
                                                                   Switching,ackn. 100912

Order data

Design	Colour	Order no. with labelling field	Order no. without labelling field
Module 2	**white**	7516101**2**	7516111**2**
	polar white	7516101**9**	7516111**9**
ARSYS	**white**	7516104**2**	7516114**2**
	polar white	7516104**9**	7516114**9**
	light bronze, varnished	7516104**4**	7516114**4**
	stainless steel, varnished	7516104**3**	7516114**3**
CLIPTEC	**polar white**	7516105**9**	7516115**9**
	light grey	7516105**0**	7516115**0**
	deep black	7516105**5**	7516115**5**
	platinum, varnished	7516105**8**	7516115**8**
Twinpoint	**polar white**		7516106**9**
	red		7516106**6**
	black		7516106**5**

Berker push buttons are supplied with or without labelling fields (separate order numbers). The Berker labelling aid is available for labelling the touch sensors (can be run under standard spreadsheet systems).

Application features

☑ **Status LED configurable**
☑ **Switching/dimming function**

☑ **Operating LED configurable**
☑ **Variable area dimming**

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

Dimming 100 C12

Communications objects:

Application: Dimming 100 C12

	Obj	Function	Name	Type	Prio	Flag
	0	Push button 1	Switching	1 bit	Auto	CWRT
	1	Push button 2	Dimming	4 bit	Auto	CWRT

Object description:
Object control is carried out on the basis of the length of time the button is pressed:
Button pressed < 360 msec = telegrams sent through the switching object; button held for longer period = dimming command sent in accordance with parameter settings.

Parameter description

General	
Function of operating LED	**ON** , OFF
Function of status LED	**ON**, OFF
Dimming brighter by	**100%,**1/2,1/4,1/8,1/16,1/32,1/64 of the dimming range
Dimming darker by	**100%,**1/2,1/4,1/8,1/16,1/32,1/64 of the dimming range
Telegram repetition	YES, **NO**
Time between 2 telegrams, factor (0...255)	100 ms to 2s, variable in different stages
Send a stop telegram ?	**YES**, NO

Function of operating LED: The bus device is connected to the system and the system voltage is available.
Function of status LED: The status LED is switched on when the appropriate button is pressed.
Basic function: The **basic setting: "100%, stop telegram Yes"** can be compared with the function of a conventional touch dimmer: If the dimmer is pressed briefly (<350 ms) an ON/OFF command is sent for the bus devices (dim and/or switch actuators) shown in the group address under "switching objects".
If the button is held, a dimming telegram is sent. The 4-bit information of the dimming telegram determines the direction of dimming and the range. When the button is released a stop telegram is sent in accordance with the parameter settings.
Stop telegram: With the parameter setting *"Stop telegram: yes"* releasing the button stops the dimming process by sending a stop telegram. If the setting "**Send a stop telegram: NO**" was selected, after a dimming telegram is sent the light is switched to the max. brightness or dimmed to its min. brightness (with setting 100%). The actuator sets dimming speed.
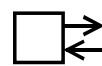**Telegram repetition ?:** For the basic setting described above, set the parameter **Telegram repetition: to NO**. The setting "YES" does not affect the function but increases the bus load by sending unnecessary telegrams and should only by used in the case of area dimming.
Area dimming: The function "Area dimming" is recommended in the case of line-overlapping dimming. Because of the memory function of the couplers, it is not possible to set the lamps evenly in touch dimming operations. However, if the dimming command directly transmits the areas to be set, the time difference for receiving the telegram at the actuators is irrelevant.
The complete dimming range (100%) is divided into ranges through the parameter **Dimming brighter/darker by** (example: 1/16). If a dimming telegram is generated, the actuator makes the brightness about 1/16 lighter or darker and, given the precondition **Send a stop telegram: NO** ends the process at the limit to the next range independently of whether you press the button again or not.

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Dimming 100 C12

Telegram repetition ?/Time between two telegrams: If you selected the parameter settings **Telegram repetition: YES and Time between the telegrams: x** A new telegram is sent ("dim by 1/16") if you hold the button.
The parameter setting **Time between two telegrams** determines how long you have to hold the button after the last telegram is sent to send another telegram ("dim by 1/16").

