

Push button 1gang with labeling field

Push button 2gang with labeling field

Push button 3gang with labeling field

Push button 4gang with labeling field



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Content

1	<u>Product definition</u>	<u>3</u>
1.1	Product catalogue	3
1.2	Function	3
2	<u>Fitting, electrical connection and operation</u>	<u>4</u>
2.1	Safety instructions	4
2.2	Device components	5
2.3	Fitting and electrical connection	7
2.4	Commissioning	8
2.5	Operation	9
3	<u>Technical data</u>	<u>10</u>
4	<u>Software description</u>	<u>11</u>
4.1	Software specification	11
4.2	Push button xgang 10Cx01 / 10Cx11	13
4.2.1	Scope of functions	13
4.2.2	Software information	14
4.2.3	Object table	15
4.2.4	Parameters	17
5	<u>Appendix</u>	<u>22</u>
5.1	Index	22

1 Product definition

1.1 Product catalogue

Product name: Push button 1gang with labeling field / Push button 2gang with labeling field /
Push button 3gang with labeling field / Push button 4gang with labeling field

Use: Sensor

Design: UP (concealed)

Order-No. 7514 12 xx / 7514 22 xx / 7514 32 xx / 7514 42 xx

1.2 Function

When a button is pressed, and depending on the loaded application and the parameter setting, the push button sensor Standard transmits telegrams to the KNX / EIB. These can be, for instance, telegrams for switching or momentary-contact control, for dimming or for shutter control. It is also possible to program value transmitter functions such as dimming value transmitters or light scene extensions.

The Standard pushbutton sensor consists of up to four operating areas, depending on the variant. In the "Switching" function, the control concept of one control surface can be configured as a rocker function or as a button function. The control concept is defined as a rocker in the "Dimming", "Venetian Blind", "Value transmitter" and "Scene extension" functions. With the rocker function, one control surface is divided into two actuation pressure points with the same basic function. With the button function, one control surface is evaluated as two functionally-different actuation pressure points (two buttons).

The push button sensor is equipped with two status LEDs per control surface (left & right), which are always controlled in the same way. One status LED can optionally either be permanently on or off, or otherwise act as an button-press or status indicator for a button or a rocker.

If necessary, an operation LED can optionally serve as an orientation light. If the pushbutton is in Programming mode, the operation LED flashes with a frequency of about 8 Hz. If there is no (suitable) application loaded in the pushbutton, the operation LED flashes to indicate an error at a frequency of approx. 0.75 Hz and the pushbutton sensor does not work.

A bus coupling unit is already permanently integrated in the Standard pushbutton sensor, allowing the device to be connected directly to the bus cable during commissioning.

2 Fitting, electrical connection and operation

2.1 Safety instructions

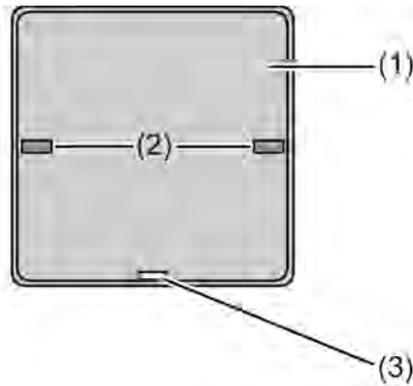
Electrical equipment must be installed and fitted by qualified electricians. The applicable accident prevention regulations must be observed.

Failure to observe the instructions may cause damage to the device and result in fire and other hazards.

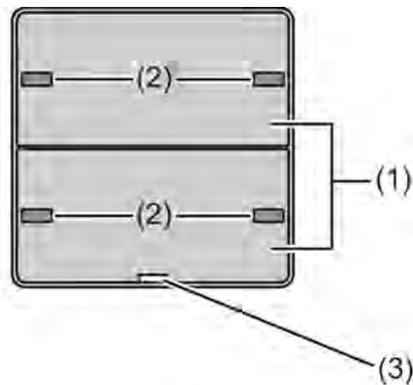
During installation, adequate insulation between the mains voltage and the bus must be ensured! A minimum spacing of 4 mm must be ensured between bus wires and mains conductors.

The device may not be opened or operated outside the technical specifications.

