

12 S2 On-off-toggle/Dim/Shu/Scene 220710

Use of the application program

Product family: Input
Product type: Binary input, 4-fold
Manufacturer: Siemens

Name: Push button interface UP 220/03
Order no.: 5WG1 220-2AB03

Name: Push button interface UP 220/13
Order no.: 5WG1 220-2AB13

Functional description

With this application program, it is possible to use conventional push buttons via the push button interfaces UP 220/03 and UP 220/13 for switching, dimming and shutter control functions as well as for sending values and storing and retrieving scenes.

Two of the four inputs / two inputs can be combined functionally to create a 2-fold switch sensor. With push button pair A/B for example, it is possible to switch on and off via a short push button action as well as dim brighter and darker via a longer operation. Push button pair C/D for example generates telegrams for the shutter function up/down after a long push button action while a short push button action generates the stop command or louvre adjustment.

The following functions are available for a push button pair:

- Switch, push buttons, value sending, scene
- Dimming on/off
- Dimming toggle/toggle
- Shutter up/down

The dimming function is implemented with a stop telegram. In the dimming setting, a dimming telegram for 100% brighter or darker is generated with a long push button action while a stop telegram is sent when the push button is released. In the switch setting (ON/OFF/TOGGLE), there is no evaluation of the duration of the push button action. A switching telegram is sent immediately after operation.

Maximum number of group addresses: 12
Maximum number of associations: 12

Communication objects

Phys.Addr		Program		
no.	Function	Object name	Type	
01.01.008	12 S2 On-off-toggle/Dim/Shu/Scene 220710			
0	On / Off / Toggle	Switch, Input A	1 Bit	
1	On / Off / Toggle	Switch, Input B	1 Bit	
2	On / Off / Toggle	Switch, Input C	1 Bit	
3	On / Off / Toggle	Switch, Input D	1 Bit	

Note

The view of the objects can be arranged individually i.e. this view can vary.

1. Parameters

1.1. General

General	Input A / B	Input C / D
Number of Inputs (depending of type)	Input A / B and C / D	
Debounce time	50 milliseconds	
Type of contact channel A / B	normally open / n.o. contact	
Type of contact channel C / D	normally open / n.o. contact	

Parameters	Settings
Number of Inputs (depending of type)	Input A/B Input A/B and C/D please select
It can be set in this parameter whether a 2-fold or 4-fold push button interface is used. When retrieving the device from the database using the order number, the correct setting is carried out automatically. If this parameter is modified at a later date, the assignments of the group addresses are lost.	
Debounce time	10 milliseconds 30 milliseconds 50 milliseconds 100 milliseconds
A temporary contact bounce is created when a push button is pressed. The contact opens and closes several times until it finally remains closed. The duration of the contact bounce is dependent on the push button used. The multiple operation of the push button would be detected by the rapid scanning of an input via the application software and therefore several switching telegrams are sent. This is prevented by the debounce time since after the initial detection of a change in the status, there is a delay for the set period and then the current status is used for further processing.	

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Parameters	Settings
Type of contact channel A/B	normally open/n.o. contact normally closed/n.c. contact normally open/n.c. contact normally closed/n.o. contact
Type of contact channel C/D	normally open/n.o. contact normally closed/n.c. contact normally open/n.c. contact normally closed/n.o. contact
The contact type of the inputs connected to the push buttons is set here. The contact type can be set separately for each contact. "normally open contact": The contacts of the push buttons are closed when they are operated and open when they are not operated. "normally closed contact": The contacts of the push buttons are open when they are operated and closed when they are not operated.	

1.2. Parameters of input A/B:

The following parameters are also available for the inputs C/D for the push button interface UP 220/13.

