20 A2 Actuator-BCU binary 901402

Use of the application program

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

Name: Binary output UP 562/01
Order no.: 5WG1 562-2AB01

Functional description

Using the application program “20 A1 Actuator-BCU binary 901402”, it is possible to assign parameters to the 2 outputs of the binary output UP 562/01 and to the 1-fold push button DELTA profil that is connected to its physical external interface.
The binary outputs can be used for pure switch functions, as a time switch (staircase lighting function) and for switching with time delays, logic operations and positive drive. It is also possible to parameterise the behaviour on bus voltage failure and select the type of relay contact. The following functions can be selected for the 1-fold push button: switching, value sending, dimming, shutter or scene control.
The first LED can be used for status display while the second LED can serve as an orientation light.

Functional description of the push button

Switching
When the rockers are pressed, the corresponding signal (on/off/toggle/8 bit value) is sent immediately.
Each rocker contact can be assigned its own 8 bit value. 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.

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.

Dimming
A distinction is made between a short and long push button action. A short push button action sends a corresponding switching command (on, off or toggle). 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).

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. 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.

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Functions of the binary outputs

Switching with On/Off delay (normal mode)
If an On delay has been assigned, the On signal is routed with a delay (to the OR function). If a further On signal is received during the On delay, the period is restarted. In the same way, a specified Off delay causes the Off signal to be routed with a delay. The Off delay is restarted if a further Off signal is received during this period. No changes occur however if an Off signal is received during the On delay or an On signal is received during the Off delay as the delay that is currently active is interrupted.
If no time delays have been assigned, then the On/Off signal is routed immediately.

Switching with On/Off delay (time switch)
If an On delay has been assigned, the On signal is routed with a delay. If a further On signal is received during the On delay, the period is restarted.
Once the On delay has elapsed, the On signal is routed and the Off delay is started simultaneously. The Off signal is routed once the period specified for the Off delay has elapsed. If a premature Off signal is received during the Off delay, the delay period is interrupted and the signal is routed immediately (=switching off prematurely).

OR function
The OR object input and the output of the time function form the two inputs of the OR function. If the OR function is enabled, both the inputs are linked with an OR logic operation and are available at the internal output of the OR function. If the OR function is disabled, the output of the time function is available directly at the internal output of the OR function.

AND function
The AND object input and the output of the OR function form the two inputs of the AND function. If the AND function is enabled, the two inputs are linked with an AND logic operation and are available at the internal output of the AND function. If the AND function is disabled, the output of the OR function is available directly at the internal output of the AND function.

Positive drive
The input of the positive drive object and the output of the AND function form the two inputs of the positive drive. If the positive drive is enabled, the two inputs are linked as follows and are available at the internal output of the positive drive. The positive drive object is a 2 bit object. If bit 1 has the value 0, then the positive drive is regarded as “passive” and the output of the AND function is available directly at the output of the positive drive. This value is simultaneously loaded into bit 0 of the positive drive object so that the status is always contained in bit 0 of this object. If bit 1 of the positive drive object has the value 1, the positive drive is regarded as “active” and the output of the AND logic operation has no function. In this case, bit 0 of the positive drive object determines the value of the internal output of the positive drive. If the positive drive is disabled, the output of the AND function is available directly at the internal output of the positive drive.

Bit 1	Bit 0	Function
0	0	Disabled positive drive
0	1	Disabled positive drive
1	0	Switch off with positive drive
1	1	Switch on with positive drive

Status object
After each switching operation, the status object is updated accordingly and automatically sent. It is possible to disable the automatic sending of the object via parameters so that the relay state is only achieved by scanning this object specifically.

Bus voltage failure / bus voltage recovery
The program always stores all the object values on bus voltage failure. It is also possible to assign a switching operation to the relay. On bus voltage recovery, these object values are read back first of all. They are then modified according to the parameters selected. The relay state is then produced from the object values and the corresponding system configuration (logic operations....).

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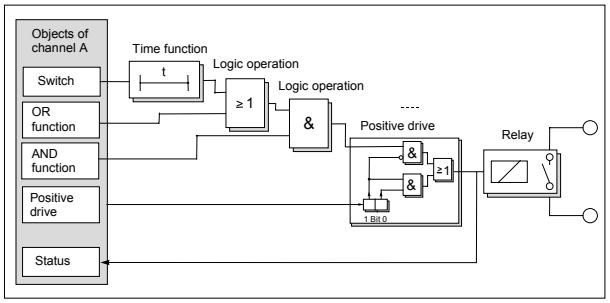
Block diagram of a channel



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.