Send a stop telegram: A " Stop" telegram is sent to the bus when the button is released. The dimming process can be stopped between two ranges if you set the parameter **Send a stop telegram: YES**. The otherwise constant division of the part ranges is displaced correspondingly.

Application features

☑ **Step and move command**   ☑ **No. of step commands for variable inching**

☑ **Variable operating LED**

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

Shutter 100 D12

Application: Shutter 100 D12

	Obj	Function	Name	Type	Prio	Flag
⬚⇄	0	Step operation	Push button	1 bit	Auto	C W T
⬚⇄	1	Move operation	Push button	1 bit	Auto	C W T

Object description:
Object control is carried out on the basis of the length of time the button is pressed:
Button pressed < 360 ms = telegrams sent through the step operation object; button held for longer period = move operation command sent in accordance with parameter settings. If you now press any button a telegram is sent through object 0 and stops the drive.

Parameter description

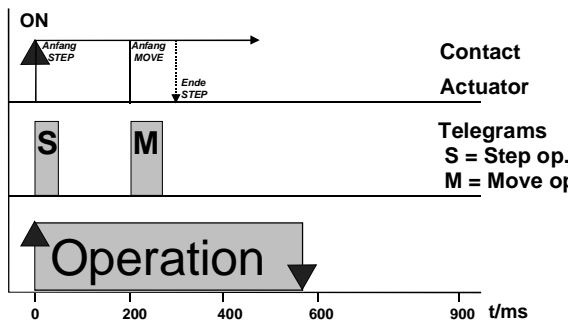| General	
Function of operating LED	**ON**, OFF
Number of steps before move operation (1...30)	**1**..10
Time between two telegrams, **base**	approx. 0.5 ms; **8 ms**; 130 ms; 2.1 s; 33 s;
Time between two telegrams, factor (0...255)	0..**46**..255

Parameter description

Function of operating LED: The device is connected to the system, the system voltage is available. The status LED is not active.
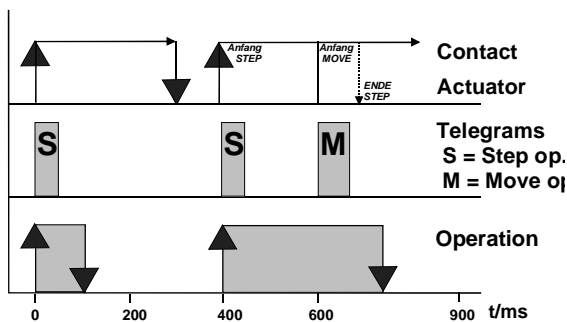**Number of steps before move operation:** The overall function of the shutter control function differentiates between a "step" command (step = inching) and a "move" command (move = maintained operations). The two 1 bit switching telegrams are triggered separately in dependence on the operating time (time between step and duration = time between inching and maintained operations):
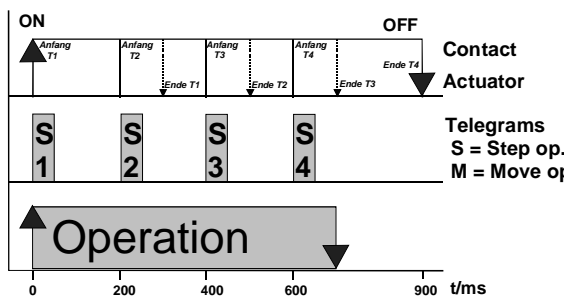
Shutter 100 D12

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Function sequences **shutter control function** with the parameter settings:
Number of steps before move operation: **1**
Time between two commands: **200 msec**
Step operation setting of actuator: **300 msec**

Function sequences **shutter control function** with the parameter settings:
Number of steps before move operation: **1**
Time between two commands: **200 msec**
Step operation setting of actuator: **300 msec**

Function sequences **shutter control function** with the parameter settings:
Number of steps before move operation: **4**
Time between two commands: **200 msec**
Step operation setting of actuator: **300 msec**

