20 A1 Actuator-BCU Shutter 902502

Use of the application program

Product family: Input/output
Product type: Binary/binary
Manufacturer: Siemens

Name: Shutter switch UP 520/01
Order no.: 5WG1 520-2AB01

Functional description

With the application program “20 A1 Actuator-BCU Shutter 902502”, the output of the shutter switch can be used to control a shutter, roller blind or skylight. The following functions can be assigned to the 2-fold push button DELTA profil: 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.

Functions of the rockers

Switching

A separate communication object is available for each rocker contact of the two rockers. It is therefore possible to switch up to four different groups of luminaires. It is possible to set via parameters which switch function (on/off/toggle) is carried out when the rocker is pressed or released. An 8 bit value can also be assigned to each rocker contact. The corresponding value is sent immediately once the rocker has been pressed. It is therefore possible for a dimming actuator for example to be set to a defined value. A “bell function” is also possible. The On/Off signal is sent when the rocker is pressed and the inverse signal is sent when the rocker is released.

Dimming

A distinction is made between a short and long push button action. A short push button action 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 other 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. The application programs “12 C0 Scene 740701” and “12 C0 Scene 740801” are available. 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 three LEDs. There are two communication objects available for the two upper LEDs. They can be used either to display the switching states or as an orientation light if the corresponding parameters have been selected. The third LED serves as an orientation light.

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Functions of the shutter output

Shutter (Roller blind), Up/Down
When the “Up/Down” object receives a telegram, the shutter (roller blind) is moved in the required direction for a set period. The shutter is raised if the object value is “0” and lowered if the object value is “1”. The shutter or roller blind can also be controlled via a dimming object. In this setting, the shutter (roller blind) and louvre objects are inverted to achieve a synchronisation with the push buttons that are being used. The relays are automatically opened once the set period for shutter or roller blind movement has elapsed. If the shutter (blind) is already travelling in a certain direction and “Up/Down” telegrams are received to move the shutter in the opposite direction, the shutter (blind) first stops for a set interval before it changes direction. This “Pause on change in direction” depends on the shutter motor that is being used and information should be obtained from the manufacturer. When the shutter is lowered, it is completely closed. For this reason, it is possible to set a period (“Delay time on a direction change”) which causes the shutter motor to move in another direction and thus leads to louvre adjustment. This is also the case if the lowering of the shutter is interrupted by a stop telegram. The time set for the “Pause on change in direction” is observed.

Louvres, Open/Closed
The behaviour of the shutter on receipt of a telegram for louvre adjustment depends on the current status of the shutter. If the shutter is travelling in a specific direction, the shutter movement is stopped. In the case of a roller blind, the receipt of a louvre adjustment telegram functions like a stop telegram. If the roller blind is stationary, it has no effect. During louvre adjustment, if another telegram is received to rotate the louvres in the same direction, the adjustment period is extended. If however a telegram is received to rotate the louvres in the opposite direction, the command is carried out once the pause on change in direction has been observed. If the shutter is stationary, a louvre adjustment telegram leads to shutter movement in the required direction. Once the set period for movement has elapsed (normally 150 ms to 200 ms), the shutter motor is automatically switched off. If a shutter is lowered (without reverse step), the louvres remain closed in this direction. If the shutter is stopped and then raised step by step (louvre adjustment), the louvres are opened first of all and then rotated upwards again. If the louvres are completely closed, further telegrams to rotate the louvres in the same direction cause the shutters to be moved step by step in this direction.

Safety object (wind alarm)
The safety function can be enabled or disabled. In the event of an alarm signal, a “1” is received by the safety object and the shutters are raised. The safety position of the roller blinds can be selected. The safety object expects to receive cyclical telegrams from the signalling device (e.g. wind sensor) for monitoring purposes. Even if there is no alarm, the sensor must send telegrams with the value “0” (no alarm) at a set time interval (monitoring time). If the telegrams fail to appear, the shutters are also moved to the safety position. The object value of the safety object is thus set internally to “1” (alarm). The current alarm status can be read out via the safety object (if the safety function is enabled). If the safety position has been activated, the shutters/roller blinds can no longer be controlled via “Up/Down” or louvre adjustment telegrams. If the shutter or roller blind is moved to the safety position, thereby changing direction, the time set in the parameter “Pause on change in direction” is observed. The relays are not opened once the period for shutter or roller blind movement has elapsed. This guarantees that the shutter/roller blind reaches the safety position. The shutter/roller blind can only be operated once the safety object receives a telegram with the value “0” (no alarm).

Bus voltage failure and recovery
The shutter or roller blind is switched off on bus voltage recovery. The shutter and roller blind can be moved up, moved down or stopped on bus voltage failure. In the event of a bus voltage failure, the pause on change in direction that is normally observed is not taken into account. This means for example that if a shutter is currently being lowered, it will change direction after approx. 20 ms. Shutter motors that require a pause are not able to carry out this change in direction. If the relay contacts were already opened before the bus voltage failure, the functionality is not taken into account. When operating heavy roller blind motors, the setting “STOP” should be selected in order to protect the relay contacts.