Assigning parameters to the push button

Switch

Communication objects

Phys.Addr.	Program		
no.	Object name	Function	Type
01.01.011	20 A2 Actuator-BCU Binary 901402		
0	Switch, Rocker A (upper rocker contact)	On	1 Bit
1	Switch, Rocker A (lower rocker contact)	Off	1 Bit
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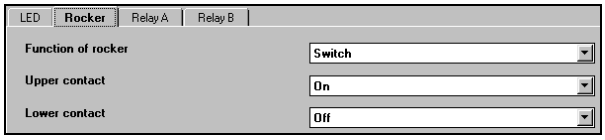
Obj	Object name	Function	Type	Flag
0	Switch, Rocker A (upper rocker contact)	On	1 Bit	CT
1	Switch, Rocker A (lower rocker contact)	Off	1 Bit	CT
These objects serve as switching objects for the lower and upper rocker contacts. An On or Off telegram is sent depending on the parameters selected. If “Toggle” is selected, either an On or Off telegram is sent (toggling) depending on the current switching state.				

Parameters



Parameters	Settings
Function of 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 “Rocker” parameter window changes depending on the function that is selected here and the relevant parameters are displayed with default settings.	
Upper contact	**On** Off Toggle 8-bit Value press: On, release: Off press: Off, release: On
Lower contact	On **Off** Toggle 8-bit Value press: On, release: Off press: Off, release: On
This parameter determines which telegram is sent via the corresponding objects when the rocker contacts are pressed. “On” or “Off”: An On or Off telegram is sent when the rocker contact is pressed. . “Toggle”: The inverse object value of the corresponding switching object is sent each time the contact is pressed. “8-bit Value”: A value telegram is sent when the contact is pressed. When this setting is selected, an additional parameter is displayed where the 8 bit value can be defined. “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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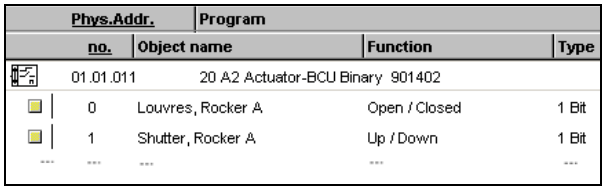
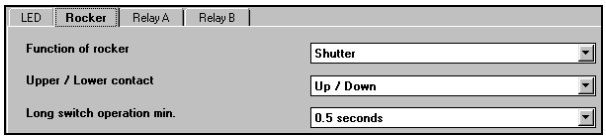
Shutter

Communication objects



Obj	Object name	Function	Type	Flag
0	Open / Closed	Louvres, Rocker A	1 Bit	CT
This object serves as a switching object for louvre adjustment after a short push button action. In the default setting, when the upper contact is pressed, the louvres are opened by a step with an Off telegram while pressing the lower contact closes the louvres by a step with an On telegram.				
1	Shutter, Rocker A	Up / Down	1 Bit	CT
This object is used as a switching object for shutter movement after a long push button action. In the default setting, pressing the upper contact raises the shutter with an Off telegram while pressing the lower contact lowers the shutter with an On telegram. Pressing the contact briefly while the shutter is moving causes the shutter to stop.				

Parameters

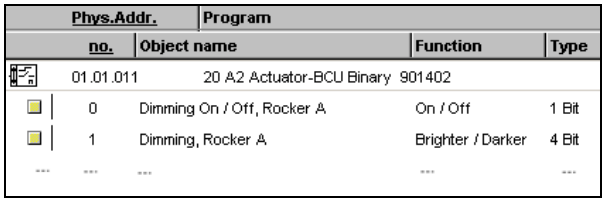


Parameters	Settings
Function of rocker	Switch **Shutter** Dimming with stop telegram Dimming with cyclical sending Scene (recall / program)
The function of the rocker is set via this parameter. The "Rocker" parameter window changes depending on the function that is selected here and the relevant parameters are displayed with default settings.	

Parameters	Settings
Upper / Lower contact	**Up / Down** Down / Up
This parameter defines the function of the upper and lower rocker contacts. In the default setting, a brief operation of the upper contact opens the louvres by a step with an Off telegram. Pressing the lower contact closes the louvres 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 the rocker is pressed for longer than the set period, the push button detects a long rocker operation.	

Dimming with stop telegram

Communication objects



Obj	Object name	Function	Type	Flag
0	Dimming On / Off, Rocker A	On / Off	1 Bit	CT
This object serves as a switching object for the rocker after a short push button action. In the default setting, pressing the upper contact sends an On telegram while an Off telegram is sent when the lower contact is sent. If "Toggle / Toggle" is selected, either an On or Off telegram is sent (toggling) depending on the current object status.				
1	Dimming, Rocker A	Brighter / Darker	4 Bit	CT
This object serves as a dimming object for the rocker and sends a dimming telegram after a long push button action. In the default setting, pressing the upper rocker contact sends a "Dim brighter" telegram while a "Dim darker" telegram is sent when the lower contact is pressed. A stop telegram is sent when the rocker is released.				