1.2.1. Parameters: Switch, push buttons, value sending, scene



Parameters	Settings
Function of input A/B	Switch, push buttons, send value, scene Dimming On/Off Dimming toggle/toggle Shutter Up/Down
The required function can be set with this parameter. In the setting "Switch, push buttons, send value, scene", inputs A and B can be assigned the functions separately. In the dimming and shutter control functions, the inputs are permanently assigned to a push button pair and are evaluated together.	
Input A	<ul style="list-style-type: none"> • Switch (rising edge) • Switch (rising and falling edge) • Switch (short/long push button action) • Send value (rising edge) • Send value (rising and falling edge) • Send value (short/long push button action) • Scene

Parameters	Settings
This parameter defines the precise function of channel A: "Switch (rising edge)": A signal is only triggered on rising edge (if the contact changes from "0"/open to "1"/closed). "Switch (short/long push button action)": In this case, it is possible after a short push button action to send a different value than for a long push button action or to send the same values to a communication object. "Switch (rising and falling edge)": It is possible to send different values or the same values to a communication object on rising edge (if the contact changes from "0"/open to "1"/closed) and on falling edge (if the contact changes from "1"/closed to "0"/open). "Value sending (rising edge)": Only one value (8-bit) is sent to the communication object on rising edge (if the contact changes from "0"/open to "1"/closed). "Value sending (rising and falling edge)": It is possible to send different values or the same values (8-bit) to a communication object on rising edge (if the contact changes from "0"/open to "1"/closed) and on falling edge (if the contact changes from "1"/closed to "0"/open). "Value sending (short/long push button action)": In this case, it is possible after a short push button action to send a different value than for a long push button action or to send the same values (8-bit) to a communication object. "Scene": In this setting, an 8-bit scene can be retrieved or stored in actuators.	

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1.2.1.1. Parameters: Switch (rising edge):

The parameters are also available for channel B and are not described separately in the documentation.

General | **Input A / B** | Input C / D

Function of input A / B: **Switch, push buttons, send value, scene**

Input A: **Switch (rising edge)**
Value: **On**

Input B: **Switch (rising edge)**
Value: **On**

Communication objects

Obj	Function	Object name	Type	Flags
n	On/Off /Toggle	Switch, Input A	1 Bit	CRWT

The switching telegrams are sent via the group address which is linked with this object.

Parameters

Parameters	Settings
Value	On Off Toggle

This parameter sets the value which is sent when an event is triggered on the *instabus* KNX EIB.

1.2.1.2. Parameters:

Switch (rising and falling edge):

The parameters are also available for channel B and are not described separately in the documentation.

General | **Input A / B** | Input C / D

Function of input A / B: **Switch, push buttons, send value, scene**

Input A: **Switch (rising and falling edge)**
Value on rising edge: **On**
Value on falling edge: **Off**

Communication objects

Obj	Function	Object name	Type	Flags
n	On / Off	Switch, Input A	1 Bit	CRTU

The switching telegrams are sent via the group address which is linked with this object.

Parameters

Parameters	Settings
Value on rising edge	On Off Toggle
Value on falling edge	On Off Toggle

These parameters set the values which are sent when events are triggered on the *instabus* KNX EIB.

1.2.1.3. Parameters:

Switch (short/long push button action):

The parameters are also available for channel B and are not described separately in the documentation.

General | **Input A / B** | Input C / D

Function of input A / B: **Switch, push buttons, send value, scene**

Input A: **Switch (short / long push button action)**
Value on short push button action: **On**
Value on long push button action: **On**
Long push button action min.: **0.5 seconds**

Communication objects

Obj	Function	Object name	Type	Flags
n	On/Off	Switch, Input A	1 Bit	CRWT

The switching telegrams are sent via the group address which is linked with this object.

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Parameters

Parameters	Settings
Value on short push button action	On Off
Value on long push button action	On Off
These parameters set the values which are sent when events are triggered on the <i>instabus</i> KNX EIB.	
Long push button action min.	0.3; 0.4; 0.5; 0.6; 0.8; 1.0; 1.2; 1.5; 2.0; 2.5; 3.0; 4.0; 5.0; 6.0; 7.0 seconds
This parameter defines the time limit for a short/long closing of the contacts. If a contact remains closed for longer than the set period, the software detects a long push button action.	