Automatic opening of the relays
It is possible to prevent the relays from opening automatically (via the parameter “Function of louvres“ in the “Shutter” parameter window). This deactivation takes effect if the relay has been closed for example by an “Open/Closed” telegram. Once a motor has been set in motion, it can then only be brought to a halt with a stop telegram (necessary for reverse circuits). For this reason, the louvre adjustment telegram is always interpreted as a stop telegram. This is also the case when the shutter is stationary (louvre adjustment telegrams no longer exist).

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⚠ WARNING

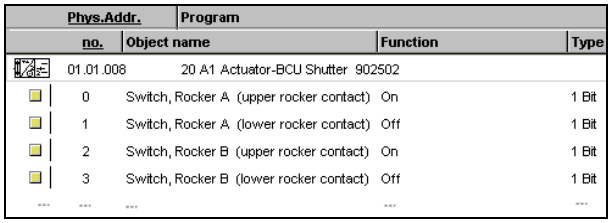
When using the shutter switch UP 520/01 for roller blind drive mechanisms, the following should be noted when assigning parameters:
(It can otherwise lead to welding of the contacts).

- The parameter “Pause on change in direction” must be set to the time given by the manufacturer of the roller blind (generally longer than 500 ms).
- The parameter “Behaviour on bus voltage failure” should be set to “STOP”.

Assigning parameters to the rockers

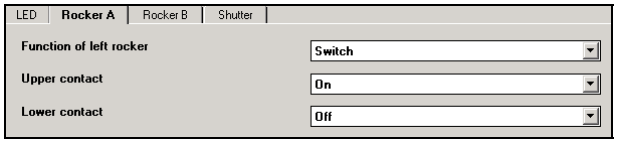
Switch

Communication objects



Obj	Object name	Function	Type	Flag
0	Switch, Rocker A (upper rocker contact)	On	1 Bit	CT
1	Switch, Rocker A (lower rocker contact)	Off	1 Bit	CT
The switching telegrams for rocker A are sent via the group addresses in these objects. It is possible to set via parameters which switching state is generated when the rocker is pressed or released. If the setting “Toggle” is selected, the central addresses that are also contained in the actuator must be entered in order to synchronise the sensor.				
2	Switch, Rocker B (upper rocker contact)	On	1 Bit	CT
3	Switch, Rocker B (lower rocker contact)	Off	1 Bit	CT
The switching telegrams for rocker B are sent via the group addresses in these objects. It is possible to set via parameters which switching state is generated when the rocker is pressed or released. If the setting “Toggle” is selected, the central addresses that are also contained in the actuator must be entered in order to synchronise the sensor.				

Parameters



The function and parameters of rockers A and B are identical.

Parameters	Settings
Function of left rocker	**Switch** Shutter Dimming with stop telegram Dimming with cyclical sending Scene (recall / program)
The function of the rocker is set via this parameter. The parameter window “Rocker A” changes depending on the function that is selected here and the relevant parameters are displayed with 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 state is sent via the corresponding switching object when the upper and lower rocker contacts are pressed. “On” or “Off”: An On or Off telegram is sent when the contact is pressed. There is no evaluation when the rocker is released. “Toggle”: When the rocker is pressed, the value in the switching object is inverted. There is no evaluation when the rocker is released. “8-bit Value”: An adjustable 8 bit value is sent when the rocker is operated. When this setting is selected, the parameter window changes and an additional parameter is displayed for defining the value. “press: On, release: Off”: An On telegram is generated when the contact is pressed while releasing the contact produces an Off telegram. “press: Off, release: On”: An Off telegram is generated when the contact is pressed while releasing the contact produces an On telegram.	

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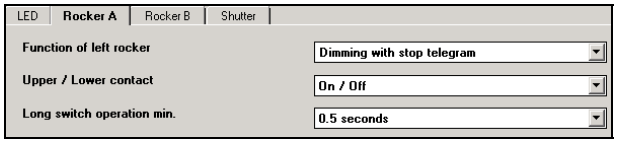
Dimming with stop telegram

Communication objects

Phys.Addr.	Program		
no.	Object name	Function	Type
01.01.008	20 A1 Actuator-BCU Shutter 902502		
0	Dimming On / Off, Rocker A	On / Off	1 Bit
1	Dimming, Rocker A	Brighter / Darker	4 Bit
2	Dimming On / Off, Rocker B	On / Off	1 Bit
3	Dimming, Rocker B	Brighter / Darker	4 Bit
...	...	...	...