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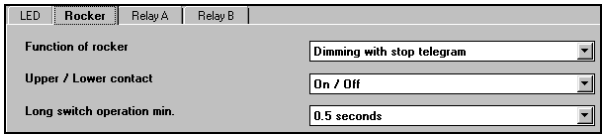
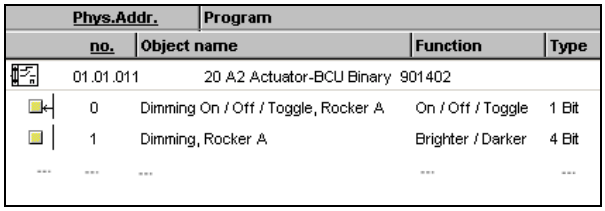
Parameters



Parameters	Settings
Function of 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 "Rocker" parameter window 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 the function of the upper and lower rocker contacts. In the default setting, pressing the upper contact briefly sends an On telegram while an Off telegram is sent when the lower contact is pressed. If a long push button action is detected, a "Dim brighter" telegram is sent when the upper contact is pressed while pressing the lower contact causes a "Dim darker" telegram to be sent. A stop telegram is sent when the push button is released. If "Toggle / Toggle" is selected, either an On or Off telegram is sent (toggling) after a brief rocker operation, depending on the current object status. The dimming function remains the same as for the setting "On / Off".	
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 period, the push button detects a long rocker operation.	

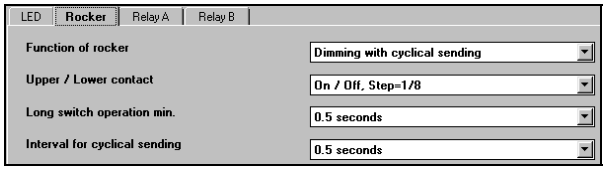
Dimming with cyclical sending

Communication objects



Obj	Object name	Function	Type	Flag
0	Dimming On / Off / Toggle, Rocker A	On / Off / Toggle	1 Bit	CWT
This object serves as a switching object for the rocker after a short push button action. In the default setting, pressing the upper contact sends an On telegram while an Off telegram is sent when the lower contact is pressed. If "Toggle / Toggle" is selected, either an On or Off telegram is sent (toggling) depending on the current object status.				
1	Dimming, Rocker A	Brighter / Darker	4 Bit	CT
This object serves as a dimming object for the rocker and sends a dimming telegram after a long push button action. The following applies: pressing the upper contact for a long period sends a "Dim brighter" telegram while a "Dim darker" telegram is sent when the lower contact is pressed according to the interval selected in the parameter "Interval for cyclical sending".				

Parameters



Parameters	Settings
Function of rocker	Switch Shutter Dimming with stop telegram **Dimming with cyclical sending** Scene (recall / save)
The function of the rocker is set via this parameter. The "Rocker" parameter window changes depending on the function that is selected here and the relevant parameters are displayed with default settings.	

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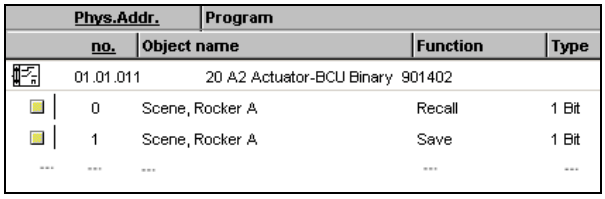
Parameters	Settings
Upper / Lower contact	On / Off, Step = 1/1 On / Off, Step = 1/2 On / Off, Step = 1/4 **On / Off, Step = 1/8** On / Off, Step = 1/16 On / Off, Step = 1/32 On / Off, Step = 1/64 Toggle / Toggle, adjustment = 1/1 Toggle / Toggle, adjustment = 1/4 Toggle / Toggle, adjustment = 1/8 Toggle / 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 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.	

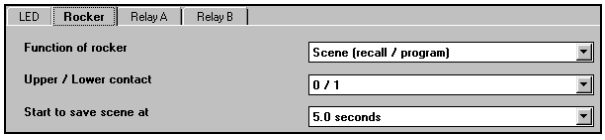
Scene

Communication objects



Obj	Object name	Function	Type	Flag
0	Scene, Rocker A	Recall	1 Bit	CT
The telegrams for recalling the scene 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.				

