20 S4 rocker (BCU2) 907802

Use of the application program

Produktfamilie:	Push Button
Produkttyp:	Push Button 4-fach
Hersteller:	Siemens

Name:	Push Button UP 284 4-fold DELTA ambiente
Bestell-Nr.:	5WG1 284-2AB__

Functional description

The application program "20 S4 rocker (BCU2) 907802" provides parameters to switching (on/off/toggle/value), dimming (on/off or brighter/darker), controlling shutters, skylights and security gates etc., recalling/programming scenes and status display via LEDs with the push button 4-fold.

Switching
There is a separate communication object available for each rocker contact of the four rockers. It is therefore possible to switch up to eight different groups of luminaires. It is also possible to set via parameters which switch function (on/off/toggle) is carried out when the rocker is pressed or released. Each rocker contact can also be assigned an 8 bit value. The corresponding value is sent immediately when the rocker is pressed. It is therefore possible for a dimming actuator for example to be set to a defined value.

Dimming
A distinction is made between a long and short push button action. A brief operation of the rocker sends a corresponding switching command (on or off). If the push button is pressed and held down for a longer period (the duration of which can be set), a dimming command is sent. The functions of "Dimming with stop telegram" and "Dimming with cyclical sending" are available. If "Dimming with stop telegram" is selected, a long push button action sends a command to the dimming object to dim by 100%. When the rocker is released, a stop command is sent. If "Dimming with cyclical sending" is selected, a dimming command is sent at set intervals for the duration of the push button action. It is also possible to assign parameters to the adjustment of the brightness value per dimming command (e.g. adjust by 1/8).

Shutter control
A distinction is made between a short and long push button action. If the rocker is pressed briefly, a switching telegram is sent which adjusts the louvres or stops any shutter movement. After a long push button action, the shutters are either raised or lowered. When assigning parameters, it is possible to choose between "Upper contact: Up, Lower contact: Down" or vice versa. Skylights and security gates for example can be controlled in both directions using this parameter. In this case the Up command corresponds to the Off command and the Down command corresponds to the On command.

Scene
Using the "Scene function", users are able to reprogram a scene module themselves without changing the project design in ETS i.e. they can assign brightness values or switching states to the individual groups of the respective scene. Two scenes can be recalled by pressing the rocker briefly (e.g. upper contact: scene 1, lower contact: scene 2) while a long rocker operation is used to program them.
The scene is recalled via a 1 bit switching command, whereby scene 1 is recalled with a "0" telegram and scene 2 is recalled with a "1" telegram. It is possible to specify in the parameters which telegrams are sent by the upper and lower rocker contacts.
The scene is saved via a 1 bit switching command, whereby scene 1 is saved with a "0" telegram and scene 2 is saved with a "1" telegram. An application with this type of function must also be used in the scene module. Before programming a scene, the actuators concerned must be set to the required brightness values or switching states using the sensors provided. The scene modules that have been addressed are requested on receipt of a telegram to scan the current brightness values and switching states of the actuators and to store them in the corresponding scene.
A long rocker operation is indicated by the LED lighting up. It is possible to specify the period that distinguishes a short and long push button action.

LED
The push button has five LEDs. There are four communication objects available for the four upper LEDs of the push button. They can therefore either be used to display switching states or as an orientation light if the corresponding parameters have been selected. The centre LED serves as an orientation light.

Initialisation signal
It is not possible to carry out an initialisation signal (on bus voltage recovery). You should ensure that the push button is always in the neutral position (i.e. not pressed) on bus voltage recovery. If the push button is not in this position on bus voltage recovery, the application program will then send the corresponding signal. This could however not yet be understood by other bus devices as all the devices in the system are loaded up (ready for operation) at different rates.

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Maximum number of group addresses: 38
Maximum number of associations: 38

Note

The view of the communication objects can be arranged individually i.e. this view can vary depending on the parameters selected.

Switch

Communication objects

	Phys.Addr.	Program		
	no.	**Object name**	**Function**	**Type**
	01.01.007	20 S4 Rocker (BCU2) 907802		
	0	Switch, upper small button left	On	1 Bit
	1	Switch, lower small button left	Off	1 Bit
	2	Switch, upper large button left	On	1 Bit
	3	Switch, lower large button left	Off	1 Bit
	4	Switch, upper large button right	On	1 Bit
	5	Switch, lower large button right	Off	1 Bit
	6	Switch, upper small button right	On	1 Bit
	7	Switch, lower small button right	Off	1 Bit

Obj	Object name	Function	Type	Flag
0	Switch, upper small button left	On	1 Bit	CT
1	Switch, lower small button left	Off	1 Bit	CT

The switching telegrams of the buttons are sent via the group addresses in this object. It is possible to set via parameters which switching state is generated when the rocker is pressed or released. If "Toggle" is selected, the central addresses that are also contained in the actuator must be entered in order to synchronise the sensor.