Obj	Object name	Function	Type	Flag
0	Dimming On / Off, Rocker A	On / Off	1 Bit	CT
The switching telegrams for rocker A are sent via the group addresses in these objects. It is possible to set via parameters which switching state is generated when the rocker is pressed or released. If the setting “Toggle / Toggle” is selected, the central addresses that are also contained in the actuator must be entered in order to synchronise the sensor.				
1	Dimming, Rocker A	Brighter / Darker	4 Bit	CT
This object serves as a dimming object for rocker A and sends a dimming telegram after a long push button action. It is possible to set via parameters which switching state is generated when the rocker is pressed or released.				
2	Dimming On / Off, Rocker B	On / Off	1 Bit	CT
The switching telegrams for rocker B are sent via the group addresses in these objects.				
3	Dimming, Rocker B	Brighter / Darker	4 Bit	CT
This object serves as a dimming object for rocker B and sends a dimming telegram after a long push button action.				

Parameters



The function and parameters of rockers A and B are identical.

Parameters	Settings
Function of left rocker	Switch Shutter **Dimming with stop telegram** Dimming with cyclical sending Scene (recall / program)
The function of the rocker is set via this parameter. The parameter window “Rocker A” changes depending on the function that is selected here and the relevant parameters are displayed with default settings.	
Upper / Lower contact	**On / Off** Toggle / Toggle
This parameter defines which switching value is sent via the object after a brief operation of the upper and lower contact. “On / Off”: Pressing the upper contact sends an On telegram while an Off telegram is sent when the lower contact is pressed. “Toggle / Toggle”: The value in the switching object is inverted when one of the contacts 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 a rocker is pressed for longer than the set time, the push button detects a long rocker operation and sends dimming telegrams.	

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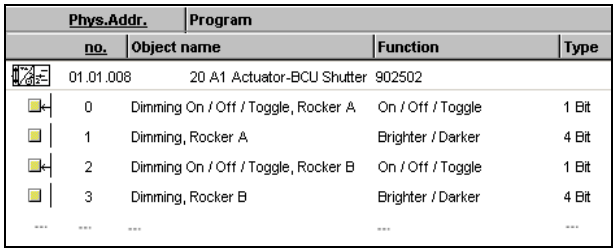
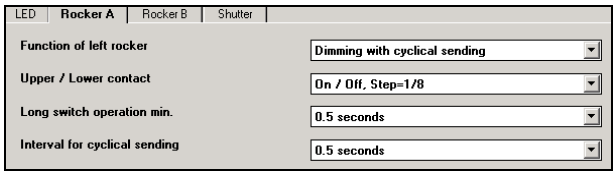
Dimming with cyclical sending

Communication objects



Obj	Object name	Function	Type	Flag
0	Dimming On / Off / Toggle, Rocker A	On / Off / Toggle	1 Bit	CWT
The switching telegrams for rocker A are sent via the group addresses in these objects. It is possible to set via parameters which switching state is generated when the rocker is pressed or released. If the setting “Toggle / Toggle” is selected, the central addresses that are also contained in the actuator must be entered in order to synchronise the sensor.				
1	Dimming, Rocker A	Brighter / Darker	4 Bit	CT
This object serves as a dimming object for rocker A and sends a telegram after a long push button action. It is possible to set via parameters which dimming telegrams are generated when the upper or lower contact is pressed.				
2	Dimming On / Off / Toggle, Rocker B	On / Off / Toggle	1 Bit	CWT
The switching telegrams for rocker B are sent via the group addresses in these objects.				
3	Dimming, Rocker B	Brighter / Darker	4 Bit	CT
This object serves as a dimming object for rocker B and sends a telegram after a long push button action.				

Parameters



The function and parameters of rockers A and B are identical.

Parameters	Settings
Function of left rocker	Switch Shutter Dimming with stop telegram **Dimming with cyclical sending** Scene (recall / program)
The function of the rocker is set via this parameter. The parameter window “Rocker A” changes depending on the function that is selected here and the relevant parameters are displayed with default settings.	
Upper / Lower contact	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 contacts are pressed briefly. The change in the brightness value that is carried out by a dimming telegram when a long push button action is detected is also set here. For example, in the setting “Step = 1/8”, 8 dimming telegrams have to be sent in order to dim from 0% to 100%. “On / Off, Step = x”: A short operation of the upper contact generates an On telegram while an Off telegram is sent after the lower contact is pressed briefly. “Dim brighter” telegrams are sent if the upper contact is pressed for a long period while “Dim darker” telegrams are sent if the lower contact is pressed. “Toggle / Toggle, adjustment = x”: The value in the switching object is inverted after a short push button action. The dimming function remains the same as for the setting “On / Off, Step = x”.	
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 a rocker is pressed for longer than the set time, 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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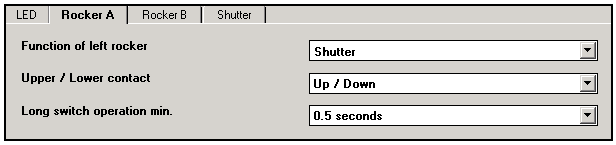
Shutter