Parameters



Parameters	Settings
Function of 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 “Rocker” parameter window 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 with a “1” telegram 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 scenes. “1 / 0”: The assignment of scenes to the rocker contacts is inverted in this setting.	

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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 length of time that the rocker must be operated 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.	

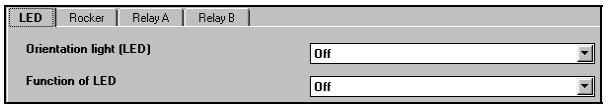
LED

Communication objects

Phys.Addr.	Program			
no.	Object name		Function	Type
01.01.011	20 A2 Actuator-BCU Binary 901402			
8	LED		Status	1 Bit

Obj	Object name	Function	Type	Flag
8	Status	LED	1 Bit	CRW
When the LED is used to display the status of a switching state, the switching telegrams are received via the group addresses in this object. If the setting “On” or “Off” is selected in the “LED” parameter window, this object is not displayed and has no function.				

Parameters



Parameters	Settings
Orientation light (LED)	**Off** On
This parameter defines whether the second LED should be used as an orientation light or always be switched off.	
Function of LED	**Off** On Status (via separate object) Inverted (via separate object)
With this parameter, the first LED can be selected for status display or as an orientation light. If “On” is selected, the LED is used as an orientation light. If “Off” is selected, the LED is switched off. In the setting “Status (via separate object)” or “Inverted (via separate object)”, the associated object is added to the object list. This object must then be linked with the corresponding group address.	

Assigning parameters to the binary outputs

Communication objects

Phys.Addr.	Program		
no.	Object name	Function	Type
01.01.011	20 A2 Actuator-BCU Binary 901402		
12	Switch, Channel A	On / Off	1 Bit
13	Switch, Channel B	On / Off	1 Bit
14	Status, Channel A	On / Off	1 Bit
15	Status, Channel B	On / Off	1 Bit
16	Logic operation, Channel A	OR function	1 Bit
17	Logic operation, Channel B	OR function	1 Bit
18	Logic operation, Channel A	AND function	1 Bit
19	Logic operation, Channel B	AND function	1 Bit
20	Positive drive, Channel A	On / Off	2 Bit
21	Positive drive, Channel B	On / Off	2 Bit

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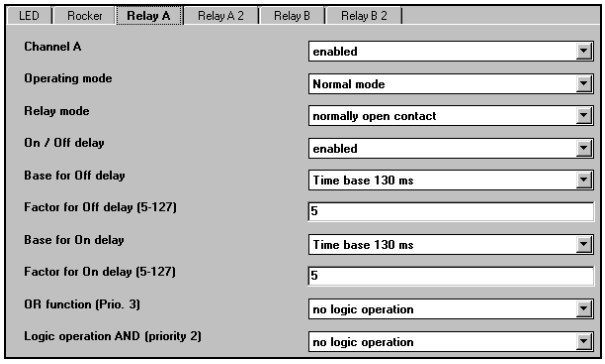
Obj	Object name	Function	Type	Flag
12	Switch, Channel A	On / Off	1 Bit	CW
13	Switch, Channel B	On / Off	1 Bit	CW
The switching telegrams that are relayed via the time function to the OR function of channel A or B are received via the group addresses in these objects.				
14	Status, Channel A	On / Off	1 Bit	CRT
15	Status, Channel B	On / Off	1 Bit	CRT
The current switching states of the relay channels are stored in this object. The object value is dependent on the switching telegrams to switching object 12 or 13 as well as on the state of the objects for logic operation and positive drive. The parameter settings “normally open contact” and “normally closed contact” for the relay mode do not influence the object value. No telegrams are sent if there is a change in the object value. The switching state can be read out via the ETS program or a visualisation terminal.				
16	Logic operation, Channel A	OR function	1 Bit	CRW
17	Logic operation, Channel B	OR function	1 Bit	CRW
18	Logic operation, Channel A	AND function	1 Bit	CRW
19	Logic operation, Channel B	AND function	1 Bit	CRW
The switching information for the logic operation inputs of channel A or B is received via the group addresses in these objects. If “no logic operation” is selected in the relevant parameters, these objects have no function.				
20	Positive drive, Channel A	On / Off	2 Bit	CRT
21	Positive drive, Channel B	On / Off	2 Bit	CRT
The switching telegrams for the positive drive of relay channels A and B are received via the group addresses in these objects. The positive drive is not active for the object values "0” and “1”. The switching state is assigned by the internal output of the AND function. Object value “2” switches off with positive drive while object value “3” switches on with positive drive. This overrides the state that was set by the output. Disabling the positive drive via a telegram with the value “0” or “1” causes the relay to be operated in the state that was defined by the output.				