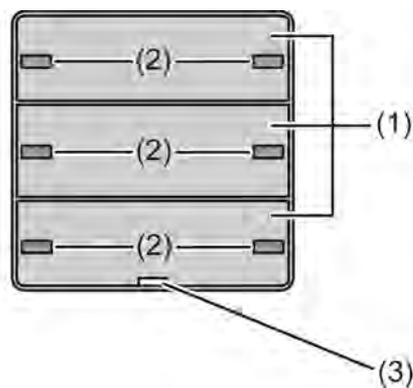
2.2 Device components



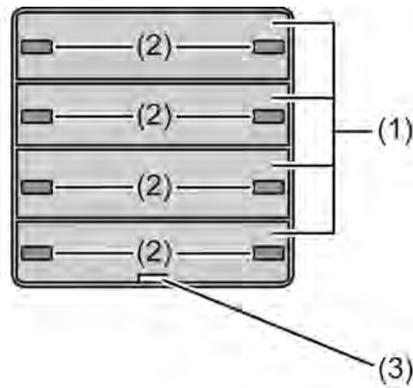
picture 1: Device components of the push button 1gang



picture 2: Device components of the push button 2gang



picture 3: Device components of the push button 3gang



picture 4: Device components of the push button 4gang

- (1) Control surfaces
- (2) Status LED (orange)
- (3) Operation LED (white)

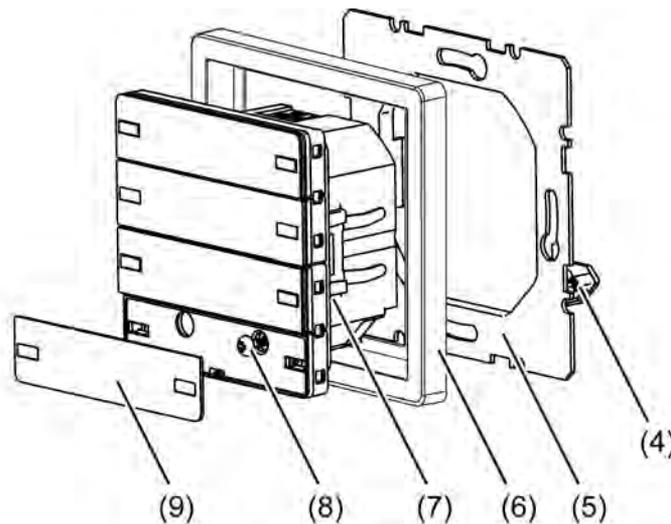
Dimensions:

Width (W): 58 mm / Height (H): 58 mm / Depth (D): 34 mm

i Data including flush-mounted section, without decorative frame, without supporting frame.

2.3 Fitting and electrical connection

Fitting and connecting the device



picture 5: Device fitting using the example of a push button 4gang

- (4) Dismantling protection
- (5) Supporting ring
- (6) Frame
- (7) Pushbutton sensor
- (8) Retaining screw
- (9) Cover with labelling panel

- Fit the supporting frame (5) in the right position on an appliance box. The dismantling protection (4) must be at the bottom right.
- Run the bus cable with the connection terminal through the supporting frame (5) and the frame (6) and connect to the pushbutton sensor (7).
- Push the pushbutton sensor (7) with the frame (6) onto the supporting frame until it locks into place.
- Detach the labelling panel (9) from the bottom rocker.
- Screw the retaining screw (8) tight. This is prefitted in the round opening.
- Reattach the labelling panel (9).

i To program the physical address, a cover with a labelling panel must be removed from the pushbutton sensor (see chapter 2.4. Commissioning).

2.4 Commissioning

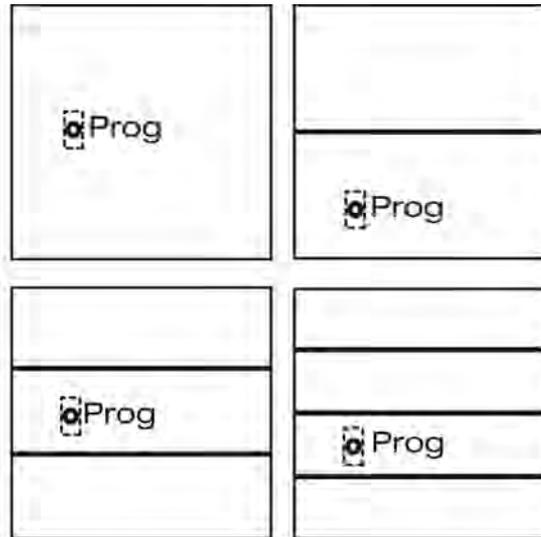
Loading the physical address and application software

The commissioning procedure of the device is basically confined to programming of the physical address and the application data with the ETS.

Project planning and commissioning of the device preferably using the ETS 3.0d with Patch A or newer versions.

The device is connected and ready for operation.