Communication objects

Phys.Addr.	Program		
no.	Object name	Function	Type
01.01.008	20 A1 Actuator-BCU Shutter 902502		
0	Louvres, Rocker A	Open / Closed	1 Bit
1	Shutter, Rocker A	Up / Down	1 Bit
2	Louvres, Rocker B	Open / Closed	1 Bit
3	Shutter, Rocker B	Up / Down	1 Bit

Obj	Object name	Function	Type	Flag
0	Louvres, Rocker A	Open / Closed	1 Bit	CT
This object sends a switching command for louvre adjustment after a brief operation of rocker A. It is possible to set via parameters which switching command is generated when the rocker is pressed.				
1	Shutter, Rocker A	Up / Down	1 Bit	CT
This object sends a switching command to raise or lower the shutter after a long operation of rocker A. It is possible to set via parameters which switching command is generated when the upper or lower contact is pressed.				
2	Louvres, Rocker B	Open / Closed	1 Bit	CT
This object sends a switching command for louvre adjustment after a brief operation of rocker B.				
3	Shutter, Rocker B	Up / Down	1 Bit	CT
This object sends a switching command to raise or lower the shutter after a long operation of rocker B.				

Parameters



The function and parameters of rockers A and B are identical.

Parameters	Settings
Function of left rocker	Switch **Shutter** Dimming with stop telegram Dimming with cyclical sending Scene (recall / program)
The function of the rocker is set via this parameter. The parameter window “Rocker A” changes depending on the function that is selected here and the relevant parameters are displayed with default settings.	
Upper / Lower contact	**Up / Down** Down / Up
This parameter defines the switching command for the upper and lower rocker contacts. In the default setting, a brief operation of the upper contact causes the louvres to be opened by a step with an Off telegram. Pressing the lower contact closes the louvres by a step with an On telegram. A long operation of the upper contact raises the shutter with an Off telegram while pressing the lower contact lowers 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 limit for a short/long rocker operation. If a rocker is pressed for longer than the set time, the push button detects a long rocker operation.	

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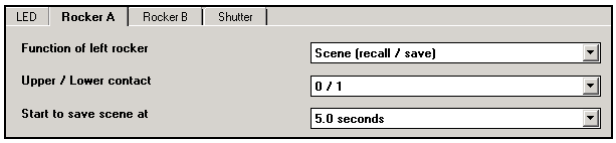
Scene

Communication objects

Phys.Addr.	Program		
no.	Object name	Function	Type
01.01.008	20 A1 Actuator-BCU Shutter 902502		
0	Scene, Rocker A	Recall	1 Bit
1	Scene, Rocker A	Save	1 Bit
2	Scene, Rocker B	Recall	1 Bit
3	Scene, Rocker B	Save	1 Bit
...	...	...	...

Obj	Object name	Function	Type	Flag
0	Scene, Rocker A	Recall	1 Bit	CT
The telegrams for recalling scenes are sent via the group address in this object. On receipt of this 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.				
1	Scene, Rocker A	Save	1 Bit	CT
The programming telegrams are sent via the group address in this object to the corresponding scene module.				
2	Scene, Rocker B	Recall	1 Bit	CT
The telegrams for recalling scenes are sent via the group address in this object.				
3	Scene, Rocker B	Save	1 Bit	CT
The programming telegrams are sent via the group address in this object to the corresponding scene module.				

Parameters



The function and parameters of rockers A and B are identical.

Parameters	Settings
Function of left rocker	Switch Shutter Dimming with stop telegram Dimming with cyclical sending **Scene (recall / program)**
The function of the rocker is set via this parameter. The parameter window “Rocker A” changes depending on the function that is selected here and the relevant parameters are displayed with default settings.	
Upper / Lower contact	**0 / 1** 1 / 0
This parameter defines the sending signal when the rocker contacts are pressed. “0 / 1”: When the upper contact is pressed briefly, scene 1 is set with a “0” telegram by the scene modules that have been addressed. In the same way, scene 2 is set when the lower contact is pressed briefly. After a long push button action, these scene modules 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. “1 / 0”: The assignment of scenes to the rocker contacts is inverted in this setting.	
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 length of time that the rocker must be operated in order to distinguish between recalling the scene and switching to programming 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.	

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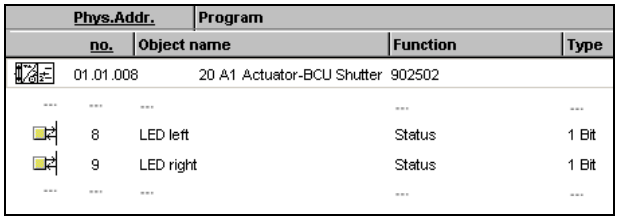
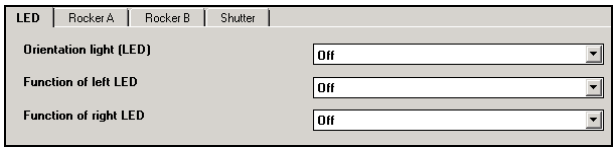
LED

Communication objects



Obj	Object name	Function	Type	Flag
8	LED left	Status	1 Bit	CRW
9	LED right	Status	1 Bit	CRW
The switching telegrams are received via the group addresses in these objects when the left and right LEDs are used to display the switching state. If “On” or “Off” is selected, these objects are not displayed and have no function.				