Note

The "Switch" function of objects 2-7 of the remaining push buttons corresponds to that of objects 0 and 1. These objects are therefore not described in detail.

Parameters

LED	**Small buttons left**	Large buttons left	Large buttons right	Small buttons right	
Function		Switch			▼
Upper push button		On			▼
Lower push button		Off			▼

Note

The function and parameters of the small left push buttons are identical to the other push buttons and are therefore not described in detail.

Parameters	Settings
Function	**Switch** Shutter Dimming with stop telegram Dimming with cyclical sending Scene (recall / program)
The function of the push buttons is set via these parameters. The parameter window "Small buttons left" changes depending on the function set in this parameter and the associated parameters are displayed with their default settings.	
Upper contact	Off **On** Toggle 8-bit Value press: On, release: Off press: Off, release: On
Lower contact	**Off** On Toggle 8-bit Value press: On, release: Off press: Off, release: On
This parameter determines which switching value is sent via the corresponding switching object when the upper and lower rocker contacts are pressed or released. "On" or "Off": Pressing the contact generates an On or Off telegram. There is no evaluation when the rocker is released. "Toggle": The value in the switching object is inverted when the contact is pressed. There is no evaluation when the contact is released. "8-bit Value": An adjustable 8 bit value is sent when the contact is pressed. When this setting is selected, an additional parameter is displayed where the value can be defined. There is no evaluation when the contact is released. "press: On, release: Off": Pressing the push button generates an On telegram while an Off telegram is produced when the push button is released. "press: Off, release: On": Pressing the push button generates an Off telegram while an On telegram is produced when the push button is released.	

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Dimming with stop telegram

Communication objects

	Phys.Addr.	Program		
	no.	**Object name**	**Function**	**Type**
	01.01.007	20 S4 Rocker (BCU2) 907802		
☐	0	Dimming On / Off, small buttons left	On / Off	1 Bit
☐	1	Dimming, small buttons left	Brighter / Darker	4 Bit
☐	2	Dimming On / Off, large buttons left	On / Off	1 Bit
☐	3	Dimming, large buttons left	Brighter / Darker	4 Bit
☐	4	Dimming On / Off, large buttons right	On / Off	1 Bit
☐	5	Dimming, large buttons right	Brighter / Darker	4 Bit
☐	6	Dimming On / Off, small buttons right	On / Off	1 Bit
☐	7	Dimming, small buttons right	Brighter / Darker	4 Bit

Obj	Object name	Function	Type	Flag
0	Dimming On / Off, small buttons left	On / Off	1 Bit	CT
	The switching telegrams of the small left buttons are sent via the group addresses in this object. The switching state that is generated when the upper or lower rocker contact is pressed must be set via the parameters. In the "Toggle" setting, all the central addresses that are also present in the actuator must be entered in order to synchronise the sensor.			
1	Dimming, small buttons left	Brighter / Darker	4 Bit	CT
	This object serves as a dimming object for the small left buttons and sends a dimming telegram after a long push button action. The dimming telegrams that are generated when the upper or lower push buttons are pressed must be set via the parameters.			

Note

The function "Dimming with stop telegram" of objects 2-7 of the remaining push buttons corresponds to that of objects 0 and 1. These objects are therefore not described in detail.

Parameters

LED	Small buttons left	Large buttons left	Large buttons right	Small buttons right

Function	Dimming with stop telegram ▼
Upper / Lower push button	On / Off ▼
Long switch operation min.	0.5 seconds ▼

Note

The function and parameters of the small left push buttons are identical to the other push buttons and are therefore not described in detail.

Parameters	Settings
Function	Switch Shutter **Dimming with stop telegram** Dimming with cyclical sending Scene (recall / program)
The function of the push buttons is set via these parameters. The parameter window "Small buttons left" changes depending on the function set in this parameter and the associated parameters are displayed with their default settings.	
Upper / Lower push button	On / Off Toggle / Toggle
This parameter determines the switching value that is sent via the object when the upper and lower rocker contacts are pressed. "On / Off": Pressing the upper push button generates an On telegram while an Off telegram is produced when the lower push button is pressed. "Toggle / Toggle": The value present in the switching object is inverted when the push button is pressed.	
Long switch operation 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 rocker operation. If the rocker is pressed for longer than the set period, the push button detects a long rocker operation and sends dimming telegrams.	