1.2.1.4. Parameters:

Value sending (rising edge):

The parameters are also available for channel B and are not described separately in the documentation.

General | **Input A / B** | Input C / D

Function of input A / B: Switch, push buttons, send value, scene

Input A: Send value (rising edge)

Value (0-255): 1

Communication objects

Obj	Function	Object name	Type	Flags
n	8-bit value	Value, Input A	1 Byte	CT
The parameterised 8-bit integer value (EIS 6) is sent via the group address which is linked with this object.				

Parameters

Parameters	Settings
Value (0-255)	0 - 255
This parameter sets the value which is sent when an event is triggered on the <i>instabus</i> KNX EIB.	

1.2.1.5. Parameters:

Value sending (rising and falling edge):

The parameters are also available for channel B and are not described separately in the documentation.

General | **Input A / B** | Input C / D

Function of input A / B: Switch, push buttons, send value, scene

Input A: Send value (rising and falling edge)

Value on rising edge (0-255): 1

Value on falling edge (0-255): 0

Communication objects

Obj	Function	Object name	Type	Flags
n	8-bit value	Value, Input A	1 Byte	CT
The parameterised 8-bit integer value (EIS 6) is sent via the group address which is linked with this object.				

Parameters

Parameters	Settings
Value on rising edge (0 - 255)	0 - 255
Value on falling edge (0 - 255)	0 - 255
These parameters set the values which are sent when events are triggered on the <i>instabus</i> KNX EIB.	

1.2.1.6. Parameters: Value sending

(short/long push button action):

The parameters are also available for channel B and are not described separately in the documentation.

General | **Input A / B** | Input C / D

Function of input A / B: Switch, push buttons, send value, scene

Input A: Send value (short / long push button action)

Value on short push button action (0-255): 1

Value on long push button action (0-255): 0

Long push button action min.: 0.5 seconds

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Communication objects

Obj	Function	Object name	Type	Flags
n	8-bit value	Value, Input A	1 Byte	CT
The parameterised 8-bit integer value (EIS 6) is sent via the group address which is linked with this object.				

Parameters

Parameters	Settings
Value on short push button action (0 – 255)	0 - 255
Value on long push button action (0 – 255)	0 - 255
These parameters set the values which are sent when events are triggered on the <i>instabus KNX EIB</i> .	
Long push button action min.	0.3; 0.4; 0.5 ; 0.6; 0.8; 1.0; 1.2; 1.5; 2.0; 2.5; 3.0; 4.0; 5.0; 6.0; 7.0 seconds
This parameter defines the time limit for a short/long closing of the contact. If a contact remains closed for longer than the set period, the software detects a long push button action.	

1.2.1.7. Parameters: Scene

The parameters are also available for channel B and are not described separately in the documentation.

8-bit scene control

With the function “8-bit scene control”, the user can reprogram scene modules for 8-bit scene control or actuators with integrated 8-bit scene control scene himself without modifying the project design with ETS i.e. he can assign current brightness values or switching states to the respective scene. The scene with the parameterised number (1...64) can be retrieved with a push button and stored via a long push button action. Both the command for saving a scene and the command to retrieve a stored scene and the number of the required scene are transmitted via a single communication object.

Before saving a scene, the relevant actuators with the available push buttons/sensors must be set to the required brightness values or switching states. The addressed scene modules or actuators with integrated scene control are requested through the receipt of a telegram to query the currently set brightness values and switching states of the actuators and to store them in the corresponding scene.

So that the storing of the scene is not accidentally triggered by a slightly longer push button action, the operating time which leads to the storing of a scene can be set separately to an extra long period. It can also be parameterised whether the push button should only be used to retrieve a scene or whether it is also possible to trigger the storing of a scene via the push button. No special activities take place for this function on mains or bus voltage failure and recovery.