Parameters

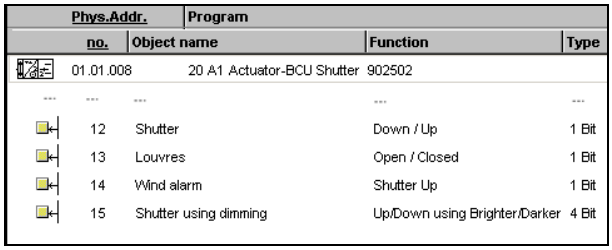


Parameters	Settings
Orientation light (LED)	**Off** On
Using this parameter, the third LED can be switched off or used as an orientation light.	
Function of right LED	**Off** On Status (via separate object) Inverted (via separate object)
Function of right LED	**Off** On Status (via separate object) Inverted (via separate object)
The LEDs can be parameterised as an orientation light or for status display. When the LEDs are used for status display, a separate object is available for each LED. The status can also be displayed as inverted.	

Assigning parameters to the shutter output

Shutter

Communication objects



Obj	Object name	Function	Type	Flag
12	Shutter	Up / Down	1 Bit	CW
Shutter movement (Up / Down) is initiated with this object. The shutter is raised on receipt of a logic “0” and lowered on receipt of a logic “1”.				
13	Louvres	Open / Closed	1 Bit	CW
This object serves for louvre adjustment. The louvres are rotated downwards on receipt of a logic “0” and rotated upwards on receipt of a logic “1”.				
14	Wind alarm	Shutter up	1 Bit	CW
This object can be linked with a safety address e.g. from a wind sensor. In the idle state, the sensor sends a logic “0” at cyclic intervals. In the event of a wind alarm, it sends a logic “1”. In this case, the shutter switch moves the shutter into the safety position and blocks the operation of the shutter. This also happens if the wind sensor fails and is therefore no longer able to send cyclical “0” signals. This object is only available if the parameter “Safety (e.g. wind alarm)” has been set to “enabled”.				
15	Shutter using dimming	Up/Down using Brighter/Darker	4 Bit	CW
A dimming sensor can control a shutter via this object, whereby dimming brighter raises the shutter and dimming darker lowers the shutter. All the dimming telegrams are interpreted as an adjustment by 100%, as the actuator does not know the current position. For this reason, it is only advisable to configure the dimming sensor for “Dimming with stop telegram”. This object is only available if the parameter “Shutter control using dim. command” has been set to “enabled”. The object values of “Shutter” and “Louvres” are also inverted. This means that the object for the shutter that is controlled by a short push button action can be linked with the “Louvres” object. The louvres are thus opened by a short push button action of the upper contact (upper -> brighter; lower -> darker).				

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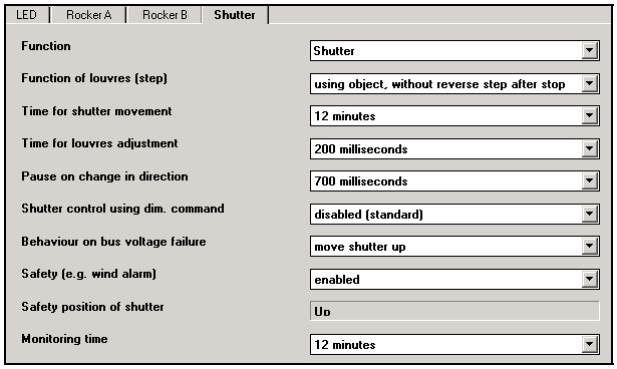
Parameters



Parameters	Settings
Function	**Shutter** Roller blind
The function of the shutter switch is set via this parameter. The parameter window changes depending on the function selected and the relevant parameters are displayed with default settings.	
Function of louvres (step)	**using object, without reverse step after stop** using object, with reverse step after stop using shutter up/down with stop telegram
The reaction to the receipt of a louvre adjustment telegram at the louvre object is set via this parameter. "using object, without reverse step after stop": The louvre adjustment command is carried out without a reverse step and the relay is opened once the period for louvre adjustment has elapsed. "using object, with reverse step after stop": The louvre adjustment command is carried out with a reverse step and the relay is opened once the period for louvre adjustment has elapsed. In this setting, the parameter for setting the delay time is displayed. "using shutter up/down with stop telegram": The louvre adjustment telegram is interpreted as a stop telegram for halting the shutter movement. The automatic opening of the relays is deactivated. In this setting, the louvre object changes and is displayed as a stop object.	
Time for shutter movement	10; 30 seconds 1; 2; 3; 4; 5; 6; 7; 8; 10; **12;** 15; 20; 25; 30; 35; 40; 60; 90; 120 minutes
This parameter indicates the duration of the shutter movement before the shutter is automatically switched off. It is not displayed if the parameter "Function of louvres (step)" is set to "using shutter up/down with stop telegram".	