Dimming with cyclical sending

Communication objects

	Phys.Addr.	Program		
	no.	**Object name**	**Function**	**Type**
	01.01.007	20 S4 Rocker (BCU2) 907802		
☐	0	Dimming On / Off / Toggle, small buttons left	On / Off / Toggle	1 Bit
☐	1	Dimming, small buttons left	Brighter / Darker	4 Bit
☐	2	Dimming On / Off / Toggle, large buttons left	On / Off / Toggle	1 Bit
☐	3	Dimming, large buttons left	Brighter / Darker	4 Bit
☐	4	Dimming On / Off / Toggle, large buttons right	On / Off / Toggle	1 Bit
☐	5	Dimming, large buttons right	Brighter / Darker	4 Bit
☐	6	Dimming On / Off / Toggle, small buttons right	On / Off / Toggle	1 Bit
☐	7	Dimming, small buttons right	Brighter / Darker	4 Bit

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Obj	Object name	Function	Type	Flag
0	Dimming On / Off / Toggle, small buttons left	On / Off / Toggle	1 Bit	CWT
	The switching telegrams of the small left buttons are sent via the group addresses in this object. It is possible to set via parameters which switching state is generated when the rocker is pressed or released. If "Toggle" is selected, the central addresses that are also present in the actuator must be entered in order to synchronise the sensor.			
1	Dimming, small buttons left	Brighter / Darker	4 Bit	CT
	This object serves as a dimming object for the small left buttons and sends a dimming telegram after a long push button action. The dimming telegrams that are generated when the upper or lower push buttons are pressed must be set via the parameters..			

Note

The function "Dimming with cyclical sending" of objects 2-7 of the remaining push buttons corresponds to that of objects 0 and 1. These objects are therefore not described in detail.

Parameters

Note

The function and parameters of the small left push buttons are identical to the other push buttons and are therefore not described in detail.

Parameters	Settings
Function	Switch Shutter Dimming with stop telegram **Dimming with cyclical sending** Scene (recall / program)
The function of the push buttons is set via these parameters. The parameter window "Small buttons left" changes depending on the function set in this parameter and the associated parameters are displayed with their default settings.	

Parameters	Settings
Upper / Lower push button	On / Off, Step = 1/1 On / Off, Step = 1/2 On / Off, Step = 1/4 **On / Off, Step = 1/8** On / Off, Step = 1/16 On / Off, Step = 1/32 On / Off, Step = 1/64 Toggle / Toggle, adjustment = 1/1 Toggle / Toggle, adjustment = 1/4 Toggle / Toggle, adjustment = 1/8 Toggle / Toggle, adjustment = 1/16 Toggle / Toggle, adjustment = 1/32 Toggle / Toggle, adjustment = 1/64
This parameter determines which switching value is sent when the upper and lower push buttons are pressed briefly and which brightness adjustment is carried out by a dimming telegram on detection of a long push button action. For example, in the setting "adjustment = 1/8", 8 dimming telegrams must be sent in order to dim from 0% to 100%. "On / Off, Step = x": A short operation of the upper push button sends an On telegram while an Off telegram is sent when the lower push button is pressed briefly. "Dim brighter" telegrams are sent after a long operation of the upper push button while "Dim darker" telegrams are sent when the lower push button is pressed for a longer period. "Toggle / Toggle, Step = x": After a short push button action, the value in the switching object is inverted. The dimming function is maintained as in the setting "On / Off, Step = x".	

Parameters	Settings
Long switch operation 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 rocker operation. If the rocker is pressed for longer than the set period, the push button detects a long rocker operation and sends dimming telegrams.	
Interval for cyclical sending	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
The repetition rate for cyclical sending after a long push button action is set here. The bus load should be taken into consideration when setting this interval.	