Normal mode: Parameters

Relay A



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

Parameters	Settings
Channel A	**enabled** disabled
The corresponding channel is disabled (not used) or enabled via this parameter. If “disabled” is selected, the following parameters are no longer displayed.	
Operating mode	**Normal mode** Time switch
The function of the channel is set via this parameter. The parameter window “Relay A” changes depending on the function that is selected here and the relevant parameters are displayed with default settings.	
Relay mode	**normally open contact** normally closed contact
This parameter defines the behaviour of the relay contact. “normally open contact”: Off telegram = contact open, On telegram = contact closed. “normally closed contact”: Off telegram = contact closed, On telegram = contact open.	
On / Off delay	**enabled** disabled
The On/Off delay can be disabled (not used) or enabled via this parameter. If “disabled” is selected, the parameters that are used for setting the time delays are no longer displayed.	
Base for Off delay	**Time base 130 ms** Time base 260 ms Time base 520 ms Time base 1 sec Time base 2.1 sec Time base 4.2 sec Time base 8.4 sec Time base 17 sec Time base 34 sec Time base 1.1 min Time base 2.2 min Time base 4.5 min Time base 9 min

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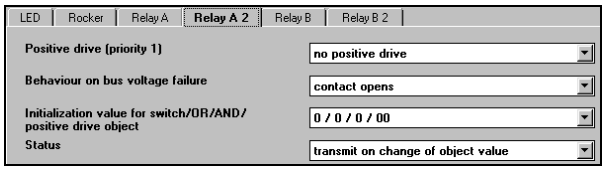
	Time base 18 min Time base 35 min Time base 1.2 hr
Factor for Off delay (5-127)	**5**
The time for the “Off delay” is set here. This is calculated from the selected base multiplied by the factor that is entered here. Note: An attempt should always be made to set the required time with the smallest possible base as the base that is selected here also simultaneously specifies the maximum timing error.	
Base for On delay	**Time base 130 ms** Time base 260 ms Time base 520 ms Time base 1 sec Time base 2.1 sec Time base 4.2 sec Time base 8.4 sec Time base 17 sec Time base 34 sec Time base 1.1 min Time base 2.2 min Time base 4.5 min Time base 9 min Time base 18 min Time base 35 min Time base 1.2 hr
Factor for On delay (5-127)	**5**
The time for the “On delay” is set here. This is calculated from the selected base multiplied by the factor that is entered here. Note: An attempt should always be made to set the required time with the smallest possible base as the base that is selected here also simultaneously specifies the maximum timing error.	
OR function (Prio. 3)	**no logic operation** OR function
This parameter defines whether a logic operation should be carried with an OR function object at the output of the time function.	
Logic operation AND (priority 2)	**no logic operation** AND function
This parameter defines whether a logic operation should be carried out with an AND function object at the output of the OR function.	

Relay A-2



Parameters	Settings
Positive drive (priority 1)	**no positive drive** Positive drive
Using this parameter, channel A can be controlled via a positive drive object. The positive drive input and the output of the AND function form the two inputs of the positive drive. If the positive drive is enabled, the two inputs are linked and are available at the internal output of the positive drive.	
Behaviour on bus voltage failure	no action **contact opens** contact closes
The behaviour of the relay contact on bus voltage failure can be set here. This reaction is not dependent on the relay mode that has been selected (normally open or normally closed contact). “no action”: The relay contact maintains its current switching state on bus voltage failure. “contact closes”: The relay contact is closed on bus voltage failure. This reaction is not dependent on the relay mode that has been selected (normally open or normally closed contact). “contact opens”: The relay contact is opened on bus voltage failure. This reaction is not dependent on the relay mode that has been selected (normally open or normally closed contact).	
Initialisation value for switch/OR/AND/positive drive object	**0 / 0 / 0 / 00** 1 / 1 / 1 / 00 1 / 0 / 1 / 00 1 / 0 / 1 / 10 1 / 0 / 1 / 11 1 / 0 / 0 / 00 0 / 1 / 1 / 00 0 / 0 / 1 / 10 0 / 0 / 1 / 11 as before bus voltage failure
This parameter specifies the initialisation values of the objects. The first value (on the left) corresponds to the object value for switching, the second is the object value for the OR function, the third is for the AND function and the final value corresponds to the object value for positive drive.	
Status	**transmit on change of object value** using read request
This parameter defines the behaviour of the status object. (It controls the “transmission flag” of the object parameters). “transmit on change of object value”: If the object value has changed, a corresponding telegram is sent. “using read request”: The status object only sends the status after a read request.	