An appropriate device must be set up and configured in the ETS project.



picture 6: Arrangement of the programming button dependent on the device variant

- i** The programming button is located behind a labelling panel. Refer to the image (picture 6) for the exact position - depending on the version.
 - Release the labelling panel above the programming button.
 - Activating Programming mode: press the programming button.
The operation LED (3) flashes quickly.
 - Program the physical address with the help of the ETS.
The operation LED (3) switches back to the previous status - off, on or flashing slowly.
 - Write the physical address on the device label.
 - Load the application data into the device using the ETS.
 - Reattach the labelling panel.
- i** If the device was programmed with incorrect application data, then operation LED flashes slowly. In this case, the device will not function after commissioning.

2.5 Operation

Operating areas

The Standard pushbutton sensor consists of up to four operating areas, depending on the variant. In the "Switching" function, the control concept of one control surface can be configured as a rocker function or as a button function. The control concept is defined as a rocker in the "Dimming", "Venetian Blind", "Value transmitter" and "Scene extension" functions. With the rocker function, one control surface is divided into two actuation pressure points with the same basic function. With the button function, one control surface is evaluated as two functionally-different actuation pressure points (two buttons).

The push button sensor is equipped with two status LEDs per control surface (left & right), which are always controlled in the same way. The LEDs can be switched on permanently - for example as an orientation light - or also switched off permanently - for example in bedrooms.

The operation LED of the pushbutton sensor can be switched permanently on or off. Besides functions programmed in the ETS, the operation LED also indicates that the pushbutton sensor is in Programming mode for commissioning or diagnosis purposes.

3 Technical data

General

Protection rating	IP 20
Safety class	III
Mark of approval	KNX / EIB
Ambient temperature	+5 ... +45 °C
Storage/transport temperature	-20 ... +70 °C

KNX/EIB supply

KNX medium	TP 1
Commissioning mode	S mode
Rated voltage KNX	DC 21 V ... 32 V SELV
Power consumption KNX	typical 150 mW
Connection mode KNX	Connection terminal

4 Software description

4.1 Software specification

ETS search paths:	- Push button / Push button 1gang / Push button 1gang with labeling field
	- Push button / Push button 2gang / Push button 2gang with labeling field
	- Push button / Push button 3gang / Push button 3gang with labeling field
	- Push button / Push button 4gang / Push button 4gang with labeling field
BAU used:	ASIC FZE 1065 + μ C
KNX/EIB type class:	3b device with cert. Physical layer + stack
Configuration:	S-mode standard
PEI type:	"00" _{Hex} / "0" _{Dec}
PEI connector:	No connector

Applications for push button 1gang:

No.	Short description	Name	Version	from mask version
1	Standard pushbutton application with 1 control surface.	Push button 1gang 10C901	0.1 for ETS 2 and ETS 3.0a...c	705
2		Push button 1gang 10C911	1.1 for ETS3.0 Version d onwards	705

Applications for push button 2gang:

No.	Short description	Name	Version	from mask version
1	Standard pushbutton application with 2 control surfaces.	Push button 2gang 10CA01	0.1 for ETS 2 and ETS 3.0a...c	705

2		Push button 2gang 10CA11	1.1 for ETS3.0 Version d onwards	705
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Applications for push button 3gang:

No.	Short description	Name	Version	from mask version
1	Standard pushbutton application with 3 control surfaces.	Push button 3gang 10CB01	0.1 for ETS 2 and ETS 3.0a...c	705
2		Push button 3gang 10CB11	1.1 for ETS3.0 Version d onwards	705

Applications for push button 4gang:

No.	Short description	Name	Version	from mask version
1	Standard pushbutton application with 4 control surfaces.	Push button 4gang 10CC01	0.1 for ETS 2 and ETS 3.0a...c	705
2		Push button 4gang 10CC11	1.1 for ETS3.0 Version d onwards	705

4.2 Push button xgang 10Cx01 / 10Cx11

4.2.1 Scope of functions

Scope of functions

General:

- Function of operation LED and status LED configurable.

"Switching" function:

- Rocker or button function
- Command on actuating the buttons configurable (ON, OFF, TOGGLE).

"Dimming" function:

- Rocker function
- Command on actuating the rocker configurable (lighter - ON, darker - OFF).
- Time between switching and dimming can be set.

"Venetian blind" function:

- Rocker function
- Command on actuating the rocker configurable (UP, DOWN).
- Time between short-time and long-time commands can be set.

"Value transmitter" and "Scene extension" function:

- Rocker function
- Command on pressing the rocker configurable (values 0...255 / 0...100 % or scene numbers).

i With the device variants "3gang" and "4gang", the functions "Switching", "Dimming", "Venetian Blind", "Value Transmitter" or "Scene Extension" can only be specified for all the control surfaces as standard.