Number of steps before move operation: Depending on the time the button is pressed several step commands can be triggered consecutively to extend the overall time for the inching mode (application: e.g. sunshades).
Each start of operations first of all triggers a step command that starts the actuators' step operation function. A second step command resets this time function to the original setting, so that the complete actuator time function only takes effect with the final step command. This procedure should be taken into account when you define the inching mode.
Time between inching and continuous operations = Time between two telegrams
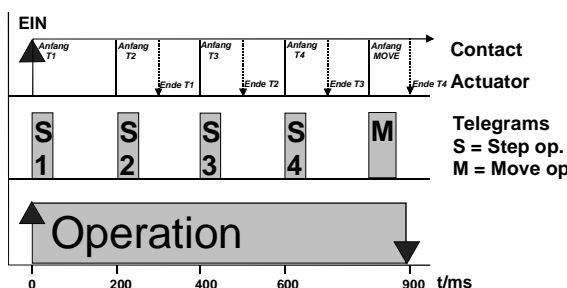
If the button is held after all step commands have been sent a continuous command (move) is sent to the bus in accordance with the set time (factor x base) that controls the actuators into the continuous mode.

Non-jerking operation: To achieve a smooth transition from step to move operations set the time limit in the sensors slightly **less** than the step operation time for the actuators!

Shutter 100D12

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Stopping move operations: Press **any button** to interrupt continuous operations. **Precondition for this is the allocation of the step operation object.**

Application features

☑ **Switch commands freely configurable**   ☑ **Displays object value through status LED**

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

Switching 100112

Application: Switching 100 112

	Obj	Function	Name	Type	Prio	Flag
⬚⇄	0	Switching	Push button	1 bit	Auto	C W T

Object description:
If you press a button, a telegram is sent in accordance with the parameters. The object value is displayed through the status LED. If several group addresses are connected with the object, the object value and thus the status of the LED are followed up in accordance with the contents of the telegram.

Parameter description

General	
Function of status LED	**ON** , OFF
Function of operating LED	**ON**, OFF
Command at pushing upper push button	**ON,** OFF
Command at pushing lower push button	ON**, OFF**

Function of status LED: When the function is activated the status of the group addresses linked to the object is displayed. The first linked group address (transmitting) controls the LED directly when the button is pressed and a switching command is carried out.
All other linked addresses are received and control the LED in accordance with the object value in the telegram. If a group of actuators is controlled from different group addresses, the switching status can be monitored with the help of the LED if the group addresses are allocated to the object of the touch sensors.
Function of operating LED: The device is connected to the system, the system voltage is available.
Command at pushing upper/lower push button: Because of the neutral central position, the standard setting can be varied, for example, to realise an **OFF** push-button in a lighting controller.
Application features

☑ **LED for send control (acknowledge)**   ☑ **Operating LED configurable**
☑ **Freely configurable switching commands**

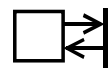**No. of group addresses:**   max. 10
No. of associations: **max. 10**

Switching 100 912

Communication objects:

Application: Switching 100 912

	Obj	Function	Name	Type	Prio	Flag
⬚⇄	0	Switching	Push button	1 bit	Auto	SKÜ

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Object description:
When the push buttons are pressed a telegram corresponding to the parameters is generated. Successful transmission is signalled by the status LED lighting briefly.
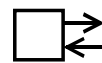
Parameter description

General	
Function of operations LED	**ON** , OFF
Function of status LED	**ON**, OFF
Light duration of the status LED in acknowledge mode	0.75s, 1.5s, 2.25s, 2.7s , **3s**, 4.5s, 6s, 10s, 15s, 20s
Command at operating the upper push button	**ON**, OFF
Command at operating the lower push button	ON, **OFF**

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

Function of the status LED: Pressing the button sends a telegram to the bus. The devices combined in a group send an acknowledgement to the transmitting devices. The status LED display the successful transmission and acknowledgement status. This procedure applies to bot an "ON" command and to an "OFF" command. The statuses of other groups and transmissions from devices belonging to the same groups are not displayed.

Command at operating the upper/lower push button: Because of the neutral central position, the standard setting can be varied, for example, to realise an **OFF** push button in a lighting controller.

Application features

☑ **2 values for sending to dim actuators / control units / analogue actuators**

☑ **Passive or active extension of a light scene push button**

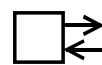**No. of group addresses:**   max. 1
No. of associations: **max. 1**

Communications objects:

Application: Value transmitter 101B01						
	Obj	**Function**	**Name**	**Type**	**Prio**	**Flag**
	0	Value / light scene	Push button	1 byte	Auto	KÜ

Object description:
When the push buttons are pressed an 8-bit telegram corresponding to the parameters is generated.