Note

If the parameter “On / Off delay” is set to “disabled” while in normal mode, the parameters of parameter window “Relay A-2” are displayed in parameter window “Relay A” where they can be set as required. The parameter window “Relay A-2” is not displayed in this case.

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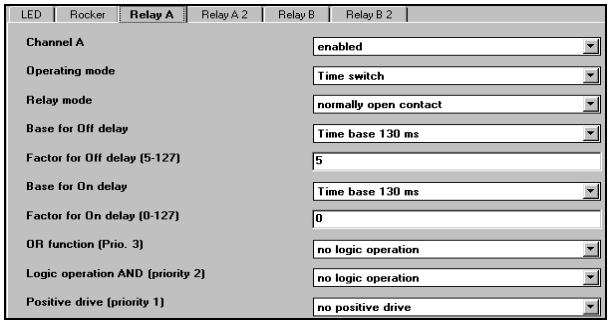
Time switch: Parameters

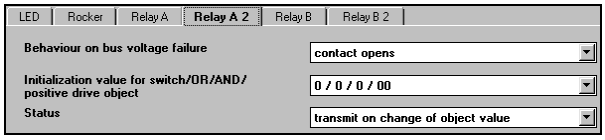
Relay A



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

Parameters	Settings
Channel A	**enabled** disabled
The corresponding channel is disabled (not used) or enabled via this parameter. If “disabled” is selected, the following parameters are no longer displayed.	
Operating mode	**Normal mode** Time switch
The function of the channel is set via this parameter. The parameter window “Relay A” changes depending on the function that is selected here and the relevant parameters are displayed with default settings.	
Relay mode	**normally open contact** normally closed contact
This parameter defines the behaviour of the relay contact. “normally open contact”: Off telegram = contact open, On telegram = contact closed. “normally closed contact”: Off telegram = contact closed, On telegram = contact open.	
Base for Off delay	**Time base 130 ms** Time base 260 ms Time base 520 ms Time base 1 sec Time base 2.1 sec Time base 4.2 sec Time base 8.4 sec Time base 17 sec Time base 34 sec Time base 1.1 min Time base 2.2 min Time base 4.5 min Time base 9 min Time base 18 min Time base 35 min Time base 1.2 hr
Factor for Off delay (5-127)	**5**
The time for the “Off delay” is set here. This is calculated from the selected base multiplied by the factor that is entered here. Note: An attempt should always be made to set the required time with the smallest possible base as the base that is selected here also simultaneously specifies the maximum timing error.	
Base for On delay	**Time base 130 ms** Time base 260 ms Time base 520 ms Time base 1 sec Time base 2.1 sec Time base 4.2 sec Time base 8.4 sec Time base 17 sec Time base 34 sec Time base 1.1 min Time base 2.2 min Time base 4.5 min Time base 9 min Time base 18 min Time base 35 min Time base 1.2 hr
Factor for On delay (0-127)	**0**
The time for the “On delay” is set here. This is calculated from the selected base multiplied by the factor that is entered here. Note: An attempt should always be made to set the required time with the smallest possible base as the base that is selected here also simultaneously specifies the maximum timing error.	
OR function (Prio. 3)	**no logic operation** OR function
This parameter defines whether a logic operation should be carried with an OR function object at the output of the time function.	
Logic operation AND (priority 2)	**no logic operation** AND function
This parameter defines whether a logic operation should be carried out with an AND function object at the output of the OR function.	
Parameters	**Settings**
Positive drive (priority 1)	**no positive drive** Positive drive
Using this parameter, channel A can be controlled via a positive drive object. The positive drive input and the output of the AND function form the two inputs of the positive drive. If the positive drive is enabled, the two inputs are linked and are available at the internal output of the positive drive.	

Relay A-2



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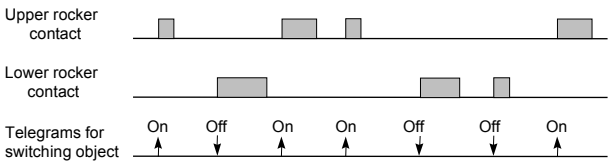
Parameters	Settings
Behaviour on bus voltage failure	no action **contact opens** contact closes
The behaviour of the relay contact on bus voltage failure can be set here. “no action”: The relay contact maintains its current switching state on bus voltage failure. “contact closes”: The relay contact is closed on bus voltage failure. This reaction is not dependent on the relay mode that has been selected (normally open or normally closed contact). “contact opens”: The relay contact is opened on bus voltage failure. This reaction is not dependent on the relay mode that has been selected (normally open or normally closed contact).	
Initialisation value for switch/AND/OR/positive drive object	**0 / 0 / 0 / 00** 1 / 1 / 1 / 00 1 / 0 / 1 / 00 1 / 0 / 1 / 10 1 / 0 / 1 / 11 1 / 0 / 0 / 00 0 / 1 / 1 / 00 0 / 0 / 1 / 10 0 / 0 / 1 / 11 as before bus voltage failure
This parameter specifies the initialisation values of the objects. The first value (on the left) corresponds to the object value for switching, the second is the object value for the OR function, the third is for the AND function and the final value corresponds to the object value for positive drive.	
Status	**transmit on change of object value** using read request
This parameter defines the behaviour of the status object. (It controls the “transmission flag” of the object parameters). “transmit on change of object value”: If the object value has changed, a corresponding telegram is sent. “using read request”: The status object only sends the status after a read request.	