Communication objects

Obj	Function	Object name	Type	Flags
n	Recall/save	Scene, Input A	1 Byte	CT
The telegrams for retrieving and saving the scene with the parameterised number (1...64) are sent via the group address which is linked with this object.				

Parameters

Parameters	Settings
Number of scene (1 – 64)	1 - 64
This parameter specifies which scene (1...64) should be saved or retrieved.	
Enable scene programming	Yes No
This parameter determines whether the scene can be saved via a long push button action (yes).	
Long push button action for scene min.	0.3; 0.4; 0.5 ; 0.6; 0.8; 1.0; 1.2; 1.5; 2.0; 2.5; 3.0; 4.0; 5.0; 6.0; 7.0 seconds
This parameter indicates the operating time of the push button which is necessary to trigger the storing of a scene.	

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1.3. Parameters: Dimming/shutter

Both channels A/B are required here.

General | **Input A / B** | Input C / D

Function of input A / B: Dimming On / Off

Long push button action min.: 0.5 seconds

Communication objects

Dimming on/off

Obj	Function	Object name	Type	Flags
n	On/Off	Dimming on/off, Input A/B	1 Bit	CT
The ON or OFF switching telegrams are sent via the group address which is linked with this object.				
n	Brighter/Darker	Dimming on/off, Input A/B	4 Bit	CT
The dimming telegrams are sent via the group address which is linked with this object.				

Dimming toggle/toggle

Obj	Function	Object name	Type	Flags
n	Toggle	Dimming on/off, Input A/B	1 Bit	CT
The ON or OFF switching telegrams are sent via the group address which is linked with this object.				
n	Brighter/Darker	Dimming on/off, Input A/B	4 Bit	CT
The dimming telegrams are sent via the group address which is linked with this object.				

Shutter up/down

Obj	Function	Object name	Type	Flags
n	Open/closed	Louvres, Input A/B	1 Bit	CT
The commands "STOP" or "Louvres OPEN/CLOSED" are sent via the group address which is linked with this object. A short push button action always generates a command to stop the movement or to adjust the louvres by a step.				
n	Up/down	Shutter, Input A/B	1 Bit	CT
The commands for movement UP/DOWN or for lowering/raising the blind/shutter are sent via the group address which is linked with this object.				

Parameters

Parameters	Settings
Function of input A/B	Switch, push buttons, value sending, scene Dimming on/off Dimming toggle/toggle Shutter up/down
<p>The required function can be set with this parameter. In the setting "Switch, push buttons, value sending, scene", inputs A and B can be assigned the functions separately. In the dimming and shutter control functions, the inputs are permanently assigned to a push button pair and are evaluated together.</p> <p>"Dimming on/off": An ON signal can be sent with channel A after a short push button action while a dimming brighter signal can be sent after a long push button action. With channel B, an OFF signal can be sent after a short push button action while a dimming darker signal can be sent with a long push button action.</p> <p>"Dimming toggle/toggle": An ON or OFF signal is sent to channel A or B after a short push button action. An ON signal is sent after the first push button action while an OFF signal is sent after a further push button action. It should be noted that if other sensors with different group addresses affect the same actuator including the push button interface, these group addresses are entered as listening addresses at the communication objects. Dimming brighter is carried out with channel A after a long push button action while dimming darker is carried out with channel B.</p> <p>"Shutter up/down": A STOP or CLOSE LOUVRE command is sent with channel A after a short push button action while a DOWN command for the shutters is sent after a long push button action. A STOP or CLOSE LOUVRE command is issued with channel B after a short push button action while an UP command for the shutters is sent after a long push button action.</p>	
Long push button action from	0.3; 0.4; 0.5 ; 0.6; 0.8; 1.0; 1.2; 1.5; 2.0; 2.5; 3.0; 4.0; 5.0; 6.0; 7.0 seconds
This parameter defines the time limit for a short/long closing of the contacts. If a contact remains closed for longer than the set period, the software detects a long push button action.	