Parameter description

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

Function of the operating LED: The device is connected to the system, the system voltage is available.
Function of the status LED: If a value (light scene, dimming value) is sent when a switch is pressed,

Value transmitter 101B01

Value transmitter 101 B01

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the LED confirms the process by lighting for one second.

Operating mode value transmitter: The value transmitter function of the push button 1gang can be referred to as a 2gang touch dimmer with fixed value memory. The operating button can be assigned two different values. If either the upper or the lower push button is pressed, this generates a telegram with an 8-bit value field.

Dim actuators, for example, can receive and evaluate this telegram because of the connection with the object *Dimming value*. Depending on the setting in the actuator, the lighting is made brighter or is dimmed darker. The complete dimming range (100%) is divided into 255 steps. An increase by one step results in about 0.4% more brightness. If the value transmitted is 0, this generates a switching off process.

Operating mode Call light scenes with memory funct: This mode enables the extension operation of a light scene push button. **This mode is only practical in combination with a light scene push button.**

When the upper/lower push button is pressed, a telegram with group address and a light scene identifier with telegram function ("set") is sent. The light scene push button **(object extension mode)** that is connected to the same group address receives the telegram and transmits the brightness/switching values that are stored under the identifier for the light scene to the actuators (object output light scene push button).

The mode allows a light scene to be stored/altered through the extension mode. If the upper/lower button is held longer than 5 seconds, a telegram with group address, the preselectable identifier of the light scene and telegram function ("save") is sent. The light scene push button (object extension mode) that is connected to the same group address receives the telegram and transmits the request for transmission of the current switching or brightness status to the actuators. The actuators transmit the values that are stored in the light scene push button.

Operating mode Call light scene without memory function: This mode does **not** allow a light scene to be saved/altered. This application is practical, or example, for preventing unwanted saving (e.g. hotel receptions, speaker's desk in lecture rooms).

Push button	
Command at operating upper push button, light scene/value	**1**..8 or 0..255
Command at operating lower push button, light scene/value	1.**2**..8 or 0..255

The selection of the mode determines the range of the possible input ranges.

In the **value transmitter** mode inputs from 0..255 are possible. If a value greater than 8 is entered in the **light scene** mode, the function is not carried out because there is no light scene partner: the light scene push button manages max. 8 lighting arrangements.

Application features

☑ **Status LED with separate object**   ☑ **Operating LED configurable**

☑ **Freely configurable switching commands**   ☑ **"TOGGLE" function for up to 2 group commands**

No. of group addresses: max. 13

No. of associations: max. 13

Switching/ pushing

103 301

Communications objects:

	Obj	Function	Name	Type	Prio	Flag
	0	Switching	Upper push button	1 bit	Auto	C W T
	1	Switching	Lower push button	1 bit	Auto	C W T
	2	Status LED	LED operation	1 bit	Auto	C W T

Application: Switching / push-button control 103 301

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Object description: The push button is divided into two separate objects. This means that each object can trigger different switching commands. The object for the status LED receives group telegrams and controls the LED in accordance with the telegram contents.
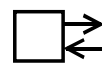
Parameter description

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

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

Push button	
Command at operating the upper/lower push button	**push = ON; release= --- (upper push button)**
	push = OFF; release= --- (lower push 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= ---

Command at operating the upper/lower push button: The forms of operating (push, release) and the type of switching command (ON, OFF, TOG) enable flexible, cost-saving solutions for new installations and extensions. Application example: bell push button function, 2gang, e.g. for transmitting two independent call commands:

    Command when upper push button pushed: push = ON / release = OFF
    Command when lower push button pushed: push = ON / release = OFF

Application example: touch switch function 2gang, e.g. for the subsequent extension of a push button 1gang with a function without affecting the hardware:

    Command when upper push button pushed: push = TOG / release = ---
    Command when lower push button pushed: push = TOG / release = ---

Application example: combined function touch switch/push-button bell e.g. for opening a door with the possibility of switching on an indicator light from on operating point:

    Command when upper push button pushed: push = TOG / release = ---
    Command when lower push button pushed: push = ON   / release = OFF

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Part 2