Note

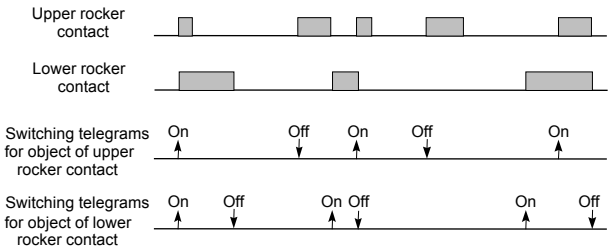
The function and parameters of relay B are identical.

Timing diagrams: Examples for a push button

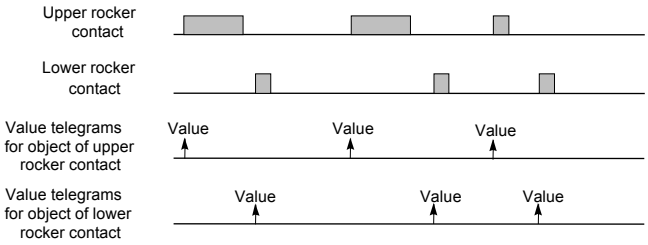
1. Configured for switch function: upper “On”, lower “Off”



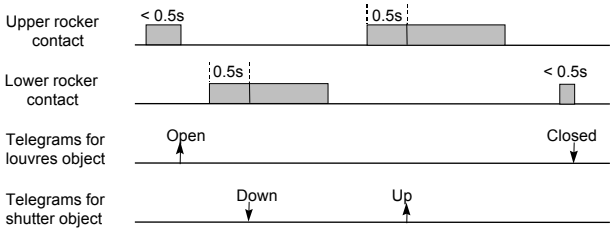
2. Configured for switch function: upper “Toggle”, lower “press: On, release Off”



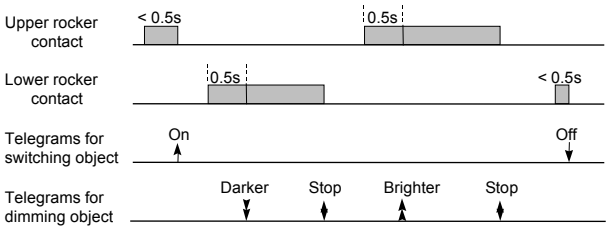
3. Configured for switch function: upper “8-bit Value”, lower “8-bit Value”



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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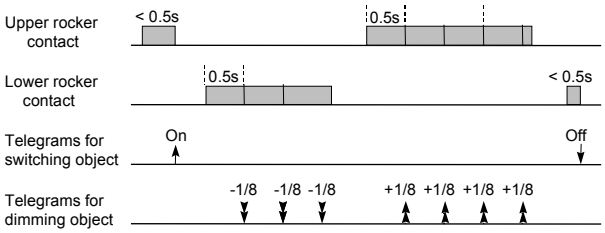
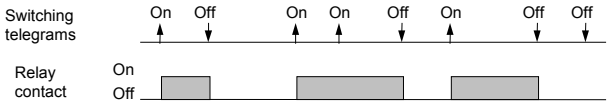
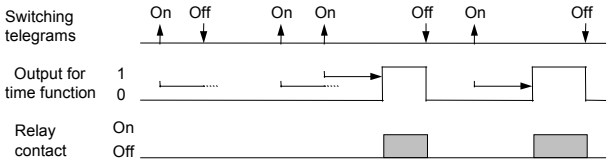


Timing diagrams: Examples for a channel

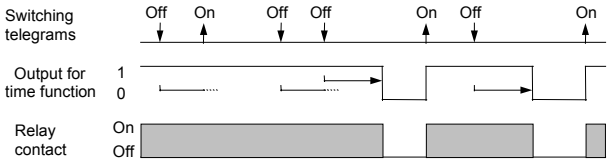
1. Switching without time delays, logic operation or positive drive