Parameters	Settings
Time for louvres adjustment	50; 80; 100; 120; 140; 160; 180; **200;** 220; 240; 260; 280; 300; 360; 400; 500; 700; 800; 1000 milliseconds
This parameter defines the period for louvre adjustment. It is not displayed if the parameter "Function of louvres (step)" is set to "using shutter up/down with stop telegram".	
Delay time on a direction change	50; 80; 100; 120; 140; 160; 180; **200;** 220; 240; 260; 280; 300; 360; 400; 500; 700; 800; 1000 milliseconds
The duration of a reverse step is defined using this parameter. It is not displayed if the parameter "Function of louvres (step)" is set to "using shutter up/down with stop telegram".	
Pause on change in direction	10 milliseconds 40 milliseconds 70 milliseconds 100 milliseconds 200 milliseconds 400 milliseconds **700 milliseconds** 1 second 2 seconds 4 seconds
The pause on change in direction is set via this parameter. The shutter remains stationary for the duration of the period. Note: The parameter must be set to the time given by the manufacturer of the shutter (generally longer than 500 ms).	
Shutter control using dim. command	**disabled (standard)** enabled (Up/Down are changed)
This parameter controls whether a 4 bit object is made available for shutter control. It is therefore possible for a dimming sensor to control a shutter, whereby dimming brighter raises the shutter and dimming darker lowers the shutter. All the dimming telegrams are interpreted as an adjustment by 100% since the actuator does not know the current position. For this reason, it is only advisable to configure the dimming sensor for "Dimming with stop telegram". If the setting "enabled" is selected, the corresponding object is displayed in the object list.	
Behaviour on bus voltage failure	**move shutter up** move shutter down STOP
This parameter indicates the behaviour of the shutter on bus voltage failure. In the event of bus voltage failure, the pause on change in direction that is normally observed is not taken into consideration. Note: When operating heavy shutter motors, the setting "STOP" should be selected in order to protect the relay contacts.	

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Parameters	Settings
Safety (e.g. wind alarm)	**disabled** enabled
The safety function can be enabled or disabled via this parameter. This parameter must be enabled when a wind sensor is being used.	
Safety position of shutter	**Up**
This parameter indicates the limit position of the shutter in the event of a safety alarm. The parameter only appears if the safety function has been enabled. The safety position cannot be changed.	
Monitoring time	**12 minutes**
The monitoring time is specified with this parameter. The safety object expects to receive cyclical telegrams (“0” signals). If the shutter actuator does not receive a signal within the monitoring period, the safety function is initiated.	

Roller blind

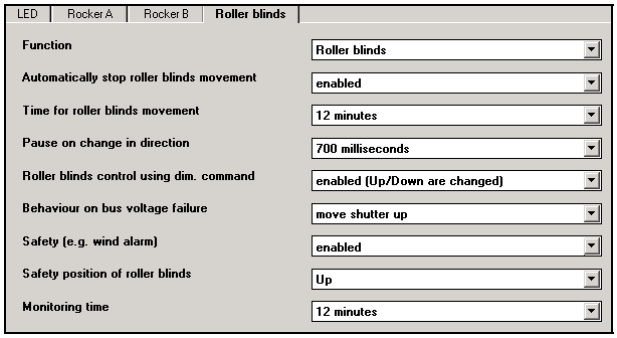
Communication objects

Phys.Addr.	Program		
no.	Object name	Function	Type
01.01.008	20 A1 Actuator-BCU Shutter	902502	
12	Roller blinds	Up / Down	1 Bit
13	Roller blinds	STOP	1 Bit
14	Wind alarm	Roller blinds up	1 Bit
15	Roller blinds using dim. command	Up/Down using Brighter/Darker	4 Bit

Obj	Object name	Function	Type	Flag
12	Roller blinds	Up / Down	1 Bit	CW
The movement of the roller blind (Up / Down) is initiated with this object. The blind is raised on receipt of a logic “0” and lowered on receipt of a logic “1”.				
13	Roller blinds	STOP	1 Bit	CW
This object serves as a receiving object for stopping the movement of the roller blind.				
14	Wind alarm	Roller blinds up	1 Bit	CW
This object can be linked with a safety address e.g. from a wind sensor. In the idle state, the sensor sends a logic “0” at cyclic intervals. In the event of wind alarm, it sends a logic “1”. In this case, the shutter switch moves the roller blind into the set safety position (Up or Down) and blocks the operation of the roller blind. This also happens if the wind sensor fails and is therefore no longer able to send cyclical “0” signals. This object is only available if the parameter “Safety (e.g. wind alarm)” is set to “enabled”.				