However, in the double device variant, it is possible to specify the functions separately for each control surface, meaning that mixed functions are also possible on a device.

4.2.2 Software information

ETS project design and commissioning

For configuration and commissioning of this device, we recommended using ETS3.0d. Advantages with regard to downloading (significantly shorter loading times) and parameter programming can be expected only if this ETS patch version or later versions are used. The advantages are gained through the use of the new mask version 7.5 and the parameter presentation of ETS3.

The product database necessary for ETS3.0 Version d onwards is provided in *.VD4 format.

The corresponding application has the version number "1.1".

For the ETS2 and older versions of the ETS3 a separate product database in the *.VD2 format is available. The application program for these ETS versions is version number "0.1".

As far as the scope of functions of the parameters described in this documentation is concerned, there is no difference between the two application programs.

When older ETS versions are updated to the level of version ETS3.0d or to that of later versions, an additional tool in the form of an ETS3 add-in is available. This tool is able to convert older product databases with application version "0.1" – for example from existing ETS2 projects – into the new application format (version "1.1"). This way you can make use of the advantages of the ETS3.0d application easily and without changing the configuration. The ETS3 add-in can be obtained separately and free of charge from the manufacturer.

4.2.3 Object table

Number of communication objects:	Depending on the device variant and the set function. max. 8
Number of addresses (max):	100
Number of assignments (max):	100
Dynamic table management:	No
Maximum table length	---

Objects for "Switching" and rocker function:

Function:	Switching				
Object	Function	Name	Type	DPT	Flag
 0, 2, 4, 6	Switching	Rocker 1-4 ¹	1-bit	1.xxx	C, W, T
Description	1-bit object for transmitting switching telegrams (ON, OFF).				

Objects for "switching" and button function:

Function:	Switching				
Object	Function	Name	Type	DPT	Flag
 0, 1, 2, 3, 4, 5, 6, 7	Switching	Buttons 1-8 ¹	1-bit	1.xxx	C, W, T
Description	1-bit object for transmitting switching telegrams (ON, OFF).				

Objects for "Dimming":

Function:	Switching				
Object	Function	Name	Type	DPT	Flag
 0, 2, 4, 6	Switching	Rocker 1-4 ¹	1-bit	1.xxx	C, W, T
Description	1-bit object for transmitting switching telegrams (ON, OFF).				

Function:	Dimming				
Object	Function	Name	Type	DPT	Flag
 8, 10, 12, 14	Dimming	Rocker 1-4 ¹	4-bit	3,007	C, W, T
Description	4-bit object for relative brightness adjustment between 0% and 100 %.				

1: The number of rockers or buttons depends on the planned device variant.

Objects for "Venetian Blind":

Function: Venetian blind

Object	Function	Name	Type	DPT	Flag
 ^{0, 2,} _{4, 6}	Short time operation	Rocker 1-4 ¹	1-bit	1,007	C, -, T

Description 1-bit object for short-time operation of a blind or roller shutter.

Function: Venetian blind

Object	Function	Name	Type	DPT	Flag
 ^{8, 10,} _{12,} ₁₄	Long time operation	Rocker 1-4 ¹	1-bit	1,008	C, -, T

Description 1-bit object for long-time operation of a blind or roller shutter.

Objects for "Value Transmitter":

Function: Value transmitter

Object	Function	Name	Type	DPT	Flag
 ^{0, 2,} _{4, 6}	Value	Rocker 1-4 ¹	1 byte	5.xxx	C, -, T

Description 1-byte object for transmitting values from 0 to 255 (0 ... 100 %).

Objects for "Scene Extension":

Function: Scene extension

Object	Function	Name	Type	DPT	Flag
 ^{0, 2,} _{4, 6}	Scene extension	Rocker 1-4 ¹	1 byte	18,001	C, -, T

Description 1-byte object for recalling or for storing a scene.

1: The number of rockers or buttons depends on the planned device variant.

4.2.4 Parameters

Description	Values	Comment
□↳ General		
Light period of status LED for button-press indicator	1 s 2 s 3 s 4 s 5 s	This parameter defines the time the status LED is lit up to indicate actuation. The setting concerns all status LEDs whose function is set to "Button-press display".
Function of operation LED	Always OFF Always ON	Specifies the state of the operation LED.
Function of the rockers	No function Switching Dimming Venetian blind Value transmitter Scene extension	Here, it is possible to configured the shared function of all the control surfaces of the device. i This parameter is only visible with the "triple" and "4x" device variants.
□↳ Rocker 1		
Function	No function Switching Dimming Venetian blind Value transmitter Scene extension	This parameter is used to define the basic function of the rocker. i This parameter can only be set in the "single" and "double" device variants.
These parameters are only valid for the function "Switching"...		
Rocker or button	Button Rocker	Here, you can specify whether the rocker is to be used with a common basic function or as two different buttons with independent objects. Depending on this choice, the ETS displays different communication objects and parameters.
Function of status LED	Always OFF Always ON Button-press display Status indicator (of the switching object) Inverted status indicator (of the switching object)	Specifies the control of the status LED. i Only with rocker function.