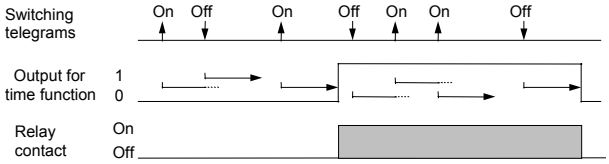
2. Switching with On delay, without logic operation or positive drive



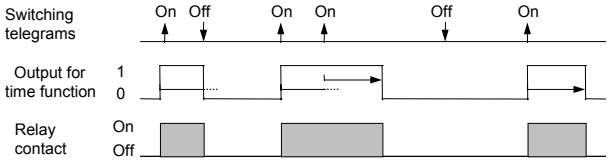
3. Switching with Off delay, without logic operation or positive drive



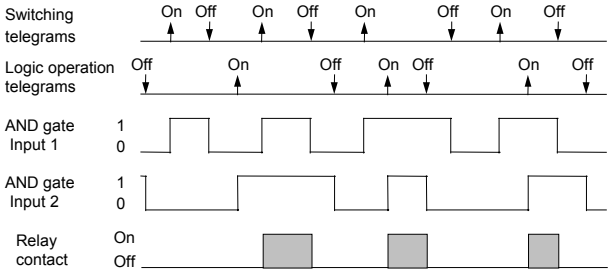
4. Switching with On and Off delay, without logic operation or positive drive



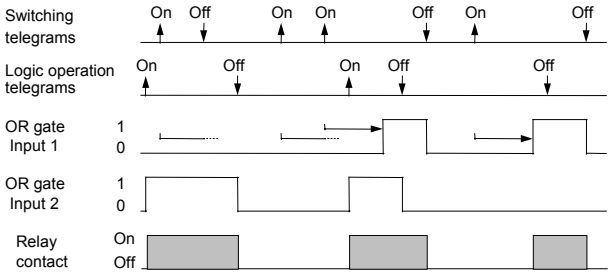
5. Switching with time switch function, without logic operation or positive drive



6. Switching with AND function, without time delays or positive drive



7. Switching with OR function and On delay, without positive drive



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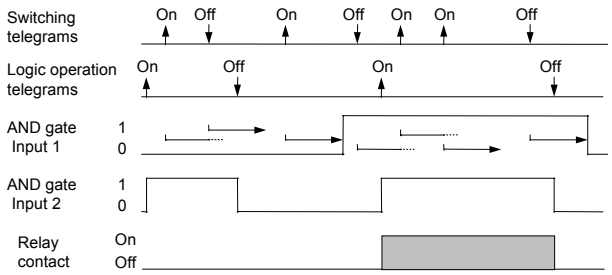
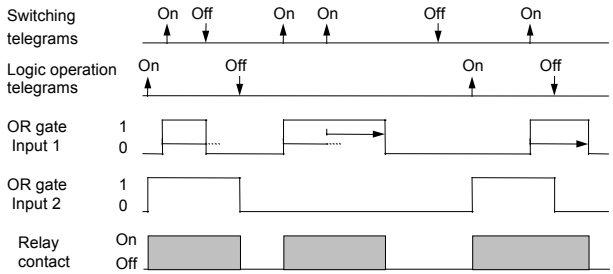
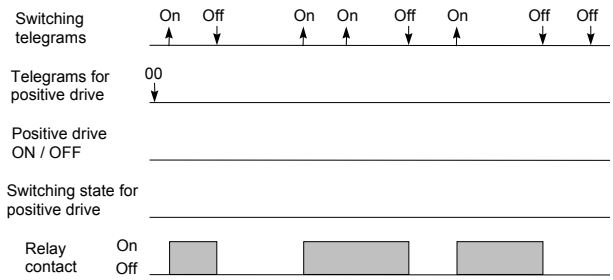
8. Switching with AND function and On and Off delay, without positive drive



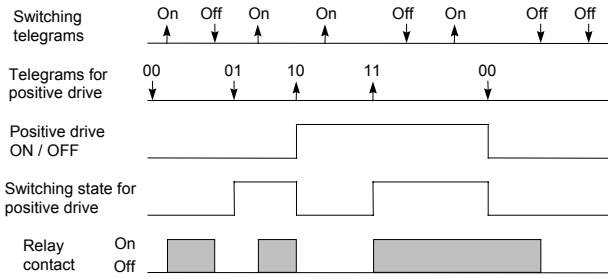
9. Switching with OR function and time switch function, without positive drive



10. Switching without positive drive



11. Switching with positive drive



instabus EIB

Application program description

October 2001

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Notes:

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