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20 S4 rocker (BCU2) 907802

Shutter

Communication objects

	Phys.Addr.	Program		
	no.	**Object name**	**Function**	**Type**
🖳	01.01.007	20 S4 Rocker (BCU2) 907802		
🟨	0	Louvres, small buttons left	Open / Closed	1 Bit
🟨	1	Shutter, small buttons left	Up / Down	1 Bit
🟨	2	Louvres, large buttons left	Open / Closed	1 Bit
🟨	3	Shutter, large buttons left	Up / Down	1 Bit
🟨	4	Louvres, large buttons right	Open / Closed	1 Bit
🟨	5	Shutter, large buttons right	Up / Down	1 Bit
🟨	6	Louvres, small buttons right	Open / Closed	1 Bit
🟨	7	Shutter, small buttons right	Up / Down	1 Bit

Obj	Object name	Function	Type	Flag
0	Louvres, small buttons left	Open / Closed	1 Bit	CT
This object sends a switching command for louvre adjustment after a short operation of the small left buttons. The switching command that is generated when the push button is pressed must be set via parameters.				
1	Shutter, small buttons left	Up / Down	1 Bit	CT
This object sends a switching command to raise or lower the shutter after a long operation of the small left buttons. The switching command that is generated when the upper or lower push button is pressed must be set via parameters.				

Note

The "Shutter" function of objects 2-7 of the remaining push buttons corresponds to that of objects 0 and 1. These objects are therefore not described in detail.

Parameters

LED	**Small buttons left**	Large buttons left	Large buttons right	Small buttons right	
Function			Shutter		▼
Upper / Lower push button			Up / Down		▼
Long switch operation min.			0.5 seconds		▼

Note

The function and parameters of the small left push buttons are identical to the other push buttons and are therefore not described in detail.

Parameters	Settings
Function	Switch **Shutter** Dimming with stop telegram Dimming with cyclical sending Scene (recall / program)
The function of the push buttons is set via these parameters. The parameter window "Small buttons left" changes depending on the function set in this parameter and the associated parameters are displayed with their default settings.	
Upper / Lower push button	**Up / Down** Down / Up
This parameter defines the switching command for the upper and lower push buttons. In the default setting, a short operation of the upper push button opens the louvre by a step with an Off telegram. A short operation of the lower push button closes the louvre by a step with an On telegram. A long operation of the upper push button raises the shutter with an Off telegram and a long operation of the lower push button closes the shutter with an On telegram.	
Long switch operation 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 period for a short/long push button action. If a push button is pressed for longer than the set time, it is evaluated by the push button as a long switch operation.	

Scene

Communication objects

	Phys.Addr.	Program		
	no.	**Object name**	**Function**	**Type**
🖳	01.01.007	20 S4 Rocker (BCU2) 907802		
🟨	0	Scene, small buttons left	Recall	1 Bit
🟨	1	Scene, small buttons left	Save	1 Bit
🟨	2	Scene, large buttons left	Recall	1 Bit
🟨	3	Scene, large buttons left	Save	1 Bit
🟨	4	Scene, large buttons right	Recall	1 Bit
🟨	5	Scene, large buttons right	Save	1 Bit
🟨	6	Scene, small buttons right	Recall	1 Bit
🟨	7	Scene, small buttons right	Save	1 Bit

Obj	Object name	Function	Type	Flag
0	Scene, small buttons left	Recall	1 Bit	CT
The telegrams for recalling the scene are sent via the group address in this object. On receipt of the telegram, the scene module sends the stored brightness values of the scene via the group objects to the switch/dim actuators that have been addressed.				

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Obj	Object name	Function	Type	Flag
1	Scene, small buttons left	Save	1 Bit	CT
The programming telegrams are sent via the group address in this object to the corresponding scene module.				

Note

The "Scene" function of objects 2-7 of the remaining push buttons corresponds to that of objects 0 and 1. These objects are therefore not described in detail.

Parameters

Note

The function and parameters of the small left push buttons are identical to the other push buttons and are therefore not described in detail.

Parameters	Settings
Function	Switch Shutter Dimming with stop telegram Dimming with cyclical sending **Scene (recall / program)**
The function of the push buttons is set via these parameters. The parameter window "Small buttons left" changes depending on the function set in this parameter and the associated parameters are displayed with their default settings.	
Upper / Lower push button	**0 / 1** 1 / 0
This parameter defines the sending signal when the push buttons are pressed. "0 / 1": After a short operation of the upper push button, scene 1 is set with a "0" telegram from the addressed scene modules. Scene 2 is set with a "1" telegram from the addressed scene modules after a brief operation of the lower push button. After a long operation of the push buttons, the scene modules are requested to scan the current brightness values and switching states of the actuators and to store them in the corresponding scenes. "1 / 0": The assignment of the scenes to the push buttons is exchanged in this setting.	

Parameters	Settings
Start to save scene at	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 rocker which distinguishes between the recalling of the scene and the transfer to memory mode. Shorter push button action than the set time: The scene is recalled. Longer push button action than the set time: The scene is switched to programming mode.	