Obj	Function	Object name	Type	Flag
15	Roller blinds using dim. command	Up/Down using Brighter/Darker	4 Bit	CW
A dimming sensor can control a roller blind via this object, whereby dimming brighter raises the blind and dimming darker lowers the blind. All the dimming telegrams are interpreted as an adjustment by 100%, as the actuator does not know the current position. For this reason, it is only advisable to configure the dimming sensor for “Dimming with stop telegram”. This object is only available if the parameter “Roller blinds control using dim. command” has been set to “enabled”. The object value of the “Roller blinds” object is also inverted. This means that the object for the roller blind that is controlled by a short push button action can be linked with the “Roller blinds” object. The roller blind is thus raised by a short push button action of the upper contact (upper -> brighter; lower -> darker).				

Parameters



Parameters	Settings
Function	Shutter **Roller blind**
The function of the shutter switch is set via this parameter. The parameter window changes depending on the function selected and the relevant parameters are displayed with default settings.	
Automatically stop roller blinds movement	disabled **enabled**
This parameter indicates whether the relay is automatically opened once the travel time for the roller blinds has elapsed. If “enabled” is selected, the parameter “Time for roller blinds movement” appears for setting the travel time.	
Time for roller blinds movement	10; 30 seconds 1; 2; 3; 4; 5; 6; 7; 8; 10; **12;** 15; 20; 25; 30; 35; 40; 60; 90; 120 minutes
This parameter indicates the duration of the roller blind movement before the blind is automatically switched off. It is not displayed if the parameter “Automatically stop roller blinds movement” is set to “disabled”.	

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Parameters	Settings
Pause on change in direction	10 milliseconds 40 milliseconds 70 milliseconds 100 milliseconds 200 milliseconds 400 milliseconds **700 milliseconds** 1 second 2 seconds 4 seconds
The pause on change in direction is set via this parameter. The roller blind remains stationary for the duration of the period. Note: The parameter must be set to the time given by the manufacturer of the roller blind (generally longer than 500 ms).	
Roller blinds control using dim. command	disabled (standard) **enabled (Up/Down are changed)**
This parameter controls whether a 4 bit object is made available for controlling the roller blind. It is therefore possible for a dimming sensor to control a roller blind, whereby dimming brighter raises the blind and dimming darker lowers the blind. All the dimming telegrams are interpreted as an adjustment by 100% since the actuator does not know the current position. For this reason, it is only advisable to configure the dimming sensor for “Dimming with stop telegram”. If the setting “enabled” is selected, the corresponding object is also displayed in the object list.	
Behaviour on bus voltage failure	**move shutter up** move shutter down STOP
This parameter indicates the behaviour of the roller blind on bus voltage failure. Note: When operating heavy roller blind motors, the setting “STOP” should be selected in order to protect the relay contacts.	
Safety (e.g. wind alarm)	disabled **enabled**
The safety function can be enabled or disabled via this parameter. This parameter must be enabled when a wind sensor is being used.	
Safety position of roller blinds	**Up** Down
This parameter indicates the limit position of the roller blind in the event of a safety alarm. The parameter only appears if the safety function has been enabled.	
Monitoring time	**12 minutes**
The safety object expects to receive cyclical telegrams (“0” signals). If these telegrams fail to appear, the safety function is triggered and the roller blind is moved to the safety position. The monitoring time is specified with this parameter. If the shutter actuator does not receive a signal within the monitoring period, the safety function is initiated.	

Times

The times cannot be kept to exactly for reasons associated with the internal operating system. The following tables indicate the time bands that are applied.

Reversal in change of direction

Time [ms]	Time from [ms]		Time to [ms]
10	9.5	-	10.0
20	19.5	-	20.0
40	39.5	-	40.0
70	69.5	-	70.0
100	99.5	-	100.0
200	192.0	-	200.0
400	392.0	-	400.0
700	696.0	-	704.0
1,000	992.0	-	1000.0
2,000	1992.0	-	2000.0
4,000	3900.0	-	4030.0

Louvre adjustment time

Time [ms]	Time from [ms]		Time to [ms]
50	49.5	-	50.0
60	59.5	-	60.0
70	69.5	-	70.0
80	79.5	-	80.0
100	99.5	-	100.0
120	119.5	-	120.0
140	136.0	-	144.0
160	152.0	-	160.0
180	176.0	-	184.0
200	192.0	-	200.0
220	216.0	-	224.0
240	232.0	-	240.0
260	256.0	-	264.0
280	272.0	-	280.0
300	296.0	-	304.0
330	320.0	-	328.0
360	352.0	-	360.0
400	392.0	-	400.0
500	496.0	-	504.0
600	592.0	-	600.0
700	696.0	-	704.0
800	792.0	-	800.0
1,000	992.0	-	1000.0

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Travel time for shutters and blinds