Function of status LED	Always OFF Always ON	Specifies the control of the status LED. i Only for button function.
	Button-press display	
	Status indicator (of switching object 0)	
	Inverted status indicator (of switching object 0)	
	Status indicator (of switching object 1)	
	Inverted status indicator (of switching object 1)	
Command on pressing left rocker	No function ON OFF TOGGLE	Defines the command when the left rocker button is pressed. i Only with rocker function.
Command on pressing right rocker	No function ON OFF TOGGLE	Defines the command when the right rocker button is pressed. i Only for button function.
Command on pressing the left button	No function ON OFF TOGGLE	Defines the command on pressing the left button. i Only for button function.
Command on releasing the right button	No function ON OFF TOGGLE	Defines the command on releasing the right button. i Only for button function.
Command on pressing the right button	No function ON OFF TOGGLE	Defines the command on pressing the right button. i Only for button function.
Command on releasing the right button	No function ON OFF	Defines the command on releasing the right button.

TOGGLE

 Only for button function.

These parameters are only valid for the function "Dimming"...

Function of status LED Always OFF Always ON Specifies the control of the status LED.

Always ON

Button-press display

Status indicator
(of the switching object)

Inverted status indicator
(of the switching object)

Command on pressing rocker **Left brighter (ON),
right darker (OFF)** Defines the command when the rocker button is pressed.

Left darker (ON),
right brighter (OFF)

Time between switching and dimming 0.3 s 0.4 s 0.5 s 0.7 s 1.0 s Defines the time between between a switching and a dimming telegram.

These parameters are only valid for the function "Venetian Blind"...

Function of status LED Always OFF Always ON Specifies the control of the status LED.

Always ON

Button-press display

Command on pressing rocker **Left rocker: UP /
Right rocker: DOWN** Defines the command when the rocker button is pressed.

Left rocker: DOWN /
Right rocker: UP

Time between short-time and long-time command 0.3 s 0.4 s 0.5 s 0.7 s 1.0 s Defines the time between a short-time and a long-time telegram.

These parameters are only valid for the function "Value Transmitter"...

Function of status LED

	Always OFF	Specifies the control of the status LED.
	Always ON	
	Button-press display	
Command on pressing rocker	Value transmitter 0...255 Value transmitter 0...100 %	A button configured as "Value transmitter" permits selecting whether the values to be transmitted are interpreted as integers from 0 to 255 or as a percentage from 0 % to 100 %. The following parameters and their settings depend on this distinction.
Value, left rocker (0...255)	0...255	Defines the value when the left rocker button is pressed. i Only for "Command on pressing the rocker = Value transmitter 0...255"!
Value, right rocker (0...255)	0...255	Defines the value when the right rocker button is pressed. i Only for "Command on pressing the rocker = Value transmitter 0...255"!
Value, left rocker (0...100 %)	0...100	Defines the value when the left rocker button is pressed. i Only for "Command on pressing the rocker = Value transmitter 0...100 %"!
Value, right rocker (0...100 %)	0...100	Defines the value when the right rocker button is pressed. i Only for "Command on pressing the rocker = Value transmitter 0...100 %"!

These parameters are only valid for the function "Scene Extension"...

Function of status LED	Always OFF	Specifies the control of the status LED.
	Always ON	
	Button-press display	
Command on pressing rocker	Scene extension without storage function Scene extension with storage function	With a rocker configured as a "Scene extension", there is the option of choosing whether only scenes are loaded or whether a storage function is possible.

Scene number, left rocker (1...64)	1...64	Defines the scene number when the left rocker button is pressed.
Scene number, right rocker (1...64)	1... 2 ...64	Defines the scene number when the right rocker button is pressed.

☐ For rocker 2...n see rocker 1.

5 Appendix

5.1 Index

A	
application.....	14
C	
communication objects.....	15
D	
Device fitting.....	7
E	
ETS project design.....	14
ETS search paths.....	11
L	
Loading the physical address and application software	.. 8
O	
Operating areas.....	9
P	
product database.....	14

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