LED

Communication objects

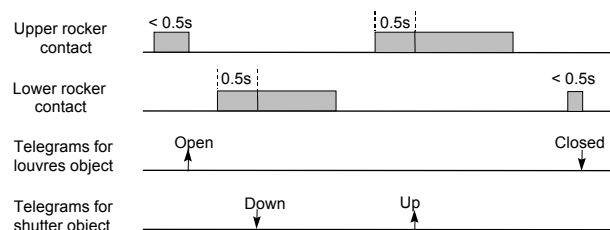| Obj	Object name	Function	Type	Flag
8	LED (upper small button left)	Status	1 Bit	CRW
9	LED (upper large button left)	Status	1 Bit	CRW
10	LED (upper large button right)	Status	1 Bit	CRW
11	LED (upper small button right)	Status	1 Bit	CRW
The switching telegrams are received via the group addresses in these objects when the 4 LEDs are used for status display. If the parameter settings "On" or "Off" are selected, these objects are not displayed and have no function.				

Parameters

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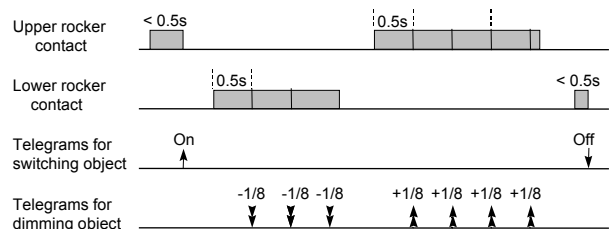| Parameters	Settings
Orientation light (LED)	**Off** On
Using this parameter, the lower LED can either be switched off or used as an orientation light.	
LED placed by upper small button left	**Off** On Status (via separate object) Inverted (via separate object)
LED placed by upper large button left	**Off** On Status (via separate object) Inverted (via separate object)
LED placed by upper large button right	**Off** On Status (via separate object) Inverted (via separate object)
LED placed by upper small button right	**Off** On Status (via separate object) Inverted (via separate object)
With these parameters, the LEDs can be parameterised as an orientation light or for status display. When the LEDs are used for status display, there is a separate object available for each LED. The status can also be displayed as inverted.	

Timing diagrams: Examples for a rocker

1. Configured for switch function: upper "On", lower "Off"
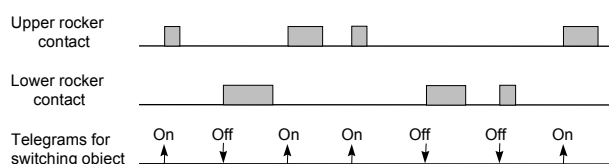
2. Configured for switch function: upper "Toggle", lower "press: On, release: Off"
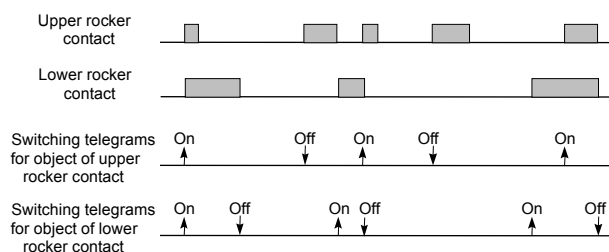
3. Configured for switch function: upper "8-bit Value", lower "8-bit Value"
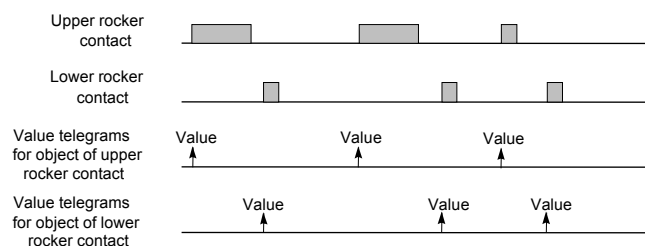
4. Configured for shutter: upper "Up", lower "Down"

5. Configured for dimming with stop telegram

6. Configured for dimming with cyclical sending

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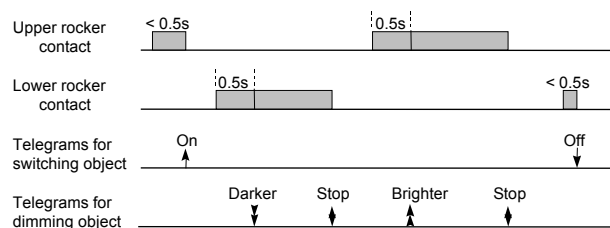
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