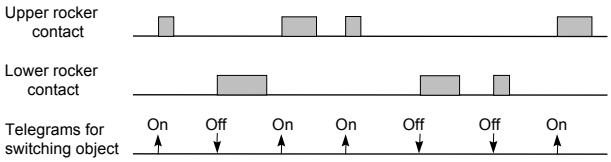
Time [min]	Time [ms]	Time [ms] from	-	to	Time [min] from	-	to
	10,000	9880.0	-	10010.0	0.2	-	0.2
	30,000	29900.0	-	30030.0	0.5	-	0.5
1	60,000	58800.0	-	60900.0	1.0	-	1.0
2	120,000	117600.0	-	119700.0	2.0	-	2.0
3	180,000	178500.0	-	180600.0	3.0	-	3.0
4	240,000	237300.0	-	239400.0	4.0	-	4.0
5	300,000	298200.0	-	300300.0	5.0	-	5.0
6	360,000	357000.0	-	359100.0	6.0	-	6.0
7	420,000	417900.0	-	420000.0	7.0	-	7.0
8	480,000	478800.0	-	480900.0	8.0	-	8.0
10	600,000	561000.0	-	594000.0	9.4	-	9.9
12	720,000	693000.0	-	726000.0	11.6	-	12.1
15	900,000	858000.0	-	891000.0	14.3	-	14.9
20	1,200,000	1155000.0	-	1188000.0	19.3	-	19.8
25	1,500,000	1452000.0	-	1485000.0	24.2	-	24.8
30	1,800,000	1782000.0	-	1815000.0	29.7	-	30.3
35	2,100,000	2079000.0	-	2112000.0	34.7	-	35.2
40	2,400,000	2376000.0	-	2409000.0	39.6	-	40.2
60	3,600,000	3564000.0	-	3597000.0	59.4	-	60.0
90	5,400,000	5379000.0	-	5412000.0	89.7	-	90.2
120	7,200,000	7161000.0	-	7194000.0	119.4	-	119.9

Safety times

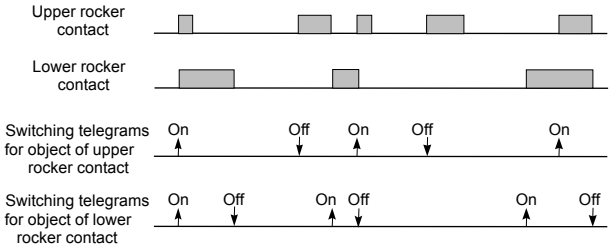
Time [min]	Time [ms]	Time from [ms]	-	Time to [ms]	Time from [min]	-	Time to [min]
2	120,000	132000.0	-	165000.0	2.2	-	2.8
4	240,000	264000.0	-	297000.0	4.4	-	5.0
8	480,000	495000.0	-	528000.0	8.3	-	8.8
12	720,000	726000.0	-	759000.0	12.1	-	12.7
20	1,200,000	1221000.0	-	1254000.0	20.4	-	20.9
30	1,800,000	1815000.0	-	1848000.0	30.3	-	30.8
45	2,700,000	2706000.0	-	2739000.0	45.1	-	45.7
60	3,600,000	3630000.0	-	3663000.0	60.5	-	61.1

Timing diagrams: Examples for a rocker

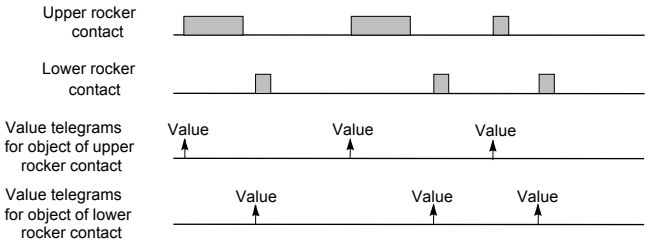
1. Configured for switch function: upper “On”, lower “Off”



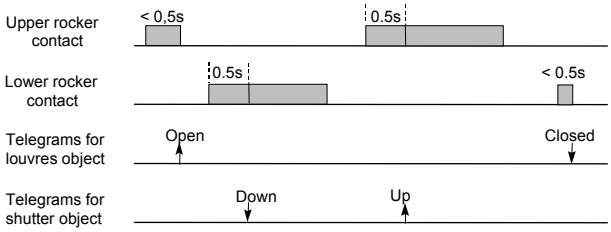
2. Configured for switch function: upper “Toggle”, lower “press: On, release: Off”



3. Configured for switch function: upper “8-bit Value”, lower “8-bit Value”



4. Configured for shutter: upper “Up”, lower “Down”



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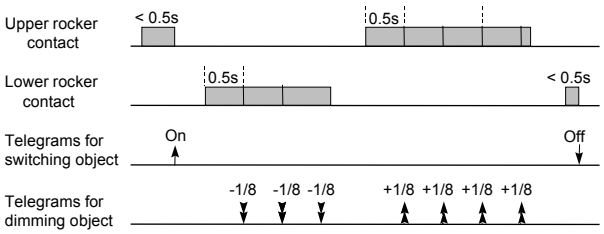
5. Configured for dimming with stop telegram

6. Configured for dimming with cyclical sending



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Space for notes

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